BERKELEY SPACE CENTER
AT NASA RESEARCH PARK

DRAFT ENVIRONMENTAL IMPACT REPORT/
ENVIRONMENTAL IMPACT STATEMENT

BERKELEY SPACE CENTER AT NASA RESEARCH PARK



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Glossary

Each technical report included as an appendix to this joint EIR/EIS includes a glossary; refer to those technical reports for terms specific to those topics.

Ames Research Center Directives and Procedural Requirements (APR) – The Ames Research Center Directives and APR are a public listing of National Aeronautics and Space Administration Ames Research Center (NASA ARC) policies and procedures. These policies ensure compliance with NASA's standards and authorize review, assessment, and approval of projects at NASA ARC. The policies also address NASA ARC's conformance with federal, state, and local land use plans and regulations.

Bicycle Lane (Class II facility) – A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Path (Class I facility) – A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

Bicycle Route (Class III facility) – A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

California Environmental Quality Act (CEQA) – California law signed in 1970 that requires State and local government agencies to inform decision-makers and the public about the potential environmental impacts of proposed projects and reduce those environmental impacts to the extent feasible.

California Register of Historical Resources (CRHR) - The State Historical Resources Commission designed this program for use by state and local agencies, private groups and citizens to identify, evaluate, register and protect California's historical resources. The CRHR is the authoritative guide to the state's significant historical and archeological resources.

Congestion Management Plan (CMP) – A mechanism employing growth management techniques, including traffic level of service requirements, standards for public transit, trip reduction programs involving transportation systems management and jobs/housing balance strategies, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional traffic impacts of development. Assembly Bill 1791, effective August 1, 1990, requires all cities, and counties that include urbanized areas, to adopt by December 1, 1991, and annually update a Congestion Management Plan.

Earthquake Fault Zone – The State of California, Alquist-Priolo Earthquake Fault Zoning Act identifies sites within 1,000 foot wide zone with the fault at the center as Earthquake Fault Zones. The Alquist-Priolo Act requires that these sites undergo specialized geologic investigations prior to approval of certain new development. State law requires that these zones be incorporated into local general plans.

Environmental Impact Report (EIR) – A report required by the California Environmental Quality Act and which assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action. (See "California Environmental Quality Act.")

Environmental Impact Statement (EIS) – A report prepared pursuant to the National Environmental Policy Act and is an evaluation of the environmental effects of a federal action including its alternatives. The public, other federal agencies, and outside parties may provide input into the preparation of an EIS and then comment on the draft EIS when it is published. (See " National Environmental Policy Act.")

Erosion – (1) The loosening and transportation of rock and soil debris by wind, rain, or running water. (2) The gradual wearing away of the upper layers of earth.

Exclusive Federal Jurisdiction – The federal government alone has jurisdiction and provides law enforcement and public safety services.

Expansive Soils – Soils that swell when they absorb water and shrink as they dry.

Fault – A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Flood Insurance Rate Map (FIRM) – For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

Flood, 100-Year – The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

Geological – Pertaining to rock or solid matter.

Geomorphic Province – A region with distinctive landforms, rock types, and geologic structure.

Grade – The average level of the finished surface of the ground adjacent to the exterior walls of the building.

Groundwater – Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Hazardous Waste – Any refuse or discarded material or combinations of refuse or discarded materials in solid, semisolid, liquid, or gaseous form which cannot be handled by routine waste management techniques because they pose a substantial present or potential hazard to human health or other living organisms because of their chemical, biological, or physical properties.

Household – All those persons related or unrelated who occupy a single housing unit.

Institutional Shared Pool (ISP) – The ISP is the mechanism by which NASA charges its tenants for costs for common levels of services provided throughout its Property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), and additional demand services above the common levels of service.

Jobs/Housing Balance – The availability of affordable housing for employees.

Jobs/Housing Ratio – The jobs/housing balance divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

Lead Agency – A lead agency is the public agency that has the principal responsibility for carrying out or approving a project that is subject to CEQA or NEPA. For this project, NASA is the NEPA Lead Agency for the proposed action. The UC Regents is the CEQA Lead Agency for the proposed project.

LEED – The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings.

Level of Service (LOS) Standard, Traffic – A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

LOS A – Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

LOS B – A steady flow of traffic, with only slight delays in vehicle movement and speed.

LOS C – A reasonably steady, high-volume flow of traffic, with some limitations on vehicle movement and speed, and occasional backups on critical approaches.

LOS D – Designates where the level of traffic nears an unstable flow. Intersections still function but short queues develop and cars may have to wait through one cycle during short peaks.

LOS E – Traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak hours, with frequent stopping, longstanding queues, and blocked intersections.

LOS F – Represents unsatisfactory stop-and-go traffic characterized by "traffic jams" and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and "upstream" intersections may be blocked by the long queues.

Limits of Work – The Project Site (39 acres) plus the Off-Site Areas (6-acre area outside of the Project Site where utility improvements and building demolition would take place).

Liquefaction – The transformation of loose water saturated granular materials (such as sand or silt) from a solid into a liquid state. A type of ground failure that can occur during an earthquake.

Mitigation – As defined in the CEQA Guidelines, "Mitigation" includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

NASA Ames Development Plan (NADP) – The NADP is a comprehensive long-range land use plan that guides the use, renovation, management, and development of facilities at National Aeronautics and Space Administration Ames Research Center. (See "National Aeronautics and Space Administration Ames Research Center.")

National Aeronautics and Space Administration Ames Research Center (NASA ARC) - An approximately 2,000-acre facility in unincorporated Santa Clara County, California, between U.S. 101

and the southwest edge of San Francisco Bay. Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction.

National Environmental Policy Act (NEPA) – Federal law signed in 1970 requiring federal agencies to analyze and disclose the environmental impacts of proposed actions before they are undertaken.

National Pollutant Discharge Elimination System (NPDES) – The national program for controlling discharges of pollutants from point sources (e.g., municipal sewage treatment plants, industrial facilities) into the waters of the United States.

National Historic Preservation Act (NHPA), Section 106 – Archaeological and architectural resources (buildings and structures) are protected through the NHPA (16 United States Code 470f), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Section 106 of the NHPA requires project review of effects on historical properties only when projects involve federal funding or permitting or occur on federal land; therefore, it is not applicable to discretionary actions on privately owned land at the municipal level. However, the NHPA establishes the National Register of Historic Places, which provides a framework for resource evaluation and informs the process for determining impacts on historical resources under CEQA.

National Register of Historic Places (NRHP) – The listing maintained by the US National Park Service of sites and structures that have been designated as historically significant.

Open Space – Land and water areas retained for use as active or passive recreation areas or for resource protection in an essentially undeveloped state.

Parking Ratio – The number of parking spaces provided per 1,000 square of floor area, e.g., 2:1 or "two per thousand."

Project Site – 39-acre site where the proposed project would be implemented. The Project Site is bounded by Wescoat Road to the north and Cody Road to the east. The southern boundary of the Project Site is between Edquiba Road and Girard Road. The western boundary of the Project Site is within an empty lot immediately west of Bailey Road.

Proposed project/proposed action – Berkeley Space Center at the National Aeronautics and Space Administration (NASA) Research Park. The proposed project will include the proposed Berkeley Space Center Master Plan (Master Plan), which establishes the overall project vision, conceptual plans, and illustrative renderings, and the proposed Berkeley Space Center Development Guidelines (Development Guidelines), which provide Maximum and Minimum Development Parameters and Standards for the proposed project buildings and open space.

Regional Housing Needs Allocation (RHNA) – The State of California mandated process that determines the number of housing units, by income level, a region's local governments must plan for over an 8-year cycle. The Association of Bay Area Governments manages the local RHNA process**.**

Remediation – The action or measures taken, or to be taken, to lessen, clean-up, remove, or mitigate the existence of hazardous materials existing on the property to such standards, specifications, or requirements as may be established or required by federal, state, or county statute, rule, or regulation.

Responsible Parties – The parties held responsible for the remediation of a site.

Record of Decision (ROD) – The signed document that adopts the preferred alternative described in the EIS, and commits NASA and its partners to implementation of the mitigation measures.

Runoff – That portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Sediments – Soil, sand, and minerals eroded from land by water or air. Sediments settle to the bottom of surface water.

Seiche – An earthquake generated wave in an enclosed body of water such as a lake, reservoir, or bay.

Seismic – Caused by or subject to earthquakes or earth vibrations.

Seismic Hazard Zone – The State of California, Seismic Hazards Mapping Act identifies areas within the state where landslides and liquefaction are most likely to occur. The Act requires special investigation of these sites before some types of buildings may be constructed. Property owners must disclose that property lies within such a zone at the time of sale.

Shared Use Streets – These streets would not include formal distinctions for spaces that would be used by vehicles and bicyclists. Shared Use Streets would include shared-use markings for bike and vehicular uses as well as pedestrian sidewalks.

Slope – Land gradient described as the vertical rise divided by the horizontal run, and expressed in percent.

Solid Waste – Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes, and wood, but does not include sewage and hazardous materials. Organic wastes and paper products comprise about 75 percent of typical urban solid waste.

Socioeconomics – The human-level elements that may be affected by a project. These categories can include topics such as relocation, available jobs, resulting economic changes, and local demographics.

Spring 2026 Project-Specific Environmental Issues Management Plan (EIMP) – Provides the framework to redevelop the Premises and Off-Site Areas in a manner that is protective of human health and the environment. EIMP includes minimum design considerations for new construction, risk management measures to be implemented during construction within the Limits of Work, post-construction risk management procedures for future subsurface activities within the Limits of Work, as well as procedures for long-term compliance with the EIMP and other regulatory requirements.

State Historic Preservation Officer (SHPO) – The official appointed or designated pursuant to Section 10(b)(1) of the NHPA to administer the State historic preservation program or a representative designated to act for the State historic preservation officer.

State Implementation Plan (SIP) – A detailed description of the programs a state will use to carry out its responsibilities under the Clean Air Act. State implementation plans are collections of the regulations used by a state to reduce air pollution. The Clean Air Act requires that EPA approve each state implementation plan. Members of the public are given opportunities to participate in review and approval of state implementation plans.

Surface Water – All water open to the atmosphere (e.g., rivers, lakes, reservoirs, streams, impoundments, seas, estuaries) and all springs, wells, or other collectors that are directly influenced by surface water.

Transportation Demand Management (TDM) – The implementation of programs, plans or policies designed to encourage changes in individual travel behavior. TDM can include alternatives to the single occupant vehicle such as carpools, vanpools, bicycles, transit, reduction or elimination of the number of vehicle trips, or shifts in the time of vehicle commutes to other than the peak period.

Trip Generation – The dynamics that account for people making trips in automobiles or by means of public transportation. Trip generation is the basis for estimating the level of use for a transportation system and the impact of additional development or transportation facilities on an existing, local transportation system.

Tsunami – A large ocean wave generated by an earthquake in or near the ocean.

Uniform Building Code (UBC) – A national, standard building code that sets forth minimum standards for construction.

United States Environmental Protection Agency (U.S. EPA) – An independent agency of the federal government that protects people and the environment from significant health risks, sponsors and conducts research, and develops and enforces environmental regulations. The U.S. Environmental Protection Agency is the lead air quality agency for the United States.

Unique Archaeological Resource – CEQA, Section 21083.2(g) defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that it contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information, it has a special and particular quality such as being the oldest of its type or the best available example of its type or it is directly associated with a scientifically recognized prehistoric or historic event."

Unique Paleontological Resource – CEQA does not define a "unique Paleontological Resource" however, the California Public Resource Code section 5097.2. discusses paleontological sites in the following terms, "lands [which] may contain any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological sites, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological or historical feature."

Vehicle Miles Traveled (VMT) – A metric for assessing passenger vehicle-related impacts that focuses on the total amount of driving to promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. VMT is a metric used for CEQA analysis.

View Corridor – The line of sight identified as to height, width, and distance of an observer looking toward an object of significance to the community (e.g., ridgeline, river, historic building, etc.); the route that directs the viewer's attention.

Viewshed – The area within view from a defined observation point.

Wastewater – The spent or used water from individual homes, a community, a farm, or an industry that often contains dissolved or suspended matter.

Wetlands – Habitats where the influence of surface or groundwater has resulted in development of plant or animal communities adapted to aquatic or intermittently wet conditions. Wetlands include tidal flats, shallow subtidal areas, swamps, marshes, wet meadows, bogs, and similar areas**.**

ES.1 Introduction

Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California (UC Regents) and SKSP NRP, LLC, is proposing a master-planned mixed-use academic and research project, referred to as the Berkeley Space Center at the National Aeronautics and Space Administration (NASA) Research Park (NRP) (proposed project/proposed action).[1] The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under the California Environmental Quality Act (CEQA) and NASA's approval to proceed following analysis consistent with the National Environmental Policy Act (NEPA). NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The UC Regents is the CEQA Lead Agency for the proposed project and would provide authorization before the proposed action is submitted for NASA's approval.[2]

The University of California, Berkeley (UC Berkeley) (on behalf of UC Regents) and NASA are preparing this joint environmental impact report/environmental impact statement (joint EIR/EIS) to assess potential environmental impacts that could result from the implementation of the proposed project.[3]

State CEQA Guidelines Section 15123 identifies the required contents for an EIR executive summary, which includes a brief summary of the proposed actions and its consequences, each significant effect, proposed mitigation measures, alternatives that would reduce or avoid significant effects, and known areas of controversy. This information is provided in subsequent sections. While there are no specific requirements for the format of an EIS, this executive summary also summarizes the NEPA evaluation contained in this document.

ES.1.1 Proposed Project/Proposed Action Overview

The proposed project under consideration by NASA (i.e., the proposed action) would include academic and research facilities, consisting of offices, laboratories, research-and-development (R&D) uses, and related amenities (collectively, "Research and Office Uses"); conference center and related amenities ("Conference Uses"); ground-floor retail, food and beverage, maker spaces (i.e., collaborative work spaces for using various tools and materials), and other complementary accessory uses that would be publicly accessible (collectively, "Active Uses"); student/faculty housing, including associated amenities ("Student/Faculty Housing"); short-term lodging, including associated amenities ("Short-Term Lodging"); transportation networks; and open spaces, as well as landscaped spaces, to create a state-of-the-art research and education hub that shapes the future of technology and innovation and advance the UC Regents educational, scientific research, charitable,

1 Throughout this joint environmental impact report/environmental impact statement (joint EIR/EIS), *proposed project* refers to both the proposed project (under the California Environmental Quality Act) and the proposed action (under the National Environmental Policy Act).

2 UC Regents is a legal entity that includes all of the University of California campuses.

3 Throughout this joint EIR/EIS, the discussion of the CEQA Proposed Project and each CEQA alternative (other than the CEQA No Project/Existing Conditions Alternative) also applies to the corresponding Build Alternative under NEPA.

and other exempt purposes (within the meaning of Section 501(c)(3) of the United States Internal Revenue Code). The proposed open space would include pathways, activated uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). The proposed project would facilitate the development and long-term operation of a collaborative research environment at the National Aeronautics and Space Administration Ames Research Center (NASA ARC) that supports NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research.

The UC Regents will consider approving the submittal of the Project Proponent's application to NASA, an action that requires review pursuant to CEQA.[4] The Project Proponent's application proposes 2.3 million square feet of mixed-use academic and research uses, which is the proposed project under CEQA (i.e., the CEQA Proposed Project).

ES.1.2 Location of the Proposed Project/Proposed Action

The proposed project would be located at NASA ARC, as depicted in Figure 2-1, Project Location, on an approximately 39-acre Project Site (Project Site), along with approximately 6 acres of off-site areas (Off-Site Areas) where utility improvements and building demolition would take place. Together, the Project Site and Off-Site Areas comprise the approximate 45-acre limits of work (Limits of Work), as depicted in Figure 2-2, Limits of Work, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, and as more fully described below.

The Limits of Work are located primarily on federal land within NASA ARC, an approximately 2,000-acre facility in unincorporated Santa Clara County, California, between U.S. 101 and the southwest edge of San Francisco Bay. A small portion of the Off-Site Areas is on federal land owned by the United States Army (Army). The city of Mountain View borders NASA ARC to the north and southwest, and the city of Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of the city of San Francisco and 8 miles north of the city of San José.

The Project Site is within the City of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. Most of the Off-Site Areas are also within the City of Mountain View Sphere of Influence and outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the city of Mountain View. The Project Site is bounded by Wescoat Road to the north and Cody Road to the east,[5] as depicted in Figure 2-3, Existing Conditions (Project Site), in Chapter 2. The southern boundary of the Project Site is between Edquiba Road and Girard Road. The western boundary of the Project Site is within an empty lot immediately west of Bailey Road. The Project Site is a portion of Santa Clara County Assessor's Parcel Number 116-18-012.

The Limits of Work are currently developed with 18 one- to three-story buildings that total approximately 185,600 square feet (including approximately 132,500 square feet of vacant uses and

[4] The application will include the proposed Berkeley Space Center Master Plan (Master Plan) provided in Appendix 2-1 of this joint EIR/EIS, which establishes the overall project vision, conceptual plans, and illustrative renderings, and the proposed Berkeley Space Center Development Guidelines (Development Guidelines) provided in Appendix 2-1 of this joint EIR/EIS, which provide strategies for the proposed buildings and landscapes within a flexible framework (as further discussed in Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

[5] Cody Road would be realigned to the east as part of the proposed project and would be the eastern boundary of the Project Site.

approximately 53,100 square feet of occupied uses), along with surface parking lots, roadways, and utility infrastructure, as depicted in Figure 2-4, Existing Conditions Site Plan (Limits of Work), in Chapter 2. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations (e.g., offices, food service, a gas station, pool, recreation center, and lodging). The other existing buildings within the Limits of Work comprise industrial, storage, and utility facilities. The buildings range in height from approximately 15 to 45 feet above the finished grade. In addition, there are approximately 900 existing parking spaces within the Limits of Work. As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work.

ES.1.3 Overview of the CEQA, NEPA, and Section 106 of NHPA Processes

ES.1.3.1 CEQA Process

The CEQA process is initiated with public scoping and the notice of preparation (NOP). The term *scoping* refers to the process used to assist the lead agency in determining the focus and content of an EIR. Scoping solicits input on the potential topics to be addressed in an EIR, the range of project alternatives, and possible mitigation measures. In compliance with CEQA Section 21080.4, the scoping process for this EIR was initiated when the NOP was released for the proposed project on June 21, 2024 for a 30-day public review period through July 22, 2024. Public scoping meetings were held via Zoom on July 10, 2024, and July 15, 2024. The purpose of the NOP was to allow various private and public entities to transmit their concerns and comments on the scope and content of this EIR, focusing on specific information related to each individual's or group's interest or agency's statutory responsibility early in the environmental review process

Following the close of the 30-day NOP public scoping period, this Draft EIR was prepared (refer to Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, of this joint EIR/EIS). As stated in the CEQA Guidelines, an EIR is an informational document. It is intended to inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to a project. The purpose of this Draft EIR is to provide UC Regents responsible and trustee agencies, other public agencies, and the public with detailed information about the environmental effects that could result from the proposed project; examine and set forth feasible methods of mitigating any adverse environmental impacts should the project be approved; and consider feasible alternatives to the proposed project. UC Berkeley must provide public notice of availability of this Draft EIR to interested individuals, agencies, and organizations to review and comment on the document prior to being finalized. This Draft EIR must be distributed for a 45-day (minimum) public review and comment period. Readers are invited to submit written comments on the document and are encouraged to be as specific as possible and address either the adequacy of the EIR or the merits of the alternatives considered.

Following the close of the 45-day public review period, UC Berkeley will prepare responses to all substantive comments related to potential physical changes to the environment. The Draft EIR, along with the written and oral substantive comments received during the review period, as well as responses to those comments, will make up the Final EIR. All responses to comments submitted on

the Draft EIR by public agencies will be provided to those agencies at least 10 days before certification of the EIR.

The Final EIR (consisting of the Draft EIR and the responses to comments) will be considered by the UC Regents to certify the Final EIR and then approve or deny the proposed project application. NASA is the final decision-making body regarding the project-specific discretionary development entitlements. Additionally, when a public agency approves a project evaluated under CEQA in the form of an EIR, CEQA requires that the public agency adopt a mitigation monitoring and reporting program to ensure that the mitigation measures identified in the EIR are implemented. The mitigation monitoring and reporting program will be considered by the UC Regents in conjunction with the Final EIR and will be included as part of the final proposed project application that is submitted to NASA for approval. Because the UC Regents is not constructing the proposed project and does not have jurisdiction over NASA ARC, the oversight of implementation of the mitigation measures by the developer lies with NASA.

Certification of the Final EIR by the UC Regents as complete and adequate, in conformance with CEQA, does not grant any land use approvals or entitlements for the proposed project. The merits of the proposed project application will be considered by the UC Regents following certification of the Final EIR/EIS. The CEQA Guidelines require that, for one or more significant and unavoidable impacts that cannot be substantially mitigated, a lead agency must prepare a Statement of Overriding Considerations that balances the social, economic, technological, and legal benefits of approving a project against the significant and unavoidable environmental impacts that would result from project implementation. If significant and unavoidable impacts are identified, the UC Regents will consider the Statement of Overriding Considerations for the proposed project application.

ES.1.3.2 NEPA Process

Because the proposed action would be located on federal land, it must comply with NEPA, and because the proposed action may have a reasonably foreseeable significant effect on the quality of the human environment an EIS must be prepared. As described above, this EIS has been prepared in accordance with NEPA.

The scoping process for the EIS was initiated when the notice of intent (NOI) was released for the proposed action from June 25, 2024 for a 30-day public review period through July 26, 2024. Public scoping meetings were held via Zoom on July 10, 2024, and July 15, 2024. In addition, the NOI was published in the *Federal Register* on June 26, 2024, under Docket Number NASA-24-039. Scoping allowed various private and public entities to transmit their concerns and comments on the scope and content of this EIS, identify significant issues, and provide input on alternatives).

After the public scoping period, this Draft EIS was prepared (refer to Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS). The primary purpose of an EIS is to ensure that federal agencies consider the environmental impacts of their actions and inform decision-makers and the public of reasonably foreseeable environmental effects and a reasonable range of project alternatives. An EIS provides information regarding the purpose and need for the proposed action, describes the affected environment, significant effects and reasonable alternatives that are technically and economically feasible and meet the purpose and need of the proposed action.

NASA provided a public notice of availability of this Draft EIS to interested individuals, agencies, and organizations to review and comment on alternatives or impacts prior to being finalized. This Draft

EIS document will be distributed for a 45-day public review and comment period. Readers are invited to submit written comments, and are encouraged to be as specific as possible about the alternatives presented or the range of the analysis considered. In addition, the document will be made available through the *Federal Register.*

Following the close of the 45-day public review period, NASA will prepare responses to all substantive comments related to potential environmental effects and alternatives. A Final EIS will be prepared and consist of the (1) the Draft EIS, (2) a list of individuals, organizations, or agencies that provided comments on the Draft EIS, (3) comments received on the Draft EIS during the public comment period, (4) responses to the comments provided on the Draft EIS, and (5) and clarification of errors, omissions, or misinterpretation of the discussion in the findings in the Draft EIS by NASA. The Final EIS will be published on NASA's project website and accessible to the public.

After the Final EIS is published, NASA will prepare a written record explaining why NASA has chosen to undertake a proposed action, identifying what the proposed action is, and any mitigation identified in the joint EIR/EIS that NASA is including. The Mitigation Monitoring and Reporting Program details the mitigation and assigns responsibility for their implementation; the final Mitigation Implementation and Monitoring Plan will also be prepared by NASA.

The National Historic Preservation Act (NHPA) mandates that federal agencies consider the effects of projects on historic properties and seek comments on their actions from an independent reviewing agency, the State Historic Preservation Office (SHPO) and/or the Advisory Council on Historic Preservation (ACHP). Title 36 of the Code of Federal Regulations provides the methodology for assessing impacts on historic properties and details the requirements of the consultation process. For complex projects and programs expected to continue over time, the Section 106 regulations allow development of a Programmatic Agreement (PA) that governs ongoing and future activities undertaken as part of the project or program it addresses. An agency may fulfill its obligations under Section 106 by following the alternate review process outlined in a PA. NASA, in consultation with the Advisory Council on Historic Preservation, the National Conference of State Historic Preservation Officers, and other consulting parties, developed the NASA-Wide Programmatic Agreement (NPA) as a Section 106 program alternative pursuant to 36 CFR 800.14(b). Executed in October 2025, the NPA governs NASA's implementation of alternate procedures for project review and the resolution of adverse effects on historic properties under Section 106. Historic properties and impacts to them are analyzed in Section 4.5.5, *Cultural Resources*, in this joint EIR/EIS. NASA will use the process described in the NPA to satisfy its obligations under Section 106.

ES.1.3.3 Joint EIR/EIS Process

The joint Draft EIR/EIS will be circulated together, approximately at the same time, for a 45-day (minimum) public review and comment period. As outlined above, following the close of the 45-day public review period, NASA and UC Berkeley will prepare responses to all substantive comments related to potential environmental effects and alternatives. The joint Final EIR/EIS will be distributed to federal agencies with jurisdiction by law or special expertise, state and local cooperating agencies, environmental regulatory agencies, and those requesting copies.

ES.1.4 NASA & UC Berkeley Roles

NASA is the NEPA Lead Agency for the proposed action. As the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The UC Regents is the CEQA Lead Agency for the proposed project application and would provide authorization, including certification of the joint EIR/EIS under CEQA before the proposed action is submitted for NASA's approval.[6] UC Berkeley (on behalf of UC Regents) and NASA are preparing this joint EIR/EIS for the proposed project.

ES.2 Purpose and Intended Use of this EIR/EIS

The purpose of this joint EIR/EIS is to assess and disclose the potential environmental impacts associated with adoption and implementation of the project and to determine corresponding mitigation measures as necessary. The project is evaluated at a detailed project level in this joint EIR/EIS and is intended to be relied upon by UC Berkeley and NASA to provide CEQA and NEPA clearance, respectively, for approval and entitlement of the proposed project. This joint EIR/EIS is also intended to provide CEQA and NEPA clearance for review, approvals, or actions by other agencies or entities, as listed in Section 2.5, *Reviews and Approvals by Lead Agencies, Responsible and Other Agencies*, in Chapter 2.

ES.3 Overview of Alternatives and Variant

In accordance with CEQA and the CEQA Guidelines, specifically Section 15126.6, an EIR must describe a reasonable range of alternatives to a project, or the location of a project, that could attain most of the project objectives while avoiding or substantially lessening any of the significant effects of the project. The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. CEQA states that an EIR should not consider alternatives "whose effects cannot be ascertained and whose implementation is remote and speculative."

NEPA requires an EIS to consider "a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal".

UC Berkeley and NASA are preparing this joint EIR/EIS for the proposed project. Pursuant to NEPA requirements, NASA identified two build alternatives to meet the purpose and need for the proposed action including the majority of the project's objectives (see Section ES.4, *CEQA Project Objectives*). The joint EIR/EIS also discusses the NEPA No-Action Alternative. Therefore, pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- **CEQA Proposed Project (NEPA Build Alternative 1)**, which would create approximately 2.3 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. The CEQA Proposed Project would include approximately 2 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000

[6] UC Regents is a legal entity that includes all of the University of California campuses.

square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Only the CEQA Proposed Project includes the Water Reuse Facility (WRF) Option and the Central Utility Plant (CUP) Option.[7]

- **CEQA Reduced Density Alternative (NEPA Build Alternative 2)**, which would create approximately 1.4 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would provide less space for Research and Office Uses. The CEQA Reduced Density Alternative would include approximately 1.1 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.
- **NEPA No-Action Alternative**, under which the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant would be reoccupied consistent with the prior uses of the buildings (e.g., ancillary buildings that supported Navy operations as well as industrial, storage, and utility facilities); reoccupying the vacant buildings would not require construction activity. The NASA Ames Development Plan (NADP), which established NASA's vision for long-term development of NASA ARC, also allows other types of uses at the Project Site. The NEPA No-Action Alternative could result in retaining the approximately 185,600 square feet of existing mixed uses, resulting in approximately 668 employees.[8] The NEPA No-Action Alternative would not result in the reoccupation of any buildings formerly used for lodging; thus, the NEPA No-Action Alternative would not generate any new full-time residents or short term occupants (e.g., summer interns) within the Limits of Work.

ES.3.1 Project Variant

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different: the No Student/Faculty Housing Variant/Sub-Alternative (Variant).[9] Both the CEQA Proposed Project and the CEQA Reduced Density Alternative include the Variant. The Variant would replace the 130,000 square feet of Student/Faculty Housing in Subarea 6 with 130,000 square feet of Research and Office Uses under both the CEQA Proposed Project and CEQA Reduced Density Alternative. Specifically, the Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses. The Variant would have the same type of land uses; the same general site plan; the same maximum building height; the same amount of Conference Uses, Active Uses, Short-Term Lodging, and open space; the same number of guests; the same roadway infrastructure; the same utility infrastructure; the same parking ratio; and the same construction activities proposed and evaluated under the CEQA Proposed Project and CEQA Reduced Density Alternative, unless otherwise noted below. Because the amount of Research and Office Uses and the number of Student/Faculty Housing units

[7] Under the Water Reuse Facility Option, portions of the non-potable supply would be provided on-site rather than by Mountain View. The Central Utility Plant Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

[8] This is based on a generation rate of 3.6 employees per 1,000 square feet.

[9] Throughout this joint EIR/EIS, *Variant* refers to both the variant (under CEQA) and the Sub-Alternative (under NEPA).

would be different under the Variant, the number of bicycle parking spaces, and the number of residents, employees, and students would likewise change. The differences among the CEQA Proposed Project, the CEQA Proposed Project with the Variant, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant are analyzed quantitatively throughout this joint EIR/EIS, as applicable.

ES.3.2 Additional CEQA Alternatives

Consistent with the guidance in State CEQA Guidelines Sections 15126.6(d) and 15126.6(e), the following two additional CEQA alternatives are evaluated and compared to the CEQA Proposed Project:

- **CEQA No-Project/Existing Conditions Alternative**, under which the Project Proponent would not construct and operate the CEQA Proposed Project at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational, and the buildings within the Limits of Work that are currently vacant would remain vacant.[10]
- **CEQA Reduced Height Alternative,** which would create approximately 2 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Height Alternative would achieve lower maximum building height in some areas. In addition, the CEQA Reduced Height Alternative would provide less space for Research and Office Uses and less space for Student/Faculty Housing compared to the CEQA Proposed Project. The CEQA Reduced Height Alternative would include approximately 1.66 million square feet for Research and Office uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 100,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.

The CEQA Proposed Project, the CEQA Proposed Project with the Variant, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant are discussed throughout this joint EIR/EIS, whereas the two additional CEQA alternatives are discussed in Chapter 5, *Other CEQA Information and Alternatives*.

ES.4 CEQA Project Objectives

Section 15124(b) of the CEQA Guidelines requires a project to contain a clear statement of project objectives, including the underlying purpose of the project. The underlying purpose of the proposed project is to redevelop the approximately 39-acre Project Site with an economically viable development that combines housing, lodging, conference center, and academic uses, and employment opportunities near transit and freeway access. Project objectives include the following:

1. Develop a state-of-the-art, collaborative, and multidisciplinary master-planned research park that integrates public and private R&D efforts in the areas of space exploration, scientific discovery, and aeronautics, as contemplated in the NASA Ames Development Plan (NADP).
2. Co-locate University of California, Berkeley (UC Berkeley) academic and private industry research space at NASA Ames Research Center (NASA ARC) to enable intellectual exchange,

[10] This provides a conservative analysis under CEQA for the purposes of comparison.

interdisciplinary research and experimentation, and further advancements in science, engineering, and technology among government, private industry, and academia.

3. Provide sufficient multi-tenant Class A office, R&D, academic space, and a conference center to support a variety of research functions and tenant types and sizes to create a synergistic campus environment while maintaining flexibility to be responsive to academic needs, tenant demands, and market conditions.
4. Provide a publicly accessible and high-quality central greenspace to provide a space for collaboration and informal meeting spaces for faculty, staff, employees, and visitors of the Berkeley Space Center while also providing ecological functions such as stormwater management and phytoremediation.
5. Redevelop an underutilized site by replacing existing obsolete and aging buildings and infrastructure with new state-of-the-art buildings and infrastructure in a manner that optimizes density and site capacity while complying with applicable environmental and land use restrictions.
6. Create a financially sustainable R&D campus that can support costs associated with the completion of the critical infrastructure upgrades and improvements necessary to redevelop the site and facility operations.
7. Provide a positive fiscal impact on the local economy and NASA ARC through the creation of public, private, and non-profit industry jobs

ES.5 NEPA Purpose and Need

In accordance with NEPA requirements, the purpose of the proposed project is to:

- Facilitate the development and long-term operation of a collaborative research environment at NASA ARC as contemplated in the NADP.
- Create a research development that combines UC Berkeley's mission to accelerate scientific discovery, create innovative technologies, and advance knowledge for the benefit of humanity with NASA's mission to enable exploration, innovative technologies, and interdisciplinary scientific discovery through the integration of public and private research and development efforts.
- Strengthen and expand NASA ARC's global profile, attracting and retaining new research talent as well as generating innovative ideas for use throughout the world and the cosmos.
- Promote collaborative research and development activities among NASA ARC, UC Berkeley, private industry, and non-profit organizations.
- Provide lodging options or on-site short-term housing, or both, to primarily support faculty, students, and visitors.
- Enable more efficient use of land at NASA ARC by demolishing older underutilized buildings and infrastructure and constructing new facilities and associated infrastructure involved in the creation of the new research space.

The need for the proposed project is as follows:

- To maintain NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research and technology transfer.
- To strengthen the United States' ability to address the research challenges of tomorrow by combining NASA's unique ability to focus on high-risk long-term research; the industry's ability to react quickly with applied technology; and the UC Berkeley's expertise in educating and providing a vibrant workforce for the future.

ES.6 Summary of Environmental Impacts

Table ES-1 describes impact topics considered in the EIR, identifies the level of significance without mitigation, provides recommended mitigation measures, and the level of significance with mitigation for the CEQA Proposed Project, CEQA Proposed Project with Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with Variant. For a complete description of potential impacts and recommended mitigation measures for the proposed project, please refer to the specific topic of discussion in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*. As shown in Table ES-1, all mitigation measures required to reduce impacts for the CEQA Proposed Project are also required for the CEQA Reduced Density Alternative, and the Variant.

Table ES-1 also describes impact topics considered in the EIS, identifies the level of significance without mitigation, provides recommended mitigation measures, and the level of significance with mitigation for NEPA Build Alternative 1, NEPA Build Alternative 1 Sub-Alternative, NEPA Build Alternative 2, and NEPA Build Alternative 2 Sub-Alternative. For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topic of discussion in Chapter 4, *Environmental Impact Statement*. As shown in Table ES-1, all mitigation measures required to reduce impacts for NEPA Build Alternative 1 are also required for NEPA Build Alternative 2, and the Sub-Alternative.

Levels of significance in Table ES-1 are categorized as follows:

NI	No Impact
LTS	Less than Significant
PS	Potentially Significant
LTSM	Less than Significant with Mitigation
SUM	Significant and Unavoidable with Mitigation
SU	Significant and Unavoidable

ES.7 Significant Impacts

As discussed in more detail throughout the resource-specific sections in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS, and as summarized in Table ES-1, impacts in the following areas would be significant and unavoidable with implementation of mitigation measures for the

CEQA Proposed Project (NEPA Build Alternative 1), CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with Sub-Alternative), CEQA Reduced Density Alternative (NEPA Build Alternative 2), and CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with Sub-Alternative).

CEQA

- **Impact CEQA-AIR-1. Conflicts with Air Quality Plan**. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risks as well as $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan under CEQA. Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 would be required to reduce project-generated emissions during construction and operation and associated health risks from receptor exposure to TACs and $PM_{2.5}$. Although these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds; $PM_{2.5}$ risk would likewise exceed the Air District's thresholds at some future onsite worker receptor locations. The analysis finds that the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan, even with implementation of identified mitigation measures. The impact would be significant and unavoidable.
- **Impact CEQA-AIR-2. Criteria Pollutants (Full Operations).** Although sustainable project design features would reduce the severity of growth-oriented criteria pollutants by supporting energy-efficient buildings and fostering active and alternative transportation, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), would generate ROG and PM_{10} emissions above the Air District's thresholds. ROG emissions would be primarily the result of consumer products, architectural coatings, and landscaping equipment (i.e., area sources). PM_{10} emissions would be primarily the result of private vehicle trips. Mitigation Measures AQ-5 and AQ-6 would be required to reduce ROG emissions from area sources. Mitigation Measure AQ-5 requires, at a minimum, the use of low-VOC paints and cleaning supplies. Mitigation Measure AQ-6 would require the use of zero-emission landscaping equipment over conventional gasoline-fueled counterparts. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions, and Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces vehicle miles traveled (VMT). Nonetheless, even with implementation of the above-identified mitigation measures, ROG and PM_{10} emissions would still exceed the Air District's thresholds. The project design features and Mitigation Measures AQ-5, AQ-6 and TRAN-1 collectively represent the best available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. There is no feasible mitigation beyond these measures and the project design features to reduce operational ROG and PM_{10} emissions to levels below the Air District's thresholds. Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the CEQA Proposed Project (with and without the Variant) and the CEQA

Reduced Density Alternative (with and without the Variant) would be significant and unavoidable.

- **Impact CEQA-AIR-3. Pollutant Concentrations.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in exceedances of the Air District project-level cancer risk threshold and $PM_{2.5}$ threshold for existing off-site receptors located adjacent to the Project Site. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold and $PM_{2.5}$ threshold due to project construction activities. The primary cause of the cancer risk threshold exceedances for existing and future receptors is exposure to DPM during construction at the Project Site—specifically, exhaust from off-road equipment and on-site trucks, with smaller contributions from operational sources of TACs. The primary causes of the $PM_{2.5}$ concentration exceedances are on-site off-road equipment activity, earthmoving activity, and vehicle travel, which generates fugitive $PM_{2.5}$ from resuspended road dust. Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 would be required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 would be required to reduce operational $PM_{2.5}$ risks. However, the CEQA Proposed Project (with and without the Variant) would exceed the Air District's annual $PM_{2.5}$ thresholds, even with implementation of the above-identified mitigation measures. These measures collectively represent the best available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact would be significant and unavoidable.
- **Impact CEQA-C-AIR-1. Cumulative Air Quality Impacts.** Because impacts from criteria pollutants are cumulative in nature, the project-level and cumulative impact thresholds for the analysis of regional air quality impacts are the same. Thus, the analysis and conclusions presented characterize the cumulative regional air quality impacts of the project. Emissions generated by the project during the construction period would not contribute to a cumulative regional air quality impact under CEQA with mitigation. However, long-term operational emissions of ROG and PM_{10} would be cumulatively considerable, even with implementation of all feasible mitigation. Localized $PM_{2.5}$ concentrations at the maximally exposed receptor location would also be cumulatively considerable. This impact is significant and unavoidable.
- **Impact CEQA-CUL-1. Historical Resources.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in physical damage to contributors to the NAS Sunnyvale Historic District associated with construction equipment and vibration within the Limits of Work, and new development would introduce new facilities into the setting of the NAS Sunnyvale Historic District that would significantly alter the visual character of the district's immediate surroundings. Implementation of Mitigation Measure CUL-1 would ensure that contributing streetlights would be protected from inadvertent damage during construction. Mitigation Measure NOI-5 would protect historical resources near vibration-producing construction activities. Mitigation Measure CUL-2 would establish a process through which the design of project components adjacent to the historic district would be developed to be as architecturally compatible with the NAS Sunnyvale Historic District as feasible while also meeting project objectives. However, it cannot be guaranteed that Mitigation Measure CUL-2 would successfully prevent material impairment to the NAS Sunnyvale Historic District's setting. If it is not feasible to modify project designs in a manner that complies with the Secretary of the Interior's Standards, Mitigation Measure CUL-3 would require the development of interpretive materials that document the historic district's physical development and setting. However, there is no feasible mitigation beyond these

measures and the project design features to prevent material impairment of the historic district's setting. Even with the project design features and mitigation measures, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in substantial adverse change to the setting of the NAS Sunnyvale Historic District; that change would constitute material impairment of the historic district's significance. Therefore, there would be a significant and unavoidable impact on built-environment resources.

- **Impact CEQA-CUL-2: Archaeological Resources.** The Are of Potential Effects (APE) and Area of Direct Impacts (ADI) have a history of precontact and historic-period use and physical remnants from these former uses still exist within the APE and ADI. Therefore, the CEQA Proposed Project's grading and excavation may substantially disturb, damage, or degrade archaeological resources. As a result, construction may cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. Ground disturbance within the Project Site extending up to five feet in depth could result in partial or complete destruction of two assumed eligible archaeological sites identified within the Project Site (CA-SCL-1145 and CA-SCL-1146). Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a Cultural Resources Treatment and Monitoring Plan (CRTMP), cultual resources monitoring and sensitivity training, and protocols for inadvertent discoveries of cultural resources, which would reduce the impacts to archaeological resources. Even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-CUL-3: Human Remains.** The CEQA Proposed Project would have a significant impact if it were to disturb human remains, including those interred outside of dedicated cemeteries. The results of the records search from the Northwest Information Center indicated that human remains have been recorded within the APE and ADI and within a 0.5-mile radius. Moreover, it is possible that original construction of the former and existing uses at the Project Site has displaced human remains or other types of cultural resources. Project grading and excavation may encounter and disturb human remains. Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.
- **Impact CEQA-C-CUL-1. Cumulative Historical Resources Impacts.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects would result in substantial adverse change to the setting of the expanded NAS Sunnyvale Historic District. For example, the demolition of Hangar Three removed a historic district contributor and diminished the district's historic visual character. The removal of other historic district contributors by cumulative projects and construction of new facilities in the NASA Research Park (NRP) consistent with the buildout of the NASA Ames Development Plan (NADP) may further diminish significant qualities in the historic district's setting. The cumulative impact on historical resources would therefore be significant, and the proposed project's contribution to this impact would be cumulatively

considerable. Implementation of Mitigation Measure CUL-2 would improve the proposed project's architectural compatibility with the contributors to the NAS Sunnyvale Historic District. Mitigation Measure CUL-2 would be expected to somewhat reduce the proposed project's visual impact on the historic district's setting but would not reduce the setting impact to a less-than-significant level. Mitigation Measure CUL-3 has been identified to document and share information on the historical development and setting of the NAS Sunnyvale Historic District but would not be able to avoid the change in the district's setting. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on built-environment historical resources would be cumulatively considerable with mitigation.

- **Impact CEQA-CUL-2: Cumulative Archaeological Resources and Human Remains Impacts.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects, would include construction excavations with the potential to affect archaeological resources and human remains. The proposed project and all cumulative projects would be required to implement best management practices, policy/regulatory requirements, and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of archaeological resources. Nonetheless, cumulative impacts on archaeological resources and disturbance of human remains are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown archaeological resources. Because damage to archaeological resources is irreversible, past projects, the effects of other current projects, and the effects of probable future projects would have a significant unavoidable impact on known and potentially unknown archaeological resources. Therefore, even with the implementation of mitigation, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on archaeological resources and human remains. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on archaeological resources and human remains.

- **Impact CEQA-GHG-1: Greenhouse Gas Emissions.** The CEQA Reduced Density Alternative (with and without the Variant) would be expected to exceed vehicle miles traveled (VMT) per service population threshold, which conflicts with the Air District's VMT criteria for transportation. Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT; it would not achieve sufficient reductions to meet the regional per service population VMT target. Accordingly, operation of the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to global climate change from mobile sources. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-GHG-2**: **Conflict with Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions.** The regional VMT reduction target is designed to meet regional and statewide VMT and emission reduction goals. Because consistency with the regional VMT threshold cannot be achieved with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-GHG-1), the CEQA Reduced Density Alternative (with and without the Variant)

would conflict with *Plan Bay Area* and *2017 Clean Air Plan*. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-C-GHG-1: Cumulative Greenhouse Gas Emissions Impacts.** Climate change is a global problem, and GHG impacts are inherently cumulative. Thus, project-level conclusions characterize the cumulative impacts. Because consistency with the regional VMT threshold cannot be achieved with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-GHG-1), the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to global climate change from mobile sources and conflict with *Plan Bay Area* and *2017 Clean Air Plan*. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-NOI-1a. Construction Noise.** Daytime construction noise levels from both on- and off-site (in-street) construction would be expected to exceed County construction noise thresholds at the nearest noise-sensitive uses. A 10 dB increase (or greater) over the existing ambient noise level would also be expected to occur at the nearest noise-sensitive uses. Because noise levels from daytime construction may exceed the applicable construction noise thresholds and result in a 10 dB or greater increase in the ambient noise level, daytime construction noise impacts would be considered potentially significant. In addition, concrete pours and off-site/in-street construction activities taking place during nighttime hours may result in noise levels that would exceed the applicable construction noise thresholds and a 10 dB or greater increase in the ambient nighttime noise level. Nighttime construction noise impacts would also be considered potentially significant. Mitigation Measure NOI-1, which requires a noise control plan that includes measures to reduce noise from construction during all hours (i.e., daytime and nighttime hours), would be implemented to reduce the project's significant impacts related to daytime and nighttime construction noise. Although this mitigation measure would reduce construction noise levels, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Mitigation Measure NOI-2 would also be implemented, which includes the installation of temporary construction noise barriers along the western and southern perimeters of all project subareas within 1,400 feet of Wescoat Village. However, in order for temporary noise barriers to be effective, they must block the full line of sight between the noise source and the receiver, which may not be feasible at all locations during all construction activities. In addition, note that Mitigation Measure NOI-2 would not be expected to reduce noise from nighttime off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-NOI-2. Excessive Groundborne Vibration or Groundborne Noise Levels (Vibration-Sensitive Laboratory Equipment).** An analysis was conducted to determine if construction-related vibration from the project could be disruptive for sensitive research equipment at nearby off-site laboratories, such as USGS Building 800, which is north of the Project Site. Vibration-sensitive machinery or instruments, such as those used in research laboratories or hospitals, can be affected by much lower vibration velocity levels than other uses. According to the analysis, vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment categories at distances of approximately 9 to 1,350 feet (depending on both the type of construction equipment in use and the specific sensitivity of nearby laboratory equipment). It is important to note that the nearby USGS Building 800 includes some vibration-isolation features in select rooms, which may reduce the

propagation of external vibration to sensitive equipment within those rooms. In addition, background vibration velocity levels in typical residential and educational environments are generally around 50 VdB, as noted in FTA's *Transit Noise and Vibration Impact Assessment Manual*. Consequently, ambient vibration levels at laboratory facilities near the Project Site, including USGS Building 800, may already exceed the VC-D and VC-E criteria established for highly sensitive equipment. However, vibration from project construction may still interfere with the use of some sensitive research equipment within nearby laboratory buildings. Mitigation Measure NOI-6 has been identified to reduce impacts on vibration-sensitive equipment. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

- **Impact CEQA-C-NOI-1a: Cumulative Construction Noise.** As described previously, worst-case daytime construction noise levels from the project may exceed the applicable County criterion for daytime construction noise (65 dBA L_{eq}) from construction activities lasting 10 days or longer. A 10 dB increase (or greater) over the existing ambient noise level would also be expected to occur at the nearest noise-sensitive receptors. Similarly, nighttime construction noise levels may exceed the applicable criterion of 55 dBA for multi-family residential land uses. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Construction of the cumulative projects is already complete; consequently, cumulative project construction would not be expected to occur concurently with project construction activities (beginning in 2027). Construction noise from cumulative projects would therefore not be expected to combine with construction noise from the proposed project and expose nearby sensitive receptors to greater overall construction noise levels. However, because project construction noise levels for both daytime and nighttime hours were modeled to exceed applicable thresholds, cumulative construction noise impacts would conservatively be considered significant. Although mitigation measures would be expected to somewhat reduce project construction noise, it may not be possible to reduce all construction noise levels to a level below the significance thresholds used in this assessment, even with implementation of all feasible mitigation measures. Therefore, cumulative construction noise effects during daytime and nighttime hours are considered to be significant and unavoidable, and the project's contribution would be considered cumulatively considerable, even with the implementation of project-specific mitigation.
- **Impact CEQA-C-NOI-1a: Cumulative Excessive Groundborne Vibration or Groundborne Noise Levels (Vibration-Sensitive Laboratory Equipment).** Vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment located within the nearby USGS Building 800 according to the project-specific vibration analysis. Note that the cumulative projects list does not include any projects in proximity to the nearby USGS Building 800 (with construction of all nearby cumulative projects already complete) for which construction would occur concurrently with project construction. Therefore, vibration from project construction would not be expected to combine with vibration from the construction of cumulative projects and result in greater levels of interference with nearby vibration-sensitive research equipment. However, because project-specific impacts related to interference with vibration-sensitive research equipment were considered significant, cumulative impacts related to interference with vibration-sensitive research equipment would also conservatively be considered significant. Mitigation Measure NOI-6 has been identified to reduce impacts on

vibration-sensitive equipment. Even with implementation of all feasible mitigation, it may not be possible to fully reduce vibration-related annoyance effects on nearby sensitive laboratory or research equipment. Cumulative vibration impacts related to interference with vibration-sensitive equipment would conservatively be considered significant and unavoidable, and the project's contribution would be cumulatively considerable, even with implementation of mitigation.

- **Impact CEQA-TRAN-2: Vehicle Miles Traveled.** The CEQA Reduced Density Alternative (with and without the Variant) would be expected to exceed VMT per service population threshold, which is based on the total VMT per service population for the Bay Area region under 2024 (existing) conditions. Mitigation Measure TRAN-1 would be required to reduce VMT through implementation of a mitigated TDM plan to reduce project-generated trip generation and associated VMT. The mitigated TDM plan includes both project-specific TDM elements and mitigated TDM elements and specifies which TDM measures need to be completed before construction completion, before Phase 1 certificate of occupancy, and ongoing during implementation of the proposed project. The mitigated TDM plan outlines regular monitoring requirements to evaluate TDM effectiveness on a regular basis. While the mitigated TDM plan would reduce VMT, the CEQA Reduced Density Alternative (with and without the Variant) would still exceed the VMT threshold even with implementation of the above-identified mitigation measures. The mitigated TDM plan includes all feasible measures to reduce VMT for the proposed project (i.e., a mixed-use academic and research project). Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-C-TRAN-2: Cumulative Vehicle Miles Traveled Impacts.** The project-level and cumulative impact the analysis of VMT impacts are the same. Thus, the analysis and conclusions presented for Impact CEQA-TRAN-2 characterize the cumulative VMT impacts of the CEQA Reduced Density Alternative (with and without the Variant). Even with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-TRAN-2), the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to a cumulatively significant VMT impact. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on VMT would be cumulatively considerable with mitigation. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-TCR-1: Tribal Cultural Resources**. Through consultation with the tribes, multiple tribes identified the twelve known tribal archaeological sites in the APE as potential Tribal Cultural Resources (TCRs). The Tamien Nation also identified a cultural landscape and its multiple contributing components as potential TCRs. Under Public Resources Code (PRC) Section 21074(a)(1)(2), the CEQA lead agency has determined, in its discretion and supported by substantial evidence, the archaeological resources located within the APE/ADI are significant for the purpose of CEQA. In addition, the CEQA lead agency has determined that the cultural landscape, and its contributing components identified by the Tamien Nation that are located within the APE/ADI are significant for the purpose of the CEQA. The entire ADI also has the potential to contain as yet unidentified TCRs. The proposed project would result in impacts on the two assumed eligible archaeological sites identified within the Project Site (CA-SCL-1145 and CA-SCL-1146) and identified as TCRs by the tribes. The proposed project would also result in impacts on the cultural landscape identified as a TCR by the Tamien Nation. The CEQA

Proposed Project has the potential to cause physical damage to TCRs which may alter characteristics that qualify them as TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains, which would reduce the impacts to TCRs. Even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-C-TCR-1: Cumulative Tribal Cultural Resources Impacts**. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects, would include construction excavations with the potential to affect TCRs. The proposed project and all cumulative projects would be required to implement best management practices, policies, regulations , and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of a TCR. Nonetheless, cumulative impacts on TCRs are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown TCRs. Because damage to TCRs is irreversible, past projects, the effects of other current projects, and the effects of probable future projects would have a significant unavoidable impact on known and potentially unknown TCRs. Therefore, even with the implementation of mitigation, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on TCRs. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-UTIL-2: Water Supply**. The San Francisco Public Utilities Commission (SFPUC) would have adequate water supplies available to enable NASA to provide water to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) and reasonably foreseeable future development during normal years. However, current SFPUC potable demand would exceed available supply in single dry through multiple dry year scenarios, with the supply shortfall relative to demand ranging from 27 to 37 percent. SFPUC's Water Shortage Contingency Plan (WSCP) identifies water demand reduction measures for drought scenarios. Therefore, SFPUC is expected to enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all users, including the proposed project. Because the proposed project is not subject to the reduction measures of the WSCP, project-specific mitigation, in the form of Mitigation Measure UTIL-1, would be necessary to support the water supplier's reduction intent. Implementation of Mitigation Measure UTIL-1 would require the Project Proponent and NASA ARC to implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. This mitigation measure would reduce effects related to water supply in drought conditions. However, even with implementation of project Mitigation Measure UTIL-1, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could experience a water supply shortfall relative to demand in dry year conditions. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-C-UTIL-1: Cumulative Water Supply Impacts**. The impacts on water supply and infrastructure under the CEQA Proposed Project (with and without the Variant) and the CEQA

Reduced Density Alternative (with and without the Variant), described in Impact CEQA-UTIL-1 is cumulative in nature because the analysis evaluates whether SFPUC has adequate water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. As discussed in Impact CEQA-UTIL-2, SFPUC can meet customer demand through 2045 during normal years; however, during single-year and multi-year droughts, SFPUC will need to implement the WSCP to meet supply shortfalls. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on water supply could be cumulatively considerable with mitigation. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

NEPA

- **Impact NEPA-AIR-1. Conflicts with Air Quality Plan**. The NEPA Build Alternative 1 (with and without the Sub-Alternative) and the NEPA Build Alternative 2 (with and without the Sub-Alternative) would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risks as well as $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the NEPA Build Alternative 1 (with and without the Sub-Alternative) and the NEPA Build Alternative 2 (with and without the Sub-Alternative) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan under CEQA. Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 would be required to reduce project-generated emissions during construction and operation and associated health risks from receptor exposure to TACs and $PM_{2.5}$. Although these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds; $PM_{2.5}$ risk would likewise exceed the Air District's thresholds at some future onsite worker receptor locations. The analysis finds that the NEPA Build Alternative 1 (with and without the Sub-Alternative) and the NEPA Build Alternative 2 (with and without the Sub-Alternative) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan, even with implementation of identified mitigation measures. The impact would be significant and unavoidable.
- **Impact NEPA-AIR-3. Pollutant Concentrations.** The NEPA Build Alternative 1 (with and without the Sub-Alternative) and the NEPA Build Alternative 2 (with and without the Sub-Alternative) would result in exceedances of the Air District project-level cancer risk threshold and $PM_{2.5}$ threshold for existing off-site receptors located adjacent to the Project Site. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold and $PM_{2.5}$ threshold due to project construction activities. The primary cause of the cancer risk threshold exceedances for existing and future receptors is exposure to DPM during construction at the Project Site—specifically, exhaust from off-road equipment and on-site trucks, with smaller contributions from operational sources of TACs. The primary causes of the $PM_{2.5}$ concentration exceedances are on-site off-road equipment activity, earthmoving activity, and vehicle travel, which generates fugitive $PM_{2.5}$ from resuspended road dust. Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 would be required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 would be required to reduce operational $PM_{2.5}$ risks. However, the NEPA Build Alternative 1 (with and without the Sub-Alternative) would exceed the Air District's annual $PM_{2.5}$ thresholds, even with implementation of the above-

identified mitigation measures. These measures collectively represent the best available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact would be significant and unavoidable.

- **Impact NEPA-AIR-5. Regional and Local Air Quality.** As discussed in Impact CEQA-AIR-1 in Section 3.3, *Air Quality*, NEPA Build Alternative 1 (with and without the Sub-Alternative) and NEPA Build Alternative 2 (with and without the Sub-Alternative) are not expected to contribute to any new localized CO hot-spots. Likewise, neither construction nor operation of NEPA Build Alternative 1 or NEPA Build Alternative 2 would result in new or worsened odors that would affect a substantial number of people. Background TAC sources in combination with the proposed project would exceed the Air District's $PM_{2.5}$ risk threshold at the maximally affected receptor location, which could result in a significant impact and conflict with the community health goals of the 2017 Clean Air Plan. Mitigation Measures AQ-1, AQ-2, and GHG-1 (which would reduce use of diesel in construction equipment); AQ-3 AQ-8, and HAZ-1 (which would require dust control); AQ-9 (which provides worker training to reduce exposure to emissions), and TRAN-1 (which would reduce operational trips) would reduce impacts. The maximum $PM_{2.5}$ risk is concluded to remain above the Air District's threshold even after mitigation. .
- **Impact NEPA-NOI-1a. Construction Noise.** Daytime construction noise levels from both on- and off-site (in-street) construction would be expected to exceed County construction noise thresholds at the nearest noise-sensitive uses. A 10 dB increase (or greater) over the existing ambient noise level would also be expected to occur at the nearest noise-sensitive uses. Because noise levels from daytime construction may exceed the applicable construction noise thresholds and result in a 10 dB or greater increase in the ambient noise level, daytime construction noise impacts would be considered potentially significant. In addition, concrete pours and off-site/in-street construction activities taking place during nighttime hours may result in noise levels that would exceed the applicable construction noise thresholds and a 10 dB or greater increase in the ambient nighttime noise level. Nighttime construction noise impacts would also be considered potentially significant. Mitigation Measure NOI-1, which requires a noise control plan that includes measures to reduce noise from construction during all hours (i.e., daytime and nighttime hours), would be implemented to reduce the project's significant impacts related to daytime and nighttime construction noise. Although this mitigation measure would reduce construction noise levels, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Mitigation Measure NOI-2 would also be implemented, which includes the installation of temporary construction noise barriers along the western and southern perimeters of all project subareas within 1,400 feet of Wescoat Village. However, in order for temporary noise barriers to be effective, they must block the full line of sight between the noise source and the receiver, which may not be feasible at all locations during all construction activities. In addition, note that Mitigation Measure NOI-2 would not be expected to reduce noise from nighttime off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact NEPA-NOI-2. Excessive Groundborne Vibration or Groundborne Noise Levels (Vibration-Sensitive Laboratory Equipment).** An analysis was conducted to determine if construction-related vibration from the project could be disruptive for sensitive research equipment at nearby off-site laboratories, such as USGS Building 800, which is north of the

Project Site. Vibration-sensitive machinery or instruments, such as those used in research laboratories or hospitals, can be affected by much lower vibration velocity levels than other uses. According to the analysis, vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment categories at distances of approximately 9 to 1,350 feet (depending on both the type of construction equipment in use and the specific sensitivity of nearby laboratory equipment). It is important to note that the nearby USGS Building 800 includes some vibration-isolation features in select rooms, which may reduce the propagation of external vibration to sensitive equipment within those rooms. In addition, background vibration velocity levels in typical residential and educational environments are generally around 50 VdB, as noted in FTA's *Transit Noise and Vibration Impact Assessment Manual*.[11] Consequently, ambient vibration levels at laboratory facilities near the Project Site, including USGS Building 800, may already exceed the VC-D and VC-E criteria established for highly sensitive equipment. However, vibration from project construction may still interfere with the use of some sensitive research equipment within nearby laboratory buildings. Mitigation Measure NOI-6 has been identified to reduce impacts on vibration-sensitive equipment. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

- **Impact NEPA-SOCIO-2. Worker Housing.** Operations under NEPA Build Alternative 1 (with and without the Sub-Alternative) would generate new employees and students at NASA ARC. Operation of NEPA Build Alternative 1 (with and without the Sub-Alternative) would exceed the impact threshold of 1 percent. Although NEPA Build Alternative 1 (with and without the Sub-Alternative) would generate workers who would not be housed on-site and would represent more than 1 percent of the predicted new households in the housing impact area (HIA) through 2040 there are some nuances to consider, including the existing housing vacancies in the HIA, the remaining underutilized sites at NASA ARC, and the nature of the housing imbalance in the region. Nonetheless, with development projects moving forward at different times, there will inevitably be temporary periods of jobs/housing imbalance. The proposed project is facilitating the overall vision of the 2002 NADP, a planning-level document, by developing an underutilized site with land uses consistent with the NRP site. As further noted in the Socioeconomics Technical Report in Section 3.3, *Labor Supply and Employment,* the housing imbalance is at a regional level and varies by jurisdiction, and based on current rates is improved from the 2002 PEIS identified rates of 1.4 to 1.6.[12] While this is a planning-level threshold and NASA could achieve an improved balance for NASA ARC through subsequent projects, given that there are no feasible mitigation measures for the Project Proponent to provide additional housing at the Project Site, the impact related to a jobs/housing imbalance would be significant and unavoidable.
- **Impact NEPA-TRAN-3. Level of Service.** Operation of NEPA Build Alternative 1 (with and without the Sub-Alternative) and NEPA Build Alternative 2 (with and without the Sub-Alternative) would generate daily, AM peak hour, and PM peak hour net new trips. Specifically, operations at the Ellis Street/Manila Avenue Intersection in the City of Mountain View would

[11] Ibid.

[12] As detailed in Appendix 4-1, Section 3.3, for every housing unit in Mountain View, Sunnyvale, and Santa Clara County, there are 1.21, 1.37, and 1.41 employed persons, respectively. These rates are comparable and in some cases better than the current Bay Area-wide rate of 1.4.

exceed the threshold of significance and degrade the intersection from acceptable LOS C to unacceptable LOS F during both the AM and PM peak hours under Reasonably Foreseeable conditions. Mitigation Measure TRAN-1 would reduce the proposed project-generated traffic at the intersection through implementing additional TDM measures and Mitigation Measure TRAN-2 (NEPA-only) would reduce the delay at this intersection through installing a signal at the intersection, which would result in the intersection operating at LOS B during AM and PM peak hours. However, due to the need for coordination with the City of Mountain View under Mitigation Measure TRAN-2 (NEPA-only), the Project Proponent cannot ensure implementation of the signal, and as such, the impact at the Ellis Street / Manila Avenue intersection would be considered significant and unavoidable.

- **Impact NEPA-UTIL-2: Water Supply for Existing Users**. The Water Supply Evaluation identifies that current SFPUC plus project water demand exceeds supply in single dry through multiple dry year scenarios: with supply shortfall relative to demand ranging from 27 to 37 percent under NEPA Build Alternative 1 (with and without the Sub-Alternative) and NEPA Build Alternative 2 (with and without the Sub-Alternative). Because the WSCP systematically identifies ways in which SFPUC can reduce water demand for the six drought stages to address water demand reductions of more than 50 percent, it is anticipated that, in single and multiple dry years, SFPUC would enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all users, including the proposed project. However, because the proposed project is not subject to the reduction measures of the WSCP, project specific mitigation would be necessary to support the water supplier's reduction intent. Mitigation Measure UTIL-1 would require the Project Proponent implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. While this mitigation measure would reduce effects related to water supply in drought conditions, conservatively, because the WSE and SFPUC identify a water supply shortfall relative to demand in dry year conditions, even with implementation of project Mitigation Measure UTIL-1, the overall exceedance could interfere with the ability of SFPUC to meet the foreseeable needs of existing users, and the impact is considered to be significant and unavoidable.
- **Impact NEPA-UTIL-3. Water Supply Capacity to NASA ARC.** SFPUC would experience supply shortfalls relative to total demand estimated to range from 27 to 37 percent during single to multiple dry years, and in Scenario 2 during dry and multiple dry years there would be an anticipated exceedance in water demand relative to water supply. While SFPUC is anticipated to meet demand-supply shortfalls by implementing its WSCP, the proposed project is not subject to the demand reduction measures of the WSCP. Therefore, implementation of Mitigation Measure UTIL-1 would be necessary to support the water supplier's reduction intent. Mitigation Measure UTIL-1 would require the Project Proponent implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. While this mitigation measure would reduce effects related to water supply in drought conditions, conservatively, because the WSE and SFPUC identify a water supply shortfall relative to demand in dry year conditions, even with implementation of project Mitigation Measure UTIL-1, there could still be an overall water supply shortfall for NASA ARC, and the impact is considered to be significant and unavoidable.

ES.8 Areas of Controversy

A Notice of Preparation (NOP) was released for the CEQA public scoping period from June 21, 2024, to July 22, 2024. Seven comment letters were received from public agencies and local organizations. The NEPA public scoping period in response to the Notice of Intent (NOI) was from June 25, 2024, to July 26, 2024. Four comment letters were received from public agencies, local organizations, and individuals. In addition, comments for both the NOP and NOI were received during the July 10, 2024, scoping meeting, and one comment was received during the July 15, 2024, scoping meeting.

CEQA Guidelines Section 15124 specifies that a Draft EIR summary identify "areas of controversy" known to the Lead Agency, including issues raised by agencies and the public. A summary of comments on CEQA and NEPA topics, and information and analyses received during both the CEQA and NEPA scoping periods is provided by topic below. Some topics are relevant to both NEPA and CEQA and some only to CEQA or NEPA. The topics that would result in physical impacts are addressed in the joint EIR/EIS analyses. It should be noted that during the public scoping process for both CEQA and NEPA, no other alternatives to the proposed project were suggested. Appendix 1-1, *Scoping Report*, of this joint environmental impact report/environmental impact statement (joint EIR/EIS), includes copies of all written comment received through mail, email, or the online comment forms, along with comments received during the scoping meetings.

Project Description (CEQA and NEPA)

- Clarity needed on number of proposed housing units for both Alternative 1 and 2
- Alternatives should be evaluated at equal level of detail
- Identify all measures to reduce impacts related to project construction, including recycling, salvaging, and re-use
- Clarify the County of Santa Clara's jurisdiction, if any, over the Project Site
- Explain if Santa Clara County would be a responsible agency
- California Department of Fish and Wildlife is a trustee agency and responsible agency

Air Quality (CEQA and NEPA)

- Identify health/air quality impacts from construction and demolition activities, including potential to encounter asbestos, with application of mitigation, if necessary
- Disclose National Ambient Air Quality Standards and nonattainment status of the Project Site
- Analyze project-related emissions of particulate matter, carbon dioxide, nitrogen oxides, sulfur oxides, and fugitive dust
- Incorporate mitigation for construction and operational-related emissions
- Analyze spatial distribution of sensitive receptors around the Project Site and the engagement of such receptors throughout project process
- Disclose strategy to reduce construction-related impacts on sensitive receptors
- Evaluate and mitigate, as necessary, the impact of construction workers commuting to the Project Site

Biological Resources (CEQA and NEPA)

- Project should protect biological resources and minimize degradation of wildlife habitats
- Within environmental setting include full list or table that notes species common name, scientific name, state/federal listing status, habitat type preference, and determination on presence for all special-status species with potential to occur
- Recommend baseline habitat assessments
- Use California Natural Diversity Database (CNDDB) and previous studies performed in the area
- Project Site contains special-status species and has the potential to support other special-status species, and an Incidental Take Permit (ITP) consultation may be required
- Recommendations for mitigation for nesting birds
- Recommendations for mitigation for roosting bats
- Recommendations for mitigation for Crotch's bumble bee
- Recommendations for mitigation for western burrowing owl

Cultural Resources (CEQA and NEPA), Tribal Cultural Resources (CEQA), and Section 106 of NHPA (NEPA)

- Section 106 consultation to be completed for the proposed project/proposed action
- Potential historic impacts and cumulative impacts should be evaluated within the NEPA scope
- Impacts on historic properties, as well as other cultural resources, which could include archaeological and resources of significance to tribes and indigenous people should be evaluated
- Project does not fall within traditional territory of the Confederated Villages of Lisjan Nation
- Provided contact for Tamien Nation
- Requirements for Assembly Bill 52, Senate Bill 18, tribal consultation and cultural resources assessment

Energy (CEQA)

- Project should be designed to maximize renewable energy use and minimize use of fossil fuels

Greenhouse Gas Emissions (CEQA and NEPA)/Climate Change (CEQA)

- For CEQA, the project should minimize use of fossil fuels
- For CEQA, discuss context of climate change impacts on the setting of the project
- Discuss impacts related to extreme precipitation/storm events, temperature, and sea-level rise and project design features or mitigation measures that would be incorporated to address impacts
- Identify project design features and transportation improvements to reduce GHG emissions and increase energy efficiency as well as reliance on renewable energy

- Require zero-emission alternatives to backup when feasible (or require Tier 4 Final generators)
- Require compliance with Leadership in Energy and Environmental Design (LEED) Version 4 checklist and California Green Building Standards Code (CALGreen) mandatory measures; commit to LEED platinum or equivalent third-party green building certification
- Identify and quantify sources of carbon dioxide emissions during project construction and operation
- Add low embodied carbon materials

Hazards and Hazardous Materials (CEQA and NEPA)

- Describe how construction workers, project employees/visitors/residents, and ecological systems would not be adversely affected by potential hazards from Middlefield-Ellis-Whisman (MEW) Superfund Site
- Discuss project construction and operation activities in relation to ongoing cleanup activities
- Discuss potential contamination/hazmat material that may be encountered during project construction
- Detail any cleanup activities that the project would implement during construction or operation
- Provided EPA contact for coordination regarding MEW site
- San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) maintains oversight regarding hazmat sites and should be coordinated with to identify areas where SFBRWQCB would provide oversight
- Conduct surveys for lead-based paint, mercury, asbestos-containing materials, and polychlorinated biphenyl caulk for structures or buildings to be demolished
- Recommend testing imported soil or fill for contaminants of concern
- Evaluate direct impact on construction workers as well as indirect costs associated with exposure to hazards and hazardous materials

Hydrology and Water Quality (CEQA and NEPA)

- Analyze change in stormwater volume and potential changes in contaminants and/or pollutants
- Provide calculations for impervious/pervious surfaces on the Project Site

Land Use (CEQA and NEPA)

- EIR/EIS to describe local land use jurisdictional issues
- Identify which federal, state, and/or local plans/regulations would apply to the project

Population and Housing (CEQA)/Socioeconomics (NEPA)

- Project to add significant pressure to already-imbalanced housing market and provide little housing to off-set impacts

- Project could result in displacement of jobs, forcing workers to live farther away from workplaces, and environmental impacts from longer commutes related to traffic, greenhouse gas emissions, and socioeconomics

Public Services (CEQA and NEPA)

- Clarify if project would request law enforcement services by the Santa Clara County Sherriff
- Identify any proposed public facilities and which providers would serve the Project Site

Transportation and Traffic (CEQA and NEPA)

- Provided city of Sunnyvale contacts for transportation-related questions
- Request to review the scope of the TIA and a draft of the TIA
- Request to review the draft EIR/EIS, specifically analysis related to vehicle miles traveled (VMT) and proposed mitigation
- Request level of service (LOS) be evaluated for intersections located in Sunnyvale using Santa Clara Valley Transportation Authority (VTA) TIA guidelines and incorporate full-/pro-rate share financial contributions toward any identified improvements
- Need to consider approved and pending development projects in Sunnyvale as part of baseline and cumulative traffic analyses
- Need to consider the Valley Transportation Plan, Sunnyvale's Capital Improvement Program, and/or Sunnyvale's Traffic Impact Feed Study as part of cumulative analysis
- Evaluate alternative modes of transportation in accordance with VTA Congestion Management Program guidelines
- List potential transportation demand management measures
- Evaluate construction-related impacts on local and regional corridors
- EIR/EIS should identify and incorporate traffic-reducing measures for project-generated VMT

Utilities and Service Systems (CEQA and NEPA)

- Provided city of Sunnyvale contacts for water-and sewer-related questions
- Sunnyvale water pollution control plant does not have adequate capacity to serve the project
- Conduct sanitary sewer analysis for both alternatives
- Provide clarity on proposed sewer connections
- Provide flow estimates for both alternatives to evaluate sewer impacts
- Provide clarity on proposed recycled water connections and use
- City of Sunnyvale does not provide water or stormwater to the Project Site

Other

- Project should incorporate labor standards and use a general contractor
- Individual requests to be included on list of interested parties to receive notices for environmental documents and hearings
- Disclose outreach and engagement efforts

Table ES-1. Summary of CEQA and NEPA Impacts and Mitigation Measures

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Aesthetics and Visual Resources (CEQA)						
In accordance with Senate Bill 743 and Public Resources Code Section 21099, the EIR portion of this joint EIR/EIS does not consider aesthetics or vehicular parking in determining the significance of impacts under CEQA. Appendix 3.2-1 of this joint EIR/EIS includes a discussion of the proposed project's potential changes to the visual environment; for the purposes of CEQA, this information is provided for informational purposes.						
Aesthetics and Visual Resources (NEPA)						
Impact NEPA-AES-1: The project would not substantially degrade the visual character or quality of ARC or its surroundings, or obstruct significant public views or view corridors.	LTS	—	—	Same	Same	Same
Impact NEPA-AES-2: The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	LTS	—	—	Same	Same	Same
Air Quality (CEQA)						
Impact CEQA-AIR-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	PS	**Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction** All project contractor(s) must use electric-powered lifts (including aerial, scissor, and man), welders, air compressors, and mini-excavators. Diesel- or fossil-fuel-powered lifts, welders, air compressors, and mini-excavators during construction are prohibited. The Project Proponent shall verify that the requirement to use electric	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		versions of these equipment types is identified in construction bids and on architectural plans. All other types of off-road equipment (i.e., non-lifts, welders, air compressors, and mini-excavators) with diesel engines greater than 25 horsepower must use EPA-certified Tier 4 Final engines. This mandate does not preclude use of engines that meet certification standards more stringent than Tier 4 Final, if commercially available at the time of construction. A copy of each unit's certified tier specification, emissions rating, and any required CARB permit or Bay Area Air District operating permit shall be made available to NASA at the time of mobilization of each piece of equipment. All other types of off-road equipment with diesel engines less than 25 horsepower (i.e., non-Tier 4) shall be required to use renewable diesel fuel that meets the most recent ASTM D975 specification for ultra-low sulfur diesel and has a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum fuels sold in California. Each project contractor shall provide NASA with annual reports of renewable diesel purchase records and equipment fuel consumption. Pursuant to the In-Use Off-Road Diesel-Fueled Fleets Regulation (In-Use Regulation), contractors shall also be required to submit to CARB an affirmation that the fleet complied with the renewable diesel mandate in each year that annual reporting is required under the In-Use Regulation. **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction** All project contractor(s) must achieve the following minimum zero-emission on-road vehicle performance standards, as commercially and financially available and feasible at the time of construction (i.e., within 100 miles of the Project Site and equivalent powered and capable zero-				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		emission vehicle can cost no more than 50 percent more (1.5 times) than its internal combustion counterpart). The standards must be achieved based on the total number of vehicles onsite used to construct the proposed project over the duration of each contract. The Project Proponent shall verify that the performance standards are identified in construction bids and on architectural plans. ● 25 percent zero-emission light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with Phases 1 and 2 (e.g., on-site vehicles, contractor vehicles). ● 50 percent zero-emission light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with Phases 3 and 4 (e.g., on-site vehicles, contractor vehicles). ● 25 percent zero-emission heavy-duty on-road vehicles associated with Phases 1 and 2 (e.g., for hauling, material delivery and soil import/export). ● 50 percent zero-emission heavy-duty on-road vehicles associated with Phases 3 and 4 (e.g., for hauling, material delivery and soil import/export). **Mitigation Measure AQ-3. Fugitive Dust Controls** All project contractor(s) shall be required to comply with the Air District's current basic control measures for fugitive dust. The Air District's current basic control measures are drawn from their 2023 CEQA Guidelines, Table 5-2, and are identified below. Compliance with the following control measures is required by the Spring 2026 project-specific Environmental Issues Management Plan and shall be identified in construction bids. ● All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) shall be watered two times per day.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		● All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ● All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ● All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. ● All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. ● All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour. ● All trucks and equipment, including their tires, shall be washed off prior to leaving the site. ● Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel. ● Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations. **Mitigation Measure AQ-4. Low-VOC Coatings during Construction** All project contractor(s) must use certified (e.g., Greenguard or Green Seal) low-volatile organic compound (VOC) paints (i.e., less than 50 grams per liter of VOC) or, when feasible, no-VOC paints (i.e., less than 5 grams per liter of VOC) during construction. The Project Proponent				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		shall verify that the requirement to use low-VOC (and/or no-VOC) paints is identified in construction bids and on architectural plans. **Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations** All non-residential tenants must use certified (e.g., Greenguard or Green Seal) no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where not locally and commercially available, use low-VOC paints (i.e., less than 50 grams per liter of VOC). NASA shall require no-VOC and low-VOC paints as a condition of occupancy for all non-residential tenants. The Project Proponent shall require all janitorial contracts mandate use of water-based or low-VOC cleaning products. **Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations** All landscaping equipment must use zero-emission equipment over conventional gasoline-fueled counterparts. This includes all chainsaws, chippers, lawn mowers, leaf blowers/vacuums, riding mowers, tillers, trimmers, and any other equipment used to maintain landscaping features. Gasoline- or fossil-fuel-powered landscaping equipment during operations is prohibited. The Project Proponent shall require all landscaping contracts mandate use of electric equipment. **Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions** The Project Proponent shall offset combined construction and net partial operational ROG and PM_{10} emissions that exceed the Air District's annual thresholds to quantities below 10 tons and 15 tons				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		per year, respectively. The preferred means of undertaking such off-site mitigation will be through a partnership with the Air District's Clean Air Foundation (Foundation), as follows: ● The Project Proponent, or its designee, shall pay a mitigation fee and an administrative fee in accordance with the provisions of the Foundation's established mitigation fee program to reduce the project impacts from combined construction and net partial operational ROG and PM_{10} emissions to a less-than-significant level (i.e., below 10 tons and 15 tons per year, respectively). ● The Project Proponent, or its designee, shall pay the mitigation and administrative fees for each of the construction years, as determined by the Foundation, in full prior to NASA approval of the tentative map, parcel map, or planned development permit for the associated construction phase. ● An alternative payment plan may be negotiated by the Project Proponent, or its designee, based on the timing of construction activities or other construction phases that are expected to exceed the Air District's threshold of significance. Any alternative payment plan must be acceptable to the Air District and agreed upon in writing prior to NASA approval of the tentative map, parcel map, or planned development permit. The alternative payment plan must cover the full quantity of required offsets, and full payment must be provided prior to the completion of construction. ● In coordination with the Air District, the Project Proponent, or its designee, may reanalyze combined construction and net partial operational ROG and PM_{10} from the proposed project prior to starting construction to update the required mitigation and administrative fees.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		○ The analysis must be conducted using Air District approved emissions model(s) and the fee rates published at the time of reanalysis. ○ The analysis must use the latest available engineering data for the proposed project. Consistent with the methodology used in this joint EIR/EIS, emission factors may account for enacted regulations that will influence future year emissions intensities (e.g., fuel efficiency standards for on-road vehicles). ○ The analysis must include all required mitigation measures as specified in this joint EIR/EIS. The analysis may include additional measures to reduce construction emissions if deemed feasible and equally effective or superior by the lead agency and Project Proponent. All on-site measures assumed in the analysis must be included in the construction contracts and be enforceable by the lead agency. **Mitigation Measure AQ-8. Enhanced Dust Control** All project contractor(s) comply with the Air District's current enhanced control measures for fugitive dust. The Air District's current enhanced control measures are drawn from their 2023 CEQA Guidelines, Table 5-3, and are identified below. The requirement to comply with the control measures shall be identified in construction bids. ● Limit the simultaneous excavation, grading, and ground-disturbing construction activities occurring within 1,000 feet of one another. ● Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		● Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established. ● Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent. ● Minimize the amount of excavated material or waste materials stored at the site. ● Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days. **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction.** The Project Proponent or its contractor(s) shall provide educational material for on-site workers on ways to reduce emissions exposure during construction of the proposed project as part of a pre-construction advisory that precedes construction of each phase. These materials shall provide recommendations to on-site workers (i.e., future employees of the proposed project) to reduce their exposure while indoors and outdoors. The information shall include recommendations to reduce emissions exposure and examples include the following: ● Keep doors and windows closed when working inside and active construction is taking place. ● Ensure any heating, ventilation, and air-conditioning (HVAC) systems in buildings on the Project Site are operating and fully functional when indoors.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		• Ensure any Minimum Efficiency Reporting Value (MERV) 13 (or higher) filter systems in buildings on the Project Site are in working order. • Avoid standing or taking breaks in the vicinity of idling diesel-powered construction equipment associated with the proposed project. Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				
Impact CEQA-AIR-2: The project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above Implement **Mitigation Measure AQ-4. Low-VOC Coatings during Construction**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		Implement **Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations**, above Implement **Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations**, above Implement **Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management**, below				
Impact CEQA-AIR-3: The project would expose sensitive receptors to substantial pollutant concentrations.	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above Implement **Mitigation Measure AQ-8. Enhanced Dust Control**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		Implement **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				
Impact CEQA-AIR-4: The project would not project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	—	—	Same	Same	Same
Impact CEQA-C-AIR-1: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to regional or local air quality (including receptor exposure to pollution and odors).	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Implement **Mitigation Measure AQ-4. Low-VOC Coatings during Construction**, above Implement **Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations**, above Implement **Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations**, above Implement **Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions**, above Implement **Mitigation Measure AQ-8. Enhanced Dust Control**, above Implement **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Air Quality (NEPA)						
Impact NEPA-AIR-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above Implement **Mitigation Measure AQ-8. Enhanced Dust Control**, above Implement **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below	SUM	Same	Same	Same
Impact NEPA-AIR-2: The project would not result in a substantial increase of any criteria pollutant for which the project region is non-	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
attainment under an applicable federal ambient air quality standard.						
Impact NEPA-AIR-3: The project would expose sensitive receptors to substantial pollutant concentrations.	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above Implement **Mitigation Measure AQ-8. Enhanced Dust Control**, above Implement **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below	SUM	Same	Same	Same
Impact NEPA-AIR-4: The project would not project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Impact NEPA-AIR-5: The project would result in a significant impact on regional or local air quality (including receptor exposure to pollution and odors) when quantified along with other reasonably foreseeable environmental trends and other planned actions in the region.	PS	Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emissions On-Road Vehicles during Construction**, above Implement **Mitigation Measure AQ-3. Fugitive Dust Controls**, above Implement **Mitigation Measure AQ-8. Enhanced Dust Control**, above Implement **Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction**, above Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below	SUM	Same	Same	Same
Impact NEPA-AIR-6: The project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	PS	Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, below Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above	LTSM	Same	SUM	SUM

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		Implement **Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction**, above Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				
Impact NEPA-AIR-7: The project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	PS	Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below	LTSM	Same	SUM	SUM
Biological Resources (CEQA)						
Conflict with local policies or ordinances protecting biological resources.	NI	—	—	Same	Same	Same
Impact CEQA-BIO-1: The project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.	PS	**Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training** All field management and construction personnel shall be trained by a qualified biologist experienced in construction monitoring as to the importance of protecting sensitive natural resources (e.g., special-status plants, birds, and mammals as well as designated critical and/or suitable habitats for these species) prior to any ground-disturbing activity for each construction phase. Preconstruction training shall be conducted so that construction personnel are aware of their responsibilities and the importance of compliance. All trainees shall be required to sign a sheet, indicating their attendance and completion of environmental training. Construction personnel shall be educated on	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		the types of sensitive resources in the project area and the measures required to avoid and minimize impacts on these resources. Materials covered in the training program shall include environmental rules and regulations, along with specific site requirements to limit activities to approved work areas; timing restrictions; and instructions regarding avoidance of sensitive resource areas. In general, the training shall include the following components: • A review of the special-status species and sensitive habitats that could be found in work areas, including known plant populations, bird nests or bat roosts, if present, and the location of burrowing owl preserves. • Measures to avoid or minimize impacts on special-status species and their habitats. • A review sf all conditions and requirements of environmental permits, reports, and plans. • Consequences for violations of the laws and regulations protecting resources. • Boundaries of the work area. • Exclusion and construction fencing methods and staking methods to protect resources. • Roles and responsibilities, including an explanation regarding the authority of biological monitors to stop work, as required by permits and/or project approvals. • What to do when special-status species are encountered (including dead, injured, stressed, or entrapped individuals) in work areas. **Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species**				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Prior to the start of construction in a work area for the current construction phase, preconstruction surveys shall be conducted for special-status plant and wildlife species by a qualified biologist(s) to inform implementation of avoidance and compensation measures that may be required if special-status species are observed. Alkali milk-vetch and Congdon's tarplant surveys shall be required in suitable annual grassland habitat within 100 feet of work areas for the current construction phase. The purpose of the surveys is to inform implementation of the avoidance and compensation measures described below if alkali milk-vetch or Congdon's tarplant are observed. Surveys shall be initiated during the identifiable period of the year that precedes construction of each phase and be consistent with the methods described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (California Department of Fish and Game 2018a). Surveys for special-status wildlife species (Crotch's bumble bee, monarch butterfly, northwestern pond turtle, snowy egret, northern harrier, white-tailed kite, California Ridgway's rail, western burrowing owl, Alameda song sparrow, tricolored blackbird, saltmarsh common yellowthroat, pallid bat, Townsend's big-eared bat, and hoary bat)shall be conducted consistent with available established survey protocols for each species, such as in *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (California Department of Fish and Wildlife 2023), *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012), *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2019).				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Mitigation Measure BIO-3. Exclusion Fencing Prior to the start of construction in a work area for the current construction phase, the Project Proponent or its contractor(s) shall install high-visibility exclusion fencing and erosion control measures prior to any ground disturbance within 50 feet of environmentally sensitive areas (i.e., potential emergent wetlands, native perennial grassland, special-status species' habitats) under the guidance of a qualified biologist. The fencing shall be installed around the perimeter of native perennial grassland, potential emergent wetlands (potential habitat for Ridgway's rail and northwestern pond turtle), and burrowing owl preserves. Flagging or other visual barriers and/or signs may be installed in place of fencing (e.g. in the case of burrowing owl preserves to prevent perching on fence stakes by avian predators). The contractor, under the supervision of a qualified biologist, shall erect and maintain the exclusion fencing for the duration of the construction activity in that work area. Fencing and erosion control measures shall be inspected and maintained daily by the construction foreman until completion of the construction activity. Status of the fencing and erosion control measures shall also be verified and documented at least once a week by a biological monitor. Fencing shall be removed upon completion of construction activities in that work area and prior to demobilization. Activity exclusion zones for sensitive natural communities shall be a minimum of 50 feet; the zones shall be established around each sensitive natural community, the boundaries of which shall be clearly marked with construction exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if construction-related disturbances shall not occur within 250 feet of the sensitive natural community. The size of activity exclusion zones may be reduced below 50 feet through consultation with a qualified biologist if construction activities are conducted in the presence of a biological monitor.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant In the event that avoidance of alkali milk-vetch or Congdon's tarplant is not feasible, seeds of alkali milk-vetch and/or Congdon's tarplant shall be collected by a qualified biologist with experience collecting native plant seeds prior to the start of construction in a work area for the current construction phase. Seeds shall be stored and redistributed after the current construction phase is completed. Include the redistributed seeds in the planting palette for on-site restoration of temporarily disturbed grassland and/or the landscape design for open space, as described in the Development Guidelines. **Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat** Prior to the start of construction in a work area for the current construction phase, botanists shall identify and map locations of milkweed (monarch butterfly breeding habitat). If the Limits of Work overlaps with milkweed plants, milkweed plants shall be removed outside of the breeding season for monarch butterfly (February 15 through October 15). The Project Proponent shall compensate for the permanent loss of milkweed by planting native milkweed in the landscape design for open space at a ratio of 1:1 (one native milkweed planted for each milkweed plant removed) and by including native nectar plants for monarch butterfly such as goldenrods (*Solidago* spp.), asters (*Symphyotrichum* spp.; *Eurybia* spp.), coyotebrush (*Baccharis pilularis*), nettleleaf giant hyssop (*Agastache urticifolia*), yarrow (*Achillea millefolium*), coastal sand verbena (*Abronia latifolia*), bluedicks (*Dichelostemma capitatum*), seaside fleabane (*Erigeron glaucus*), coyote mint (*Monardella villosa*), gumplant (*Grindelia camporum*), and sunflowers (*Helianthus* spp.), among others (Xerces Society 2025) in planting palettes for on-site restoration of temporarily				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		disturbed grassland, and/or the landscape design for open space, as described in the Development Guidelines. **Mitigation Measure BIO-6. Crotch's Bumble Bee** Prior to any phase of construction and as long as the species is considered a candidate for listing under the California Endangered Species Act (CESA) or in the event that they become listed under CESA, a qualified biologist shall assess the work area through a desktop analysis and land cover assessment through site visits to determine whether the work area for the current phase of construction and immediately surrounding landscape within 50 feet has the potential to contain potential habitat for Crotch's bumble bees. This analysis shall identify whether the work area is a developed area with no landscaping (i.e., contains buildings; paved roads, sidewalks or parking lots; other built infrastructure; or mowed and irrigated lawns) or contains open grassland, ornamental landscaping or scrub habitats that could be potential Crotch's bumble bee foraging, nesting, or overwintering habitat. If habitat suitable for Crotch's bumble bee is determined not to be present within the work area for the construction phase, then further measures would not be required. If the work area contains suitable Crotch's bumble bee habitat, then the following measures shall be implemented prior to construction of the phase. • Pre-construction surveys for Crotch's bumble bee and nests shall be conducted within all suitable habitat prior to initial ground-disturbing activities for the current construction phase. Surveys shall follow the survey methodologies set out in the CDFW *Survey Considerations for CESA Candidate Bumble Bee* (CDFW 2023). The surveys can be phased with project buildout. The purpose of this				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		survey shall be to identify active nest colonies inside of and within 50 feet of permanent and temporary impact areas. If Crotch's bumble bees are not detected during the pre-construction survey, no additional measures are required. ● If active Crotch's bumble bee nests are present within the Limits of Work or a 50-foot buffer surrounding the Limits of Work, an appropriate no disturbance buffer zone shall be established around the nest to reduce the risk of disturbance or accidental take. The buffer shall provide at least 50 feet of clearance around nest entrances. ○ If establishment of a no-work buffer is feasible, construction activities shall not occur within the no-work buffer until a qualified biologist determines that the colony is no longer active (i.e., no Crotch's bumble bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season, and the next season's queens have dispersed from the colony). Once the nest has been determined inactive, construction activities within the no-work buffer(s) shall be allowed to resume. ○ If avoidance of the nest is not feasible, the Project Proponent or its contractor(s) shall consult with a qualified biologist familiar with Crotch's bumble bee biology, regulations, and conservation for recommendations on appropriate measures. The proposed measures must be approved by the NASA Ames Research Center Environmental Management Division (NASA ARC EMD) prior to proceeding. ● Mowing shall be minimized as much as feasible in suitable Crotch's bumble bee habitat. In areas where mowing is needed, the following measures to minimize potential take of Crotch's bumble bee shall be followed to the extent feasible:				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		○ Mow outside of the blooming season (typically March through June), if feasible; ○ Mow at the highest cutting height possible to avoid disturbing nests or overwintering queens; ○ Avoid mowing from noon into the afternoon, the time of day when pollinators are most active; and ○ Mow at speeds less than 8 mph. ● During construction, vehicles on-site shall not exceed a speed of 15 mph. This requirement shall be posted with signage noted throughout the Project Site **Mitigation Measure BIO-7. Herbicide and Pesticide Use** To minimize impacts on monarch butterfly and Crotch's bumble bee from herbicide and pesticide drift, application shall be limited to areas immediately adjacent to the proposed facilities and shall be conducted using handheld equipment. Herbicides and pesticides shall be applied only by applicators with current licenses and/or certifications from the California Department of Pesticide Regulation. The herbicide applicator shall follow the label directions. Spray nozzles shall be kept within 24 inches of target vegetation during spraying. The most current information on herbicide and pesticide toxicity on wildlife shall be used to inform future decisions about herbicide and pesticide use during operations. **Mitigation Measure BIO-8. Burrowing Owl Surveys** Prior to any ground disturbance for the current construction phase, a qualified biologist shall conduct pre-construction surveys in all areas identified as suitable habitat within 250 feet of the Limits of Work. Surveys shall be performed consistent with the methods described in the				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Limits of Work of the construction phase, particularly in areas within 250 feet of construction activities. Surveys shall be initiated no less than 14 days prior to initial construction activities for the phase, and the final survey shall conclude no more than 2 calendar days prior to construction of the phase. **Mitigation Measure BIO-9. Burrowing Owl Avoidance** If active burrowing owl burrows are detected during preconstruction surveys, the following shall apply: If disturbance must occur within the breeding or non-breeding season buffer zones, the Project Proponent or its contractor(s) shall work with NASA Ames Research Center Environmental Management Division (NASA ARC EMD) prior to commencement of activities for each construction phase to adhere to and implement the following measures listed below. Alternative measures to avoid impacts may be considered on a case-by-case basis in coordination with NASA ARC EMD and the approved qualified biologist.[13] Prior to construction activity for the current construction phase within 250 feet of burrowing owl habitat, NASA ARC EMD must review and approve all vehicular access routes and staging areas.				

[13] As described in the NASA ARC Final Burrowing Owl Habitat Management Plan (NASA 2022), the qualified biologist must have 1) familiarity with the western burrowing owl biology and its local ecology (i.e., Santa Clara County); 2) at least 2 years of experience with conducting habitat assessments as well as breeding and non-breeding season surveys for burrowing owls, or experience with such surveys conducted under the direction of an experienced western burrowing owl biologist; 3) familiarity with regulations related to burrowing owls and conservation; and 4)experience with analyzing impacts of development on burrowing owls and their habitat.

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Mitigation Measure BIO-10. Burrowing Owl Relocation If occupied burrowing owl burrows cannot be avoided (i.e., disturbance within 160 feet of active burrows during the non-breeding season or 250 feet of active burrows during the breeding season would occur), the following measures shall be implemented in coordination with and subject to the approval of NASA ARC EMD. 1. Passive Relocation a. Timing i. No passive relocation is allowed during the breeding season (February 1 through August 31). The destruction of burrows is only allowed outside the breeding season (September 1 through January 31). All artificial burrows shall be installed prior to the breeding season. ii. Installation of artificial burrows must occur prior to activities that cause disturbance. A project is not allowed to proceed until NASA ARC EMD has verified the artificial burrows have been installed. iii. Installation of artificial burrows must occur at least 1 week prior to passive relocation and burrow exclusion activities. b. Surveys and Banding i. The approved qualified biologist must conduct multiple surveys for a minimum of 2 weeks prior to the passive relocation. These surveys need to locate active burrows within the Limits of Work and buffer zone, identify satellite burrows outside the buffer zone, and observe owl behavior to establish the territory of the owl. ii. Before passive relocation occurs, owls should be trapped and banded, at the discretion of the NASA ARC EMD, to track success. At least 2 weeks prior to exclusion, all owls may be banded by an approved qualified biologist who has				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		a minimum of 2 years of bird banding experience and a Federal Bird Banding and Marking Permit. c. Restrictions i. Passive relocation should only be allowed if satellite burrows are located outside the 50-foot buffer zone to increase the chances of success. All passive relocation efforts must be coordinated with and approved by NASA ARC EMD. ii. Burrows associated with ground squirrel colonies (i.e., dense clusters of interconnecting burrows that support multiple ground squirrels) must be protected to the extent they do not conflict with NASA infrastructure protection and aircraft safety requirements. 2. Exclusion Requirements a. Short-term exclusion (for 1 to 4 weeks) must be avoided to the extent feasible and is only allowed if avoidance measures are not practicable. If short-term exclusion is the only available mechanism, install a one-way door, and once the owl leaves, collapse the burrow within the 1-4 week duration. Long-term exclusion (more than 4 weeks) is prohibited. If exclusion more than 4 weeks is necessary, passive relocation measures shall be implemented. i. Burrowing owls may only be temporarily excluded from burrows in the Limits of Work and 50-foot buffer zone. ii. Restoration. Burrows within the Limits of Work and 50-foot buffer that are temporarily excluded (i.e., not destroyed) must be restored to pre-project conditions (e.g., removal of wood blocks/one-way doors, digging out burrows by hand, and relocating squirrels to the area) in coordination with NASA ARC EMD.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		b. Exclusion Procedures i. Exclusion shall be conducted by installing one-way doors in burrow entrances. One-way doors shall be left in place for a minimum of 48 hours to ensure owls have left the burrow before excavation. ii. The approved qualified biologist shall remove the one-way doors and verify that no owls are present before excavating the burrows. All burrows shall be excavated immediately after removal of the one-way doors. c. Re-entry Prevention i. If project activities do not occur within 5 days of removing the one-way doors, the Limits of Work and 250-foot buffer zone shall be resurveyed to verify that burrowing owls have not reoccupied the site. ii. The Limits of Work and 250-foot buffer zone shall be resurveyed if the site remains inactive for more than 2 weeks during construction to ensure owls have not occupied the site in the interim period between the initial surveys and ground-disturbing activities. 3. Artificial Burrows a. Replacement Ratio. Active natural and artificial burrows (i.e., burrows that have been active during the breeding season within the last 5 years) that are permanently excluded (i.e., destroyed) shall be replaced with artificial burrows at a 3:1 ratio. b. Siting and Design. Artificial burrows must be installed within approximately 300 feet of the burrows to be destroyed, if feasible. If this distance is not feasible, the Project Proponent or its contractor(s) must coordinate with the approved qualified biologist to locate alternate sites (e.g., within				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		burrowing owl preserves or other burrowing owl habitat). The location(s) and design of the artificial burrows will be developed in coordination with the NASA ARC EMD prior to installation. c. Monitoring. Subsequent to installation of artificial burrows, the Limits of Work, buffer zone, and surrounding area must be monitored daily for at least 1 week to confirm owl use of the alternate burrows before destroying burrows in the Limits of Work. Burrow exclusion is not allowed until owl use of the artificial burrows and/or satellite burrows is confirmed by the approved qualified biologist. d. Management. Activities must be minimized around the new artificial burrows, and these areas need to be managed to provide foraging habitat to the extent possible. **Mitigation Measure BIO-11. Burrowing Owl Habitat** If suitable burrowing owl habitat is temporarily disturbed or permanently lost or degraded (as determined by the qualified biologist and approved by NASA ARC EMD), the following measures shall be implemented. 1. Suitable burrowing owl habitat lost from project impacts shall be replaced at a 3:1 mitigation ratio. 2. All suitable burrowing owl habitat temporarily disturbed by ground-disturbing activities must be restored with native grasses and habitat (e.g., rocks, mulch, berms) to attract native insects and rodents and facilitate repopulation of ground squirrels. 3. The location of habitat restoration area(s) must be approved by the NASA ARC EMD.				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		4. Initial restoration activities associated with permanent habitat loss must commence prior to construction. NASA ARC EMD must verify that restoration activities have been initiated prior to construction activities. 5. Recommended native plant species include but are not limited to meadow barley, purple needlegrass, coast range melic, California poppy, California brome, Molate red fescue, monkey flower, purshings lotus, deerweed, Farewell to Spring, sky lupine, and small fescue. 6. Native seed dispersal within selected restoration areas should be scheduled for the beginning of the winter rainy season. If seed dispersal occurs during the dry months, irrigation shall be necessary. 7. All restoration areas must be maintained and monitored for up to two years to ensure the long-term success of the restoration (i.e., restoration areas provide suitable habitat for burrowing owl). The approved qualified biologist must conduct inspections (at a frequency agreed upon by the NASA ARC EMD) and coordinate maintenance requirements with the Project Proponent or its contractor(s). If restoration and/or ground squirrel repopulation efforts are not successful, the Project Proponent or its contractor(s) shall coordinate with NASA ARC EMD to evaluate and implement additional activities (including potential ground squirrel relocation) to ensure the continued success of the restoration. **Mitigation Measure BIO-12. Nesting Birds** Timing Restrictions. To the maximum extent feasible, as determined by the contractor in coordination with a qualified biologist, construction activities, vegetation removal, and trimming shall be scheduled during the nonbreeding season of birds (September 1				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		through January 31) to avoid impacts on nesting birds if nesting birds are present. If construction activities, vegetation removal, and trimming cannot be conducted in accordance with this timeframe, surveys for nesting birds and additional protective measures shall be implemented as described below. Preconstruction Surveys. A qualified wildlife biologist with knowledge of avian species and their behavior shall conduct nesting surveys before the start of each construction phase from locations where access is allowed. A minimum of three separate surveys shall be conducted within 30 days prior to construction of each phase, with the last two surveys conducted within 7 days and 3 days prior to construction. Surveys shall be conducted within the project construction and staging areas as well as all suitable nesting habitat (e.g., trees, shrubs, potential emergent wetland, grasslands, ruderal areas, cultivated lands, human-made structures) within 500 feet of the project construction and staging areas for the current construction phase to locate any active nest protected by the MBTA or by CDFW. If no active nests are detected during these surveys, no additional measures shall be required if construction begins within 3 calendar days. An additional survey shall be conducted after any construction breaks of 3 calendar days or more. Non-Disturbance Buffer. If active nests are found in the survey area, non-disturbance buffers shall be established around the nest sites to avoid disturbance or destruction of the nest site until the end of the breeding season (September 1) or until a qualified wildlife biologist determines that the young have fledged and moved out of the work area (this date varies by species). Buffer distances vary by species and conservation status (e.g., listed species and fully protected species, for which take is prohibited, may warrant larger buffers than non-special-status species), but typically, these buffer distances are between 300 and 650 feet for raptors and between 50 and 250 feet for other nesting				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		birds. The extent of the buffers shall be determined by the qualified wildlife biologist(s) and established by taking into consideration the type and extent of the proposed activity occurring near the nest, the duration and timing of the activity, the line of sight between the nest and the disturbance, the sensitivity and the habituation of the birds and raptors to existing conditions, and the dissimilarity of the proposed activity to ambient levels of noise and other disturbances. The qualified wildlife biologist(s) shall mark the extent and locations of non-disturbance buffers on maps that shall be presented to construction personnel at morning tailboards or use flagging, fencing, or other suitable physical markers, depending on the species of birds, the size of the buffers, and the construction activities to be conducted in the work area. Nest Monitoring. The qualified wildlife biologist(s) shall monitor the nests to ensure that construction activities shall not affect nest success. Buffers (described above) may be reduced if a full-time qualified biologist is present to monitor the nest. Active nests shall be monitored to track progress of nesting activities until the biologist determines that the young have fledged and are capable of independent survival or the nest site is no longer active. Monitoring will be conducted from locations where access is allowed. Authority of Qualified Wildlife Biologist(s). If, during construction, the qualified wildlife biologist(s) determines that a nesting bird is disturbed by construction activities to the point where continued activities could lead to nest failure, the qualified wildlife biologist(s) shall have the authority to immediately stop work and provide additional protective measures (including increasing the non-disturbance buffer distance) that need to be implemented and continue monitoring the nest until determining that bird behavior has normalized.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Mitigation Measure BIO-13. Roosting Bats To avoid take of roosting bats, a preconstruction survey of buildings to be demolished or trees to be trimmed or removed shall be conducted in areas affected by the current construction phase by a qualified wildlife biologist in accordance with *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2019). If special-status roosting bats are found, an avoidance or mitigation plan prepared by a qualified wildlife biologist shall be developed and implemented to avoid take of roosting bats. Avoidance measures may include conducting construction, demolition, tree-trimming or tree-removal outside of hibernation (January – February) and maternal roosting (March 1- August 31) time periods and excluding bats from buildings after they have left the roost to forage at night by closing entrances. Mitigation may include the construction of bat boxes to accommodate displaced bats. If bat boxes are used, their success shall be monitored and reported to the NASA ARC EMD.				
Impact CEQA-BIO-2: The project could have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above	LTSM	Same	Same	Same
Impact CEQA-BIO-3: The project could have a substantial adverse effect on State or federally protected wetlands (including, but not	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means.		**Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, Including Wetlands, and Waters of the State** To the extent possible, the project shall avoid and minimize impacts on waters of the United States, including wetlands, and waters of the State by implementing the measures below. ● The project shall be designed, to the extent possible, to avoid and minimize direct and indirect impacts on waters of the United States, including wetlands, and waters of the State. ● Construction activities shall be avoided in saturated or ponded natural wetlands during the wet season (October through May) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as the use of padding or vehicles with balloon tires, shall be employed. ● All activities shall be completed promptly to minimize their duration and resultant impacts. **Mitigation Measure BIO-15. Compensate for Losses to Waters of the United States, Including Wetlands, and Waters of the State** If it is not feasible for construction activities to avoid impacts on waters of the United States, including wetlands, or waters of the State, the following shall apply: ● The Project Proponent or its contractor(s) shall acquire all applicable permits. ● The Project Proponent or its contractor(s) shall demonstrate that there is no net loss of wetlands and other waters of the United States or State-protected waters/wetlands from project construction. To ensure this, wetland mitigation shall be developed as a part of the				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		permitting process. Mitigation shall be provided before construction-related impacts on the existing wetlands occur. Mitigation typically includes the purchase of mitigation credits within the watershed. The exact mitigation ratio will be determined in consultation with USACE and/or RWQCB, but the Project Proponent or its contractor(s) shall compensate for affected wetlands at a ratio of no less than 1:1.				
Impact CEQA-BIO-4: The project could interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-12. Nesting Birds**, above Implement **Mitigation Measure BIO-13. Roosting Bats**, above	LTSM	Same	Same	Same
Impact CEQA-BIO-5: The project could conflict with the provisions of an applicable adopted HCP, NCCP, or other approved local, regional or State HCP.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-8. Burrowing Owl Surveys**, above Implement **Mitigation Measure BIO-9. Burrowing Owl Avoidance**, above Implement **Mitigation Measure BIO-10. Burrowing Owl Relocation**, above Implement **Mitigation Measure BIO-11. Burrowing Owl Habitat**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Impact CEQA-C-BIO-1: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to biological resources.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above Implement **Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant**, above Implement **Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat**, above Implement **Mitigation Measure BIO-6. Crotch's Bumble Bee**, above Implement **Mitigation Measure BIO-7. Herbicide and Pesticide Use**, above Implement **Mitigation Measure BIO-8. Burrowing Owl Surveys**, above Implement **Mitigation Measure BIO-9. Burrowing Owl Avoidance**, above Implement **Mitigation Measure BIO-10. Burrowing Owl Relocation**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		Implement **Mitigation Measure BIO-11. Burrowing Owl Habitat**, above Implement **Mitigation Measure BIO-12. Nesting Birds**, above Implement **Mitigation Measure BIO-13. Roosting Bats**, above Implement **Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, Including Wetlands, and Waters of the State**, above Implement **Mitigation Measure BIO-15. Compensate for Losses to Waters of the United States, Including Wetlands, and Waters of the State**, above				
Biological Resources (NEPA)						
Impact NEPA-BIO-1: The project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above Implement **Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant**, above Implement **Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat**, above Implement **Mitigation Measure BIO-6. Crotch's Bumble Bee**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		Implement **Mitigation Measure BIO-7. Herbicide and Pesticide Use**, above Implement **Mitigation Measure BIO-8. Burrowing Owl Surveys**, above Implement **Mitigation Measure BIO-9. Burrowing Owl Avoidance**, above Implement **Mitigation Measure BIO-10. Burrowing Owl Relocation**, above Implement **Mitigation Measure BIO-11. Burrowing Owl Habitat**, above Implement **Mitigation Measure BIO-12. Nesting Birds**, above Implement **Mitigation Measure BIO-13. Roosting Bats**, above				
Impact NEPA-BIO-2: The project could have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Impact NEPA-BIO-3: The project could have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-3. Exclusion Fencing**, above Implement **Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, Including Wetlands, and Waters of the State**, above Implement **Mitigation Measure BIO-15. Compensate for Losses to Waters of the United States, Including Wetlands, and Waters of the State**, above	LTSM	Same	Same	Same
Impact NEPA-BIO-4: The project could interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above Implement **Mitigation Measure BIO-12. Nesting Birds**, above Implement **Mitigation Measure BIO-13. Roosting Bats**, above	LTSM	Same	Same	Same
Impact NEPA-BIO-5: The project would not violate a law, code, or ordinance protecting or regulating special-status species.	NI	—	—	Same	Same	Same
Impact NEPA-BIO-6: The project could conflict with the provisions of an applicable	PS	Implement **Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
adopted HCP, NCCP, or other approved local, regional or State HCP.		Implement **Mitigation Measure BIO-8. Burrowing Owl Surveys**, above Implement **Mitigation Measure BIO-9. Burrowing Owl Avoidance**, above Implement **Mitigation Measure BIO-10. Burrowing Owl Relocation**, above Implement **Mitigation Measure BIO-11. Burrowing Owl Habitat**, above				
Cultural Resources (CEQA)						
Impact CEQA-CUL-1: The project would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.3.	PS	**Mitigation Measure CUL-1. Protect and Reinstall Shenandoah Plaza Streetlights** Prior to the issuance of permits for work occurring in the Clar Road, Wescoat Road, and Cummins Avenue roadways, the Project Proponent shall submit site plans for review and approval by the NASA ARC cultural resources manager to ensure that historic streetlights are retained in their current locations at the conclusion of project construction. This measure applies to the 17 streetlights installed during the 1930s that line Clark Road, Wescoat Road, and Cummins Avenue. The Project Proponent shall also incorporate into contract specifications a requirement that the contractor(s) prepare a written protection plan that outlines the methods and equipment to be undertaken so that equipment and vibration-related damage to the streetlights is avoided during construction. Such methods may include staging equipment and materials so as to avoid direct damage, installing physical barriers, and temporarily stabilizing the area, as deemed appropriate by the contractor. Specifications shall also	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		stipulate that any damage incurred to historic properties as a result of construction activities shall be reported to the NASA ARC cultural resources manager. The site plans and contract specifications shall be reviewed and deemed adequate by the NASA ARC cultural resources manager prior to the issuance of permits. If damage to a streetlight occurs during construction, the Project Proponent shall engage a qualified professional who meets the standards for historical architecture, as set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations, Part 61), to assess the damage and provide treatment recommendations. Damage incurred to the resource shall be repaired according to the Secretary of the Interior's Standards in consultation with the qualified professional and NASA ARC cultural resources manager. **Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility** To ensure the designs of project buildings adjacent to the NAS Sunnyvale Historic District (i.e., along Wescoat Road and Cody Road) areinformed by the Secretary of the Interior's Standards, the Project Proponent shall retain a qualified professional to consult on and evaluate project construction plans at conceptual design, schematic design, and permit submittal phases. The purpose of this mitigation measure is to promote architectural compatibility between project buildings and the historic district, on balance with appropriate differentiation. This mitigation measure establishes a review process that applies only to exterior building façades that are most immediately visible from the historic district (i.e., the northernmost 150 feet of Subareas 1, 2, and 6, as well as the easternmost 150 feet of Subarea 3). The qualified professional shall meet the Secretary of the Interior's				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Professional Qualifications Standards (36 CFR Part 61) for architectural history or historic architecture. In coordination with the Schematic Design Review process required by the NASA Research Park (NRP) Design Review Board (pursuant to AMES Procedural Requirement 8822.1), the qualified professional shall provide input during the development of the conceptual design of exteriors of project buildings in Subareas along Wescoat Road and Cody Road (adjacent to the NAS Sunnyvale Historic District) using the Secretary of the Interior's Standards (particularly Standard 9). Input on the exteriors of project buildings may relate to massing, fenestration patterns, entry placement, exterior materials, and façade articulation. Following completion of conceptual design, the qualified professional shall prepare a memorandum that analyzes the compatibility of project building design elements that have been developed. If the design of project buildings does not comply with the Secretary's Standards, the qualified professional shall provide recommendations for modifying the project building design to improve its compatibility with the historic district. The memorandum shall be included in the Conceptual Design Phase submittal, and the NASA ARC cultural resources manager shall review and provide comments on the analysis during the Conceptual Design Review process. The Project Proponent shall incorporate the recommended design changes that are feasible while also meeting the objectives of the project (i.e., do not conflict with code requirements or remove programmatically necessary amenities). The Project Proponent shall provide a response documenting the reasons any recommendations are not feasible and cannot be incorporated into the project design. The qualified professional shall prepare memoranda that document and analyze the schematic design and permit submittal documents to address any subsequent design changes with the potential to cause				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		visual effects on the NAS Sunnyvale Historic District that occurred from previous review. Each analysis shall be submitted to the Project Proponent and NASA ARC cultural resources manager. Should NASA ARC disagree with any conclusions in the analysis, they shall notify the Project Proponent within 2 weeks of NASA's receipt of the memo of proposed design changes. The plans shall not be resubmitted, but those changes shall be incorporated into the next plan submission. Prior to the issuance of a building permit, NASA cultural resources staff must sign-off that the final permitted plans have been developed with the greatest possible adherence to the objectives defined in the design review process while also meeting project objectives. NASA shall notify ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate, of the approval of construction documents and shall distribute the approved memorandum to demonstrate compliance with this measure. **Mitigation Measure CUL-3. Develop and Implement an Interpretive Program** The Project Proponent shall develop and implement an interpretive program that documents and commemorates the historical development and setting of the NAS Sunnyvale Historic District. Interpretive materials shall address the general history of NAS Sunnyvale and incorporate visual representations of the installation's historical setting (including the Project Site) during the interwar, World War II, and early Cold War periods. Interpretive media may include on-site displays placed in visible and accessible locations and/or digital platforms (i.e., using a mobile device application). An interpretive plan shall be prepared in coordination with an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards and an exhibit designer,				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		graphic designer, and/or other professional with historical interpretation design experience. The interpretive plan shall describe, at a minimum, the proposed location(s), formats/media, and content themes of interpretive materials. The NASA ARC cultural resources manager shall advise on whether the interpretive plan shall be developed in coordination with separate interpretive requirements (i.e., public interpretation of archaeological materials required by the Cultural Resources Treatment and Monitoring Plan). Representatives from the Moffett Field Museum shall be invited to collaborate on the interpretive plan to ensure that proposed materials and themes are coordinated with existing or planned interpretive efforts at NASA ARC. The interpretive plan shall be reviewed and approved by the NASA ARC cultural resources manager. Following approval of the interpretive plan, the qualified historian and designer shall then develop detailed interpretive content, including text and images, and applicable design specifications for the interpretive materials. The NASA ARC cultural resources manager shall review and approve the text, images, and applicable design specifications prior to production and installation or publication of the interpretive materials and prior to the completion of the first construction phase. Implement **Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers**, below.				
Impact CEQA-CUL-2: The project would cause a substantial adverse change in the significance of an archaeological historical resource pursuant to Section	PS	**Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan** Prior to any ground-disturbing activity, the Project Proponent shall retain a qualified Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (qualified Archaeologist) to develop a Cultural Resources Treatment and	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			

15064.5 or a unique archaeological resource (PRC Section 21083.2).		Monitoring Plan (CRTMP) in consultation with the Project Proponent, NASA, and ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate. The CRTMP shall specify the procedures to be used to implement the mitigation measures or conditions of approval in the field, the standards of evaluation for unanticipated discoveries that shall be appropriate given the locations and kinds of cultural properties predicted, and treatment methods for resources determined eligible for the National Register of Historic Places (NRHP). The CRTMP shall meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (U.S. Department of the Interior, National Park Service, 1983, as amended and annotated). Within each construction phase, all actions mandated in the CRTMP shall be implemented after demolition, but before any other ground-disturbing activities (e.g., grading, trenching), except for the activities as noted below. The CRTMP shall include descriptions and/or summaries of:
		● The proposed project and its subsurface impacts;
		● The proposed project's regulatory requirements;
		● Known cultural resources in the APE and ADI;
		● Canine Forensic Survey Alert Results and Interpretations;
		● Archaeological Site Sensitivity Assessments;
		● A Monitoring Plan that includes:
		  ○ A definition of the Cultural Resources Monitoring Area (CRMA)
		  ○ Requirements for cultural resources sensitivity training
		  ○ Requirements for tribal resources sensitivity training, monitoring schedules, consultation requirements, procedures for addressing tribal resource discoveries made during construction, documentation requirements				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		○ Monitoring schedules ○ Procedures for addressing archaeological discoveries made during construction ○ Documentation requirements, etc. ● A tribal ethnographic study for each consulting tribe developed in partnership with the tribes that incorporates tribal realities (to be completed prior to occupancy of Phase 4); ● Public interpretation, as determined through consultation with ARC Center Consulting Parties, as appropriate, and designed as part of the interpretive program (see above) (to be completed prior to occupancy of Phase 4); ● Protocols for the treatment of isolate artifacts; ● A plan for conducting subsurface archaeological assessment/evaluation of a sample of the archaeologically sensitive areas and Canine Forensic Survey Alert locations, with sample locations focused on areas of clustered Canine Forensic Survey Alerts and/or areas where the archaeological sensitivity overlaps with the Canine Forensic Survey Alert results. The sample testing locations shall be determined through continued consultation with ARC Center Consulting Parties, as appropriate. The plan shall include subsurface testing through a combination of non-invasive methods (e.g., ground-penetrating radar), mechanical trenching, and hand excavation to allow the qualified Archaeologist and tribal monitor to observe subsurface conditions and locate any buried cultural deposits, features, or artifacts. If the subsurface investigation identifies archaeological resources, the Archaeologist shall conduct hand excavation to evaluate the find to recommend its eligibility under the National Historic Preservation Act (NHPA) Section 106 (36 CFR Part 800). The plan shall include research themes and eligibility criteria to guide the evaluation of				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		archaeological resources under the NRHP. The qualified Archaeologist shall document any findings and subsurface conditions in a report that shall be submitted to NASA. The draft technical report shall be shared with the SHPO and ARC Center Consulting Parties, as appropriate, for review and comment. This plan shall be developed and implemented after demolition, but prior to any other ground-disturbing activity (e.g., grading, trenching) for each construction phase. • A plan for documenting the data potential and integrity of CA-SCL-1145 and CA-SCL-1146. The plan shall include subsurface testing through a combination of non-invasive methods (e.g., ground-penetrating radar), mechanical trenching, and hand excavation to allow the qualified Archaeologist and Native American monitor to observe subsurface conditions and locate any buried cultural deposits, features, or artifacts. The project shall develop and implement treatments commensurate with the data potential and integrity of archaeological resources CA-SCL-1145 and CA-SCL-1146, and any additional NRHP eligible resources identified through the subsurface archaeological assessment/evaluation (see above), which shall include data recovery guided by a data recovery plan; the amount of data recovery may be scaled based on the integrity of the resources. The data recovery plan shall include controlled subsurface excavations at archaeological resources CA-SCL-1145 and CA-SCL-1146, archival research, and detailed analysis of artifacts and organic remains recovered during excavation, per protocols outlined in this CRTMP. The qualified Archaeologist shall document the findings and subsurface conditions in a data recovery report, which shall be submitted to NASA. The draft data recovery report shall be shared with the SHPO and ARC Center Consulting Parties, as appropriate, for review and comment. The final data recovery report shall be submitted to Northwest Information				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			

		Center (NWIC) and ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate. This plan shall be developed and implemented after demolition, but prior to any other ground-disturbing activity (e.g., grading, trenching) that includes archaeological resources CA-SCL-1145 and CA-SCL-1146.
		● If currently unknown NRHP eligible resources are present, treatment plans to reduce project impacts to eligible resources to less than significant/minimize or offset adverse effects, including:
		  o Where feasible, protect sites or portions of sites identified during subsurface testing (e.g., incorporating sites within proposed project open space, re-routing proposed project underground infrastructure, covering the archaeological sites with a layer of chemically stable soil before building impervious surface improvements) (to be completed prior to the start of each construction phase); and/or
		  o Archaeological Data Recovery (post-field activities to be completed prior to occupancy of Phase 4); and/or
		  o Public Interpretation (to be completed prior to occupancy of Phase 4).
		● Curation and/or reburial requirements for non-human remains and non-funerary objects (to be completed prior to occupancy of Phase 4);
		● Reporting requirements (to be completed prior to occupancy of Phase 4); and
		● Conflict resolution (to be completed prior to occupancy of Phase 4).
		
		Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		The qualified Archaeologist shall also oversee archaeological monitor who shall be present during ground disturbing activities (e.g., demolition activities that involve ground disturbance, clearing/grubbing, grading, trenching) within the Cultural Resources Monitoring Area (CRMA), as defined the CRTMP. Native American tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation shall also monitor ground disturbing activities in the CRMA on a rotating basis. Tribal monitoring shall also be required for all archaeological testing and data recovery. In addition, cultural resources sensitivity training shall be pre-recorded for presentation to all construction personnel. The training shall be prepared by the qualified Archaeologist and representatives from the Native American tribes, focusing on how to identify cultural resources that may be encountered during earthmoving activities and the procedures to be followed in such an event. The pre-recorded training materials and a sign-in sheet from the training shall be provided to the Project Proponent to ensure compliance with this mitigation measure. The qualified Archaeologist shall prepare a monitoring report at the conclusion of archaeological monitoring. Tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation shall review and provide comments on the monitoring report. The final monitoring report shall be submitted to Northwest Information Center (NWIC) and participating Native American communities. The monitoring program and report shall be completed prior to occupancy of Phase 4. **Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols**				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		In the event that unforeseen precontact (e.g., hearths, stone tools, shell and faunal bone remains, etc.) or historic-era (e.g., bottles, foundations, refuse dumps/privies, etc.) archaeological resources are unearthed , ground-disturbing activities within 100-foot radius of the discovery shall be halted or diverted. Work shall be allowed to continue outside of the 100-foot buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified Archaeologist, in consultation with tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation, using methods outlined in the CRTMP. If a resource is determined by NASA, in consultation with the qualified Archaeologist and the tribes, to constitute a "historic property" pursuant to Section 106 of the NHPA, the qualified Archaeologist, in consultation with the tribes, shall direct implementation of mitigation using methods outlined in the CRTMP. Proper treatment of all inadvertent discoveries, per the CRTMP, shall be completed prior to occupancy of Phase 4 of the proposed project.				
Impact CEQA-CUL-3: The project would disturb human remains, including those interred outside of dedicated cemeteries.	PS	**Mitigation Measure CUL-7. Human Remains Discovery Protocols** If human remains are encountered unexpectedly during implementation of the project at NASA ARC: ● NASA's Protective Services and ARC's Cultural Resources Manager shall be immediately notified. ● If it is determined that the human remains are recent, then the issue becomes a matter for law enforcement officials and there are no further cultural resources responsibilities. ● If it is determined that the human remains are archaeological in nature, NASA shall immediately notify the SHPO and ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate, pursuant to inadvertent discovery mitigation.	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		• If it is determined that the human remains are of Native American origin, NASA shall initiate consultation with the appropriate Tribe(s) per the Native American Graves Protection and Repatriation Act, 43 CFR Part 10, which requires a draft plan of action. NASA and the Project Proponent shall assist the appropriate Tribe(s) to implement the plan of action, as necessary.				
Impact CEQA-C-CUL-1: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to historical resources.	PS	Implement **Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility**, above Implement **Mitigation Measure CUL-3. Develop and Implement an Interpretive Program**, above	SUM	Same	Same	Same
Impact CEQA-C-CUL-2: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to archaeological resources and human remains.	PS	Implement **Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan**, above Implement **Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training**, above Implement **Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols**, above Implement **Mitigation Measure CUL-7. Human Remains Discovery Protocols**, above	SUM	Same	Same	Same
Cultural Resources (NEPA)						
Impact NEPA-CUL-1: The project would cause an adverse effect on a historic	PS	Implement **Mitigation Measure CUL-1. Protect and Reinstall Shenandoah Plaza Streetlights**, above	Less than Significant with completion of	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
property pursuant to 36 CFR 800.5(a)(1).		Implement **Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility**, above Implement **Mitigation Measure CUL-3. Develop and Implement an Interpretive Program**, above Implement **Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan**, above Implement **Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training**, above Implement **Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols**, above Implement **Mitigation Measure CUL-7. Human Remains Discovery Protocols**, above Implement **Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers**, below	Section 106 review			
Energy (CEQA)						
Impact CEQA-ENE-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
project construction or operation.						
Impact CEQA-ENE-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	—	—	Same	Same	Same
Impact CEQA-C-ENE-1: The project would not result in a cumulatively considerably contribution to a significant environmental impact with respect to energy due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.	LTS	—	—	Same	Same	Same
Impact CEQA-C-ENE-2: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to energy due to conflicts with or obstruction of a state or local plan for renewable energy or energy efficiency.	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Energy (NEPA)						
Impact NEPA-ENE-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	—	—	Same	Same	Same
Impact NEPA-ENE-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	—	—	Same	Same	Same
Geology, Soils, and Paleontology (CEQA)						
Soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.	NI	—	—	Same	Same	Same
Impact CEQA-GEO-1: The project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: A) Rupture of a known earthquake fault, as delineated on the most	PS	**Mitigation Measure GEO-1. Design-Level Geotechnical Investigation** Once site development plans are final, the Project Proponent or its contractor(s) shall coordinate the preparation of a design-level geotechnical investigation by a licensed geotechnical engineer. The design-level investigation findings shall be used to address all the geotechnical concerns described in the *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park, Master Planning Phase, Mountain View, California*. The recommendations of the *Preliminary*	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for an area or based on other substantial evidence of a known fault. B) Strong seismic ground shaking. C) Seismic-related ground failure, including liquefaction. D) Landslides.		*Geotechnical Evaluation, Moffett Field NASA Research Park, Master Planning Phase, Mountain View, California* and any recommendations included in the design-level geotechnical investigation for the project shall be incorporated into all applicable design and engineering plans including, but not limited to, site preparation, grading, fill placement, foundations, pavement design, seismic design, etc. Because the Limits of Work are in a California Geological Survey-designated Liquefaction Hazard Zone, the design-level geotechnical investigation must include recommendations to mitigate seismic hazards in accordance with the guidelines of California Geological Survey Special Publication 117A. Prior to the issuance of permits by NASA for the proposed project, a qualified geotechnical expert shall review the design and engineering plans to verify the recommendations have been addressed and incorporated. NASA ARC EMD will then review the expert's findings and confirm that input has been addressed.				
Impact CEQA-GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.	LTS	—	—	Same	Same	Same
Impact CEQA-GEO-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, below	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Impact CEQA-GEO-4: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above	LTSM	Same	Same	Same
Impact CEQA-GEO-5: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	PS	**Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols** For all ground-disturbing activities within the Limits of Work that extend more than 5 feet below ground surface, the Project Proponent or its contractor(s) shall implement the following protocols. "Ground-disturbing activities" include soil removal, parcel grading, utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils. ● A paleontological resources awareness training program by a qualified paleontologist shall be provided to all construction personnel active within the Limits of Work during ground-disturbing activities. The first training shall be provided at the start of each construction phase, prior to the start of ground disturbing activities in a work area for the current construction phase. The training will include relevant information regarding fossils and fossil-bearing formations that may be encountered. The training shall also describe appropriate avoidance and minimization measures for resources that have the potentially to be located within the Limits of Work. ● If any paleontological resources are encountered during ground-disturbing activities, the Project Proponent or its contractor(s) shall ensure that activities in the immediate area of the find are	LTSM	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		halted and inform NASA Ames Research Center Environmental Management Division (NASA ARC EMD). The Project Proponent or its contractor(s) shall retain a qualified paleontologist to evaluate the discovery and recommend appropriate treatment options pursuant to guidelines developed by the Society of Vertebrate Paleontology, including development and implementation of a paleontological resource impact mitigation program by a qualified paleontologist for treatment for a particular resource, if applicable. These measures may include, but not be limited to the following: ○ Salvage of unearthed fossil remains and/or traces (e.g., tracks, trails, burrows); ○ Screen washing to recover small specimens; ○ Preparation of salvaged fossils to a point of being ready for curation (e.g., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles); and ○ Identification, cataloging, curation, and provision for repository storage of prepared fossil specimens.				
Impact CEQA-C-GEO-1: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to geology or soils.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above	LTSM	Same	Same	Same
Impact CEQA-C-GEO-2: The project could result in a cumulatively considerable contribution to a significant environmental impact with	PS	Implement **Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

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	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
respect to paleontological resources.						
Geology, Soils, and Paleontology (NEPA)						
Impact NEPA-GEO-1: The project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: A) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for an area or based on other substantial evidence of a known fault. B) Strong seismic ground shaking. C) Seismic-related ground failure, including liquefaction. D) Landslides.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above	LTSM	Same	Same	Same
Impact NEPA-GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

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	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-GEO-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Impact NEPA-GEO-4: The project would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.	NI	—	—	Same	Same	Same
Impact NEPA-GEO-5: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	PS	Implement **Mitigation Measure GEO-1. Design-Level Geotechnical Investigation**, above	LTSM	Same	Same	Same
Impact NEPA-GEO-6: The project could directly or indirectly destroy a unique paleontological resource or	PS	Implement **Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols**, above	LTSM	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
site or unique geologic feature.						
Greenhouse Gas Emissions (CEQA)						
Impact CEQA-GHG-1: The project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	PS	**Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions** All project contractor(s) shall comply with the Air District's current best management practices (BMPs) for construction-related GHG emissions. The Air District's current BMPs are drawn from their 2023 CEQA Guidelines, Table 6-1, and are identified below, as applicable. Where relevant, air quality mitigation that requires actions equal to or greater than the recommended BMPs are referenced in place of the specific BMP language. The requirement to comply with the control measures included in this mitigation will be identified in construction bids. ● Per Mitigation Measure AQ-1, use zero-emission and hybrid-powered equipment. Require Tier 4 Final compliant engines and renewable diesel for remaining diesel off-road equipment. Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day. ● Minimize diesel equipment idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure. ● Require all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications.	LTSM	Same	SUM	SUM

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	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation. ● Require compliance with Mitigation Measure AQ-2 regarding use of zero-emission on-road vehicles during construction, including vehicles used for deliveries and hauling. ● Implement the TDM Plan and comply with the expanded requirements per Mitigation Measure TRAN-1. ● Where grid power is available, provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible. Prioritize the use of use alternative fuels, such as propane or solar electrical power where feasible, for generators at construction sites. ● Reduce electricity use in the construction office by using efficient lighting technologies, including, but not limited, to LED technology, powering off computers every day, and utilizing efficient heating and cooling units. ● Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible. ● Use locally sourced or recycled materials for construction as commercially and financially available and feasible at the time of construction. Wood products used should be certified through a sustainable forestry program. ● Use low-carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix, as commercially and financially available and feasible at the time of construction. ● Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.				

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	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		• Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities. Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above Implement **Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction**, above Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				
Impact CEQA-GHG-2: The project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	PS	Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below	LTSM	Same	SUM	SUM
Impact CEQA-C-GHG-1: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to greenhouse gas emissions or conflict with an	PS	Implement **Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions**, above Implement **Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction**, above	LTSM	Same	SUM	SUM

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

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	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.		Implement **Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction**, above Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, below				
Hazards and Hazardous Materials (CEQA)						
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	NI	—	—	Same	Same	Same
Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.	NI	—	—	Same	Same	Same
Impact CEQA-HAZ-1: The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	PS	**Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan** The Project Proponent and/or its contractor(s) shall implement the Spring 2026 project-specific Environmental Issues Management Plan (EIMP) prepared for the proposed project and approved by Regional Water Board to (1) comply with land use restrictions and institutional controls (LUCs) and (2) take reasonable steps with respect to environmental conditions within the Project Site to help ensure that occupancy and development activities within the Project Site proceed in a	LTSM	Same	Same	Same

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	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		manner that is protective of human health and the environment and is coordinated with the ongoing response actions being undertaken by the Responsible Parties. The project-specific EIMP shall include, but not be limited to, the following: ● A summary of environmental conditions; ● A summary of potential exposure pathways from COPCs in groundwater, soil vapor, and soil; ● Target cleanup levels; ● A baseline of minimum design considerations for new construction for vapor intrusion mitigation and utility construction; ● Risk management measures to be implemented during construction; ● Post-construction risk management procedures for future subsurface activities; and ● Procedures for long-term compliance with the project-specific EIMP, CERCLA (including vapor intrusion monitoring and associated operation and management of all engineering controls installed), and other environmental requirements.[14] ● The Project Information and Summary of Environmental Conditions (PISEC) for each area shall be approved by the appropriate regulatory agencies (EPA and the Regional Water Board) prior to the start of construction activities.				
Impact CEQA-HAZ-2: The project could create a significant hazard to the public or environment	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same

[14] The Master Lessee and NASA will maintain documentation of notification of the known environmental conditions within the Project Site and of the requirements of the Spring 2026 project-specific EIMP to the property manager, and tenants and other entities leasing or otherwise exercising control over space within the Project Site. Property managers, tenants, or others exercising control over space within the Project Site will inform their construction contractors and maintenance workers about the Spring 2026 project-specific EIMP, as needed, to ensure compliance.

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.						
Impact CEQA-HAZ-3: The project could be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, could create a significant hazard to the public or the environment.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Impact CEQA-HAZ-4: For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would not result in a safety hazard or excessive noise for people living or working in the project area.	LTS	—	—	Same	Same	Same
Impact CEQA-HAZ-5: The project would not impair implementation of or physically interfere with an	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
adopted emergency response plan or emergency evacuation plan.						
Impact CEQA-C-HAZ-1: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to hazards and hazardous materials.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Hazardous Materials (NEPA)						
Impact NEPA-HAZ-1: The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Impact NEPA-HAZ-2: The project could create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-HAZ-3: The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	NI	—	—	Same	Same	Same
Impact NEPA-HAZ-4: The project could be located on a site which is included on a local, state, or federal environmental database with a history of hazardous materials/waste release (including hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the Comprehensive Environmental Response, Compensation, and Liability Act) and, as a result, could create a significant hazard to the public or the environment.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Impact NEPA-HAZ-5: For a project within an airport land use plan or, where such a plan has not been adopted, within	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
two miles of a public airport or public use airport, the project would not result in a safety hazard or excessive noise for people living or working in the project area.						
Impact NEPA-HAZ-6: The project would not impair implementation of or physically interfere with emergency response or emergency evacuation requirements.	LTS	—	—	Same	Same	Same
Impact NEPA-HAZ-7: The project could hinder or conflict with on-going, planned, or required remediation at NASA ARC.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Hydrology and Water Quality (CEQA)						
Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	NI	—	—	Same	Same	Same
Impact CEQA-HYD-1: The project could violate a water quality standard or waste discharge requirements or otherwise substantially	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
degrade surface water or ground water quality.						
Impact CEQA-HYD-2: The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin.	LTS	—	—	Same	Same	Same
Impact CEQA-HYD-3: The project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would: a) Result in substantial erosion or siltation on- or off-site, b) Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site,	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
c) Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional source of polluted runoff, or d) Impede or redirect floodflows.						
Impact CEQA-HYD-4: The project could conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Impact CEQA-C-HYD-1: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to hydrology and water quality.	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same
Hydrology and Water Quality (NEPA)						
Impact NEPA-HYD-1: The project could violate a water quality standard or waste discharge requirements or	PS	Implement **Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
otherwise substantially degrade surface water or ground water quality.						
Impact NEPA-HYD-2: The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin.	LTS	—	—	Same	Same	Same
Impact NEPA-HYD-3: The project would not result in storm runoff that would exceed the capacity of existing receiving bodies or drainage systems.	LTS	—	—	Same	Same	Same
Impact NEPA-HYD-4: The project would not place structures or other improvements susceptible to flooding within a 100-year flood hazard zone as mapped on a Flood Insurance Rate Map or other flood hazard map in a manner that would impede or redirect floodflows.	NI	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-HYD-5: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	—	—	Same	Same	Same
Land Use and Planning (CEQA)						
Division of an established community.	NI	—	—	Same	Same	Same
Impact CEQA-LU-1: The project would not cause a significant environmental impact due to a conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	—	—	Same	Same	Same
Impact CEQA-C-LU-1: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to land use and planning.	LTS	—	—	Same	Same	Same
Land Use and Planning (NEPA)						
Impact NEPA-LU-1: The project would not introduce	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
new land uses incompatible with established uses at or surrounding Ames Research Center.						
Noise (CEQA)						
Impact CEQA-NOI-1a: The project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction.	PS	**Mitigation Measure NOI-1. Construction Noise Control Plan** The Project Proponent or its project contractor(s) shall develop a construction noise control plan to reduce noise levels to a level below the limits defined in the County Code, as well as FTA noise limits for daytime and nighttime construction noise, to the extent feasible (i.e., to the greatest extent practicable without impairing the contractors' ability to safely and effectively construct the project, causing unreasonable inefficiencies in the project's construction schedule, or substantially increasing costs such that they are not commensurate with the noise reduction achieved). Further, the plan shall include measures to reduce construction noise levels such that a 10 dB or greater increase over the existing ambient noise level shall not occur at the nearest sensitive uses, to the extent feasible (as defined previously). The final construction noise control plan shall be provided to and approved by NASA at the time of construction permit applications for each building and/or phase of development. The plan shall include measures to reduce daytime construction noise to the following, to the extent feasible (as defined previously): ● 65 dBA L_{eq}, or less, at the nearest multi-family residences, per the County Code (noting that noise levels below this limit would also ensure that noise levels would be below the FTA limit for daytime noise of 90 dBA L_{eq}, or less, at the nearest residences) ● Less than 10 dB greater than the existing daytime ambient noise level	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		The plan shall also include measures to reduce nighttime noise levels to the following, to the extent feasible (as defined previously): ● 55 dBA L_{eq}, or less, at the nearest multi-family residences, per the County Code (noting that noise levels below this limit would also ensure that noise levels would be below the FTA limit for nighttime noise of 80 dBA L_{eq}, or less, at the nearest residences) ● Less than 10 dB greater than the existing nighttime ambient noise level In order to assess construction noise increases relative to existing ambient noise levels, measurements obtained as part of this study may be used to define daytime and nighttime ambient noise levels. Alternatively, additional ambient noise measurements may be conducted as part of the construction noise control plan to further refine the ambient noise levels. Techniques to reduce noise from construction activities to the relevant levels shall be incorporated into the plan and include, at a minimum, the following: ● Any construction activity that is not required to occur outside of typical construction hours due to technical or safety reasons (such as concrete pours or off-site utility installations) shall be conducted between 7:00 a.m. and 7:00 p.m. Monday through Saturday (excluding legal holidays), noting that construction would not occur on Saturdays. Material/equipment deliveries shall not be permitted at the job site before 7:00 a.m. or after 7:00 p.m. ● The noisiest construction activities shall be planned to occur during daytime hours when people are less sensitive to noise, when existing ambient noise levels are higher, and when quantitative noise standards pertaining to construction are less stringent.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		● The quietest available type of construction equipment readily available to the construction contractor shall be used. This applies to both stationary equipment (e.g., compressors) and mobile equipment (e.g., forklifts). Newer equipment is generally quieter than older equipment, electrically powered equipment is typically quieter than diesel, and hydraulically powered equipment is typically quieter than pneumatic. If compressors powered by diesel or gasoline engines are to be used, they shall be contained or have baffles to help abate noise levels. ● Require all construction equipment to be equipped with mufflers and sound control devices (e.g., intake silencers and noise shrouds) that are in good condition (at least as effective as those originally provided by the manufacturer) and appropriate for the equipment. ● Maintain all construction equipment to minimize noise emissions. ● Locate construction equipment (particularly stationary equipment, such as generators or compressors, that may operate at the same location for an extended period of time) as far as feasible from adjacent or nearby noise-sensitive receptors (e.g., as far as feasible from the western edge of the Project Site). ● Require stationary noise sources associated with construction (e.g., generators and compressors) in proximity to noise-sensitive receptors to be muffled and/or enclosed within temporary enclosures and shielded by barriers, which can reduce construction noise by 5 to 10 dB. ● Limit the use of impact tools (e.g., jack hammers) during nighttime/non-standard daytime hours as feasible. ● Prohibit idling of inactive construction equipment for prolonged periods during both daytime and nighttime/non-standard hours (i.e., more than 2 minutes).				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		● Reduce noise from backup alarms (to the extent feasible without resulting in safety concerns) on construction vehicles and equipment by: ○ Providing a construction site layout that minimizes the need for reversing construction vehicles, or ○ Setting backup alarm noise levels to the minimum necessary for safe operation, ○ Using white-noise backup alarms, when feasible and safe, or ○ Using flagmen to keep the area behind maneuvering vehicles clear and minimize the time needed to back up vehicles. ● A construction notice shall be prepared that describes the project and the construction schedule, including the various types of activities that would occur throughout the construction period. The notice shall provide the name and telephone number of an on-site construction liaison. The notice shall be delivered to all property owners and residents within 500 feet of the Project Site at least 14 days (two weeks) before the start of construction. The contact information shall also be posted on a sign at each entrance to the construction site from the public right-of-way; the sign shall be large enough to be legible from the public right-of-way. If construction noise is found to be intrusive to the community (i.e., if complaints are received), the construction liaison shall take reasonable efforts to investigate the source of the noise and require reasonable measures be implemented to correct the problem. **Mitigation Measure NOI-2. Temporary Noise Barriers** Prior to the start of construction in each Subarea, the Project Proponent or its contractor(s) shall install temporary noise barriers. The barriers shall be located along all portions of the western and				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		southern construction Subarea perimeters that are within 1,400 feet of the Wescoat Village receptors. Each barrier shall be a minimum of 8- to 12-feet tall and constructed of material with a surface weight of at least 1 to 1.5 pounds per square foot and a Sound Transmission Class (STC) of at least 25 . There should be no gaps or openings from the ground to the top of the barrier or along the length of the barrier. The barrier shall be constructed with plywood supported on a wood frame, acoustical blankets supported on a frame or metal construction fence, or another type constructed with comparable material. A barrier may need to be temporarily moved or removed when it physically interferes with construction activities (e.g., the barrier is located on top of an area where a curb or sidewalk is to be constructed). Barriers are not required where complete project building(s) (i.e., complete with solid exterior facades, including all exterior walls and windows) fully block the line of sight from sensitive receptors to active construction areas. However, barriers are required where there are gaps or there are other locations where the line of sight is not fully shielded by complete project building(s).				
Impact CEQA-NOI-1b: The project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation.	PS	**Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards** Prior to the issuance of building permit(s) for each project building that would include mechanical equipment, the Project Proponent or its contractor(s) shall retain a qualified acoustical consultant to prepare an acoustical report and address mechanical equipment noise issues, based on the selected equipment models and design features. The analysis of mechanical equipment noise and emergency generator noise, required under Mitigation Measure NOI-4, could be completed by the same consultant and presented in a single report. The final report, including the analysis results and any recommended noise control measures, shall be provided to and approved by NASA at the	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		time of construction permit applications for each building and/or phase of development. The recommendations of the report shall be incorporated into the applicable project plans (site, architectural, civil, and mechanical, as needed) and implemented during project construction. The acoustical report shall satisfy the following requirements: ● The analysis shall evaluate the design and provide recommendations, as necessary, to ensure that combined noise levels from mechanical equipment at project buildings, including the recommended noise-control measures incorporated into the project design, shall not exceed the County noise exposure limits for the nearby noise-sensitive uses (i.e., 55 dBA L_{eq} at Wescoat Village). ● The analysis shall consider all noise-generating equipment, including the anticipated worst-case combination(s) of equipment that could run simultaneously. Noise-generating equipment may include, but is not limited to, air conditioners, air handlers, exhaust fans, cooling towers, chillers, pumps, and BESS units. ● Noise-control recommendations may include, but are not limited to, the measures listed below. ○ Changing equipment locations, including locating equipment inside buildings, as feasible (taking into account site-specific constraints such as structural limitations, ventilation requirements, access for maintenance, and cost considerations). ○ Selecting quieter equipment models ○ Providing equipment sound-power limits in procurement specifications ○ Shielding equipment with rooftop parapet walls, louvers, screens, or enclosures				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		○ Using acoustic absorption materials in shielding materials ○ Installing mechanical equipment base isolators ○ Installing intake or exhaust silencers **Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards** Prior to the issuance of building permit(s) for each building that would include an emergency generator, the Project Proponent or its contractor(s) shall retain a qualified acoustical consultant to prepare an acoustical report and address emergency generator testing noise issues, based on the selected generator models and design features. (Note that the analysis of emergency generator noise and mechanical equipment noise under Mitigation Measure NOI-3 could be completed by the same consultant and presented in a single report.) The final report, including the analysis results and any recommended noise control measures, shall be provided to and approved by NASA prior to the issuance of building permits for each building and/or phase of development. The recommendations of the report shall be incorporated into the applicable project plans (site, architectural, civil, and mechanical, as needed) and implemented during project construction. The acoustical report shall satisfy the following requirements: ● The analysis shall evaluate the design and provide recommendations, as necessary, to ensure that combined noise levels from emergency generators testing at project buildings, including the recommended noise control measures incorporated into the project design, shall not exceed the County noise exposure limits for the nearby noise-sensitive receptors. The applicable noise exposure limit for the nearest existing residential land uses at Wescoat Village is 55 dBA L_{eq}. Note that additional ambient noise measurements may be conducted as part of				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		the acoustical report to further refine the applicable noise exposure limits (should existing ambient levels already exceed the applicable County noise exposure limit). ● Noise-control recommendations may include, but are not limited to, the measures below. ○ Selecting and installing quieter generator models ○ Upgrading the generators' acoustical enclosures ○ Upgrading the generators' mufflers or silencers ○ Orienting or shielding generator(s) to protect noise-sensitive receptors to the greatest extent feasible (taking into account generator ventilation requirements, spatial limitations, and cost considerations). ○ Increasing the distance between the generator(s) and noise-sensitive receptors ○ Placing noise-attenuating barriers around generator(s) In addition, all project generators shall be tested only between 7:00 a.m. and 7:00 p.m.				
Impact CEQA-NOI-2: The project would generate excessive groundborne vibration or groundborne noise levels.	PS	**Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers** This mitigation measure applies to construction with vibratory rollers that occurs within 22 feet of Vibration-Sensitive Structures (i.e., structures in the "historic and some old buildings" category per the Caltrans Vibration Damage Criteria). Structures within approximately 22 feet of the Limits of Work that would be expected to fit into this category, having been constructed between 1933 and 1979, include Buildings 6, 16, and 510. The Project Proponent or its contractor(s) shall develop a construction vibration control plan to mitigate potential vibration-related damage effects. The plan shall be prepared by a qualified vibration expert, with	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		input from a qualified historical architect and the construction contractors and submitted to NASA for review and approval prior to the start of construction with vibratory rollers within 22 feet of Vibration-Sensitive Structures (expected to include Buildings 6, 16, and 510). The Project Proponent shall incorporate a requirement into construction specifications for the proposed project for the construction contractor(s) to use all feasible means to avoid damage to the nearby Vibration-Sensitive Structures without resulting in safety concerns. For the purposes of this mitigation measure, feasible is defined as being possible without impairing the contractors' ability to safely and effectively construct the project, causing unreasonable inefficiencies in the project's construction schedule, or substantially increasing costs such that they that are not commensurate with the vibration reduction achieved. Methods to reduce vibration-related damage effects may include using smaller and less vibration-intensive equipment in proximity to the potentially affected building. The construction contractor shall implement a monitoring program to minimize damage to adjacent buildings and ensure that any such damage is documented and repaired. The monitoring program shall include the following components: • Prior to the start of any construction activity that includes the use of a vibratory roller within 22 feet of a Vibration-Sensitive Structure (expected to include Buildings 6, 16 and 510), the construction contractor shall engage a structural engineer or other professionals with similar qualifications to document and photograph the existing conditions of potentially affected buildings within 22 feet of areas where the use of a vibratory roller is proposed.				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		• Based on the type, age, and existing condition of Buildings 6, 16, and 510 as observed during pre-construction surveys, the qualified vibration expert, in conjunction with project architectural historians and/or structural engineers, may establish a building-specific maximum vibration threshold for each building that shall not be exceeded during construction. The Caltrans criterion for "historic and some old buildings" (PPV limit of 0.25 in/sec, as shown in Table 4-4), shall be used as the default criterion unless otherwise justified. Any such adjustment shall be documented and approved by NASA prior to construction. • To ensure that vibration levels do not exceed the established standard, the Project Proponent shall monitor vibration levels at Buildings 6, 16 and 510 when a vibratory roller is used within 22 feet of said structures, and prohibit vibratory construction activities that generate vibration levels in excess of the applied standard. • Should vibration levels be observed in excess of the applicable standard, construction shall be temporarily halted to the extent feasible (i.e., when it is safe to do so), and alternative construction techniques used, to the extent feasible (i.e., if using alternative construction techniques, such as a static roller in lieu of a vibratory roller).				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		• A structural engineer shall conduct an initial inspection of the Vibration-Sensitive Structure for damage within 7 days of construction within 22 feet of said buildings (i.e., Buildings 6, 16 and 510). If damage is observed at the initial inspection, additional inspections should be conducted every 7 days (for as long as that activity at that location takes place) to evaluate if further damage has occurred. However, if no damage occurs to a given building within the first 7 days of a given construction activity at a given location, the 7-day inspection period may be increased to 30 days for that activity (i.e., the subsequent inspection could take place 30 days after the initial inspection). • Should damage to a Vibration-Sensitive Building occur and be identified during the inspections described above, the damage shall be remediated to bring the Vibration-Sensitive Building to its pre-construction condition at the conclusion of ground-disturbing activity on the site. **Mitigation Measure NOI-6. Vibration Control Plan for Sensitive Equipment** Prior to the start of construction activities, the Project Proponent or its contractor(s) shall retain a qualified vibration expert to prepare a vibration control plan for sensitive equipment. The plan shall be designed to minimize construction-related vibration effects on nearby facilities housing vibration-sensitive research equipment (including, but not necessarily limited to, USGS Building 800). The plan shall include the following requirements and components: ● Conduct a pre-construction survey identifying and documenting the location, type, and sensitivity of vibration-sensitive equipment within potentially affected off-site laboratory buildings. Where				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		feasible, the plan author may coordinate with facility managers to obtain equipment specifications and operational thresholds. ● Conduct pre-construction continuous vibration monitoring within or adjacent to potentially affected laboratory buildings to establish background vibration levels. ● Establish equipment-specific vibration criteria based on FTA guidelines (listed below), or other resources (e.g., vibration thresholds defined in equipment manuals), to apply to equipment present within nearby research buildings. Applied criteria may vary by laboratory room or by equipment piece. The FTA-Vibration Criteria that may be used are included in Table 4-3 and are summarized below. o VC-A: 66 VdB ▪ Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment. o VC-B: 60 VdB ▪ Adequate for high-power optical microscopes (1000X) and inspection and lithography equipment to 3-micron line widths. o VC-C: 54 VdB ▪ Appropriate for most lithography and inspection equipment to 1-micron detail size. o VC-D: 48 VdB ▪ Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capabilities o VC-E: 42 VdB				

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		▪ The most demanding criterion for extremely vibration-sensitive equipment. Note that, when determining applicable thresholds, consideration should be given to background pre-construction vibration levels at a given building; the lowest vibration standard established shall not exceed the previously established background vibration levels for a given laboratory. ● Identify construction equipment with the potential to exceed vibration thresholds and specify minimum setback distances or alternative low-vibration equipment to be used near sensitive facilities, as feasible. Feasibility considerations include that specified restrictions shall not unduly restrict the contractors' ability to safely and effectively construct the project, cause unreasonable inefficiencies in the project's construction schedule, or substantially increase costs that are not commensurate with the reduction in vibration levels achieved. ● Implement real-time vibration monitoring at potentially affected laboratory buildings during high-vibration construction activities for the duration of project construction. Note that the plan may include adaptive management and monitoring provisions to adjust requirements, based on observed results. For instance, vibration thresholds may be relaxed if monitoring confirms no adverse effects on the performance of specific equipment. ● Designate a vibration complaint coordinator to serve as the primary point of contact for nearby vibration-sensitive facilities. Contact information for the project vibration coordinator shall be posted at the Project Site and on a publicly available project website. The project vibration coordinator shall be contacted if vibration effects disrupt technical activities at nearby laboratory uses. The project vibration coordinator shall then work with the				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		construction team to adjust construction activities to reduce vibration or to reschedule activities to a less sensitive time, as feasible (as defined previously). The coordinator shall maintain a log of communications and corrective actions taken. ● In coordination with affected facilities and based on actual identified effects resulting from adjacent project construction, identify vibration-sensitive equipment that most likely cannot operate at its current location during project construction. Where feasible, arrange for temporary relocation of equipment on a case-by-case basis during high-vibration construction activities and/or in proximity to construction activities. The vibration control plan shall be submitted to NASA for review and approval prior to the start of construction.				
Impact CEQA-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	LTS	—	—	Same	Same	Same
Impact CEQA-C-NOI-1a: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of a	PS	Implement **Mitigation Measure NOI-1. Construction Noise Control Plan**, above Implement **Mitigation Measure NOI-2. Temporary Noise Barriers**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction**.**						
Impact CEQA-C-NOI-1b: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation.	PS	Implement **Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards**, above Implement **Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards**, above	LTSM	Same	Same	Same
Impact CEQA-C-NOI-2: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of	PS	Implement **Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers** above Implement **Mitigation Measure NOI-6. Construction Vibration Control Plan for Sensitive Research Equipment**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
excessive groundborne vibration or groundborne noise levels.						
Impact CEQA-C-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	NI	—	—	Same	Same	Same
Noise (NEPA)						
Impact NEPA-NOI-1a: The project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction.	PS	Implement **Mitigation Measure NOI-1. Construction Noise Control Plan**, above Implement **Mitigation Measure NOI-2. Temporary Noise Barriers**, above	SUM	Same	Same	Same
Impact NEPA-NOI-1b: The project could generate a substantial temporary or	PS	Implement **Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards**, above	LTSM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation.		Implement **Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards**, above				
Impact NEPA-NOI-2: The project would generate excessive groundborne vibration or groundborne noise levels.	PS	Implement **Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers**, above Implement **Mitigation Measure NOI-6. Vibration Control Plan for Sensitive Equipment**, above	SUM	Same	Same	Same
Impact NEPA-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	LTS	—	—	Same	Same	Same
Population and Housing (CEQA)						
Displacement of existing people or housing	NI	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact CEQA-POP-1: The project would not induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure).	LTS	—	—	Same	Same	Same
Impact CEQA-C-POP-1: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to population and housing.	LTS	—	—	Same	Same	Same
Public Services (CEQA)						
Impact CEQA-PS-1: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times,	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
or other performance objectives for police services.						
Impact CEQA-PS-2: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.	LTS	—	—	Same	Same	Same
Impact CEQA-PS-3: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services.	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact CEQA-PS-4: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable performance objectives for the provision of parks.	LTS	—	—	Same	Same	Same
Impact CEQA-PS-5: The project would not result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts in order to maintain acceptable service ratios or other performance objectives.	LTS	—	—	Same	Same	Same
Impact CEQA-C-PS-1: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to public services.	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Public Services (NEPA)						
Impact NEPA-PS-1: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services.	LTS	—	—	Same	Same	Same
Impact NEPA-PS-2: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.	LTS	—	—	Same	Same	Same
Impact NEPA-PS-3: The project would not result in	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services.						
Impact NEPA-PS-4: The project would not result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts in order to maintain acceptable service ratios or other performance objectives.	LTS	—	—	Same	Same	Same
Recreation (CEQA)						
Impact CEQA-REC-1: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities or the need for new or physically	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for park services.						
Impact CEQA-REC-2: The project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated.	LTS	—	—	Same	Same	Same
Impact CEQA-REC-3: The project would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment**.**	LTS	—	—	Same	Same	Same
Impact CEQA-C-REC-1: The project would not result in a cumulatively considerable contribution to a significant environmental impact with	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
respect to parks and recreation.						
Recreation (NEPA)						
Impact NEPA-REC-1: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities or the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for park services.	LTS	—	—	Same	Same	Same
Impact NEPA-REC-2: The project would not substantially reduce the amount of active recreation or passive recreation within Ames Research Center, thus, leading to an increase in use of surrounding recreational areas by people living or working at the center.	NI	—	—	Same	Same	Same
Impact NEPA-REC-3: The project would not include	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.						
Socioeconomics (NEPA)						
Impact NEPA-SOCIO-1: The project would create a benefit to the local economy.	Minor Benefit	—	—	Same	Same	Same
Impact NEPA-SOCIO-2: The project would generate workers who would not be able to find on-site housing or would represent more than 1 percent of the predicted new households in the identified HIA between 2026 and 2040.	PS	None Available	SU	SU	LTS	LTS
Impact NEPA-SOCIO-3: The project would not create a cost impact on a local government or school district that amounts to more than 0.5 percent of that jurisdiction's general fund or revenue limit**.**	LTS	—	—	Same	Same	Same
Transportation (CEQA)						
Impact CEQA-TRAN-1: The project would not conflict	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.						
Impact CEQA-TRAN-2: The project could conflict with or be inconsistent with State CEQA Guidelines 15064.3, subdivision (b), related to vehicles miles traveled (VMT).	PS	**Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT** As part of the Berkeley Space Center at NASA Research Park Transportation Demand Management Plan (project-specific TDM plan and mitigated TDM plan), the Project Proponent shall implement the Mitigated Transportation Demand Management Program (mitigated TDM plan) to reduce project-generated trip generation and associated vehicle miles traveled (VMT) by at least an additional 7 percentage points above the project-specific TDM plan (29 percent total reduction) for the CEQA Proposed Project and by at least an additional 9 percentage points above the project-specific TDM plan (31 percent total reduction) for the CEQA Proposed Project No Student/Faculty Housing Variant. The mitigated TDM plan would achieve up to a 31 percent reduction and meet the mitigation requirements of 29 percent under the CEQA Proposed Project and 31 percent under the CEQA Proposed Project No Student/Faculty Housing Variant. The Berkeley Space Center at NASA Research Park Transportation Demand Management Plan includes both project-specific TDM elements and mitigated TDM elements and specifies which TDM measures need to be completed before construction completion, before Phase 1 certificate of occupancy, and ongoing during implementation of the proposed project. The mitigated TDM plan outlines regular monitoring requirements to evaluate TDM effectiveness on a regular basis. For the purposes of monitoring, it is assumed that reductions in trip generation	LTSM	LTSM	SUM	SUM

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
		directly correlate with reductions in VMT (i.e., a one percent reduction in trip generation would also result in a one percent reduction in VMT). Specifically, about 1 year after Phase 1 certificate of occupancy and once every 2 years thereafter, the Project Proponent shall conduct a daily vehicle trip survey on a weekday on the Project Site. The survey will count vehicles entering and leaving the parking garages and entering and leaving the pick-up/drop-off zones. If the daily vehicle trips exceed the daily trip reduction goal, the Project Proponent shall work with the TDM Coordinator to submit a plan to NASA and the Transportation Management Association detailing modifications to the TDM Program to achieve compliance and a timeline for implementation.				
Impact CEQA-TRAN-3: The project would not substantially increase hazard due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	—	—	Same	Same	Same
Impact CEQA-TRAN-4: The project would not result in inadequate emergency access.	LTS	—	—	Same	Same	Same
Impact CEQA-C-TRAN-1: The project would not result in a cumulatively considerable contribution to a significant environmental impact related to a conflict with a program, plan, ordinance, or policy	LTS	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.						
Impact CEQA-C-TRAN-2: The project could result in a cumulatively considerable contribution to significant cumulative impacts related to a conflict or inconsistency with State CEQA Guidelines Section 15064.3, subdivision (b).	PS	Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, above	LTSM	Same	SUM	SUM
Impact CEQA-C-TRAN-3: The project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment) in combination with past, present, and reasonably foreseeable projects in the vicinity.	LTS	—	—	Same	Same	Same
Impact CEQA-C-TRAN-4: The project, in combination with past, present, and reasonably foreseeable projects in the	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
vicinity, would not result in inadequate emergency access.						
Transportation and Traffic (NEPA)						
Impact NEPA-TRAN-1: The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	LTS	—	—	Same	Same	Same
Impact NEPA-TRAN-2: The project would not increase vehicle parking demand without providing for either adequate vehicle parking capacity or sufficient alternative modes of transportation.	LTS	Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, above	LTSM	Same	Same	Same
Impact NEPA-TRAN-3: The project would substantially increase vehicle trips that result in traffic congestion that degrades the level of service of intersections to below locally adopted LOS thresholds (generally LOS D for local intersections and LOS E for Congestion	PS	Implement **Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT**, above **Mitigation Measure TRAN-2 (NEPA-only). Signalize Ellis Street/Manila Avenue Intersection** Prior to occupancy of Phase 3 of NEPA Build Alternative 1 (CEQA Proposed Project) or prior to occupancy of Phase 4 of NEPA Build Alternative 2 (CEQA Reduced Density Alternative), the Project Proponent or its contractor(s) shall install a signal at the Ellis Street/Manila Avenue intersection. The Project Proponent is	SUM	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Management [CMP] intersections).		responsible for 50 percent of the Reasonably Foreseeable with NEPA Build Alternative 1 percent growth. While the intersection is in exclusive federal jurisdiction and lands of the USA, it is granted to the City of Mountain View via easement(s). Installation of a new signal would therefore require review by the City. In addition, signal timing at this intersection shall be coordinated with nearby signalized intersections on Ellis Street at the U.S. 101 northbound and southbound ramp intersections, as well as the at-grade light rail crossing on Manila Street about 240 feet east of the intersection.				
Impact NEPA-TRAN-4: The project would not substantially increase hazard due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LTS	—	—	Same	Same	Same
Impact NEPA-TRAN-5: The project would not result in inadequate emergency access.	LTS	—	—	Same	Same	Same
Tribal Cultural Resources (CEQA)						
Impact CEQA-TCR-1: The project would cause a substantial adverse change in the significance of a tribal cultural resources, defined in Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is	PS	Implement **Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan**, above Implement **Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training**, above Implement **Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols**, above	SUM	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and: A) Listed in or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or B) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? The lead agency shall consider the significance of the resource to a California Native American tribe.		Implement **Mitigation Measure CUL-7. Human Remains Discovery Protocols**, above				

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
Impact CEQA-C-TCR-1: The project would result in a cumulatively considerable contribution to a significant environmental impact with respect to tribal cultural resources.	PS	Implement **Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan**, above Implement **Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training**, above Implement **Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols**, above **Implement Mitigation Measure CUL-7. Human Remains Discovery Protocols, above**	SUM	Same	Same	Same
Utilities and Service Systems (CEQA)						
Impact CEQA-UTIL-1: The project would not require or result in the relocation of existing or construction of new or expanded water facilities, the construction of which would cause significant environmental effects.	LTS	—	—	Same	Same	Same
Impact CEQA-UTIL-2: The project would not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	PS	**Mitigation Measure UTIL-1. Water Demand Reduction Measures** If San Francisco Public Utilities Commission (SFPUC) implements potable water demand reduction measures in the Water Shortage Contingency Plan (WSCP) during dry years, the Project Proponent shall comply with those measures. Water demand reduction measures in the WSCP escalate based on systemwide shortage severity and may include: ● Restrictions on discretionary uses	SUM	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
		● Mandatory rationing or water allotments by customer class ● Differentiated impacts by customer type (e.g., commercial, institutional, residential) **Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals** To ensure recycled water is available to the proposed project, the Project Proponent and NASA shall implement the following measures. ● The Project Proponent or its contractor(s) shall connect the proposed project to the existing recycled water main in RT Jones Road near the main gate prior to occupancy of Phase 1 of the proposed project. ● Prior to occupancy of Phase 1 of the proposed project, NASA shall coordinate with the City of Mountain View to execute a recycled water utility service agreement to allow the City of Mountain View to deliver recycled water to NASA's existing recycled water main in RT Jones Road. NASA shall also coordinate with the California Regional Water Quality Control Board to obtain a Title 22 Recycled Water Distribution Administrator permit to administer recycled water purchased from the City of Mountain View throughout NASA's infrastructure at NASA ARC.				
Impact CEQA-UTIL-3: The project would not require or result in the relocation of existing or construction of new or expanded wastewater treatment or facilities, the construction of which would cause significant environmental effects.	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact CEQA-UTIL-4: The project could result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	PS	**Mitigation Measure UTIL-3. Wastewater Connection Requirements** NASA ARC, on behalf of the Project Proponent or its contractor(s), shall submit an Excavation Permit Application and a Sanitary Sewer Service Application to the City of Mountain View for review prior to accepting new wastewater flow. The Project Proponent or its contractor(s) shall obtain an approved Excavation Permit Application, fund the preparation of any required Utility Impact Study (UIS) and pay any associated fees prior to occupancy of Phase 1 of the proposed project.	LTSM	Same	Same	Same
Impact CEQA-UTIL-5: The project would not require or result in the relocation of existing or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects.	LTS	—	—	Same	Same	Same
Impact CEQA-UTIL-6: The project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals.	LTS	—	—	Same	Same	Same
Impact CEQA-UTIL-7: The project would comply with	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
federal, State, and local management and reduction statutes and regulations related to solid waste.						
Impact CEQA-UTIL-8: The project would not require or result in the relocation of existing or construction of new or expanded electric power, natural gas, or telecommunication facilities, the construction or relocation of which would cause significant environmental effects.	LTS	—	—	Same	Same	Same
Impact CEQA-C-UTIL-1: The project would result in a cumulatively considerable contribution to a significant environmental effect with respect to water supply.	PS	Implement **Mitigation Measure UTIL-1. Water Demand Reduction Measures**, above Implement **Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals**, above	SUM	Same	Same	Same
Impact CEQA-C-UTIL-2: The project could result in a cumulatively considerable contribution to a significant environmental impact with respect to wastewater service.	PS	Implement **Mitigation Measure UTIL-3. Wastewater Connection Requirements**, above	LTSM	Same	Same	Same
Impact CEQA-C-UTIL-3: The project would not result in a	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
cumulatively considerable contribution to a significant environmental impact with respect to stormwater infrastructure.						
Impact CEQA-C-UTIL-4: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to solid waste.	LTS	—	—	Same	Same	Same
Impact CEQA-C-UTIL-5: The project would not result in a cumulatively considerable contribution to a significant environmental impact with respect to electrical power, natural gas, or telecommunication facilities.	LTS	—	—	Same	Same	Same
Utilities and Service Systems (NEPA)						
Impact NEPA-UTIL-1: The project would not place a demand on existing water distribution facilities that exceeds available conveyance to Ames Research Center.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-2: The project would exceed baseline water demand projected to	PS	Implement **Mitigation Measure UTIL-1. Water Demand Reduction Measures**, above	SUM	Same	Same	Same

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	Significance before Mitigation	**Mitigation Measures**	**Significance after Mitigation**			
occur under baseline conditions to the extent that this exceedance would interfere with the ability of the service provider to meet the reasonably foreseeable needs of existing users.						
Impact NEPA-UTIL-3: The project would create a demand for water service that exceeds existing water supply capacity to Ames Research Center.	PS	Implement **Mitigation Measure UTIL-1. Water Demand Reduction Measures**, above	SUM	Same	Same	Same
Impact NEPA-UTIL-4: The project could place a demand on existing recycled water distribution facilities that exceeds available water conveyance.	PS	Implement **Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals**, above	LTSM	Same	Same	Same
Impact NEPA-UTIL-5: The project would not create a demand for recycled water service that exceeds existing supply capacity.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-6: The project would not interfere with the provision of recycled water service to existing land uses.	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-UTIL-7: The project could interfere with provision of recycled water service for future, planned development.	PS	Implement **Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals**, above	LTSM	Same	Same	Same
Impact NEPA-UTIL-8: The project could place a demand on existing wastewater collection facilities that exceeds the available conveyance capacity.	PS	Implement **Mitigation Measure UTIL-3. Wastewater Connection Requirements**, above	LTSM	Same	Same	Same
Impact NEPA-UTIL-9: The project would not create a demand for wastewater treatment that exceeds existing treatment capacity.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-10: The project would not place a demand on existing wastewater distribution facilities that exceeds available conveyance capacity.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-11: The project would not interfere with the provision of wastewater service to existing land uses.	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-UTIL-12: The project could utilize wastewater treatment or conveyance capacity intended for identified future projects.	PS	Implement **Mitigation Measure UTIL-3. Wastewater Connection Requirements**, above	LTSM	Same	Same	Same
Impact NEPA-UTIL-13: The project would not require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which would cause a significant environmental effect.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-14: The project would not create a demand for solid waste disposal that exceeds the capacity of the landfill site currently used for Ames Research Center's waste products.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-15: The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.	LTS	—	—	Same	Same	Same

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Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Impact NEPA-UTIL-16: The project would note create a demonstrable need for new or enlarged energy facilities with respect to electrical and natural gas service.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-17: The project would not place a demand on existing electrical distribution facilities that exceed available conveyance capacity to Ames Research Center.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-18: The project would not place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity.	LTS	—	—	Same	Same	Same
Impact NEPA-UTIL-19: The project would not interfere with provision of electrical and natural gas service to existing off-site land uses.	LTS	—	—	Same	Same	Same
Effects Found Not to Be Significant (CEQA)						
Aesthetics and Vehicular Parking Analysis	NI	—	—	Same	Same	Same
Agriculture and Forestry Resources	NI	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Impacts	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Proposed Project with the Variant (NEPA Build Alternative 1 with the Sub-Alternative)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)	CEQA Reduced Density Alternative with the Variant (NEPA Build Alternative 2 with the Sub-Alternative)
	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Mineral Resources	NI	—	—	Same	Same	Same
Wildfire	NI	—	—	Same	Same	Same
Resource Topics Dismissed from Analysis (NEPA)						
Agriculture and Forestry Resources	NI	—	—	Same	Same	Same
Mineral Resources	NI	—	—	Same	Same	Same
Wildfire	NI	—	—	Same	Same	Same

Note: The summary of impacts, impact statements, and mitigation measures for the CEQA Proposed Project also applies to the CEQA Proposed Project with the Variant, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. Levels of significance are categorized as follows: (NI) No impact, (LTS) Less than Significant, (PS) Potentially Significant, (LTSM) Less than Significant with Mitigation, (SU) Significant and Unavoidable, and (SUM) Significant and Unavoidable with Mitigation.

Chapter 1
Introduction and Organization of Document

Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California (UC Regents) and SKSP NRP, LLC, is proposing a master-planned mixed-use academic and research project, referred to as the Berkeley Space Center at the National Aeronautics and Space Administration (NASA) Research Park (NRP) (proposed project/proposed action).[1] The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under the California Environmental Quality Act (CEQA) and NASA's approval to proceed following analysis consistent with the National Environmental Policy Act (NEPA).

The proposed project under consideration by NASA (i.e., the proposed action) would include academic and research facilities, consisting of offices, laboratories, research-and-development (R&D) uses, and related amenities (collectively, "Research and Office Uses"); conference center and related amenities ("Conference Uses"); ground-floor retail, food and beverage, maker spaces (i.e., collaborative work spaces for using various tools and materials), and other complementary accessory uses that would be publicly accessible (collectively, "Active Uses"); student/faculty housing, including associated amenities ("Student/Faculty Housing"); short-term lodging, including associated amenities ("Short-Term Lodging"); transportation networks; and open spaces, as well as landscaped spaces, to create a state-of-the-art research and education hub that shapes the future of technology and innovation and advance the UC Regents educational, scientific research, charitable, and other exempt purposes (within the meaning of Section 501(c)(3) of the United States Internal Revenue Code). The proposed project would facilitate the development and long-term operation of a collaborative research environment at the National Aeronautics and Space Administration Ames Research Center (NASA ARC) that supports NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research.

The University of California, Berkeley (UC Berkeley) (on behalf of UC Regents) and NASA are preparing this joint environmental impact report/environmental impact statement (joint EIR/EIS) to assess potential environmental impacts that could result from implementation of the proposed project.[2] Pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- CEQA Proposed Project (NEPA Build Alternative 1)
- CEQA Reduced Density Alternative (NEPA Build Alternative 2)
- NEPA No-Action Alternative

The Project Proponent has also identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative (as further discussed in Section 2.4, *Description of the No Student/Faculty Housing Variant/Sub-Alternative,* in Chapter 2, *Proposed Project/Proposed Action and Alternatives,* of this joint

[1] Throughout this joint environmental impact report/environmental impact statement (EIR/EIS), *proposed project* refers to both the proposed project (under the California Environmental Quality Act) and the proposed action (under the National Environmental Policy Act).

[2] Throughout this joint EIR/EIS, the discussion of the CEQA Proposed Project and each CEQA alternative (other than the CEQA No Project/Existing Conditions Alternative) also applies to the corresponding Build Alternative under NEPA.

EIR/EIS). In addition, the CEQA Proposed Project could also include a Water Reuse Facility (WRF) Option or a Central Utility Plant (CUP) Option; the CEQA Reduced Alternative would not include a WRF Option or a CUP Option.[3]

Consistent with the guidance in State CEQA Guidelines 15126.6(d) and 15126.6(e), the following alternatives are evaluated in comparison the CEQA Proposed Project in Chapter 5, *Other CEQA Information and Alternatives*:

- CEQA No-Project/Existing Conditions Alternative
- CEQA Reduced Height Alternative[4]

The CEQA Proposed Project (with or without the WRF Option, CUP Option, and water and recycled water main connection options discussed in Section 2.3.6, *Utilities*, and with or without the variant/sub-alternative discussed in Section 2.4, *Description of the No Student/Faculty Housing Variant/Sub-Alternative,* in Chapter 2) or the CEQA Reduced Density Alternative (with or without the water and recycled water main connection options discussed in Section 2.3.6 and with or without the variant/sub-alternative discussed in Section 2.4 in Chapter 2) could reasonably be approved by NASA. The final decision as to whether to adopt the CEQA Proposed Project or the CEQA Reduced Density Alternative will be made after completion of the final joint EIR/EIS.

A full description of the proposed project/proposed action is provided in Chapter 2, *Proposed Project/Proposed Action and Alternatives,* of this joint EIR/EIS.

1.1 CEQA and NEPA Lead Agencies

NASA is the NEPA Lead Agency for the proposed action. As the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The UC Regents is the CEQA Lead Agency for the proposed project and would provide authorization before the proposed action is submitted for NASA's approval.[5]

[3] Under the WRF Option, portions of the non-potable supply would be provided on-site rather than by Mountain View. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

[4] CEQA Guidelines require that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6[a]). Thus, Chapter 5, *Other CEQA Information and Alternatives*, includes an evaluation of alternatives that could reduce or avoid significant environmental effects of the CEQA Proposed Project, including the CEQA Reduced Height Alternative.

[5] UC Regents is a legal entity that includes all of the University of California campuses.

1.2 Purpose and Intended Use of this Joint EIR/EIS

1.2.1 Purpose of the EIR

This Draft EIR for the proposed project has been prepared by UC Berkeley (on behalf of UC Regents, the CEQA Lead Agency) in conformance with the provisions of the CEQA statute (California Public Resources Code Section 21000 et seq.) and CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.). As stated above, the lead agency is the public agency with principal responsibility for carrying out or approving a project under CEQA.

This EIR assesses potentially significant impacts that could result from the proposed project. As defined in CEQA Guidelines Section 15382, a significant effect on the environment is:

> …a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

In accordance with CEQA Guidelines Section 15143, an EIR analyzes the significant effects on the environment that could result from construction and operation of a project. CEQA Guidelines Section 15131 specifies that "…the intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes." Therefore, this Draft EIR does not treat economic or social effects of the proposed project as significant effects on the environment, unless they result in physical changes to the environment. In addition, if it is determined that a potential impact is too speculative for evaluation, this condition is noted, and further discussion of the impact is not necessary.

As stated in the CEQA Guidelines, an EIR is an informational document. It is intended to inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to a project. The purpose of this Draft EIR is to provide UC Berkeley, responsible and trustee agencies, other public agencies, and the public with detailed information about the environmental effects that could result from the proposed project; examine and set forth feasible methods of mitigating any adverse environmental impacts should the proposed project be approved; and consider feasible alternatives to the proposed project. UC Berkeley will use this EIR, along with other information in the public record, to determine whether to approve, modify, or deny the proposed project and specify any applicable environmental conditions or mitigation measures as part of the proposed project approvals.

As stated above, the Project Proponent will require the UC Regents' authorization to proceed with the proposed project under CEQA. The UC Regents will consider the information in this joint EIR/EIS. Figure 1-1 provides an overview comparison of the CEQA and NEPA processes for an EIR and EIS, respectively.

1.2.2 Purpose of the EIS

The primary purpose of an EIS is to ensure that federal agencies consider the environmental impacts of their actions and inform decision-makers and the public of reasonably foreseeable environmental effects and a reasonable range of project alternatives in accordance with NEPA. An EIS provides information regarding the purpose and need for the proposed action, describes the affected environment, and discusses significant effects and reasonable alternatives that are technically and economically feasible and meet the purpose and need of the proposed action. This EIS has been prepared in accordance with NEPA, as amended (42 United States Code Section 4321 et seq). Additionally, NEPA requires the integration of its requirements with other planning and environmental review procedures required by law or by agency practices (such as CEQA) so that such procedures run concurrently rather than consecutively. Therefore, a joint EIR/EIS has been prepared for the proposed action. Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS serves as the EIS for the proposed project.

As stated above, the Project Proponent will require NASA's approval to proceed following analysis required in NEPA. NASA will consider the information in this joint EIR/EIS. Figure 1-1 provides an overview comparison of the CEQA and NEPA processes for an EIR and EIS, respectively.

1.2.3 Intended Uses of this Joint EIR/EIS

The purpose of this joint EIR/EIS is to assess and disclose the potential environmental impacts associated with adoption and implementation of the proposed project and to determine corresponding mitigation measures as necessary. The proposed project is evaluated at a detailed project level in this joint EIR/EIS and is intended to be relied upon by UC Berkeley and NASA to provide CEQA and NEPA clearance, respectively, for approval and entitlement of the proposed project. This joint EIR/EIS is also intended to provide CEQA and NEPA clearance for review, approvals, or actions by other agencies or entities, as listed in Section 2.3.8, *Reviews and Approvals by Lead Agencies, Responsible Agencies, and Other Agencies,* in Chapter 2.

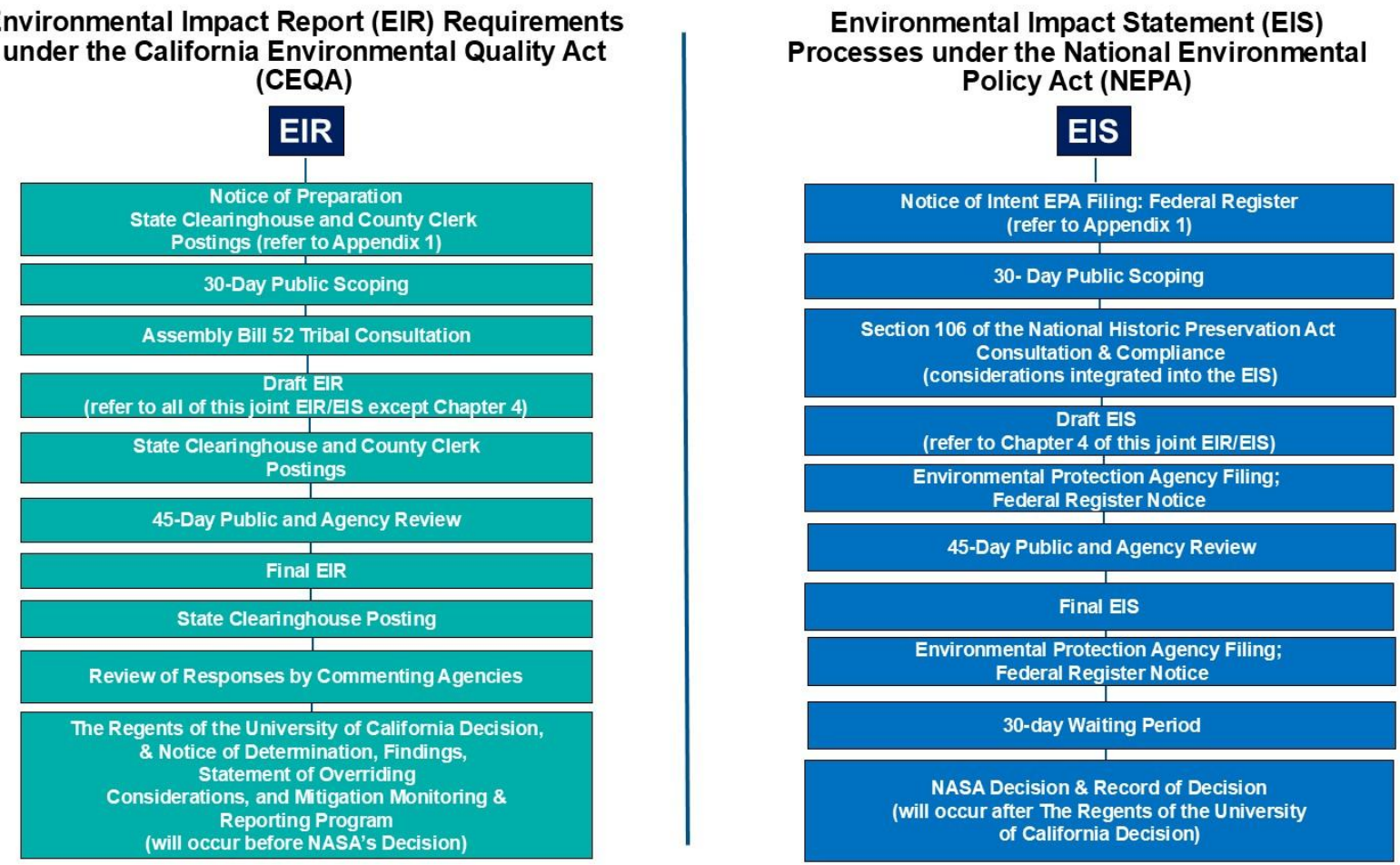


Figure 1-1. CEQA and NEPA Processes

1.3 Public and Agency Involvement during the Environmental Review Process

NASA and UC Berkeley have taken steps to provide opportunities for participation in the environmental review process in accordance with NEPA and CEQA Guidelines. During preparation of this joint EIR/EIS, an effort was made to engage the public; stakeholders; Native American tribes; federal, state, and local agencies; and other interested parties in the environmental review process to help define the range of potential alternatives to be evaluated, methodologies for analysis, probable environmental effects, and possible mitigation measures to be considered in the environmental document.

Efforts to engage the public and agencies throughout the CEQA and NEPA processes are described in the sections below. Figure 1-1 provides an overview comparison of the CEQA and NEPA processes for an EIR and EIS, respectively.

1.3.1 California Environmental Quality Act Process

1.3.1.1 Notice of Preparation and Scoping

The term *scoping* refers to the process used to assist the lead agency in determining the focus and content of an EIR. Scoping solicits input on the potential topics to be addressed in an EIR, the range of project alternatives, and possible mitigation measures. Scoping is also helpful in establishing methods of assessment and selecting the environmental effects to be considered. In compliance with CEQA Section 21080.4, the scoping process for the EIR was initiated when the notice of preparation (NOP) was released for the proposed project on June 21, 2024, for a 30-day public review period through July 22, 2024. Public scoping meetings were held via Zoom on July 10, 2024, and July 15, 2024. The NOP noted that the proposed project may have a significant effect on the environment and that an EIR would be prepared for the proposed project. Appendix 1-1 of this joint EIR/EIS includes the scoping report, which provides a copy of the NOP.

The NOP was sent to individuals, local interest groups, adjacent property owners, and responsible and trustee state and local agencies that have jurisdiction over or interest in environmental resources or conditions in the vicinity of the Project Site. The purpose of the NOP was to allow various private and public entities to transmit their concerns and comments on the scope and content of this EIR, focusing on specific information related to each individual's or group's interest or agency's statutory responsibility early in the environmental review process.

In total, seven comment letters were received from public agencies, local organizations, and individuals. Four comment letters were received from agencies (Native American Heritage Commission, California Department of Toxic Substances Control, County of Santa Clara, California Department of Fish and Wildlife), one Tribe (Confederated Villages of Lisjan Nation), and two organizations (Carpenters Union—Local 405 and American Federation of State, County, and Municipal Employees—Local 3299). In addition, members of the public made comments at the scoping meetings. All of these comments were considered during the preparation of this EIR/EIS. Appendix 1-1 of this joint EIR/EIS includes the scoping report, which provides copies of the NOP comment letters.

The NOP concluded that the following environmental resource areas would be addressed as separate sections in this joint EIR/EIS:

- Aesthetics and Visual Resources[6]
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utility and Service Systems

The proposed project would not result in impacts on agricultural and forestry resources or mineral resources because none of these resources exist at the Project Site; there would also be no impacts related to wildfire. A detailed analysis of these topics is therefore not included in this Draft EIR/EIS; however, these topics are briefly discussed in Section 3.19, *Effects Not Found to be Significant*.

1.3.1.2 CEQA Public Review of the Joint Draft EIR/EIS

This joint EIR/EIS is considered a draft under CEQA because it must be reviewed and commented upon by public agencies, organizations, and individuals before being finalized. This document is being distributed for a 45-day (minimum) public review and comment period. Readers are invited to submit written comments on the document. Hard copies of the joint Draft EIR/EIS are available for review at Mountain View Public Library at 585 Franklin Street, Mountain View, CA 94041, and Sunnyvale Public Library at 665 West Olive Avenue, Sunnyvale, CA 94086. Electronic copies of this joint Draft EIR/EIS are available for review online on UC Berkeley's Capital Strategies website: https://capitalstrategies.berkeley.edu/environmental-review.

The 45-day public review period for the joint Draft EIR/EIS is from **April 24, 2026,** to **June 10, 2026**. Written comments should be submitted during this review period to:

By email:
planning@berkeley.edu

By mail:
Shraddha Navalli Patil, Ph.D., Senior Planner
Physical & Environmental Planning
University of California, Berkeley
1995 University Avenue, Room 530
Berkeley, CA 94704

[6] As discussed in Section 3.2, *Aesthetics and Visual Resources*, this joint EIR/EIS does not consider aesthetics in determining the significance of impacts under CEQA, pursuant to Public Resources Code Section 21099. However, a discussion of the proposed project's potential impacts related to aesthetics is included for informational purposes and for consistency with the aesthetics and visual resources analysis required under NEPA and the EIS portion of this joint EIR/EIS.

Email correspondence is preferred. To receive comments on the joint Draft EIR/EIS, one joint public hearing will be held by UC Berkeley and NASA on May 13, 2026**.** Hearing notices will be mailed to responsible agencies and interested individuals.

1.3.1.3 CEQA Final EIR/EIS and Consideration of Project Approval

Following the close of the 45-day public review period, UC Berkeley will prepare responses to all substantive comments related to potential physical changes to the environment. The joint Draft EIR/EIS, along with the written and oral substantive comments received during the review period, as well as responses to those comments, will make up the joint Final EIR/EIS. All responses to comments submitted on the joint Draft EIR/EIS by public agencies will be provided to those agencies at least 10 days before certification of the joint EIR/EIS.

The joint Final EIR/EIS (consisting of the joint Draft EIR/EIS and the responses to comments) will be considered by the UC Regents to certify the joint Final EIR/EIS and then approve or deny the proposed project application. NASA is the final decision-making body regarding the project-specific discretionary development entitlements. The proposed project would also involve permits that are anticipated to be required for the proposed project from other city and responsible or other agencies as detailed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*.

Additionally, when a public agency approves a project evaluated under CEQA in the form of an EIR, CEQA requires that the public agency adopt a Mitigation Monitoring and Reporting Program (MMRP) to ensure that the mitigation measures identified in the EIR are implemented. The MMRP will include details on the mitigation and assigns responsibility for their implementation and will be considered by the UC Regents in conjunction with the joint Final EIR/EIS.

Certification of the joint Final EIR/EIS by the UC Regents as complete and adequate, in conformance with CEQA, does not grant any land use approvals or entitlements for the proposed project. The merits of the proposed project will be considered by the UC Regents following certification of the joint Final EIR/EIS. The CEQA Guidelines require that, for one or more significant and unavoidable impacts that cannot be substantially mitigated, a lead agency must prepare a Statement of Overriding Considerations that balances the social, economic, technological, and legal benefits of approving a project against the significant and unavoidable environmental impacts that would result from project implementation. If significant and unavoidable impacts are identified, the UC Regents will consider the Statement of Overriding Considerations for the proposed project.

1.3.2 National Environmental Policy Act Process

1.3.2.1 Notice of Intent Scoping

The scoping process for the EIS was initiated when the notice of intent (NOI) was released for the proposed action on June 25, 2024 for a 30-day public review period through July 26, 2024. Public scoping meetings were held via Zoom on July 10, 2024, and July 15, 2024. In addition, the NOI was published in the *Federal Register* on June 26, 2024, under Docket Number NASA-24-039. Appendix 1-1 of this joint EIR/EIS includes the scoping report, which provides a copy of the NOI. The NOI was sent to individuals, local interest groups, cooperating agencies, and state and local agencies that have jurisdiction over or interest in environmental resources or conditions in the vicinity of the Project Site. Scoping allowed various private and public entities to transmit their concerns and

comments on the scope and content of this EIS, identify significant issues, and provide input on alternatives.

In total, four comment letters were received from public agencies, local organizations, and individuals. Comment letters were received from two agencies (City of Sunnyvale, U.S. Environmental Protection Agency Region 9), one individual, and one organization (American Federation of State, County, and Municipal Employees—Local 3299). In addition, members of the public made comments at the scoping meetings. All of these comments were considered during the preparation of this joint EIR/EIS. Appendix 1-1 of this joint EIR/EIS includes the scoping report, which provides copies of the NOI comment letters.

1.3.2.2 NEPA Public Review of the Joint Draft EIR/EIS

NASA provided public notice of availability of the joint Draft EIR/EIS to interested individuals, agencies, and organizations to review and comment on the document prior to being finalized. This document is being distributed for a 45-day public review and comment period. Readers are invited to submit written comments on the document. Hard copies of the joint Draft EIR/EIS are available for review at Mountain View Public Library at 585 Franklin Street, Mountain View, CA 94041, and Sunnyvale Public Library at 665 West Olive Avenue, Sunnyvale, CA 94086. Electronic copies of the joint Draft EIR/EIS are available for review online at https://environment.arc.nasa.gov/NEPA.html. Additionally, the document will be made available through the *Federal Register.*

The 45-day public review period for the joint Draft EIR/EIS is from **April 24, 2026,** to **June 10, 2026**. Written comments should be submitted during this review period to:

By email:
arc-nepacomments@mail.nasa.gov

By mail:
Andres Estrada
Acting Deputy Division Chief
Center NEPA Program Manager| Natural Resources Manager
NASA Ames Research Center
M/S 213-7
Moffett Field, CA 94035-0001

To receive comments on the joint Draft EIR/EIS, one joint public hearing will be held by UC Berkeley and NASA on May 13, 2026**.** Hearing notices will be mailed to responsible agencies and interested individuals.

1.3.2.3 NEPA Final EIR/EIS and Consideration of Project Approval

Following the close of the 45-day public review period, NASA will prepare responses to all substantive comments related to potential physical changes to the environment. The joint Final EIR/EIS will consist of the (1) the joint Draft EIR/EIS, (2) a list of individuals, organizations, or agencies that provided comments on the joint Draft EIR/EIS, (3) comments received on the joint Draft EIR/EIS during the public comment period, (4) responses to the comments provided on the joint Draft EIR/EIS, and (5) and other clarification of errors, omissions, or misinterpretation of the discussion in the findings in the joint Draft EIR/EIS by NASA. The joint Final EIR/EIS will be published on NASA's project website and accessible to the public.

After the Final EIS is published, NASA will prepare a written record explaining why NASA has chosen to undertake a proposed action, identifying what the proposed action is, and any mitigation identified in the EIR/EIS that NASA is requiring. The MMRP details the mitigation and assigns responsibility for their implementation; the final MMRP will also be prepared by NASA.

The National Historic Preservation Act (NHPA) mandates that federal agencies consider the effects of projects on historic properties and seek comments on their actions from an independent reviewing agency, the State Historic Preservation Office (SHPO) and/or the Advisory Council on Historic Preservation (ACHP). Title 36 of the Code of Federal Regulations provides the methodology for assessing impacts on historic properties and details the requirements of the consultation process. For complex projects and programs expected to continue over time, the Section 106 regulations allow development of a Programmatic Agreement (PA) that governs ongoing and future activities undertaken as part of the project or program it addresses. An agency may fulfill its obligations under Section 106 by following the alternate review process outlined in a PA. NASA, in consultation with the Advisory Council on Historic Preservation, the National Conference of State Historic Preservation Officers, and other consulting parties, developed the NASA-Wide Programmatic Agreement (NPA) as a Section 106 program alternative pursuant to 36 CFR 800.14(b). Executed in October 2025, the NPA governs NASA's implementation of alternate procedures for project review and the resolution of adverse effects on historic properties under Section 106. Historic properties and impacts to them are analyzed in Section 4.5.5, *Cultural Resources*, in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS. NASA will use the process described in the NPA to satisfy its obligations under Section 106.

1.3.3 Cooperating Agencies

A cooperating agency is an agency with jurisdiction by law and/or with special expertise related to a proposed federal action. A participating agency under NEPA is a federal, state, tribal, or local agency participating in an environmental review or authorization of a proposed action. Cooperating agencies are also considered participating agencies.

NASA worked closely with a number of other federal, state, and local agencies throughout this NEPA process. During the public scoping period, NASA invited several state and local agencies with special expertise and potential jurisdiction over the proposed project to participate in the NEPA process. Of the notified agencies, the California Department of Transportation (Caltrans), the City of Mountain View, and the Santa Clara Valley Transportation Authority (VTA) agreed to be cooperating agencies and are considered as such under NEPA.

1.3.4 Responsible Agencies

Under CEQA, a responsible agency is a public agency which proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR. A responsible agency includes all public agencies other than the lead agency which have discretionary approval power over a project. Responsible agencies include the Bay Area Air District, San Francisco Bay Regional Water Quality Control Board, U.S. Army Corps of Engineers, Army, U.S. Fish and Wildlife Service, State Historic Preservation Officer, State Water Resources Control Board Division of Drinking Water, U.S. Environmental Protection Agency, City of Mountain View, City of Sunnyvale, Santa Clara Valley Transportation Authority (VTA), and California Department of Transportation.

1.3.5 Trustee Agencies

A trustee agency under CEQA is a public agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of the State of California. There are no trustee agencies for the proposed project.

1.4 Project Location

The proposed project would be located at NASA ARC on an approximately 39-acre project site (Project Site), along with approximately 6 acres of off-site areas (Off-Site Areas) where utility improvements and building demolition would take place, as discussed in Section 2.3.7, *Off-Site Utility Improvements and Demolition*. Together, the Project Site and Off-Site Areas comprise the approximate 45-acre limits of work (Limits of Work) and are more fully described below.[7]

The Limits of Work are located primarily on federal land within NASA ARC, an approximately 2,000-acre facility in unincorporated Santa Clara County, California, between U.S. 101 and the southwest edge of San Francisco Bay. A small portion of the Off-Site Areas is on federal land owned by the United States Army (Army). The city of Mountain View borders NASA ARC to the north and southwest, and the city of Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of the city of San Francisco and 8 miles north of the city of San José.

The Project Site is within the city of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. The Off-Site Areas are also within the city of Mountain View Sphere of Influence; most of the Off-Site Areas are outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the city of Mountain View. The Project Site is bounded by Wescoat Road to the north and Cody Road to the east.[8] The western boundary of the Project Site is within an empty lot immediately west of Bailey Road. The Project Site is a portion of Assessor's Parcel Number 116-18-012.

Regional access to the Project Site is provided by U.S. 101, approximately 0.2 mile to the south; State Route (SR) 85, approximately 0.7 mile to the southwest; and SR 237, approximately 1.0 mile southeast. In addition, the Bayshore/NASA Santa Clara Valley Transportation Authority (VTA) light rail station is located off Manila Avenue just southeast of the Project Site, between Macon Road and U.S. 101, providing daily service between Mountain View and Alum Rock, with connections to Altamont Corridor Express (ACE) and Capitol Corridor trains, Milpitas the Bay Area Rapid Transit (BART) station, and the Mountain View Caltrain station. The majority of the Project Site is within 0.5 mile of the Bayshore/NASA VTA light rail station and also close to the VTA bus stops on North Akron Road and South Akron Road.

[7] Wescoat Village is not part of the Limits of Work; rather, the Limits of Work follow the roadways surrounding Wescoat Village, as shown in Figure 2-2.

[8] Cody Road would be realigned to the east as part of the proposed project and would be the eastern boundary of the Project Site.

1.5 Selection of Alternatives

Pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- **CEQA Proposed Project (NEPA Build Alternative 1)**, which would create approximately 2.3 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. The CEQA Proposed Project would include approximately 2 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Only the CEQA Proposed Project includes the Water Reuse Facility (WRF) Option and the Central Utility Plant (CUP) Option.[9]
- **CEQA Reduced Density Alternative (NEPA Build Alternative 2)**, which would create approximately 1.4 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would provide less space for Research and Office Uses. The CEQA Reduced Density Alternative would include approximately 1.1 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Table 2-2 summarizes the similarities and differences between the CEQA Proposed Project and the CEQA Reduced Density Build Alternative.
- **NEPA No-Action Alternative**, under which the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant would be reoccupied consistent with the prior uses of the buildings (e.g., ancillary buildings that supported Navy operations as well as industrial, storage, and utility facilities); reoccupying the vacant buildings would not require construction activity. The NADP, which established NASA's vision for long-term development of NASA ARC, also allows other types of uses at the Project Site. The NEPA No-Action Alternative could result in retaining the approximately 185,600 square feet of existing mixed uses, resulting in approximately 668 employees.[10] The NEPA No-Action Alternative would not result in the reoccupation of any buildings formerly used for lodging; thus, the NEPA No-Action Alternative would not generate any new full-time residents or short term occupants (e.g., summer interns) within the Limits of Work.

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative: the No Student/Faculty Housing Variant/Sub-Alternative (Variant).[11] Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. Specifically, the Variant would include 90,000 square feet of laboratory and

[9] Under the Water Reuse Facility Option, portions of the non-potable supply would be provided on-site rather than by Mountain View. The Central Utility Plant Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

[10] This is based on a generation rate of 3.6 employees per 1,000 square feet.

[11] Throughout this joint EIR/EIS, *Variant* refers to both the Variant (under CEQA) and the Sub-Alternative (under NEPA).

R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses. The Variant would have the same type of land uses; the same general site plan; the same maximum building height; the same amount of Conference Uses, Active Uses, Short-Term Lodging, and open space; the same number of guests; the same roadway infrastructure; the same utility infrastructure; the same parking ratio; and the same construction activities proposed and evaluated under the CEQA Proposed Project and CEQA Reduced Density Alternative, unless otherwise noted below. Because the amount of Research and Office Uses and the number of Student/Faculty Housing units would be different under the Variant, the number of bicycle parking spaces, and the number of residents, employees, and students would likewise change.

The differences among the CEQA Proposed Project, the CEQA Proposed Project with the Variant, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant are analyzed quantitatively throughout this joint EIR/EIS, as applicable.

As discussed above, consistent with the guidance in State CEQA Guidelines Sections 15126.6(d) and 15126.6(e), the following alternatives are evaluated in comparison to the CEQA Proposed Project with or without the variant/sub-alternative discussed in Chapter 5, *Other CEQA Information and Alternatives*:

- **CEQA Reduced Height Alternative,** which would create approximately 2 million square feet of Research and Office Uses, Conference Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Height Alternative would achieve lower maximum building height in some areas. In addition, the CEQA Reduced Height Alternative would provide less space for Research and Office Uses and less space for Student/Faculty Housing compared to the CEQA Proposed Project. The CEQA Reduced Height Alternative would include approximately 1.66 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 100,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.
- **CEQA No-Project/Existing Conditions Alternative**, under which the Project Proponent would not construct and operate the proposed project at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational, and the buildings within the Limits of Work that are currently vacant would remain vacant.[12]

1.6 Thresholds of Significance

This joint EIR/EIS analyzes significant effects that could result from the proposed project. The impact significance thresholds for each environmental resource area evaluated under CEQA in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, are based on CEQA Guidelines Appendix G, *Environmental Checklist Form* (supplemented or revised as appropriate to fit the proposed project). NEPA does not have a single set of standards against which proposed actions can be evaluated. Therefore, criteria for evaluating the significance of impacts for all sections under NEPA in Chapter 4, *Environmental Impact Statement*, were largely based on CEQA Guidelines Appendix G, as well as professional standards

[12] This provides a conservative analysis under CEQA for the purposes of comparison.

1.7 CEQA Project Objectives

Section 15124(b) of the CEQA Guidelines requires a project to contain a clear statement of project objectives, including the underlying purpose of the project. The underlying purpose of the proposed project is to redevelop the approximately 39-acre Project Site with an economically viable development that combines housing, lodging, conference center, and academic uses, and employment opportunities near transit and freeway access. Project objectives include the following:

1. Develop a state-of-the-art, collaborative, and multidisciplinary master-planned research park that integrates public and private R&D efforts in the areas of space exploration, scientific discovery, and aeronautics, as contemplated in the NASA Ames Development Plan (NADP).
2. Co-locate University of California, Berkeley (UC Berkeley) academic and private industry research space at NASA Ames Research Center (NASA ARC) to enable intellectual exchange, interdisciplinary research and experimentation, and further advancements in science, engineering, and technology among government, private industry, and academia.
3. Provide sufficient multi-tenant Class A office, R&D, academic space, and a conference center to support a variety of research functions and tenant types and sizes to create a synergistic campus environment while maintaining flexibility to be responsive to academic needs, tenant demands, and market conditions.
4. Provide a publicly accessible and high-quality central greenspace to provide a space for collaboration and informal meeting spaces for faculty, staff, employees, and visitors of the Berkeley Space Center while also providing ecological functions such as stormwater management and phytoremediation.
5. Redevelop an underutilized site by replacing existing obsolete and aging buildings and infrastructure with new state-of-the-art buildings and infrastructure in a manner that optimizes density and site capacity while complying with applicable environmental and land use restrictions.
6. Create a financially sustainable R&D campus that can support costs associated with the completion of the critical infrastructure upgrades and improvements necessary to redevelop the site and facility operations.
7. Provide a positive fiscal impact on the local economy and NASA ARC through the creation of public, private, and non-profit industry jobs.

1.8 NEPA Purpose and Need

The purpose of the proposed project is to:

- Facilitate the development and long-term operation of a collaborative research environment at NASA ARC as contemplated in the NADP.
- Create a research development that combines UC Berkeley's mission to accelerate scientific discovery, create innovative technologies, and advance knowledge for the benefit of humanity with NASA's mission to enable exploration, innovative technologies, and interdisciplinary scientific discovery through the integration of public and private research and development efforts.

- Strengthen and expand NASA ARC's global profile, attracting and retaining new research talent as well as generating innovative ideas for use throughout the world and the cosmos.
- Promote collaborative research and development activities among NASA ARC, UC Berkeley, private industry, and non-profit organizations.
- Provide lodging options or on-site short-term housing, or both, to primarily support faculty, students, and visitors.
- Enable more efficient use of land at NASA ARC by demolishing older underutilized buildings and infrastructure and constructing new facilities and associated infrastructure involved in the creation of the new research space.

The need for the proposed project is as follows:

- To maintain NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research and technology transfer.
- To strengthen the United States' ability to address the research challenges of tomorrow by combining NASA's unique ability to focus on high-risk long-term research; the industry's ability to react quickly with applied technology; and UC Berkeley's expertise in educating and providing a vibrant workforce for the future.

1.9 Organization of Document

This joint EIR/EIS is organized into the following chapters:

- *Executive Summary* provides a summary of the proposed project/proposed action and the alternatives, the impacts that would result from its implementation, and mitigation measures recommended to reduce, eliminate, or avoid significant impacts. The Executive Summary also describes the Variant.
- Chapter 1, *Introduction and Organization of Document*, discusses the purpose of the joint EIR/EIS, provides a summary of the proposed project/proposed action, alternatives, Variant, CEQA and NEPA processes, and summarizes the scope and organization of the joint EIR/EIS.
- Chapter 2, *Proposed Project/Proposed Action and Alternatives*, describes the Project Site location and setting, the CEQA Proposed Project and the CEQA Reduced Density Alternative, the Variant, and the required approvals process.
- Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, describes the existing conditions (i.e., affected environment/setting), and applicable regulations adopted by local jurisdictions and other agencies for each environmental topic.

  The chapter also describes the following for each environmental topic in accordance with CEQA requirements: potential environmental impacts of the proposed project/proposed action and their level of significance, and mitigation measures recommended to reduce or avoid identified potential impacts. The EIR evaluates the following alternatives in Chapter 3: CEQA Proposed Project and the CEQA Reduced Density Alternative. Chapter 3 also evaluates the potential environmental impacts of the CEQA Proposed Project with the Variant and the CEQA Reduced Density Alternative, their level of significance, as well as recommends mitigation measures to reduce or avoid identified potential impacts. Additionally, potential cumulative impacts are also addressed in each resource section. Potential adverse impacts are identified by level of

significance, as follows: no impact, less than significant, significant, less than significant with mitigation, and significant and unavoidable. The significance of each potential impact is categorized before and after any recommended mitigation measure(s). If uncertain, impacts that might be significant are characterized as potentially significant.

- Chapter 4, *Environmental Impact Statement*, describes the following for each environmental topic in accordance with NEPA requirements: direct and indirect impacts of the environmental resource topics specific to NEPA for each of the alternatives and Variant. This chapter also includes other required NEPA disclosures, including the relationship between short-term uses of the environment and long-term productivity associated with federal actions, irreversible and irretrievable commitment of resources and energy consumption, and potentially significant and unavoidable adverse impacts.
- Chapter 5, *Other CEQA Information and Alternatives*, provides discussions required by CEQA, including a list of the proposed project's significant and unavoidable environmental impacts, significant irreversible environmental changes, and growth-inducing impacts. Chapter 5 also evaluates alternatives to the proposed project, including the CEQA No-Project/Existing Conditions Alternative and CEQA Reduced Height Alternative, alternatives considered but eliminated from further consideration, and identifies the environmentally superior alternative.
- Chapter 6, *Submitted Alternatives, Information and Analyses, Scoping Comments, and Areas of Controversy*, provides a summary of alternatives, comments, and information and analyses provided by public agencies, organizations, and the public during the scoping process.
- Chapter 7, *References*, identifies the references cited through this joint EIR/EIS.
- Chapter 8, *Preparers List*, lists the entities and people who were involved or were consulted with in preparing this joint EIR/EIS.
- Chapter 9, *Descriptions of Figures*, provides descriptions of the figures presented in this joint EIR/EIS.
- Appendices contain the following reference items, which provide support and documentation of the analyses performed for this joint EIR/EIS.
    - Appendix 1-1 Scoping Report
    - Appendix 2-1 Proposed Master Plan, Development Guidelines, and Standards
    - Appendix 2-2 Environmental Issues Management Plan
    - Appendix 2-3 Temporary Traffic Control Plan Procedures
    - Appendix 2-4 Proposed Transportation Demand Management Plan
    - Appendix 3.2-1 Aesthetics and Visual Resources CEQA Evaluation
    - Appendix 3.3-1 Air Quality, Health Risk Analysis, and Greenhouse Gas Emissions Technical Report
    - Appendix 3.4-1 Biological Resources Technical Report
    - Appendix 3.4-2 Preliminary Aquatic Resources Delineation Report
    - Appendix 3.5-1 Cultural Resource Inventory Report
    - Appendix 3.7-1 Preliminary Geotechnical Evaluation

- Appendix 3.9-1 Hazardous Material Conditions
- Appendix 3.12-1 Noise and Vibration Technical Report
- Appendix 3.16-1 Transportation Analysis
- Appendix 3.18-1 Water Supply Evaluation
- Appendix 4-1 Socioeconomics Technical Report

Chapter 2

Proposed Project/Proposed Action and Alternatives

2.1 Overview of Proposed Project/Proposed Action and Alternatives

Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California (UC Regents) and SKSP NRP, LLC, is proposing a master-planned mixed-use academic and research project, referred to as the Berkeley Space Center at the National Aeronautics and Space Administration (NASA) Research Park (NRP) (proposed project/proposed action).[1] The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under the California Environmental Quality Act (CEQA) and NASA's approval to proceed following analysis consistent with the National Environmental Policy Act (NEPA). NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The UC Regents is the CEQA Lead Agency for the proposed project and would provide authorization before the proposed action is submitted for NASA's approval.[2]

The proposed project under consideration by NASA (i.e., the proposed action) would include academic and research facilities, consisting of offices, laboratories, R&D uses, and related amenities[3] (collectively, "Research and Office Uses"); conference center and related amenities[4] ("Conference Uses"); ground-floor retail, food and beverage, maker spaces (i.e., collaborative work spaces for using various tools and materials), and other complementary accessory uses that would be publicly accessible[5] (collectively, "Active Uses"); student/faculty housing, including associated amenities ("Student/Faculty Housing"); short-term lodging, including associated amenities[7] ("Short-Term Lodging"); transportation networks; and open spaces, as well as landscaped spaces, to create a state-of-the-art research and education hub that shapes the future of technology and innovation and advance the UC Regents educational, scientific research, charitable, and other exempt purposes (within the meaning of Section 501(c)(3) of the United States Internal Revenue Code). The proposed

1 Throughout this joint environmental impact report/environmental impact statement (EIR/EIS), *proposed project* refers to both the proposed project (under the California Environmental Quality Act) and the proposed action (under the National Environmental Policy Act).

2 UC Regents is a legal entity that includes all of the University of California campuses.

3 Research and Office Uses could include the following amenities: a commercial kitchen, meeting/collaboration space, training space, private open space areas, and other facilities supporting the Research and Office Uses. These amenities would support the users of the Research and Office Uses.

4 Conference Uses could include the following amenities: pre-function space, collaboration areas, meeting/event rooms, business center, gathering terraces and private open space, and other facilities supporting the Conference Uses.

5 Active Uses would be publicly accessible and could include the following types of uses and spaces: co-working space; restaurants, including on-sale alcohol, community-serving retail, personal services (including, but not limited to, dry cleaning pickup/drop-off, ATM, salons, bicycle repair); and maker space. Active Uses could occur throughout the Project Site.

6 Student/Faculty Housing could include the following amenities: fitness center, game rooms, shared entertainment space with shared kitchen, business center, leasing/administrative office space, and other facilities supporting the Student/Faculty Housing.

7 Short-Term Lodging could include the following amenities: fitness center, game rooms, shared entertainment space, business center, leasing/administrative office space, and other facilities supporting the Short-Term Lodging.

open space would include pathways, activated uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). The proposed project would facilitate the development and long-term operation of a collaborative research environment at the National Aeronautics and Space Administration Ames Research Center (NASA ARC) that supports NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research.

The UC Regents will consider approving the submittal of the Project Proponent's application to NASA, an action that requires review pursuant to CEQA.[8] The Project Proponent's application proposes 2.3 million square feet[9] of mixed-use academic and research uses, which is the proposed project under CEQA (i.e., the CEQA Proposed Project).

The University of California, Berkeley (UC Berkeley) (on behalf of UC Regents) and NASA are preparing this joint environmental impact report/environmental impact statement (joint EIR/EIS) to assess potential environmental impacts that could result from the implementation of the proposed project.[10] Pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- CEQA Proposed Project (NEPA Build Alternative 1)
- CEQA Reduced Density Alternative (NEPA Build Alternative 2)
- NEPA No-Action Alternative

The Project Proponent has also identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative (as further discussed in Section 2.4, *Description of the No Student/Faculty Housing Variant/Sub-Alternative*). In addition, the CEQA Proposed Project could also include a Water Reuse Facility (WRF) Option or a Central Utility Plant (CUP) Option; the CEQA Reduced Alternative would not include a WRF Option or a CUP Option.[11]

[8] The application will include the proposed Berkeley Space Center Master Plan (Master Plan) provided in Appendix 2-1 of this joint EIR/EIS, which establishes the overall project vision, conceptual plans, and illustrative renderings, and the proposed Berkeley Space Center Development Guidelines (Development Guidelines) provided in Appendix 2-1 of this joint EIR/EIS, which provide strategies for the proposed buildings and landscapes within a flexible framework (as further discussed in Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

[9] Throughout this joint EIR/EIS, *square feet* refers to gross square feet, which is the entire square footage of a building, including maintenance and operation areas, stairwells, garages, walkways, etc.

[10] Throughout this joint EIR/EIS, the discussion of the CEQA Proposed Project and each CEQA alternative (other than the CEQA No Project/Existing Conditions Alternative) also applies to the corresponding Build Alternative under NEPA.

[11] Under the WRF Option, portions of the non-potable supply would be provided on-site rather than by Mountain View. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

Consistent with the guidance in State CEQA Guidelines Sections 15126.6(d) and 15126.6(e), the following alternatives are evaluated in comparison to the CEQA Proposed Project in Chapter 5, *Other CEQA Information and Alternatives*:

- CEQA No-Project/Existing Conditions Alternative
- CEQA Reduced Height Alternative[12]

The CEQA Proposed Project (with or without the WRF Option, CUP Option, and water and recycled water main connection options discussed in Section 2.3.6, *Utilities*, and with or without the variant/sub-alternative discussed in Section 2.4, *Description of the No Student/Faculty Housing Variant/Sub-Alternative*) or the CEQA Reduced Density Alternative (with or without the water and recycled water main connection options discussed in Section 2.3.6 and with or without the variant/sub-alternative discussed in Section 2.4) could reasonably be approved by NASA. The final decision as to whether to adopt the CEQA Proposed Project or the CEQA Reduced Density Alternative will be made after completion of the final joint EIR/EIS.

2.2 Context

In 2002, NASA prepared a programmatic EIS (PEIS) pursuant to NEPA that analyzed the environmental impact of implementation of the proposed NASA Ames Development Plan (NADP). NASA published its Record of Decision (ROD) to implement the NADP, which established NASA's vision for long-term development of NASA ARC. As part of the NADP, development was considered in four areas at NASA ARC, commonly referred to as the NRP, Eastside/Airfield, Bay View, and Ames Campus. The Project Site is within the NRP.

Since 2002, NASA (or authorized parties) has redeveloped portions of NASA ARC with entitled uses under the terms of several ground leases and other real property instruments. The Project Site is one of the parcels considered for redevelopment in the 2002 PEIS and within the scope of the analysis set forth in that document and the ROD. In 2019, NASA invited the UC Regents, on behalf of the UC system and its constituent campuses, to explore the feasibility of developing the Project Site for public and private-sector research, professional education, and housing. On November 1, 2020, the UC Regents and NASA entered into an Enhanced Use Lease for approximately 36 acres in the NRP area of NASA ARC for the purpose of facilitating development and long-term operation of a collaborative research environment on the premises, as contemplated in the PEIS, in support of various activities. In May 2021, the UC Regents authorized UC Berkeley to enter into a joint venture with SKSP NRP, LLC, to create Moffett Partners, LLC, for the proposed project. In December of 2022, the Enhanced Use Lease was assigned to an affiliate of Moffett Partners, LLC.

2.2.1 Project Location

The proposed project would be located at NASA ARC, as depicted in Figure 2-1, Project Location, on an approximately 39-acre project site (Project Site), along with approximately 6 acres of off-site

[12] CEQA Guidelines require that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6[a]). Thus, Chapter 5, *Other CEQA Information and Alternatives*, includes an evaluation of alternatives that could reduce or avoid significant environmental effects of the CEQA Proposed Project, including the CEQA Reduced Height Alternative.

areas (Off-Site Areas) where utility improvements and building demolition would take place, as discussed in Section 2.3.7, *Off-Site Utility Improvements and Demolition*. Together, the Project Site and Off-Site Areas comprise the approximate 45-acre limits of work (Limits of Work), as depicted in Figure 2-2, Limits of Work, and as more fully described below.[13]

The Limits of Work are located primarily on federal land within NASA ARC, an approximately 2,000-acre facility in unincorporated Santa Clara County, California, between U.S. 101 and the southwest edge of San Francisco Bay. A small portion of the Off-Site Areas is on federal land owned by the United States Army (Army). The city of Mountain View borders NASA ARC to the north and southwest, and the city of Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of the city of San Francisco and 8 miles north of the city of San José.

The Project Site is within the City of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. Most of the Off-Site Areas are also within the City of Mountain View Sphere of Influence and outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the city of Mountain View. The Project Site is bounded by Wescoat Road to the north and Cody Road to the east,[14] as depicted in Figure 2-3, Existing Conditions (Project Site). The southern boundary of the Project Site is between Edquiba Road and Girard Road. The western boundary of the Project Site is within an empty lot immediately west of Bailey Road. The Project Site is a portion of Santa Clara County Assessor's Parcel Number 116-18-012.

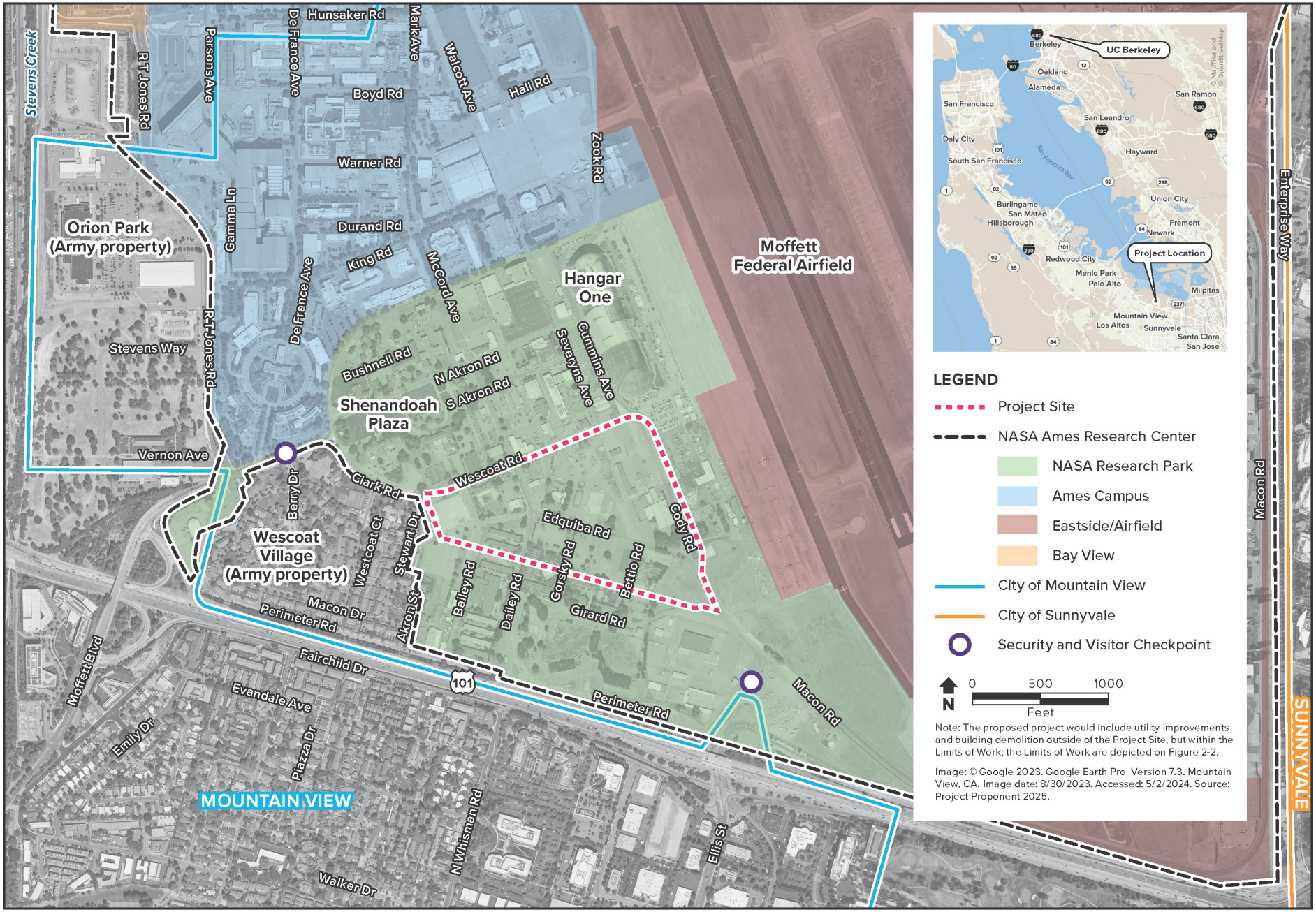
The immediate vicinity of the Project Site comprises a mix of uses. Northwest of the Project Site, across Wescoat Road, is Shenandoah Plaza, a linear open space surrounded by two-story, Mission-style buildings clustered in a formal campus-like layout defined by a west-facing gated entrance and landscape that includes mature trees, shrubs, and manicured lawns. Northeast of the Project Site, across from the intersection of Wescoat Road and Cody Road, is Hangar One, one of the largest freestanding structures in the world. Hangar One and many of the buildings, landscapes, and objects north of the Project Site are within the boundaries of the Shenandoah Plaza. East of the Project Site, across Cody Road, is Moffett Federal Airfield. An area designed as a preserve providing burrowing owl habitat is located between Moffett Federal Airfield and lands east of Cody Road; a small portion of the burrowing owl preserve overlaps the southeastern portion of the Project Site.

East of Moffett Federal Airfield is the city of Sunnyvale and large office/R&D campuses occupied by Google, Amazon, Lockheed Martin, and Meta. Beyond the southern border of the Project Site, along Girard Road in the NRP, is a recreational field and facilities previously used to support operations by the Navy; farther south is U.S. 101 and the city of Mountain View. West of the Project Site is Wescoat Village at Moffett Field, an area owned by the Army and managed by a third party that comprises multi-family and single-family residences. North the Project Site, beyond Shenandoah Plaza, is the Ames Research Center, which includes the world's largest wind tunnels, among other highly specialized R&D facilities. Farther northwest of the Project Site are additional large office/R&D Google facilities, both on NASA land and within the city of Mountain View, as well as Orion Park, a former military housing compound managed by the Army.

[13] Wescoat Village is not part of the Limits of Work; rather, the Limits of Work follow the roadways surrounding Wescoat Village, as shown in Figure 2-2.

[14] Cody Road would be realigned to the east as part of the proposed project and would be the eastern boundary of the Project Site.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



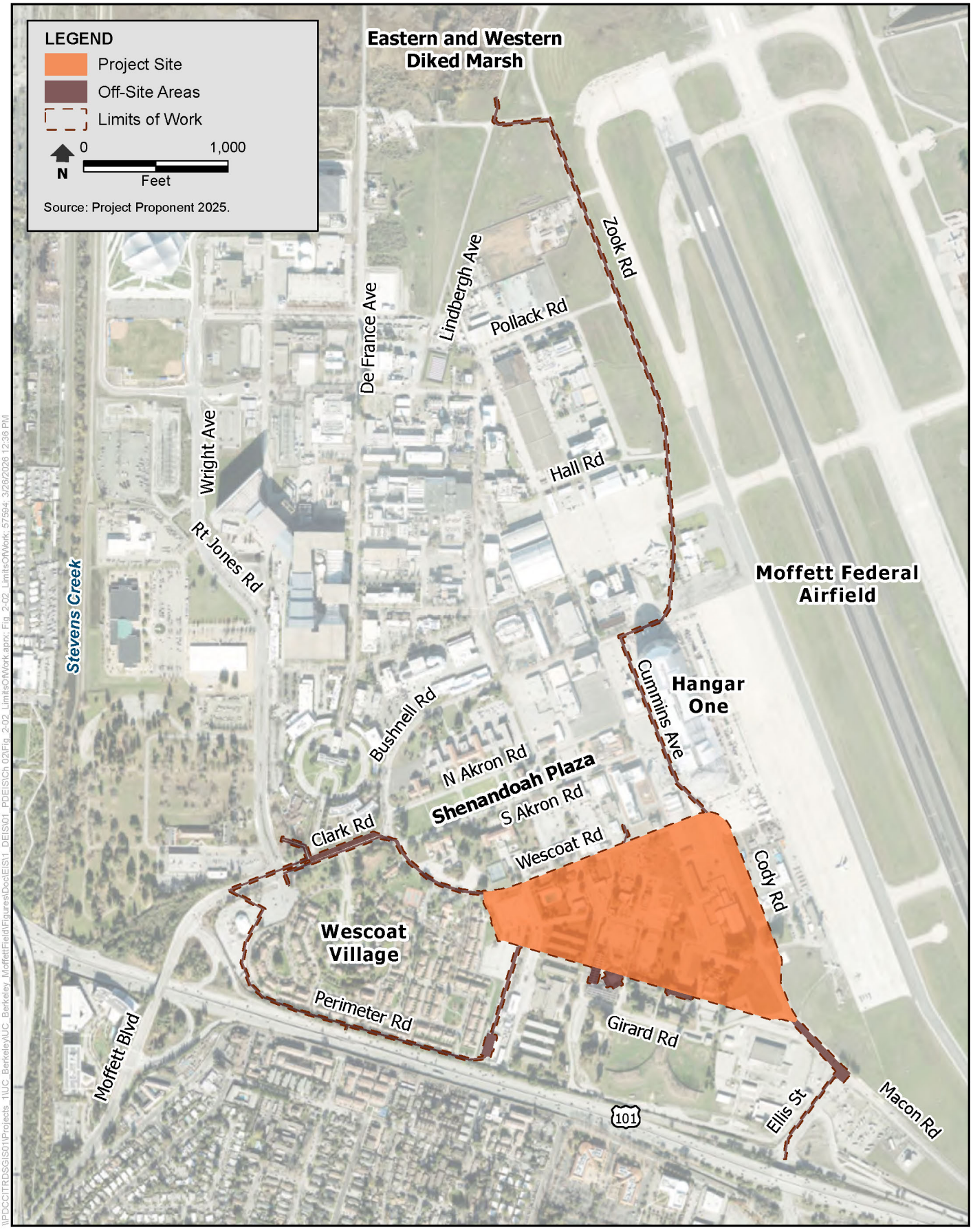
Note: The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Image: © Google 2023. Google Earth Pro, Version 7.3. Mountain View, CA. Image date: 8/30/2023. Accessed: 5/2/2024. Source: Project Proponent 2025.

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Figure 2-1
Project Location
Berkeley Space Center at NASA Research Park

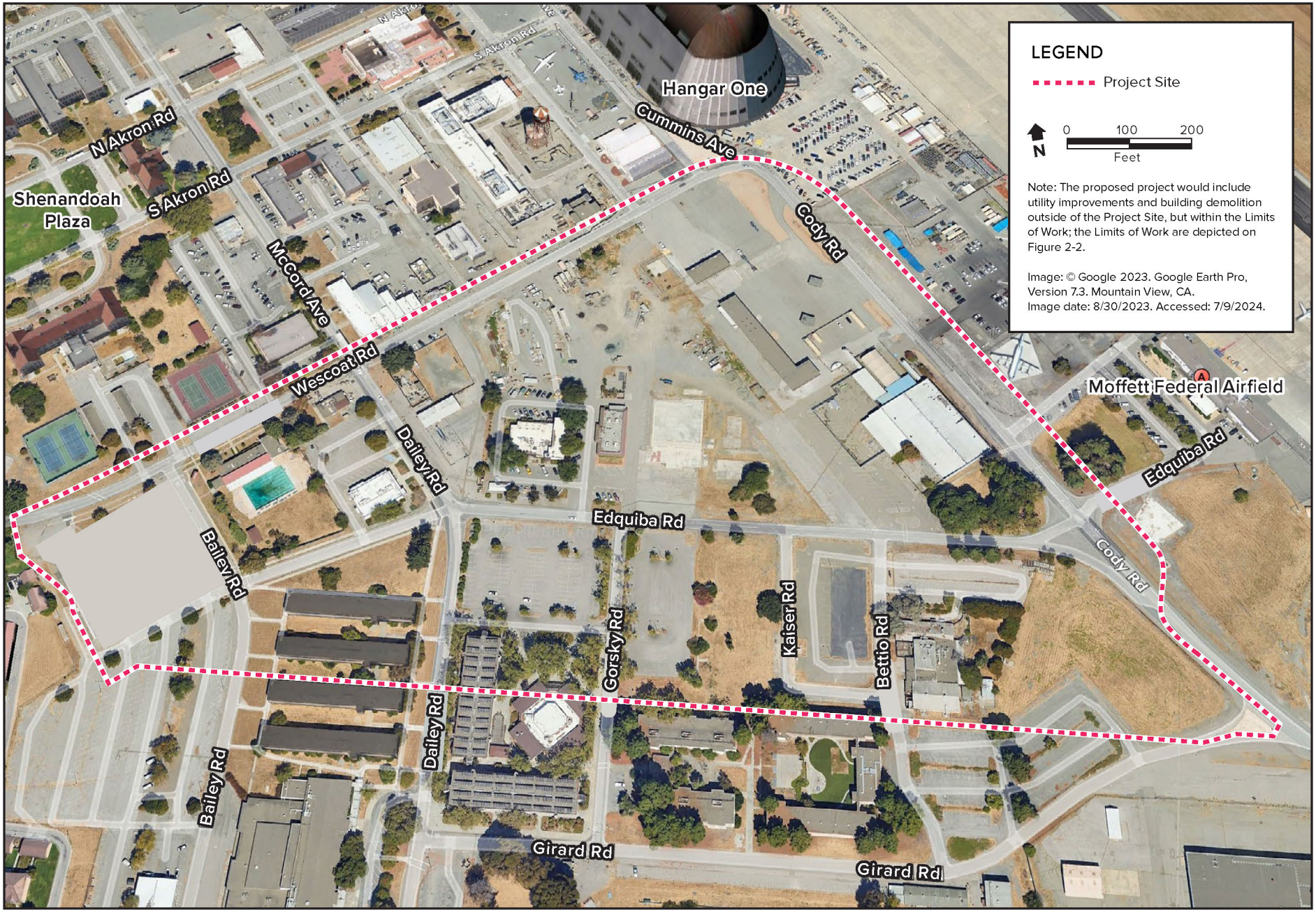
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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Figure 2-2
Limits of Work
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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Figure 2-3
Existing Conditions (Project Site)
Berkeley Space Center at NASA Research Park

Regional access to the Project Site is provided by U.S. 101, approximately 0.2 mile to the south; State Route (SR) 85, approximately 0.7 mile to the southwest; and SR 237, approximately 1.0 mile southeast. In addition, the Bayshore/NASA Santa Clara Valley Transportation Authority (VTA) light rail station is located off Manila Avenue just southeast of the Project Site, between Macon Road and U.S. 101, providing daily service between Mountain View and Alum Rock, with connections to Altamont Corridor Express (ACE) and Capitol Corridor trains, the Milpitas Bay Area Rapid Transit (BART) station, and the Mountain View Caltrain station. The majority of the Project Site is within 0.5 mile of the Bayshore/NASA VTA light rail station and also close to the VTA bus stops on North Akron Road and South Akron Road.

2.2.2 Existing Conditions

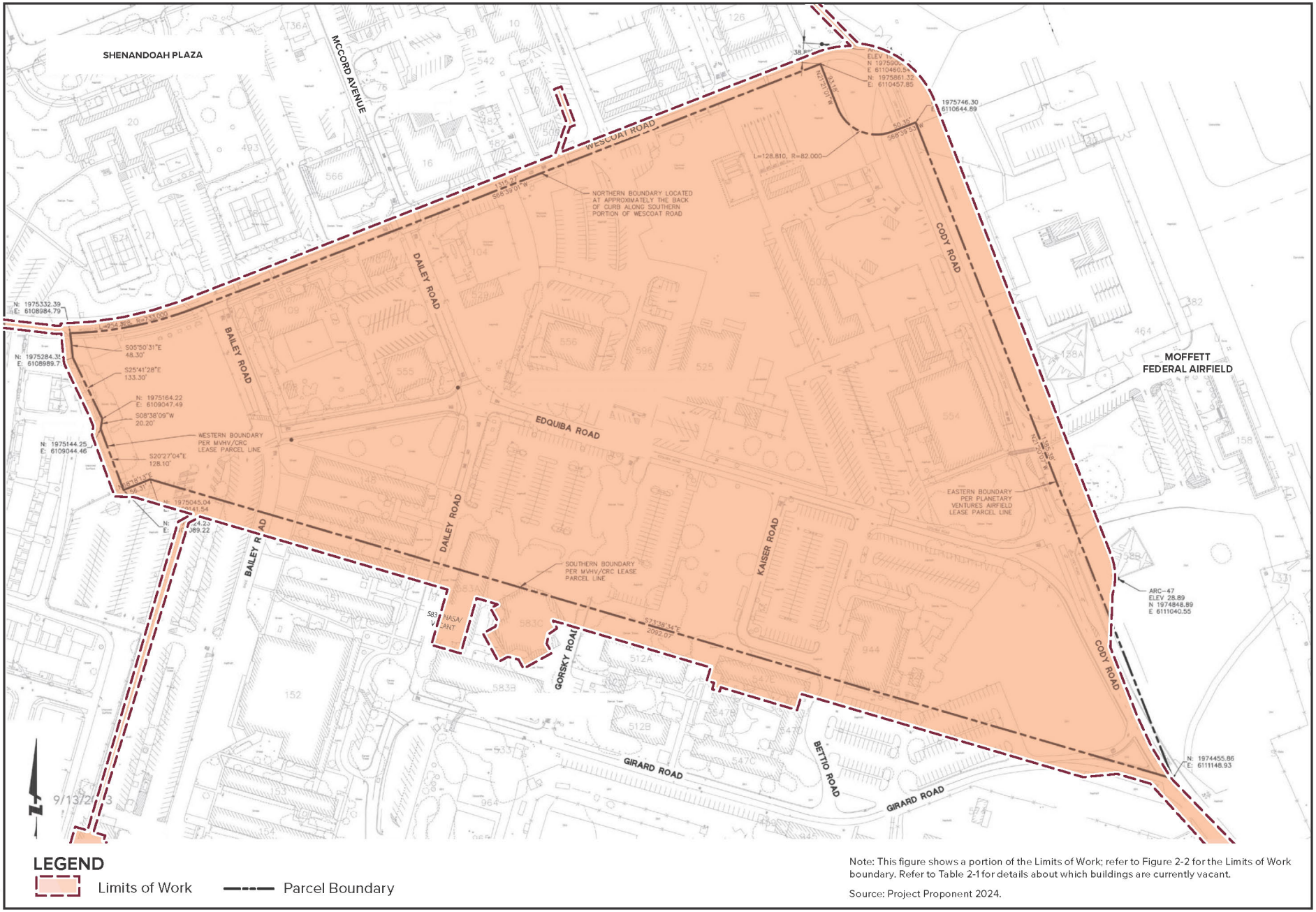
The Limits of Work are currently developed with 18 one- to three-story buildings that total approximately 185,600 square feet (including approximately 132,500 square feet of vacant uses and approximately 53,100 square feet of occupied uses), along with surface parking lots, roadways, and utility infrastructure, as depicted in Figure 2-4, Existing Conditions Site Plan (Limits of Work). Table 2-1 summarizes the condition of the existing buildings within the Limits of Work. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations (e.g., offices, food service, a gas station, pool, recreation center, and lodging). The other existing buildings within the Limits of Work comprise industrial, storage, and utility facilities. The buildings range in height from approximately 15 to 45 feet above the finished grade. In addition, there are approximately 900 existing parking spaces within the Limits of Work. Eight transformers are associated with Buildings 104, 149, 554, 556, 583C, 596, and 944. No emergency generators are currently located within the Limits of Work.

As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work.

The Project Site is relatively flat, with existing grades gradually sloping from south to north. The Project Site is currently covered with a substantial amount of impervious hardscape. This includes buildings, building pads, roads, surface parking lots, streets, and paths, which, in total, cover approximately 70 percent of the Project Site. Vegetation on the Project Site is largely the result of landscaping that was associated with structures on the Project Site. Trees currently on the Project Site include native trees, such as coast redwood, and adapted non-native trees, such as London plane and Canary Island pine, which are located throughout the Project Site but primarily within the southern portion of the Project Site. Existing landscaping includes approximately 245 trees located throughout the Project Site. Approximately 16 percent of the trees are in good condition, 56 percent of the trees are in fair condition, 27 percent of the trees are in poor condition, and 1 percent of the trees are dead.[15]

[15] Hort Science. 2024. *Preliminary Arborist Report: Ames Research Center, Mountain View (Santa Clara County), CA.* September 2024. The report is included in Attachment C to Appendix 3.14-1 of this joint EIR/EIS.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: This figure shows a portion of the Limits of Work; refer to Figure 2-2 for the Limits of Work boundary. Refer to Table 2-1 for details about which buildings are currently vacant.

Source: Project Proponent 2024.

Graphics ... 104894 (10-8-2025) TG

Figure 2-4
Existing Conditions Site Plan (Limits of Work)
Berkeley Space Center at NASA Research Park

Table 2-1. Existing Conditions within the Limits of Work

Building Number	Use	Building Size (sf)	Vacant/Occupied (Occupants)
104	Utility (westside substation)	n/a	n/a[a]
107	Office (former Navy Resident Officer in Charge of Construction building)	1,766	Vacant
108	Recreation (outdoor swimming pool)	n/a[b]	n/a
109	Recreation (former pool dressing rooms)	5,296	Vacant
148	Lodging (former barracks)	15,785	Vacant
149	Lodging (former barracks)	16,013	Vacant
503	Industrial (manufacturing and protype facility)	7,240	Occupied
526	Storage	640	Vacant
529	Storage	2,640	Occupied
543	Research lab	9,460	Vacant
547E	Lodging (former dormitories)	19,900	Vacant
554	Industrial (technology facility)	27,493	Occupied (research & design space)
555	Office (administration)	5,270	Occupied (research & design space)
556	Office	10,436	Occupied (research & design space)
583A	Lodging (former NASA Exchange Lodge)	30,900	Vacant
583C	Office (administration)	13,140	Vacant
596	Retail (former convenience store)	4,784	Vacant
944	Recreation (former recreation center)	14,794	Vacant
Total	—	***185,557***	—

Source: NASA 2024.

Notes:

sf = square feet; n/a = not available

a. Building 104 is an electrical substation that is currently in use but does not contain occupiable space.

b. Building 108 is a vacant outdoor swimming pool and is not a building.

Soil and groundwater at the Project Site have been affected by contamination associated with the Middlefield-Ellis-Whisman (MEW) Superfund site and the U.S. Navy's operations at Naval Air Station Moffett Field, which is no longer in operation. As a result, the Project Site is located within the MEW Superfund site and former Naval Air Station Moffett Field Superfund site. Under a ROD from the Department of Justice, the MEW Superfund Site Companies (MEW Companies) have been conducting soil and groundwater cleanup at the MEW site for approximately three decades.[16] Responsibility for remediation of the contaminated groundwater is allocated among the MEW Regional Groundwater Remediation Program, the Navy, and NASA, referred to as the Responsible Parties. Ongoing remediation activities in the vicinity of the Project Site continue to be implemented under the jurisdictions of the U.S. Environmental Protection Agency (EPA) and California Regional Water

[16] NASA. 2024. *2023 Annual Progress Report, NASA Ames Regional Groundwater Remediation Program, NASA Area of Responsibility, Site 28 WATS Area, and Site 26*. April 12, 2024.

Quality Control Board (RWQCB). Specifically, two groundwater extraction and treatment facilities for the remediation of volatile organic compounds (VOCs) are currently operating within proximity of the Project Site at NASA ARC: the MEW Superfund Site and the NASA-owned and operated West-Side Aquifers Treatment System (WATS). The MEW extraction and treatment system is directly adjacent to and within the Project Site. Within the Project Site are several recovery wells and underground piping for the treatment system.[17] The MEW system treats approximately 50 million gallons per year (mgy), with an average daily flow of 140,000 gallons per day (gpd) of contaminated groundwater. Treated water from the MEW facility is discharged into San Francisco Bay from an outfall in Stevens Creek. The WATS is west of Hangar One, approximately 1,000 feet north of the Project Site. It treats approximately 28 mgy of contaminated groundwater, with an average daily flow of approximately 50,000 to 75,000 gpd. Treated groundwater from the WATS is discharged into NASA's stormwater retention pond at the northernmost portion of NASA ARC. In addition, many of the buildings within the Project Site contain hazardous materials, such as asbestos-containing material (ACM) and lead-based paint (LBP); electrical equipment contains polychlorinated biphenyl (PCBs). Furthermore, hazardous materials have been or are being stored within the Project Site.

Because the Project Site is located within NASA ARC, access to the Project Site is currently controlled through security and visitor checkpoints located at the main gate on Clark Road or at the gate located on Ellis Street. Once through the controlled gates, existing roadway access to the Project Site within NASA ARC is provided from driveways on Wescoat Road, Cody Road, Dailey Road, and Edquiba Road.

2.2.3 Land Use Designations

2.2.3.1 NASA Ames Development Plan

The NADP is a comprehensive long-range land use plan that guides the use, renovation, management, and development of facilities at the approximately 2,000-acre NASA ARC. As mentioned above, of the four planning areas identified within the NADP, the Project Site is within the NRP planning area. The NRP covers approximately 86 acres in the southwestern portion of NASA ARC. It is bordered by the Eastside/Airfield planning area, the NASA ARC planning area, military housing operated by a private developer on behalf of the Department of War, and U.S. 101. Under the NADP, allowed development within the NRP planning area includes laboratories, office space, classrooms, auditoriums, museums, a conference center, open space, a burrowing owl preserve, parking, housing, and limited retail facilities. The Project Site is located within the NRP planning area on parcels designated for educational and research and development/office facilities. The NADP used floor area ratios (FARs) to identify preferred densities at the time it was prepared, but the FARs are not regulatory requirements. Thus, there is no minimum or maximum FAR applicable to the Project Site and the developable area established by the Project Proponent's Enhanced Use Lease applies to the Project Site.

2.2.3.2 Local Land Use Plans

As discussed in Section 2.5, *Reviews and Approvals by Lead Agencies, Responsible Agencies, and Other Agencies*, UC Berkeley and NASA are not subject to municipal regulations of surrounding local governments, such as general plans. Nonetheless, information about Santa Clara County's and the City of Mountain View's general plans is provided for informational purposes only.

[17] Geosyntec Consultants, Inc. 2024. *2023 Annual Progress Report, Middlefield-Ellis-Whisman Fairchild and Regional Groundwater Remediation Programs, Mountain View, California*. April 11, 2024. Figure 6.

Santa Clara County

The Project Site is within an unincorporated area of Santa Clara County. Under the Santa Clara County (County) General Plan, the Project Site is designated as a Public Facility, a designation used for lands located outside of city or county urban service areas that are owned or operated by federal, state, or local governments for government purposes. Public Facility uses could include county government centers; federal government land, including lands used for defense or research installations; or other facilities of federal, state, or local governments. The Project Site is zoned A-1, General Use, under the County's Zoning Ordinance.

City of Mountain View

The City of Mountain View's 2030 General Plan designates the Project Site as Institutional. The permitted range of uses supports public and quasi-public uses that serve an essential regional and/or local function. These include NASA ARC facilities as well as facilities owned by federal, state, or county governments. The Project Site is not covered by any of the zoning districts of Mountain View; however, it falls within the Local Agency Formation Commission (LAFCO) Sphere of Influence for Mountain View.

2.3 Description of the Proposed Project/Proposed Action and Alternatives

As more fully described below, the proposed project under consideration by NASA (i.e., the proposed action) would include Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, transportation networks, and open spaces as well as landscaped spaces, to create a state-of-the-art research and education hub. The proposed project includes utility improvements and building demolition in Off-Site Areas (i.e., areas outside of the Project Site and within the Limits of Work), as discussed in Section 2.3.7, *Off-Site Utility Improvements and Demolition*. Implementation of the proposed project would include demolition of all existing buildings within the Limits of Work. Figure 2-5, Conceptual Site Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative,[18] shows the conceptual site plan for the proposed project. Figure 2-6, Conceptual Land Use Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative, shows the proposed types of land uses.

Pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- **CEQA Proposed Project (NEPA Build Alternative 1)**, which would create approximately 2.3 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. The CEQA Proposed Project would include approximately 2 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Table 2-2 summarizes the similarities and differences between the CEQA Proposed Project and the CEQA Reduced Density Alternative. Only the CEQA Proposed Project includes the WRF Option

[18] Both the parcel boundary and the Project Site boundary are shown in some of the conceptual plans provided throughout this chapter. The parcel boundary includes the leased premises; it is provided for informational purposes only. The Project Site boundary includes the area that would be redeveloped as part of the proposed project.

(see Section 2.3.6.2, *Recycled Water*) and the CUP Option (see Section 2.3.6.8, *Heating, Ventilation, and Air-Conditioning Systems*).

- **CEQA Reduced Density Alternative (NEPA Build Alternative 2)**, which would create approximately 1.4 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would provide less space for Research and Office Uses. The CEQA Reduced Density Alternative would include approximately 1.1 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Table 2-2 summarizes the similarities and differences between the CEQA Proposed Project and the CEQA Reduced Density Alternative.
- **NEPA No-Action Alternative**, under which the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant would be reoccupied consistent with the prior uses of the buildings (e.g., ancillary buildings that supported Navy operations as well as industrial, storage, and utility facilities); reoccupying the vacant buildings would not require construction activity. The NADP, which established NASA's vision for long-term development of NASA ARC, also allows other types of uses at the Project Site. The NEPA No-Action Alternative could result in retaining the approximately 185,600 square feet of existing mixed uses, resulting in approximately 668 employees.[19] The NEPA No-Action Alternative would not result in the reoccupation of any buildings formerly used for lodging; thus, the NEPA No-Action Alternative would not generate any new full-time residents or short term occupants (e.g., summer interns) within the Limits of Work.

Consistent with the guidance in State CEQA Guidelines Sections 15126.6(d) and 15126.6(e), the following two additional alternatives are evaluated and compared to the CEQA Proposed Project. The CEQA Proposed Project, the CEQA Proposed Project with the Variant, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant are discussed throughout this joint EIR/EIS, whereas the two additional alternatives below are discussed in Chapter 5, *Other CEQA Information and Alternatives*:

- **CEQA No-Project/Existing Conditions Alternative**, under which the Project Proponent would not construct and operate the CEQA Proposed Project at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational, and the buildings within the Limits of Work that are currently vacant would remain vacant.[20]
- **CEQA Reduced Height Alternative**, which would create approximately 2 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the CEQA Proposed Project, the CEQA Reduced Height Alternative would achieve lower maximum building height in some areas. In addition, the CEQA Reduced Height Alternative would provide less space for Research and Office Uses and less space for Student/Faculty Housing compared to the CEQA Proposed Project. The CEQA Reduced Height Alternative would include approximately 1.66 million square feet for Research and Office uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active

[19] This is based on a generation rate of 3.6 employees per 1,000 square feet.

[20] This provides a conservative analysis under CEQA for the purposes of comparison.

Uses, 100,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.

Table 2-2 summarizes the similarities and differences between the CEQA Proposed Project and the CEQA Reduced Density Alternative. The primary differences between the CEQA Proposed Project and CEQA Reduced Density Alternative would be the number of internal floors, internal floor-to-floor heights, the amount of square footage for Research and Office Uses, the number of employees, the number of students, and the number of parking spaces. The internal floor-to-floor heights could be lower under the CEQA Proposed Project to accommodate more square footage in each building, whereas the internal floor-to-floor heights under the CEQA Reduced Density Alternative could be higher because less square footage would need to be accommodated in each building. A range of floor-to-floor heights is provided in the proposed Development Guidelines for guidance. The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same types of land uses at the same locations; the same site plan; the same maximum building height; the same amount of square footage for Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, and open space; the same number of residents and guests; the same utility infrastructure and roadways; and the same parking ratio.

Table 2-2. Summary of Similarities and Differences between the CEQA Proposed Project and the CEQA Reduced Density Alternative

Characteristic	CEQA Proposed Project (NEPA Build Alternative 1)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)
Similarities		
Types of Land Uses	Same	
Location of Land Uses	Same (see Figure 2-6)	
Site Plan	Same (see Figure 2-6)	
Limits of Work (i.e., Project Footprint)	Same (45 acres, including 39-acre Project Site and 6 acres of Off-Site Areas)	
Maximum Building Height[a]	Same (Approximately 80 feet, with an exceedance of up to 25 feet for mechanical screens)	
Amount of Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, and Open Space	Same (25,000-square-feet of Conference Uses, 90,000 square feet of Active Uses, 145 Student/Faculty Housing units, 100 Short-Term Lodging units, and a minimum of 10 acres of open space)	
Number of Residents and Guests	Same (200 guests and 363 residents)	
Utility Infrastructure and Roadways[b]	Same	
Parking Ratio	Same	
Construction Start and End Dates	Same (begin in 2027 and end in 2040)	
No Student/Faculty Housing Variant/Sub-Alternative	Same (Variant included)	

Characteristic	CEQA Proposed Project (NEPA Build Alternative 1)	CEQA Reduced Density Alternative (NEPA Build Alternative 2)
Differences		
Number of Internal Floors[a]	Greater to accommodate increased square footage and building height restriction	Less given reduced overall square footage
Internal Floor-to-Floor Heights[a]	Lower to accommodate increased square footage and building height restriction	Higher given reduced overall square footage
Amount of Square Footage for Research and Office Uses	Greater (2,000,000 square feet)	Less (1,080,000 square feet)
Number of Employees and Students[c]	Greater (5,997 employees and 177 students)	Less (3,331 employees and 95 students)
Number of Parking Spaces[c]	Greater	Less
WRF Option and CUP Option[d]	Yes	No

Source: Proposed Berkeley Space Center Development Guidelines, Spring 2026.

Notes:

WRF = Water Reuse Facility; CUP = Central Utility Plant

a. The internal floor-to-floor heights could be lower under the CEQA Proposed Project to accommodate more square footage in each building, whereas the internal floor-to-floor heights under the CEQA Reduced Density Alternative could be higher because less square footage would need to be accommodated in each building.

b. Only the CEQA Proposed Project includes the WRF Option and the CUP Option; see footnote "d" for more information regarding these options. The proposed roadways would be the same.

c. The difference in the number of employees, students, and parking is due to the greater amount of Research and Office Uses that would be included in the CEQA Proposed Project.

d Under the WRF Option, portions of the non-potable demand would be met using on-site reuse supply rather than recycled water from Mountain View. The non-potable demand that cannot be met by the WRF Option would require the use of potable water. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

Table 2-3 summarizes the proposed maximum square footage of land uses for the CEQA Proposed Project, the CEQA Reduced Density Alternative, and the NEPA No-Action Alternative.

Table 2-3. Summary of Proposed Maximum Square Footages of Land Uses for the CEQA Proposed Project and the CEQA Reduced Density Alternative

Land Use	CEQA Proposed Project (NEPA Build Alternative 1) (sf)	CEQA Reduced Density Alternative (NEPA Build Alternative 2) (sf)	NEPA No-Action Alternative (sf)[a]
Research and Office Uses	2,000,000	1,080,000	40,072
Office	*350,000*	*190,000*	*30,612*
Lab and R&D	*1,390,000*	*750,000*	*9,460*
Academic	*260,000*	*140,000*	—
Conference Uses	25,000	Same	—
Active Uses	90,000	Same	—

Land Use	CEQA Proposed Project (NEPA Build Alternative 1) (sf)	CEQA Reduced Density Alternative (NEPA Build Alternative 2) (sf)	NEPA No-Action Alternative (sf)[a]
Housing & Lodging	205,000	Same	82,598
Short-Term Lodging	*75,000*	Same	—
Student/Faculty Housing	*130,000*	Same	—
Other Lodging[b]	—	—	*82,598*
Recreation	—	—	20,090
Utility	n/a[c]	n/a[c]	n/a[c]
Industrial	—	—	34,733
Storage	—	—	3,280
Retail	—	—	4,784
Total	***2,320,000***	***1,400,000***	***185,557***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
Notes:
sf = square feet; R&D = research and development; n/a = not applicable

a. Under the NEPA No-Action Alternative, the buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant would be reoccupied consistent with the prior uses of the buildings.

b. Lodging is classified as barracks that were formerly used by the Navy.

c. Utility support structures do not contain occupiable uses.

2.3.1 Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines

The proposed project will include the proposed Berkeley Space Center Master Plan (Master Plan), which establishes the overall project vision, conceptual plans, and illustrative renderings, and the proposed Berkeley Space Center Development Guidelines (Development Guidelines), which provide Maximum and Minimum Development Parameters and Standards for the proposed project buildings and open space. The Maximum and Minimum Development Parameters are a conceptual layout depicting the horizontal and vertical dimensions of the proposed project. Standards are mandatory requirements that would be required to be implemented for the proposed project. Together, the Master Plan and the Development Guidelines will be included as part of the project application submitted by the Project Proponent to NASA. NASA will review and consider for approval the Master Plan and Development Guidelines as part of the proposed project.[21] The analysis of the environmental impacts of the proposed project is based on the proposed Maximum and Minimum Development Parameters and Standards established in the Development Guidelines. Appendix 2-1 of this joint EIR/EIS includes the proposed Master Plan, Development Guidelines, and Standards.

21 Upon issuance of the ROD for the proposed project, the Master Plan, Development Guidelines, Spring 2026 project-specific EIMP, project-specific TDM Plan, and other project documents will apply to the Project Site.

The proposed project will adhere to the proposed Development Guidelines, which include a regulatory framework to manage the proposed redevelopment; the regulatory framework is categorized as principles, guidelines, and standards:

- Principles – Defined as aspirational targets that convey the design intent of the proposed Master Plan but are not mandated through regulatory requirements.
- Guidelines – Measures that are not required to be implemented for the proposed project but are advised or strongly encouraged.
- Standards – Defined as mandatory requirements that would be required to be implemented for the proposed project.

The proposed project is depicted in the conceptual plans provided throughout this chapter (Figures 2-5 to 2-9 and Figures 2-12 and 2-13, and Figures 2-15 to 2-21) and the visual simulations in other chapters showing illustrative renderings (e.g., Figures 1 to 12 in the *Aesthetics and Visual Resources CEQA Evaluation* included in Appendix 3.2-1 of this joint EIR/EIS). Conceptual plans serve as a framework for general site orientation and the placement of land uses, open spaces, transportation, and infrastructure, as well as the general scale and massing of development, and overall architectural themes. Conceptual plans are intended to convey the general vision and design of the proposed project while allowing flexibility in interpretation and implementation. The visual simulations show illustrative renderings of one possible example of development that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters and Standards established in the proposed Development Guidelines). Illustrative renderings are not determinative of the ultimate configuration, building orientation, massing, architectural and landscaping details, or parking. Table 2-4 summarizes the proposed Maximum and Minimum Development Parameters and Standards.

Table 2-4. Summary of Proposed Maximum and Minimum Development Parameters and Standards

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
Site: maximum development parameters	• Building height • Mechanical screens • Setbacks in stepdown zone along Wescoat Road and Cody Road in Subareas 1, 2, 3, and 6	n/a	• 80-foot building height in all Subareas except Subarea 7 • 30-foot building height in Subarea 7 • 105-foot mechanical screens • 15-foot set back required at 35-foot stepdown zone
Open space: acreage	• Required open space	10 acres	n/a
Open space: open space network	• Hangar Commons planting layout and palette shall maintain a clear view corridor from the Central Green to Hangar One. • Planting outside of Berkeley Space Center's leasehold boundary must comply with NASA height requirements to accommodate Hangar One door opening and aircraft movement.	n/a	n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
Open space: program activation	• The Promenade shall be designed as a multi-modal, car-free pathway, linking the historic Shenandoah Plaza to the airfield through the center of the project. • Publicly accessible seating terraces and patios shall be located adjacent to the Promenade and along the interior emergency vehicle access (EVA) loop. • The character of these areas shall relate to the building spill-out zones. • Spill-out zones for terraces and patios are designated as shown along frontages.	n/a	n/a
Open space: hardscape	• The character of the hardscape materials, including grain, color and texture, shall reflect the industrial history and qualities of the site while maintaining a cohesive relationship with the architectural material palette and avoiding false historicism. • All paving surfaces shall use materials that can withstand daily use and wear and tear. • Materials shall be durable, made with natural materials, and utilize predominantly warm tones.	n/a	n/a
Open space: site lighting	• Site elements, including streetlights, pedestrian poles, bollards, litter bins, bicycle racks, benches, special features, etc., shall maintain a cohesive identity that complements the overall landscape and architectural material palettes and avoids false historicism. • Lighting shall be provided at the minimum levels required by the Illumination Engineering Society of North America (IESNA) lighting guidelines and relevant local	n/a	n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	code requirements, using no more light than is necessary. • Minimize impacts of necessary lighting by choosing low-glare sources. • Lighting standards and fixtures shall use efficient lighting technologies, including, but not limited, to LED technology. • Direct lighting away from native habitats by employing directional lighting with baffles, non-reflective tinting on windows, and other mechanisms. • Lighting fixtures shall comply with dark sky principles outlined by the International Dark-Sky Association (IDA), which involve incorporating shielding to restrict light emission beyond a 90-degree angle. • Lighting design and fixtures shall follow a clear hierarchy and be in scale with the context and surroundings.		
Open space: planting characteristics	The palette and irrigation shall comply with all local relevant regulatory requirements.	n/a	n/a
Buildings: land use and parking	• Location within the Subareas • Bike parking ratio • Vehicular parking ratio	n/a X n/a	n/a n/a X
Buildings: architectural characteristics	• The architectural character of Berkeley Space Center shall reflect its own time and the unique purposes of the research buildings, conveying a keen sense of place and identity, both for the immediate Berkeley Space Center area and within the broader NASA Ames Research Center, complementing the historic buildings and avoiding simulacrum.	n/a	n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	• Façades shall be articulated to convey a sense of human scale, denote building entries, and reinforce the design of streetwall. Material, color and texture use changes can create visual diversity through varied façade treatments. • Architectural character shall both complement the historic character of Shenandoah Plaza and provide a contemporary response to the new development as an urban research district. Façades shall be articulated to convey a sense of human scale, denote building entries and reinforce the design of the streetwall. • Durable building materials and systems that minimize long-term maintenance operations and costs shall be used, contributing positively to the innovation district's character and sustainability goals. Massing, material, and color shall be modulated to create a human-scaled public realm that minimizes the appearance of building bulk and mass and avoids visual clutter.		
Buildings: bird friendly design	As required, all building façades shall be designed with depth-of-shading members, fritted glass, and solid materials. Building designs shall comply with the California Green Building Standards Code (CALGreen) Non-Residential Voluntary Measure: A5-107 Bird-friendly Building Design.	n/a	n/a
Buildings: mechanical screening	• Mechanical screening height above the maximum building height. • Mechanical equipment and rooftop appurtenances must be screened. Mechanical equipment must not be visible from the street	n/a n/a	25 feet n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	level and views from adjacent, taller buildings shall be minimized.		
	• Setback for mechanical screens measured from the maximum development parameters along Wescoat Road and Cody Road.	n/a	45-degree setback
Building: loading docks	Service, security, or garage doors shall not be placed along façades adjacent to public streetscapes, plazas, and parks. If this cannot be avoided, the doors shall be placed in a manner that reduces their visibility by recess or other methods that incorporate them into the greater architecture of the building.	n/a	n/a
Building: work yards	Screening: On their sidewalk edge, working yards shall be screened from direct public view, based on tenant needs, security, and/or safety for passers-by. If programmatic constraints prevent the use of semi-transparent vertical screens, vegetated screen walls and/or building material textural variation are recommended to create a visually engaging environment.	n/a	n/a
Building: generators	Any large diesel emergency standby engines (> 1,000 brake horsepower) "Generators" to meet EPA Tier 4 Emission Standards through purchase of an EPA-certified Tier 4 engine (no initial or follow-up source testing required) or purchase of a Tier 4-compliant engine (packaged by the engine manufacturer with abatement equipment) (follow-up testing required every 3 years after district-approved source testing conducted before installation). The project shall comply with the regulatory requirement to use the Air District's Best Available Control Technology and Best Available Control Technology for Toxics (BACT/TBACT) workbook, revised June 9,	n/a	n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	2015, for commonly permitted sources subject to New Source Review in the Bay Area as a guide for permit applicants.		
Vehicular parking	• Driveways shall be minimized to the extent feasible on the primary bike network to minimize conflicts between bikers and vehicles. • Typical floor height shall be 10 feet. • Off-street parking shall be designed so that a vehicle will not have to back into a public right-of-way when exiting. • Ramping: The maximum slope of any driveway or ramp shall be 20 percent. • Ramps and ramped floors shall not face a street or publicly accessible open space. • No off-street parking shall be located in required front or streetside yards. • Screening: All parapet edges and/or facades shall be designed to screen or reduce the visual impact of vehicles from public view at all levels. • Lighting: Interior lighting fixtures of parking levels shall not be directly visible from outside of the parking facility.	n/a	n/a
Bike and scooter parking	• Convenient access to bicycle parking facilities shall be provided. Where access is via a sidewalk or pathway, curb ramps shall be installed where appropriate.	n/a	n/a
	• Lighting shall be provided in all bicycle parking areas. In both exterior and interior locations, lighting of not less than one footcandle of illumination at ground level shall be provided.	n/a	n/a

Topic/Page	Standard	Minimum Development Parameter (if applicable)			Maximum Development Standard (if applicable)
	• The number of short-term and long-term bicycle parking spaces provided shall meet the minimum bicycle parking ratios.	**Land Use**	**Short-Term Bicycle Parking**	**Long-Term Bicycle Parking**	n/a
		Office	0.1875 spaces/ 1,000 sf	0.75 spaces/ 1,000 sf	
		Lab and R&D	0.1875 spaces/ 1,000 sf	0.345 spaces/ 1,000 sf	
		Academic	1.5 spaces/ 10 students [b]	2.25 spaces/ 10 employees plus 1.5 spaces/10 students [b]	
		Conference Center	—	—	
		Active Uses	0.75 spaces/ 1,000 sf	0.15 spaces/ 1,000 sf	
		Short-Term Lodging	1.5 space/10 units	1.5 space/10 units	
		Student/ Faculty Housing	1.5 space/10 units	1.5 space/10 units	

Source: Proposed Berkeley Space Center Development Guidelines, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
Notes:
n/a = not applicable

The analysis of the environmental impacts of the proposed project is based on the proposed Maximum and Minimum Development Parameters and Standards.

NASA will review and consider for approval the Master Plan and Development Guidelines as part of the proposed project.[22] Upon completion of the NEPA process, the specifics regarding each building's architectural design and configuration within the Project Site will be reviewed for conformance and approval through NASA's NRP Design Review Board process (pursuant to Ames Procedural Requirement [APR] 8822.1). The Design Review Program is typically a two-stage process: Pre-Conceptual Design Review (to adequately define the scope of a project, to determine the level of environmental review needed for site approval, and to ensure that an applicant conforms to applicable requirements) and Preliminary Design Review (which includes submission for the Concept Design Phase [CDP]). The NEPA process would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site-specific NEPA documents, including the Maximum and Minimum Development Parameters and Standards, as documented in the Record of Decision (ROD). Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction for the proposed project.

2.3.2 Characteristics

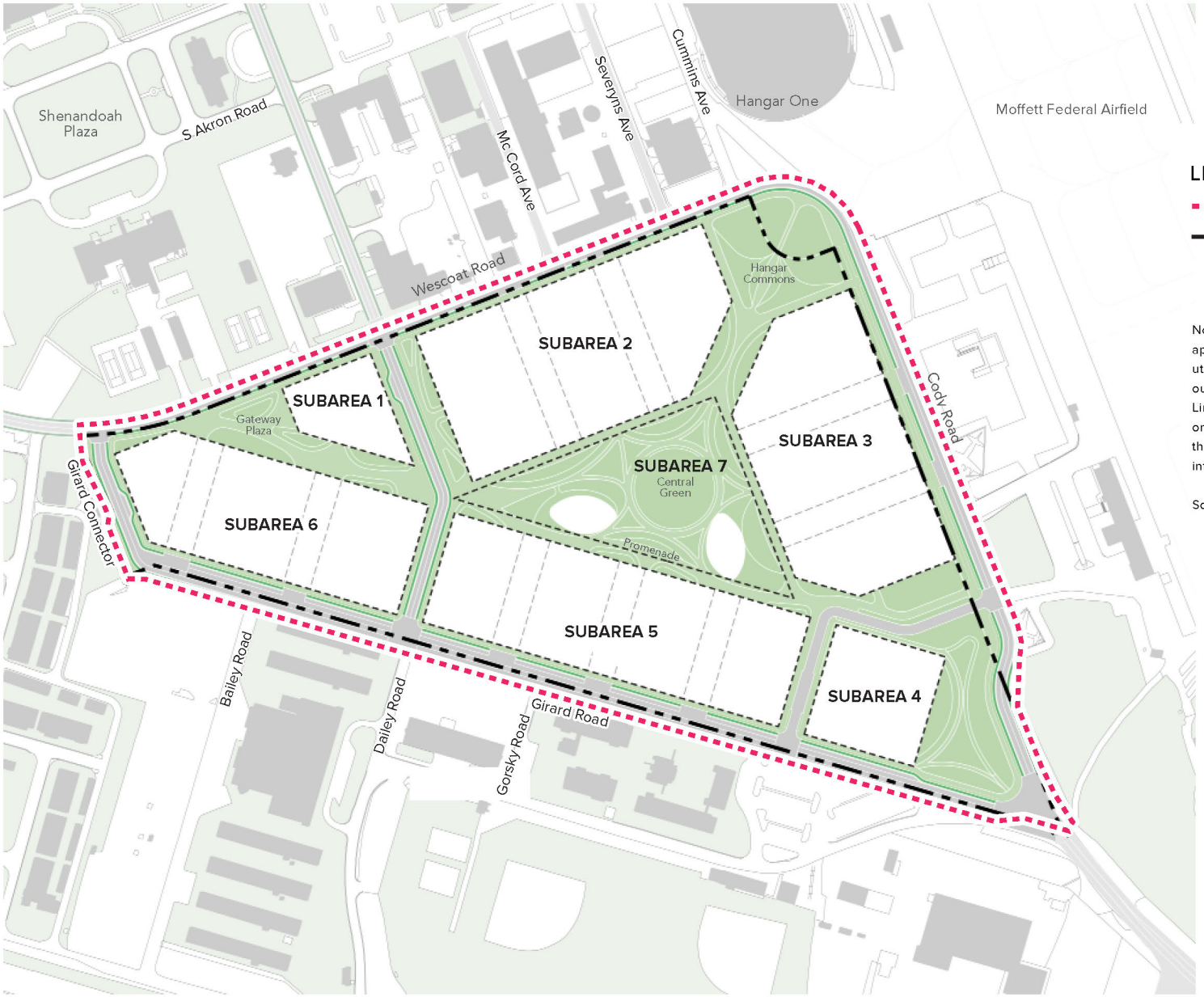
The characteristics described in the following sections apply to the proposed project (i.e., both the CEQA Proposed Project and CEQA Reduced Density Alternative), unless otherwise specified.

2.3.2.1 Site Plan

The site plan shown in Figure 2-5 would be the same for the CEQA Proposed Project and CEQA Reduced Density Alternative. There are seven Subareas within the Project Site; buildings would be situated within the Subareas and oriented around a large open space in the center of the Project Site, referred to as the Central Green. The Central Green would be within Subarea 7 and include Active Uses. The proposed Research and Office Uses would be along the perimeter of the Project Site, within Subareas 2, 3, 5, and 6. The proposed Student/Faculty Housing would be in Subarea 6, and the proposed Short-Term Lodging and Conference Uses would be in the southwest corner of the Project Site, within Subarea 1. The proposed parking garages would be in the southeast and southwest corners of the Project Site, within Subareas 4 and 6. Vehicular access to the Project Site would be provided along Wescoat Road, a realigned Cody Road, and a realigned Girard Road, as described in Section 2.3.5, *Transportation and Circulation*, under the *Site Access* subheading. The CEQA Proposed Project and CEQA Reduced Density Alternative also include a network of bicycle and pedestrian pathways, open spaces, and active/passive recreational areas.

[22] Upon issuance of the ROD for the proposed action, the Master Plan, Development Guidelines, Spring 2026 project-specific EIMP, project-specific TDM Plan, and other Project Site-specific documents will apply to the Project Site.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (9-9-2025) TG

Figure 2-5

Conceptual Site Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

2.3.2.2 Buildout Assumptions

The future sub-tenants of the proposed Research and Office Uses are not known at this time, and, because the CEQA Proposed Project and CEQA Reduced Density Alternative would be constructed over a period of years, the exact configuration of certain project elements has not yet been determined. Thus, the description of the CEQA Proposed Project and CEQA Reduced Density Alternative is based on conservative buildout assumptions regarding certain aspects of the project design within the Subareas, as shown in Table 2-5. The proposed FAR (i.e., the total proposed square footage divided by the total parcel boundary [34.92 acres]) for the CEQA Proposed Project is 1.6 and the proposed FAR for the CEQA Reduced Density Alternative is 1.0.

Table 2-5. Buildout Assumptions for the CEQA Proposed Project and CEQA Reduced Density Alternative

Project Characteristics that Could Vary	Project Characteristics that Would Not Vary
Buildings/Structures	
• Number and configuration of buildings • Design of the buildings • Building floor to floor heights • Specific locations of mechanical equipment • Principles and Guidelines[a] identified in the proposed Development Guidelines	• Maximum and Minimum Development Parameters • Standards[b] identified in the Development Guidelines
Site Design and Infrastructure	
• Dimensions of roads, driveways, travel lanes, and sidewalks • Size and specific location of underground utility infrastructure, dependent on route selected • Principles and Guidelines[a] identified in the proposed Development Guidelines	• Locations of primary vehicular roads (Wescoat Road, Cody Road, Girard Road, Girard Connector, Subarea 4 Street, and Dailey Road) • General locations of mechanical equipment, transportation, and circulation improvements, utility infrastructure, and minimum sustainability features • Parking ratios by use • Standards[b] identified in the proposed Development Guidelines
Uses	
• Allocation of permitted uses among or within the buildings • Specific locations of uses within each Subarea (e.g., Research and Office Uses could occur anywhere within Subarea 2), except for those specific uses identified in this table that would not vary. • Principles and Guidelines[a] identified in the proposed Development Guidelines	• Locations of the Subareas • Types of permitted uses • Locations of the following specific uses proposed within each Subarea would occur within the Subareas shown in Figure 2-6: o Research and Office Uses o Conference Uses o Student/Faculty Housing o Short-Term Lodging o Parking • Active Uses would occur only within portions of Subareas 1 through 3 and 5 through 7, as shown in Figure 2-6. • Minimum of 10 acres of publicly accessible open space and landscaping for public use, in the

Project Characteristics that Could Vary	Project Characteristics that Would Not Vary
	aggregate, located in the four locations conceptually shown in Figure 2-6: o Central Green o Hangar Commons o Promenade o Gateway Plaza • Standards[b] identified in the proposed Development Guidelines • Maximum and Minimum Development Parameters

Source: Project Proponent, 2024.

Notes:

a. See definitions of "Principles" and "Guidelines" in Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*.

b. See definition of "Standards" in Section 2.3.1 and Table 2-4.

2.3.2.3 Land Uses

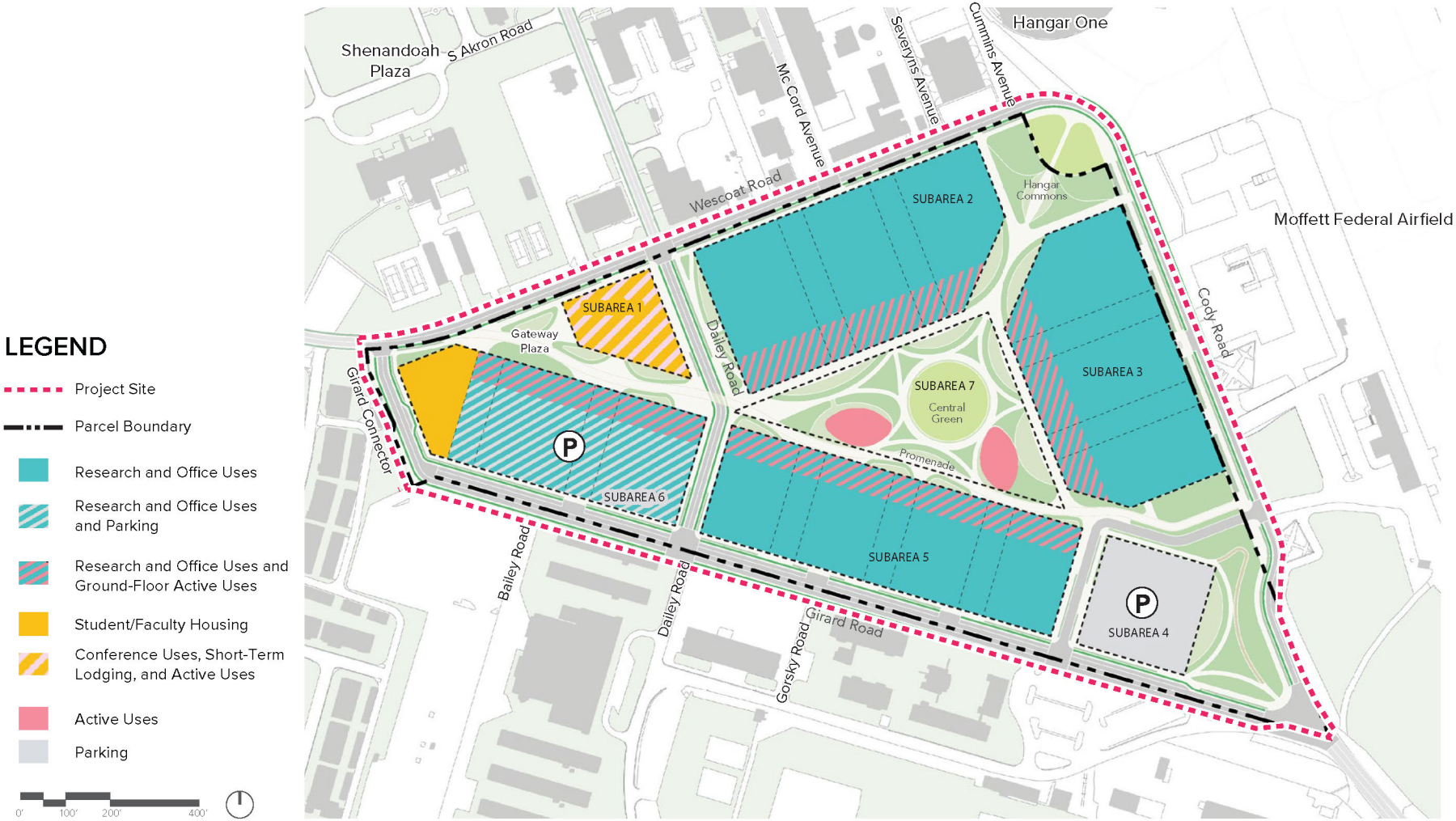
The conceptual land use plan shown in Figure 2-6 would be the same for the CEQA Proposed Project and CEQA Reduced Density Alternative. With respect to land uses, the primary difference between the CEQA Proposed Project and CEQA Reduced Density Alternative would be the amount of square footage for Research and Office Uses. The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same amount of square footage for Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging. Tables 2-6 and 2-7 summarize the maximum square footage of proposed land uses for CEQA Proposed Project and CEQA Reduced Density Alternative, respectively.

Research and Office Uses

The CEQA Proposed Project would include more square footage for Research and Office Uses than the CEQA Reduced Density Alternative. The CEQA Proposed Project would consist of up to 2 million square feet of Research and Office Uses, whereas the CEQA Reduced Density Alternative would include just under 1.1 million square feet of Research and Office Uses. Research and Office Uses would include academic and research facilities, consisting of offices, laboratories, R&D, and related amenities. Research and Office Uses would be provided in Subareas 2, 3, 5, and 6, as shown in Figure 2-6.

Office uses would include space for corporate and general offices that would allow multiple tenants to carry out research and technology, administrative, and professional office activities. In addition, the proposed laboratory and R&D uses would provide functional spaces that could include laboratories, supportive administrative offices, meeting rooms, and light manufacturing or fabrication spaces as part of the overall R&D use. It is anticipated that private laboratory and R&D uses may include a range of activities potentially involving air quality and/or other hazard containment, intellectual property protection, and property security, which would be conducted in secure zones not accessible to the general public. Furthermore, as part of the Research and Office Uses, space for academic uses would be provided, consisting of educational spaces that would be shared by different educational users for testing, analysis, instruction, research, workspace, office, conferencing or other academic pursuits.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

Graphics ... 104894 (9-9-2025) tg

Figure 2-6

Conceptual Land Use Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

Table 2-6. Maximum Square Footage of Proposed Uses by Subarea for the CEQA Proposed Project

Land Use	Subarea 1 (sf)	Subarea 2 (sf)	Subarea 3 (sf)	Subarea 4 (sf)	Subarea 5 (sf)	Subarea 6 (sf)	Subarea 7 (sf)	*Total (sf)*
Research and Office Uses	—	680,000	600,000	—	550,000	170,000	—	***2,000,000***
Office	—	*120,000*	*100,000*	—	*100,000*	*30,000*	—	*350,000*
Laboratory and R&D	—	*470,000*	*420,000*	—	*380,000*	*120,000*	—	*1,390,000*
Academic	—	*90,000*	*80,000*	—	*70,000*	*20,000*	—	*260,000*
Conference Uses	25,000	—	—	—	—	—	—	***25,000***
Active Uses	5,000	15,000	15,000	—	30,000	10,000	15,000	***90,000***
Housing and Lodging	75,000	—	—	—	—	130,000	—	***205,000***
Short-Term Lodging	*75,000*	—	—	—	—	—	—	*75,000*
Student/Faculty Housing	—	—	—	—	—	*130,000*	—	*130,000*
Total (sf)	***105,000***	***695,000***	***615,000***	***—***	***580,000***	***310,000***	***15,000***	***2,320,000***
Parking	—	—	—	555,000	—	525,000	—	***1,080,000***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
sf = square feet; R&D = research and development

Table 2-7. Maximum Square Footage of Proposed Uses by Subarea for the CEQA Reduced Density Alternative

Land Use	Subarea 1 (sf)	Subarea 2 (sf)	Subarea 3 (sf)	Subarea 4 (sf)	Subarea 5 (sf)	Subarea 6 (sf)	Subarea 7 (sf)	*Total (sf)*
Research and Office Uses	—	340,000	310,000	—	310,000	120,000	—	***1,080,000***
Office	—	*60,000*	*55,000*	—	*55,000*	*20,000*	—	*190,000*
Laboratory and R&D	—	*235,000*	*215,000*	—	*215,000*	*85,000*	—	*750,000*
Academic	—	*45,000*	*40,000*	—	*40,000*	*15,000*	—	*140,000*
Conference Center	25,000	—	—	—	—	—	—	***25,000***
Active Uses	5,000	15,000	15,000	—	30,000	10,000	15,000	***90,000***
Housing and Lodging	75,000	—	—	—	—	130,000	—	***205,000***
Short-Term Lodging	*75,000*	—	—	—	—	—	—	*75,000*
Student/Faculty Housing	—	—	—	—	—	*130,000*	—	*130,000*
Total (sf)	***105,000***	***355,000***	***325,000***	***—***	***340,000***	***260,000***	***15,000***	***1,400,000***
Parking	—	—	—	555,000	—	525,000	—	***1,080,000***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
sf = square feet; R&D = research and development

Laboratories constructed and operated as part of the CEQA Proposed Project and CEQA Reduced Density Alternative will comply with required federal, State, and local standards, in accordance with Ames Policy Directive (APD) 8829.1.[23] A small portion of the proposed laboratories associated with the Research and Office Uses would be categorized by biosafety levels (BSLs). Only BSL-1, BSL-2, and BSL-3 laboratories are included in the scope of the CEQA Proposed Project and CEQA Reduced Density Alternative; the proposed project would not include BSL-4 laboratories.[24]

Because of the nature of laboratory uses, the possibility exists for hazards related to the handling of hazardous materials (e.g., chemicals and chemical mixtures). In addition, in accordance with standard industry practices, the CEQA Proposed Project and CEQA Reduced Density Alternative, and any future tenant that handles qualifying hazardous materials, would be required to meet relevant Biosafety in Microbiological and Biomedical Laboratories (BMBL) and National Institute of Health (NIH) guidelines.

Conference Uses

The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same amount of square footage for Conference Uses. The CEQA Proposed Project and CEQA Reduced Density Alternative would provide up to a 25,000-square-foot conference center with varying capacities (e.g., one large conference hall with satellite rooms to facilitate breakout sessions or more discrete and smaller scale conference requirements) to be used as temporary meeting spaces for use by UC Berkeley and other affiliated parties, private industry, or other public agencies. The Conference Uses could also include amenity space, which could include collaboration areas (i.e., shared working spaces), meeting/event rooms, a business center, gathering terraces and private open space, and other facilities supporting the Conference Uses. The Conference Uses could also include Active Uses (e.g., restaurants, gym).

Active Uses

The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same amount of square footage for Active Uses. The CEQA Proposed Project and CEQA Reduced Density Alternative would include up to 90,000 square feet of ground-floor Active Uses that would be accessible by pedestrians. Active Uses could include display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, a gym or other amenity facilities, shared maker spaces and fabrication workshops, co-working spaces, restaurants (including on-sale alcohol), community-serving retail, personal services (including, but not limited to, dry cleaning

[23] APD 8829.1 establishes the construction permit process and requirements for all construction activities at NASA ARC. The required standards include 29 Code of Federal Regulations (CFR) 1926, Safety and Health Regulations for Construction, and 29 CFR 1910, Occupational Safety and Health Standards, as well as the current adopted California Fire Code and California Building Code requirements addressing the prevention and control of dangerous conditions related to the storage, use, and handling of hazardous materials (California Code of Regulations [CCR] Title 24, Part 9).

[24] BSL-1 laboratories are used to study infectious agents or toxins not known to consistently cause disease in healthy adults. BSL-2 laboratories are used to study moderate-risk infectious agents or toxins that pose a risk if accidentally inhaled, swallowed, or exposed to the skin. BSL-3 laboratories are used to study infectious agents or toxins that may be transmitted through the air and cause potentially lethal infection through inhalation exposure. BSL-3 and BSL-4 laboratories are intended for the storage and study of acutely hazardous biomaterials (e.g., viruses, pathogens, microbes). More information about BSLs is available at https://www.cdc.gov/training/quicklearns/biosafety/#tab-nav.

pickup/drop-off, ATM, salons, bicycle repair), along with retail uses. Active Uses would be provided within Subareas 1, 2, 3, 5, 6, and 7. For the purposes of this joint EIR/EIS, it is assumed that approximately 10 percent of the Active Uses would include retail uses involving kitchens and approximately 90 percent of the Active Uses would include the remaining uses described above.

Student/Faculty Housing and Short-Term Lodging

The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same amount of square footage for Student/Faculty Housing and Short-Term Lodging. The CEQA Proposed Project and CEQA Reduced Density Alternative would include approximately 145 Student/Faculty Housing units within Subarea 6. The proposed Student/Faculty Housing would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). Housing would prioritize the UC students and faculty affiliated with the CEQA Proposed Project or the CEQA Reduced Density Alternative as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Use Lease requirements. The Student/Faculty Housing would include a mix of studio, one-bedroom, and two-bedroom apartments as well as amenity space. A minimum of 10 percent of the Student/Faculty Housing units would be affordable (i.e., affordable to households with 80 percent of Area Median Income, as adjusted for household size); a Residential Management Plan would provide oversight of the affordability requirements for the proposed project.

The amenity space would include a lobby, laundry facilities, mail room, bike storage room, office, meeting space, game rooms, theaters, dog wash, gym and support/back-of-the house space. Additional amenities, such as fitness centers, game rooms, shared entertainment space with shared kitchen, business center, and leasing/administrative office space could be included as part of the Student/Faculty Housing, and would not be shared with other amenity uses provided as part of the CEQA Proposed Project or CEQA Reduced Density Alternative. Parking for the Student/Faculty Housing would be provided in an adjacent garage. Furthermore, private and common outdoor open space for housing occupants would be provided on the ground and on decks, balconies, porches and roofs podium level, roof, or balconies, or a combination thereof, as described in Section 2.3.2.6, *Open Space and Landscaping*.

The CEQA Proposed Project and CEQA Reduced Density Alternative would include approximately 100 Short-Term Lodging units within Subarea 1. The Short-Term Lodging would be used as temporary lodging for staff, researchers, academics, tenants, and their families visiting the Project Site for conferences, meetings, research projects, and other short-term events. The Short-Term Lodging would provide suite-style guest rooms as well as common areas and related amenities, which could include a fitness center, game rooms, shared entertainment space, business center, and leasing/administrative office space. The Short-Term Lodging would not share amenities and active uses within the Conference Uses and with the other users of the site, including restaurant and gym/fitness center uses. However, parking would be shared with other users of the site in a shared parking garage.

2.3.2.4 Building Heights and Stepdown Zone

The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same maximum building height. With respect to building heights, the primary differences between the CEQA Proposed Project and CEQA Reduced Density Alternative would be the number of internal floors and internal floor-to-floor heights. The proposed buildings would have a maximum height of

approximately 80 feet, with an exceedance of up to 25 feet (i.e., approximately 105 feet in total) allowed for mechanical screens and a limited number of minor protrusions allowed for exhaust fans and other small appurtenances, as shown in Figure 2-7, Conceptual Building Heights for the CEQA Proposed Project and CEQA Reduced Density Alternative, and Figure 2-8, Conceptual Elevations for the CEQA Proposed Project and CEQA Reduced Density Alternative. A range of internal floor-to-floor heights is allowed under the CEQA Proposed Project and CEQA Reduced Density Alternative. Typical ground floor height would range from 20 feet to 26 feet, and the typical floor height would range from 15 feet to 18 feet.

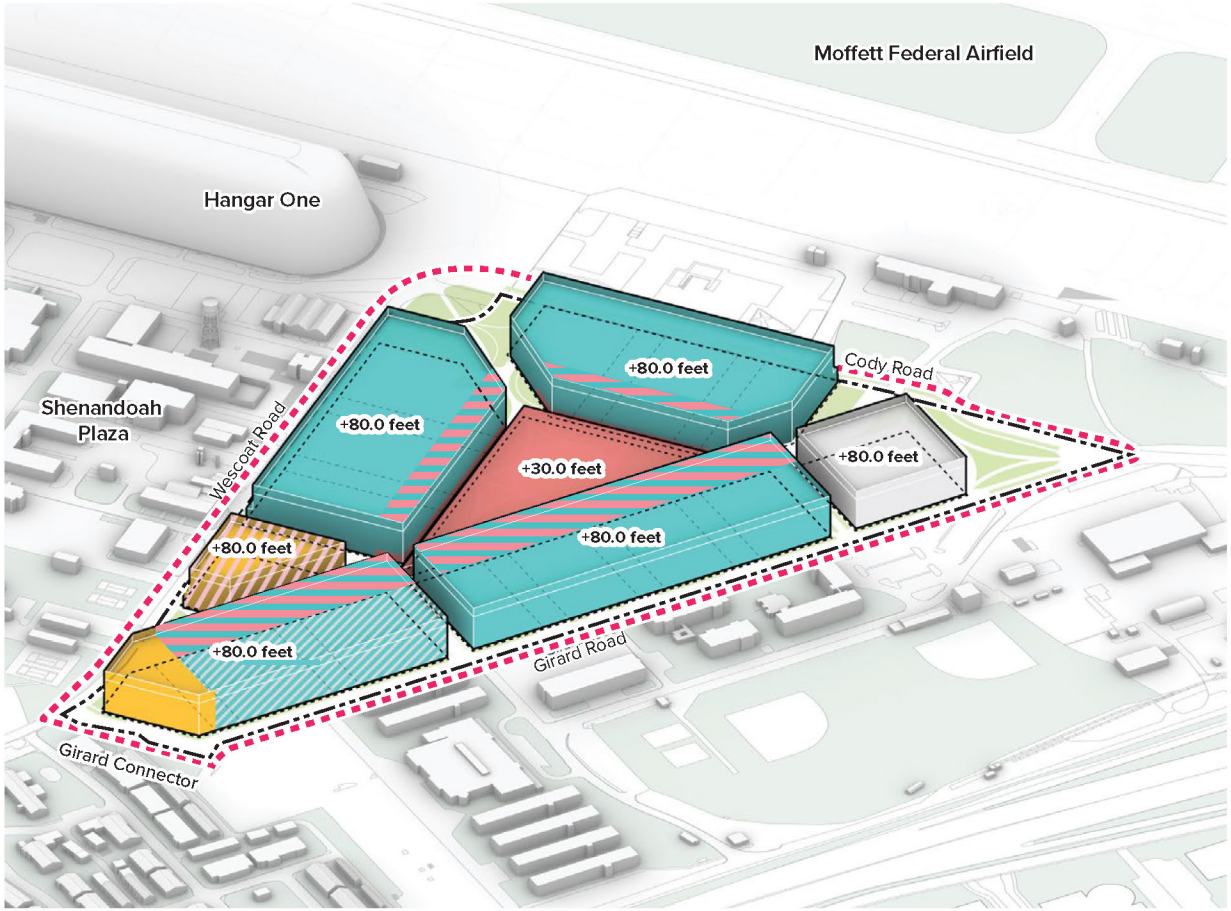
Due to the Project Site's proximity to Moffett Federal Airfield, the Project Site is within a Federal Aviation Administration (FAA) notification area and Height Restriction Area with a contour range of 157 feet above mean sea level based in National Geodetic Vertical Datum (NGVD) of 1988 to 182 feet above mean sea level based in NVGD of 1988, per the Federal Aviation Regulation Part 77, Surfaces Map, for Moffett Federal Airfield.[25] Federal Aviation Regulation Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, establishes imaginary surfaces for airports and runways as a means of identifying areas of airspace wherein objects would be obstructions to air navigation. As such, development within the Project Site would be subject to certain height limitations pursuant to Federal Aviation Regulation Part 77.9 of the Code of Federal Regulations notification requirements, which would require consultation with the FAA prior to construction of any structure or object within Federal Aviation Regulation Part 77 surfaces. The proposed building heights would comply with FAA requirements.

Due to the Project Site's proximity to Moffett Federal Airfield, the CEQA Proposed Project and CEQA Reduced Density Alternative would be within the Santa Clara County Comprehensive Land Use Plan, Moffett Federal Airfield (Moffett CLUP), adopted in 2012 by the Santa Clara County Airport Land Use Commission. In terms of height restriction areas, the Project Site is not within an Airport Safety Zone, as defined in the Moffett CLUP.

Figure 2-9, Maximum and Minimum Development Parameters and Standards for the CEQA Proposed Project and CEQA Reduced Density Alternative, is a conceptual layout depicting the horizontal and vertical dimensions of the CEQA Proposed Project and CEQA Reduced Density Alternative based on the proposed Maximum and Minimum Development Parameters for each Subarea (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*). Because the CEQA Proposed Project and CEQA Reduced Density Alternative would not be required to be developed to reach the maximum dimensions in each Subarea, Figure 2-9 represents a conservative depiction of the conceptual layout. The proposed buildings along Wescoat Road and Cody Road would include a stepdown zone, as shown in Figure 2-9. The stepdown zone would consist of a 15-foot stepback (i.e., a recession in the building exterior) for the portions of the buildings higher than 35 feet. In addition, mechanical screens along Cody Road and Wescoat Road would be set back and restricted in height at a 45-degree angle to the 25-foot maximum mechanical screen height.

[25] Santa Clara County Airport Land Use Commission. 2012. Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan. Figure 6: Moffett Federal Airfield FAR Part 77 Surfaces. Adopted November 2, 2012; amended December 19, 2018.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

- Project Site
- Parcel Boundary
- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground-Floor Active Uses
- Student/Faculty Housing
- Conference Uses, Short-Term Lodging, and Active Uses
- Active Uses
- Parking

0′ 200′ 400′ 800′ N

Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

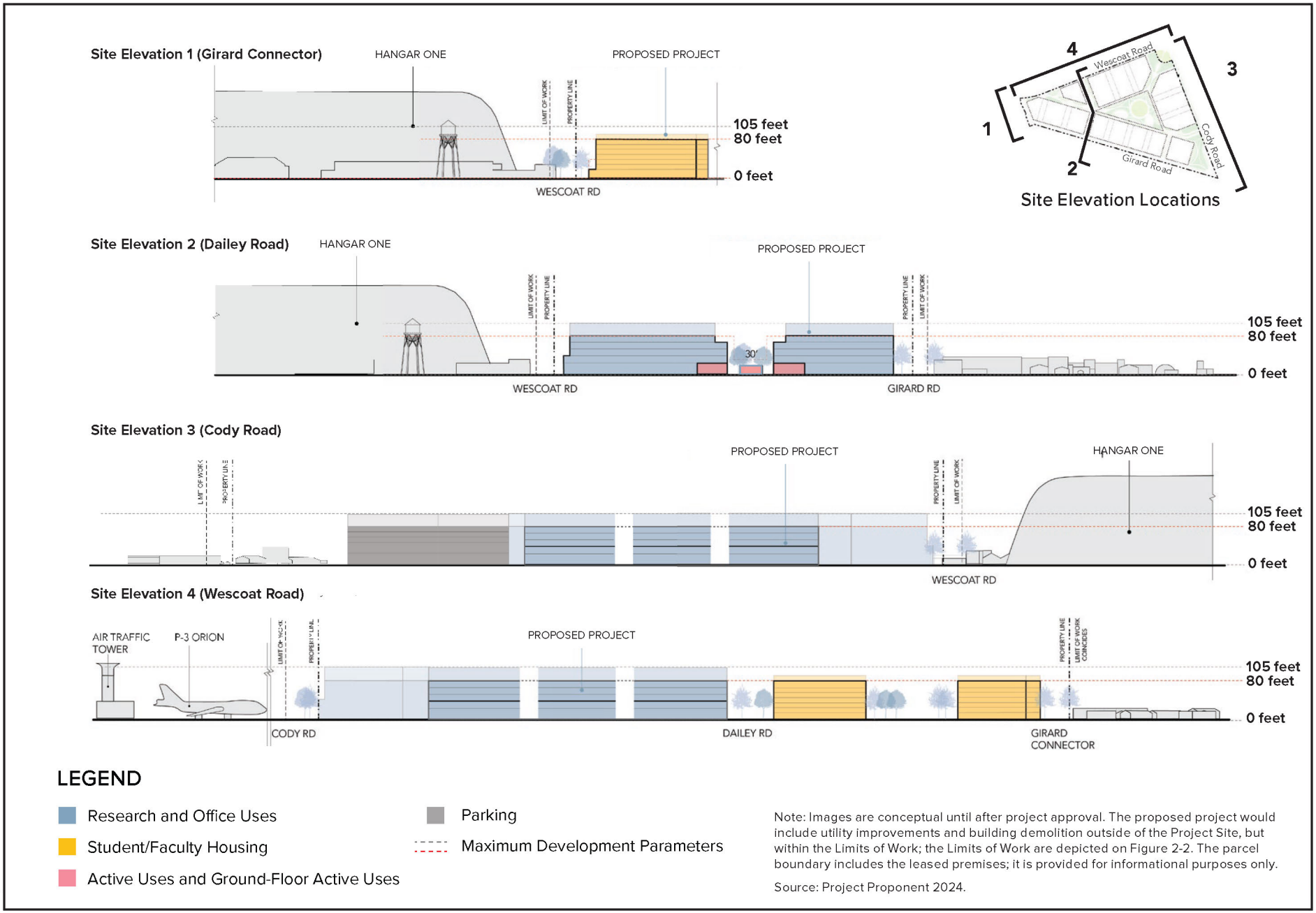
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Figure 2-7

Conceptual Building Heights for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

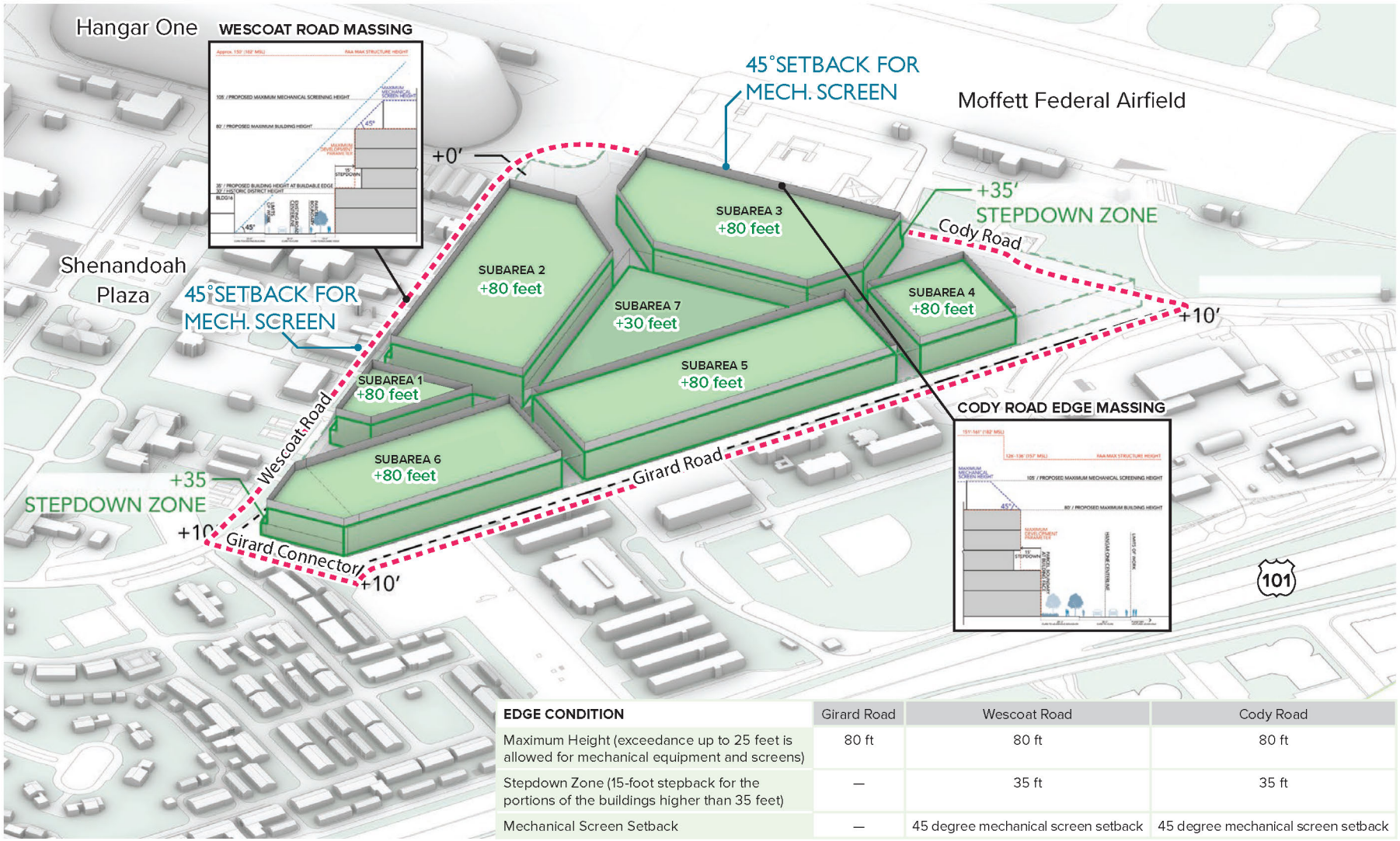
Graphics ... 104894 (12-15-2025) TG

Figure 2-8

Conceptual Elevations for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



EDGE CONDITION	Girard Road	Wescoat Road	Cody Road
Maximum Height (exceedance up to 25 feet is allowed for mechanical equipment and screens)	80 ft	80 ft	80 ft
Stepdown Zone (15-foot stepback for the portions of the buildings higher than 35 feet)	—	35 ft	35 ft
Mechanical Screen Setback	—	45 degree mechanical screen setback	45 degree mechanical screen setback

Note: Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed Maximum and Minimum Development Parameters for each Subarea. Because the proposed project would not be required to be developed to reach the maximum dimensions in each Subarea, image represents a conservative depiction of the project's conceptual layout. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024, 2025.

LEGEND

Project Site

Not to Scale

Graphics ... 104894 (3-31-2026) tg

Figure 2-9

Maximum and Minimum Development Parameters and Standards for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

2.3.2.5 Building Design and Lighting

The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same building design and lighting. The exterior design of the proposed buildings would be comprised of materials including metal panels, exposed and painted structural steel, concrete, glass curtain walls, glazing with frit inlay or colors, terracotta, aluminum frames, and plaster and natural wood. The massing, materials, and colors utilized for the proposed building design would be modulated to create a human-scaled public realm that minimizes the appearance of building bulk and mass and avoids visual clutter. In addition, mechanical equipment located on the roofs of the proposed buildings, as well as emergency generators, would be screened from view from public streets, with a limited number of minor protrusions allowed for exhaust fans and other small appurtenances.

Building façades would be designed with depth of shading members, fritted glass, and solid materials outlined in Standards set forth in the proposed Development Guidelines and will comply with California Green Building Standards Code (CALGreen) Non-Residential Voluntary Measure A5.107, *Bird-Friendly Building Design* (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*). The CALGreen measure includes design requirements related to glazing, slats, screens, netting, and louvers to minimize the risk of birds colliding with proposed buildings.[26] Furthermore, the proposed buildings within each of the Subareas would incorporate spill-out zones along the building frontages, which would include patios and terraces with seating areas that would be fully or partially covered by building articulation, trellises, or tree canopies.

Lighting throughout the Project Site would be provided for safety, security, and wayfinding purposes, and would illuminate roadways, sidewalks, and primary pathways, while minimizing light pollution. Specifically, lighting would be incorporated along the streets and sidewalks along the exterior of the Project Site along Wescoat Road, Cody Road, and Girard Road, as well as through the interior of the Project Site between the proposed buildings. In addition, primary path lighting would be provided along the Promenade and around the Central Green, with secondary path lighting being incorporated through the Central Green and Hangar Commons. Lighting fixtures incorporated throughout the Project Site would use efficient lighting technologies, including but not limited to, LED technology, and would provide lighting consistent with the minimum requirement levels by the Illumination Engineering Society of North America. In addition, lighting would be directed away from the adjacent properties by utilizing directional lighting with baffles, and non-reflective tinting on windows, among other mechanisms. Furthermore, lighting fixtures would comply with dark sky principles outlined by the International Dark-Sky Association and incorporate shielding to restrict light pollution beyond a 90-degree angle.

2.3.2.6 Open Space and Landscaping

The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same amount of open space and landscaping. The CEQA Proposed Project and CEQA Reduced Density Alternative would provide a minimum of 10 acres of publicly accessible open space, including pathways, active uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses

[26] There are several other design requirements that the project must comply with. For example, the proposed project will comply with applicable codes and regulations outlined in APD 8829.1, including, but not limited to, CCR Title 24, the National Fire Protection Association's National Fire Codes, NASA Research Park Design Review Program, and 14 CFR Part 1216, NASA Environmental Quality.

(e.g., open lawns, patios). Most of the proposed open space would be located at the center of the Project Site with additional open space in the northern, western, and eastern corners of the site.

As shown in Figure 2-5, the proposed project would include up to four open space areas, consisting of the following:

- **Central Green:** The Central Green would include a circular field at the center point of the Project Site in Subarea 7, with additional amenity seating, landscaped areas, and walkways to connect the other Subareas. The Central Green would include a loop pathway with a shaded canopy around its perimeter. The Central Green would be used for programming and events, such as corporate or academic events, demonstration or exhibition programming, picnicking and lounging, seasonal festivals, and stargazing. The Central Green would also provide stormwater collection and treatment areas.
- **Hangar Commons:** Hangar Commons would be at the northernmost portion of the Project Site between Subareas 2 and 3, across from Hangar One at the intersection of Wescoat Road and Cody Road. Hangar Commons would include seating areas with direct views to Hangar One. Hangar Commons would also serve as the location for an at-grade centralized stormwater retention basin.
- **Gateway Plaza:** The Gateway Plaza would be in the western portion of the Project Site along Wescoat Road between Subareas 1 and 6. It would include seating areas and an outdoor gathering space to serve the conference center; it would be the western starting point for the Promenade.
- **Promenade:** The Promenade would be a multi-modal, car-free connection through the Project Site in the west–east direction, from the Gateway Plaza toward Cody Road.

Seating areas and patios would be incorporated adjacent to the Promenade and around the Central Green and Hangar Commons. Furthermore, the proposed buildings within each of the Subareas would incorporate spill-out zones along building frontages. The spill-out zones would include patios and terraces with seating areas that would be fully or partially covered by building articulation, trellises, or tree canopies.

Landscaping would be incorporated throughout the Project Site and include a mix of native, climate-adaptive, and drought-resistant plant materials, along with phytoremediation-treated species (see Section 2.3.2.7, *Sustainability Features*). No invasive and/or noxious plant species would be used in project landscaping. Existing landscaping includes approximately 245 trees located throughout the Project Site. In total, implementation of the CEQA Proposed Project and CEQA Reduced Density Alternative would include removing approximately 227 trees (including up to 158 trees that would qualify as protected trees under the Santa Clara County Heritage Tree Ordinance) and planting approximately 1,283 new trees, resulting in a total of approximately 1,301 trees on the Project Site. Of the 1,283 new trees, 390 trees in a 24-inch box container would be replacement trees, which would meet the requirements of the Santa Clara County Heritage Tree Ordinance. Although tree replacement is not required, the proposed project would include implementation of the protective measures to protect trees before and during construction and avoid future loss of additional trees.[27] Of the 893 other new trees, a portion would be used for phytoremediation; the minimum number of phytoremediation trees will be determined by agreements with the EPA (see Section 2.3.3, *Remediation,* for further discussion of phytoremediation).[28]

[27] Hort Science. 2024. *Preliminary Arborist Report: Ames Research Center, Mountain View (Santa Clara County), CA.* September 2024. The report is included in Attachment C to Appendix 3.14-1 of this joint EIR/EIS.

[28] *Phytoremediation* uses plants to remediate contaminated environments.

Streetscape Improvements

As part of the CEQA Proposed Project and CEQA Reduced Density Alternative, certain streetscape and associated landscape improvements would be constructed adjacent to building frontages and within the Project Site. The streetscape and landscape improvements for the CEQA Proposed Project and CEQA Reduced Density Alternative would include landscaping, tree planting, sidewalk, bike lane, loading zone, and lighting and street furniture installations along Wescoat Road, Cody Road, and Girard Road.

Temporary Programming and Events

Temporary programming and events in the Central Green would consist of approximately one event per month (i.e., approximately 12 events per year) that may use amplified sound.

2.3.2.7 Sustainability Features

The CEQA Proposed Project and CEQA Reduced Density Alternative would incorporate various sustainability strategies for both the proposed buildings and landscaping to reduce energy consumption, water consumption, and waste generation. The CEQA Proposed Project and CEQA Reduced Density Alternative would achieve, at a minimum, a Leadership in Energy and Environmental Design (LEED) Silver rating. The proposed sustainability design responds to the climate and context by optimizing thermal comfort through passive cooling, providing windbreaks, prioritizing daylight within floor plates of the buildings and outdoor spaces, and providing a variety of courtyards and amenity terraces and patios.

In addition, the CEQA Proposed Project and the CEQA Reduced Density Alternative would include the construction and operation of photovoltaic (PV) systems to generate on-site renewable energy and battery energy storage systems that meet or exceed minimum Energy Code compliance requirements through prescriptive or performance based design provided in the proposed Development Guidelines. The PV systems would be installed on the roofs of the proposed buildings. The PV systems would connect to the battery energy storage systems. Based on the current prescriptive Energy Code requirements, an initial estimate of the battery energy storage system energy is approximately 733-kilowatts. Preliminary plans indicate that individual battery energy storage systems would range in size (i.e., storage capacity) from approximately 6 kilowatt hours (kWh) to 940 kWh. The battery energy storage system would be distributed throughout the buildings within each Subarea.

All new building systems (e.g., heating, ventilation, air-conditioning [HVAC], mechanical systems) would be supplied with electricity, eliminating the need for connections to Pacific Gas & Electric's (PG&E) natural gas infrastructure for building operations. However, gases (e.g., oxygen, carbon dioxide [CO_2], nitrogen, clean dry air, natural gas) may be used by tenants for research purposes in laboratories within the Research and Office Uses. The proposed laboratories would be supported through gas tanks, either within the laboratories, or at a central location within a building, or located in working yards.

The CEQA Proposed Project and CEQA Reduced Density Alternative would incorporate potable water conservation features within buildings (e.g., low-flow fixtures for indoor water use, dual plumbing to allow recycled water usage for flushing), a drip irrigation system, and drought-friendly and ecologically appropriate plantings. The CEQA Proposed Project and CEQA Reduced Density Alternative would also be designed to conserve resources and protect water quality through the management of

stormwater runoff using low-impact development (LID) methods, where feasible. To treat stormwater discharges from the Project Site, the CEQA Proposed Project and CEQA Reduced Density Alternative would incorporate a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, Silva Cells, and a centralized stormwater retention basin.

The proposed design elements (e.g., pedestrian circulation improvements, bicycle circulation improvements and bicycle parking, transportation demand management [TDM] measures) would encourage alternative forms of transportation. As discussed under the *Transportation Demand Management* subheading in Section 2.3.5, *Transportation and Circulation*, the CEQA Proposed Project and CEQA Reduced Density Alternative would include a project-specific TDM plan to reduce the vehicle trips and associated vehicle miles traveled (VMT) generated by the proposed project. The majority of the Project Site is within 0.50 mile of the Bayshore/NASA VTA light rail station and the Project Site is within walking and biking distance of the station. In addition, the proposed project would follow the most current CALGreen code requirements. Approximately 10 percent of the total number of parking spaces (i.e., approximately 342 spaces under CEQA Proposed Project and approximately 206 spaces under the CEQA Reduced Density Alternative) would be electric-vehicle (EV) capable to accommodate the future installation of EV chargers.

For construction and demolition, 50 percent of all inert solids (i.e., building materials) and 50 percent of non-inert solids (i.e., all other materials) would be recycled.

2.3.2.8 Occupancy

Student/Faculty Housing and Short-Term Lodging

The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same number of Student/Faculty Housing units and Short-Term Lodging units; thus, the on-site population for these uses would be the same, as shown in Table 2-8. The CEQA Proposed Project and CEQA Reduced Density Alternative would result in approximately 200 Short-Term Lodging guests and approximately 363 Student/Faculty Housing residents, for a total of approximately 563 Short-Term Lodging guests and residents.

Table 2-8. Proposed Guests and Residents for the CEQA Proposed Project and CEQA Reduced Density Alternative

	Proposed Units	Generation Rate	Guests/Residents
Existing			
Existing Residents on the Project Site	—	—	0
Proposed Project			
Short-Term Lodging Guests	100 units	2 occupants/unit	200
Student/Faculty Housing Residents	145 units	2.5 occupants/unit[a]	363
Total Net New Guests and Residents	—	—	***563***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
Note:

a. The average of 2.5 occupants per unit is based on the following calculation: (2 occupants per studio × 25 percent) + (2 occupants per one-bedroom unit × 25 percent) + (3 occupants per two-bedroom unit × 50 percent)/100 percent.

Research and Office, Conference Center, and Active Uses

The CEQA Proposed Project would result in more employees and students than the CEQA Reduced Density Alternative because the CEQA Proposed Project would include more square footage for Research and Office Uses and more space for academic uses, as shown in Table 2-9. The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same amount of square footage for Conference Uses and Active Uses; thus, the on-site population for these uses would be the same, as shown in Table 2-9. Accounting for the 42 existing employees who would no longer work at the Project Site or NASA ARC with implementation of the proposed project, the CEQA Proposed Project would result in approximately 6,132 employees and students, whereas the CEQA Reduced Density Alternative would result in approximately 3,384 employees and students.

2.3.3 Remediation

No remediation activities are included as part of the CEQA Proposed Project or CEQA Reduced Density Alternative. The Project Proponent is working with EPA, the RWQCB, San Francisco Bay Regional Water Quality Control Board Regional Water Board (Regional Water Board), and NASA on an Environmental Issues Management Plan (EIMP). The Spring 2026 project-specific EIMP is currently under review by the EPA and San Francisco Bay Regional Water Quality Control Board, the regulatory agencies that will approve of the Spring 2026 project-specific EIMP. NASA has previously reviewed and provided comments on the Spring 2026 project-specific EIMP. Appendix 2-2 of this joint EIR/EIS includes the Spring 2026 project-specific EIMP.

Implementation of the Spring 2026 project-specific EIMP is required for project implementation and is included in this joint EIR/EIS as a mitigation measure. Prior to commencement of construction of the proposed project, the EPA and the Regional Water Board will review and approve the Spring 2026 project-specific EIMP. The Spring 2026 project-specific EIMP will also be periodically reviewed and any necessary updates or addenda to the Spring 2026 project-specific EIMP will be reviewed by NASA and submitted to the EPA and Regional Water Board for approval.

The implementation of the Spring 2026 project-specific EIMP by the Project Proponent is not intended to relieve the Responsible Parties of their responsibilities and ongoing obligations. Rather, the Spring 2026 project-specific EIMP allocates as between NASA and the Project Proponent who will take actions to address environmental conditions in the event of non-performance or delayed performance by another Responsible Party, but such actions will not result in Project Proponent (including tenants and project developers) becoming a Responsible Party.

The Spring 2026 project-specific EIMP builds upon the prior 2005 NRP EIMP (and a subsequent 2007 Addendum); the 2005 NRP EIMP does not apply to the proposed project. The Spring 2026 project-specific EIMP has been updated to reflect current regulatory requirements[29] and includes more detailed procedures specific to the Project Site. A Settlement Agreement and Covenant Not to Sue (currently in draft form) is being entered into between the Project Proponent, Moffett Partners, LLC, and the United States Department of Justice and United States Environmental Protection Agency Region 9 (Covenant Not to Sue), with respect to the Project Site. The Covenant Not to Sue provides the Project Proponent with certain liability relief in consideration of a monetary payment, a phytoremediation project, and implementation of the Spring 2026 project-specific EIMP within the Limits of Work.

[29] The Spring 2026 project-specific EIMP: (a) provides an updated description of exposure pathways, (b) discusses soil and groundwater TCLs provided in the 2005 NRP EIMP, (c) provides updated TCLs for groundwater and soil, and (d) provides TCLs for indoor air, soil vapor, and sub-slab vapor.

Table 2-9. Proposed Employees and Students under the CEQA Proposed Project and CEQA Reduced Density Alternative

	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Reduced Density Alternative (NEPA Build Alternative 2)		
	Proposed Land Use (sf)	**Generation Rate**	**Employees**	**Proposed Land Use (sf)**	**Generation Rate**	**Employees**
Existing						
Existing Employees or Tenants on the Project Site	—	—	42	—	—	42
Proposed Project						
Research and Office Uses						
Office	350,000	279 sf/ employee	1,254	190,000	279 sf/ employee	681
Laboratory and R&D	1,390,000	405 sf/ employee	3,432	750,000	405 sf/ employee	1,852
Academic	260,000	234 sf/ employee	1,111	140,000	234 sf/ employee	598
Conference Uses	25,000 (20 rooms)	1 employee per room	20	Same as CEQA Proposed Project	1 employee per room	20
Active Uses	90,000	500 sf/ employee	180	Same as CEQA Proposed Project	500 sf/ employee	180
Total Proposed Employees	—	—	*5,997*	—	—	*3,331*
Total Proposed Students (based on academic square footage)	260,000	0.00068 sf/ student	*177*	140,000	0.00068 sf/ student	*95*
Total Net New Employees and Students (accounting for the existing employees who would no longer work at the Project Site with implementation of the proposed project)	—	—	***6,132***	—	—	***3,384***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
Note: sf = square feet

The purpose of the Spring 2026 project-specific EIMP is to provide a decision framework for the management of residual chemicals in soil, groundwater, and existing and future structures within the Project Site during construction and operation of the CEQA Proposed Project or CEQA Reduced Density Alternative. The Spring 2026 project-specific EIMP includes required procedures that must be followed to address the known remaining environmental conditions within the Project Site as well as contingency actions to be taken in the event that previously unknown environmental conditions are encountered during development of the CEQA Proposed Project or CEQA Reduced Density Alternative.

The CEQA Proposed Project and CEQA Reduced Density Alternative would incorporate landscaping that would allow the inclusion of phytoremediation strategies to improve soil and groundwater quality (see Section 2.2.2, *Existing Conditions*). The CEQA Proposed Project and CEQA Reduced Density Alternative would include planting phytoremediation bands along Girard Road to intersect the flow of the existing contamination and incorporating phytoremediation species, such as poplar, willow, and cottonwood trees, into the overall landscape design.

Where potential conflicts between the CEQA Proposed Project or CEQA Reduced Density Alternative and the location of existing remediation system components and/or groundwater monitoring wells occur, these conflicts will be identified and resolved during the design stage at each phase of the proposed project. Relocation or removal of any remediation system components may occur only with the prior approval of EPA and the California RWQCB, San Francisco Bay Region. Design and implementation of any changes to the remediation system could include properly sealing groundwater wells designated to be closed, installing and developing any replacement groundwater wells, and installing and connecting any rerouted pipelines or other system components that need to be relocated.

Specifically, the Spring 2026 project-specific EIMP identifies measures to reduce potential exposure to VOCs in indoor air and groundwater movement, including the installation of a vapor barrier and sub-slab ventilation system into new buildings and the use of low-permeability backfill or cutoff walls to reduce potential contaminant migration during utility work or trenching. The Spring 2026 project-specific EIMP also includes risk management measures to be implemented during project construction, which include, but are not limited to, the development and implementation of a site-specific Health and Safety Plan,[30] dust and odor control measures, and procedures for the proper management of dewatering water, hazardous building materials, and abandoned underground storage tanks encountered during project construction.

2.3.4 Construction

The CEQA Proposed Project and CEQA Reduced Density Alternative would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours. Less square footage would need to be constructed in each building under the CEQA Reduced Density Alternative; thus, the duration of some construction subphases would be reduced under the CEQA Reduced Density Alternative compared to the CEQA Proposed Project. The CEQA Proposed Project and CEQA Reduced Density Alternative would include a construction traffic control plan for each phase of the proposed project to address construction

[30] A health and safety plan describes health and safety training requirements for on-site workers, personal protective equipment to be used, and other precautions to be undertaken to minimize direct contact with soil, groundwater, and soil vapors.

traffic on regional and local roads in the vicinity of the Project Site. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption.

2.3.4.1 Demolition

All existing buildings, building slabs, pavement sections, utility infrastructure, sidewalks, and other hardscape would be demolished, except for existing underground NASA critical infrastructure, which would remain. The portion of an existing below-grade steam tunnel under Cody Road within the Project Site would also be demolished; the portion of the steam tunnel outside the Project Site would remain. A total of approximately 369,000 square feet of building area and paving would be demolished. It is anticipated that approximately 19,600 cubic yards (cy) of demolition materials (including buildings, building foundations, roads, pavement, cleared and grubbed material, steam tunnel, and contaminated soil) would be transported off-site for disposal and approximately 11,600 cy of demolition materials would be recycled to be used as fill at the Project Site. The CEQA Proposed Project and CEQA Reduced Density Alternative would be required to comply with the procedures and contingency actions described in the Spring 2026 project-specific EIMP, including those related to contaminated soil, ACM, LBP, and PCB, as discussed in Section 2.3.3, *Remediation*.

2.3.4.2 Ground Disturbance and Excavation

The proposed grading would follow the existing drainage pattern, flowing south to north. The south-to-north slope pattern would be maintained with a general 0.8 percent slope across the Project Site. The CEQA Proposed Project and CEQA Reduced Density Alternative would result in approximately 45 acres of ground disturbance during construction, inclusive of the Project Site and Off-Site Areas. Construction activities would comply with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit and the Municipal Regional Permit. As part of the Construction General Permit, standard erosion control measures and best management practices (BMPs) would be identified in a Storm Water Pollution Prevention Plan (SWPPP) and implemented during construction to reduce sedimentation in waterways and loss of topsoil.

The Project Proponent proposes to use recycled materials from demolition activities and spoils generated from excavation activities on-site. If additional soil is required for the CEQA Proposed Project or CEQA Reduced Density Alternative, soil would be imported. All imported soil would be certified clean with supporting documentation per Department of Toxic Substances Control (DTSC) fill guidance (California Environmental Protection Agency [CalEPA] 2001; CalEPA 2006), thereby eliminating the risk of import of contaminated soil onto the Project Site. Between the import required to restore the Project Site's existing grade (approximately 13,000 cy), the recycled material to be used as fill (approximately 11,600 cy), and the spoils generated from grading activities (approximately 105,500 cy), a total of approximately 104,100 cy of net soil export would be generated. However, to avoid this amount of export, the Project Site would be raised above existing grade. Along the south side of the Project Site, between 0.5 and 5 feet of fill would be placed. Because the Project Site would need to conform to the existing grade along the west, north, and east sides of the site, a small amount of fill (between 0 and 1 foot) would be placed. Most of the fill would be placed in the center and the southern portions of the Project Site, ranging from 0.5 to 2 feet near the northern edge and 2 to 6 feet near the southern edge. For the purposes of this joint EIR/EIS, it is assumed that the Project Site would be raised above the existing grade on the south side. Table 2-10

summarizes the cut, fill, recycled material, and import quantities for the CEQA Proposed Project and CEQA Reduced Density Alternative. The CEQA Proposed Project and CEQA Reduced Density Alternative would be required to comply with the procedures and contingency actions described in the Spring 2026 project-specific EIMP, including those related to the evaluation and disposal of contaminated soil and/or water, as discussed in Section 2.3.3, *Remediation*.

Table 2-10. Estimated Proposed Soil Spoils, Fill, and Import Quantities for the CEQA Proposed Project and CEQA Reduced Density Alternative

	Estimated Quantity (cubic yards)
Cut	-3,303
Fill	107,903
On-Site Soil Deficit to Meet Fill Needs without Recycled Spoils	*104,600*
Recycled Spoils Generated On-Site	-104,100
Net Soil Import	***500***

Source: BKF. 2026. *Berkeley Space Center, Moffett Field, NASA Research Park, Grading and Overland Release Master Plan.* 2026.

The maximum depth of excavation associated with construction of the CEQA Proposed Project and CEQA Reduced Density Alternative would be as follows:

- Approximately 1 foot below ground surface (bgs) for building demolition (including the off-site building demolition discussed in Section 2.3.7, *Off-Site Utility Improvements and Demolition)*
- Approximately 1 to 2 feet bgs for roads
- Approximately 1 to 4 feet bgs for open space and landscaping
- Approximately 3 to 4 feet bgs for typical utility improvements (including the off-site utility improvements discussed in Section 2.3.7, *Off-Site Utility Improvements and Demolition*)
- Approximately 5 feet bgs for building foundations
- Approximately 11 feet bgs for the distribution pipes under the CUP Option for the CEQA Proposed Project (discussed in Section 2.3.6.8, *Heating, Ventilation, and Air Conditioning Systems*, under the *CEQA Proposed Project with the Central Utility Plant Option* subheading)
- Approximately 12 feet bgs for the demolition of the steam tunnel discussed in Section 2.3.4.1, *Demolition*
- Approximately 25 feet bgs for the below-grade sewer lift station (in the southwest corner of the Project Site, near Girard Road and the Girard Connector, as discussed in Section 2.3.6.3, *Wastewater*, under the *Wastewater Main Connection Options* subheading)

Temporary construction dewatering may be required in some isolated areas of the Project Site to address the effects of shallow groundwater. Consistent with the requirements of the Spring 2026 project-specific EIMP, groundwater produced during dewatering from construction activities would be sampled for laboratory analysis and may be used for dust control within the Project Site with NASA approval and if chemical of potential concern concentrations are below target concentration levels. If use of groundwater from dewatering activities for dust control is not possible, groundwater would be transported to one of the nearby existing or future groundwater treatment systems operated by the Responsible Parties for disposal, with approval of the relevant Responsible Party (depending on the area in which the excavation occurs and the chemicals of potential concern

detected in groundwater). To the extent that use for dust control or disposal using one of the groundwater systems is not possible, the Project Proponent could discharge groundwater produced during dewatering to the sanitary sewer if a discharge permit can be obtained. If groundwater from dewatering activities is unable to be disposed of by one of the options listed previously, the Project Proponent would be required to arrange for the treatment and/or disposal of the water at a permitted off-site facility.

2.3.4.3 Schedule and Phasing

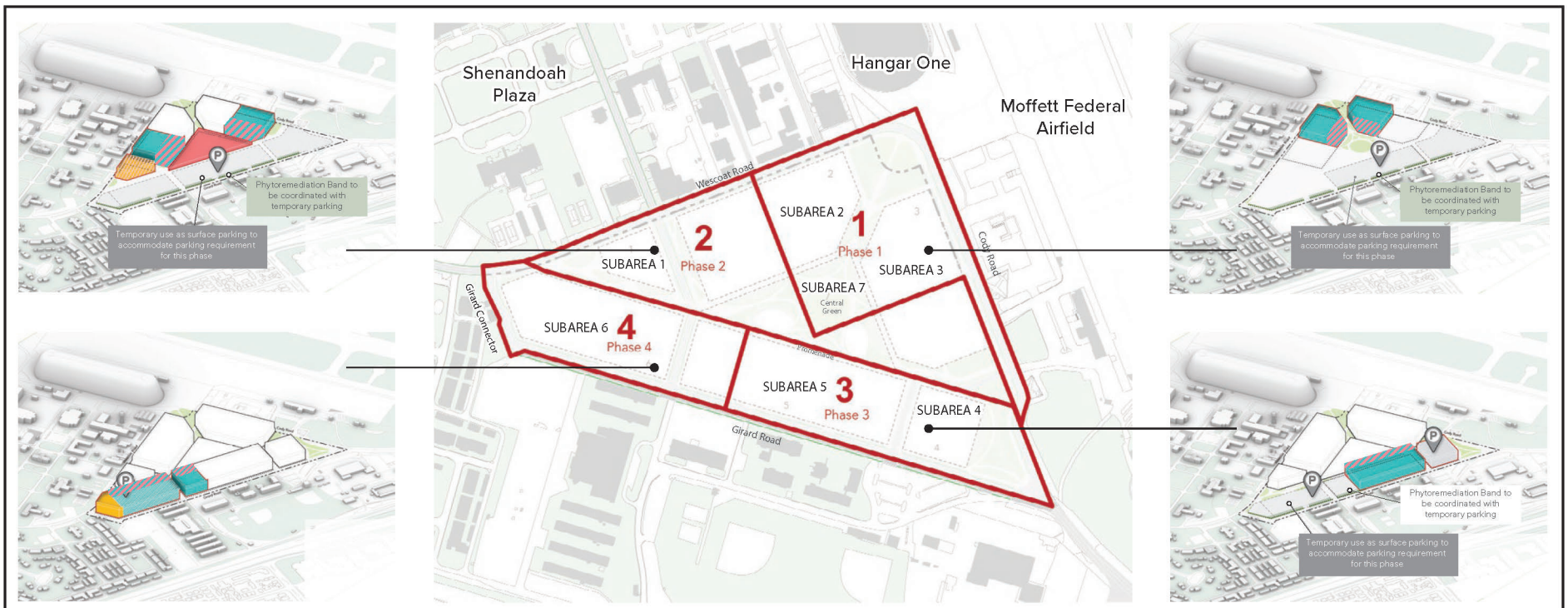
Construction is anticipated to begin in 2027 and be completed by 2040; full project occupancy is anticipated to occur in 2041. The CEQA Proposed Project and CEQA Reduced Density Alternative would be constructed in four phases, as shown in Figure 2-10, Conceptual Construction Phasing Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative. Each phase of construction would include some or all of the following subphases: demolition, site preparation and grading, building, utility and road, parking structure, and surface parking. Some subphases (e.g., site preparation) would occur concurrently and others would advance sequentially. Less square footage would need to be constructed in each building under the CEQA Reduced Density Alternative; thus, the duration of some construction sub-phases would be reduced under the CEQA Reduced Density Alternative compared to the CEQA Proposed Project. Specifically, under the CEQA Reduced Density Alternative, the duration of the "core and shell" and "architectural coating" subphases for research buildings would be reduced by 2 months and 1 month, respectively, relative to the CEQA Proposed Project. However, the overall buildout schedule would be the same under the CEQA Proposed Project and CEQA Reduced Density Alternative. Buildings within each phase would be occupied immediately following completion of each phase. Appendix A of the *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report* in Appendix 3.3-1 of this joint EIR/EIS includes further details regarding the construction assumptions for the proposed project.

During each phase, the entire construction site area for that phase would be fenced to control pedestrian and vehicular entry, except at controlled (i.e., gated) points. The construction fencing would remain locked during non-construction hours.

Phase 1

Demolition of existing on-site structures, surface asphalt, and a below-grade steam tunnel would occur in the northern portion of the Project Site (within portions of Subareas 2, 3, and 7) during Phase 1. In addition, demolition of existing Building 543 in the Off-Site Areas south of the Project Site could occur as early as Phase 1. Construction activities during Phase 1 would also occur in the northern portion of the Project Site. Temporary surface parking would be located in Subareas 4 and 5. Phase 1 would include the relocation of Cody Road and construction of a portion of the Research and Office Uses, Active Uses, and a portion of the Central Green. Only the CEQA Proposed Project includes the WRF Option (see Section 2.3.6.2, *Recycled Water*); construction of the first phase of the WRF Option would occur at the end of Phase 1. In addition, Phase 1 would include the construction of some of the utility improvements in the Off-Site Areas. During Phase 1, the demolition subphase would occur over approximately 7 months, the site preparation and grading subphases would occur over 12 months, the building subphases would occur over 48 months, the utility and road subphases would occur over 30 months, and the surface parking subphases would occur over 12 months. Construction of Phase 1 is anticipated to occur over 54 months, with first occupancy of Phase 1 in 2032.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (9-10-2025) TG

Figure 2-10
Conceptual Construction Phasing Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative
Berkeley Space Center at NASA Research Park

Phase 2

Demolition of existing on-site structures and surface asphalt would occur in the western and eastern portions of the Project Site (within Subarea 1 and portions of Subareas 2, 3, and 7) during Phase 2. Construction activities during Phase 2 would also occur in the western and eastern portions of the Project Site. Temporary surface parking would be located in Subareas 4, 5 and 6. Phase 2 would include the construction of a portion of the Research and Office Uses, Conference Uses, the Short-Term Lodging, and the ground-floor Active Uses in the Central Green. In addition, Phase 2 would include the construction of some of the utility improvements in the Off-Site Areas. During Phase 2, the demolition subphase would occur over approximately 3 months, the site preparation and grading subphases would occur over 12 months, the building subphases would occur over 38 months, the utility and road subphases would occur over 18 months, and the surface parking subphase would occur over 10 months. Construction of Phase 2 is anticipated to occur over 42 months, with first occupancy of Phase 2 in 2035.

Phase 3

Demolition of on-site existing structures and surface asphalt would occur in the eastern and southern portions of the Project Site (within Subarea 4 and a portion of Subarea 5) during Phase 3. In addition, demolition of existing Buildings 583A, 583C, 547E, and 944 in the Off-Site Areas south of the Project Site could occur as early as Phase 1. Construction activities during Phase 3 would also occur in the eastern and southern portions of the Project Site. Temporary surface parking would be located in Subareas 5 and 6. Phase 3 would include construction of a portion of the Research and Office Uses and Active Uses and also a parking garage. Phase 3 would also include demolition of some temporary surface parking. In addition, Girard Road would be built out from Cody Road to Dailey Road. Only the CEQA Proposed Project includes the CUP Option (see Section 2.3.6.8, *Heating, Ventilation, and Air-Conditioning Systems*); construction of the CUP Option would occur during Phase 3. Only the CEQA Proposed Project includes the WRF Option (see Section 2.3.6.2, *Recycled Water*); construction of the second phase of the WRF Option would occur at the end of Phase 3. In addition, Phase 3 would include the construction of some of the utility improvements in the Off-Site Areas. During Phase 3, the demolition subphase would occur over approximately 3 months, the site preparation and grading subphases would occur over 12 months, the demolition subphase would occur over 3 months, the building subphases would occur over 38 months, the utility and road subphases would occur over 19 months, the parking structure subphases would occur over 28 months, and the surface parking subphases would occur over 10 months. Construction of Phase 3 is anticipated to occur over 42 months, with first occupancy of Phase 3 in 2038.

Phase 4

Demolition of existing on-site structures and surface asphalt would occur in the southern and western portions of the Project Site (within Subarea 6 and portions of Subareas 5) during Phase 4. Phase 4 would also include demolition of the remaining temporary surface parking. Construction activities during Phase 4 also occur in the southern and western portions of the Project Site. Phase 4 would include construction of the remainder of a portion of the Research and Office Uses, the Student/Faculty Housing units, and a parking garage. In addition, Phase 4 would include the construction of some of the utility improvements in the Off-Site Areas, including Girard Connector to Wescoat Road. During Phase 4, the demolition subphase would occur over approximately 3 months, the site preparation and grading subphases would occur over 12 months, the demolition subphase

would occur over 3 months, the building subphases would occur over 32 months, and the parking structure subphases would occur over 23 months. Construction of Phase 4 is anticipated to occur over 42 months, with first occupancy of Phase 4 by 2041.

2.3.4.4 Haul Route

The haul route for demolition materials would be U.S. 101. Trucks traveling to the Project Site would exit U.S. 101 at Ellis Street, go through the applicable access control points along Ellis Street, and continue to the Project Site via Cody Road. Trucks traveling from the Project Site would exit the Project Site via Cody Road, then continue to Ellis Street and through the applicable access control points and onto the U.S. 101 on-ramp. The haul route is not anticipated to change under Open Campus conditions, which are discussed under the *Open Campus* subheading in Section 2.3.5, *Transportation and Circulation*. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption. The temporary traffic control procedures will address haul routes.

2.3.4.5 Construction Equipment and Worker Parking

Typical equipment would be used during construction of the CEQA Proposed Project or CEQA Reduced Density Alternative. This could include, but would not be limited to, an excavator, crawler tractor, mini excavator, concrete saw, rubber-tired dozer, tractor, loader, backhoe, generator, plate compactors, tower crane, trawler crane, man and material lift, aerial lift, welder, air compressor, rough fork lift, scissor lift, paver, grader, roller, and bobcat. Driven piles are not included as part of the proposed project. The proposed project may include piles installed through other construction methods.

All staging of construction equipment is expected to be on-site for Phases 1 to 3. Construction worker parking would also be on-site for Phases 1 to 4. Staging of construction equipment during portions of Phase 4 could be off-site at existing paved areas adjacent to the Project Site (to the south or east) but within NASA ARC areas that would be suitable for construction material.[31]

2.3.4.6 Construction Hours

Most construction would occur from 7:00 a.m. to 7:00 p.m. Pacific Time on weekdays. Limited nighttime or weekend construction could be required for concrete pours and off-site construction in roadways for utility installation.

The range of construction activity in the early morning hours would vary, but concrete pours are anticipated during each construction phase. In general, approximately five individual nights of construction would be required per building for concrete pours. In some instances, nighttime concrete pours could occur on back-to-back nights. However, the concrete pours would be limited in number and would generally occur months apart from each other. Off-site utility work may occur outside of normal business hours and on weekends, per NASA requirements. It is anticipated that nighttime or weekend construction could be required in limited instances for concrete pours and

[31] The use of areas adjacent to the Project Site (i.e., to the south or east) within NASA ARC would be contingent on subsequent NASA review and approval of those areas for use. If the use of areas adjacent to the Project Site for construction staging is not approved by NASA, staging of construction equipment during Phase 4 would be on-site.

utility work. In general, this would include approximately 5 days of nighttime construction per building for concrete foundation pours and approximately 10 days of nighttime construction per utility system. Low-level safety lighting may be needed for construction site security. However, the safety lighting would be temporary.

2.3.5 Transportation and Circulation

2.3.5.1 Open Campus

Public access to the Project Site under existing conditions is controlled by a perimeter fence, as well as security and visitor checkpoints located at the main gate on Clark Road and the gate located on Ellis Street. By Phase 1 occupancy, NASA anticipates operational modifications to allow a free flow of traffic at these two checkpoints, as shown in Figure 2-11, Open Campus. No physical improvements are required for these operational modifications, which are referred to as "Open Campus," and are not part of the CEQA Proposed Project or CEQA Reduced Density Alternative. For the purposes of the analysis in this joint EIR/EIS, to account for Open Campus conditions, the following describes the baseline conditions:

- The baseline for the Phase 1 construction analysis (i.e., project-related activities before Phase 1 occupancy) is a typical existing-conditions baseline scenario because Open Campus improvements would not be completed yet.
- The baseline for all operational analyses and Phases 2 to 4 construction analyses is a future baseline scenario that accounts for Open Campus improvements.

2.3.5.2 Site Access

With implementation of the CEQA Proposed Project or CEQA Reduced Density Alternative, the Project Site would be bounded by Wescoat Road, Cody Road, and Girard Road. These roadways would provide site access and access to other areas of the NRP, Eastside/Airfield, and Ames Campus. In addition, Cody Road connects to Ellis Street, which provides direct access to U.S. 101, as shown in Figure 2-1. As discussed below, the Project Site is connected to the surrounding roadway network, which serves vehicles, emergency vehicles, pedestrians, and bicyclists. Construction detours may be implemented as needed to maintain access to and around the Project Site. The CEQA Proposed Project and CEQA Reduced Density Alternative would include a construction traffic control plan for each construction phase. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption.

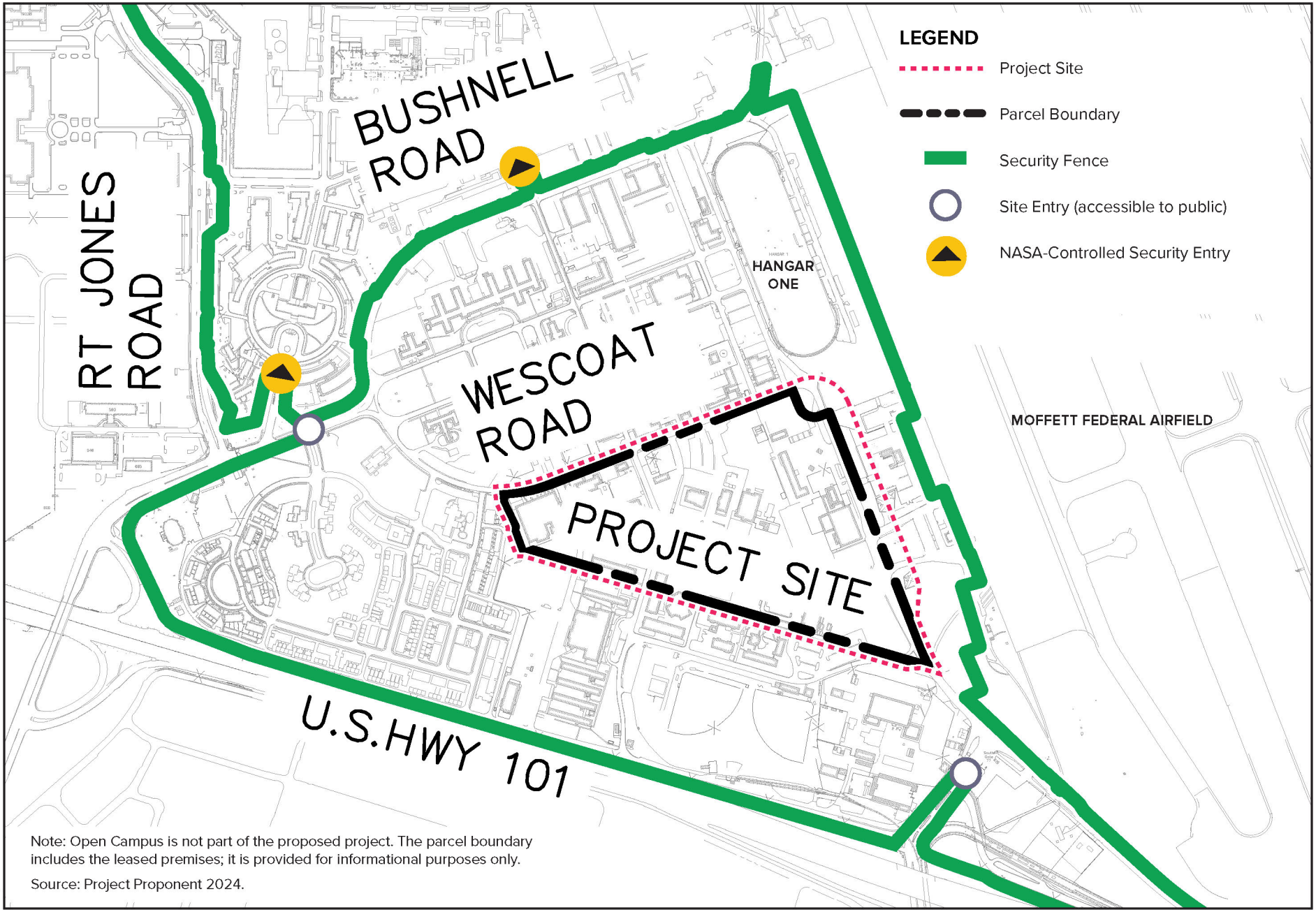
2.3.5.3 Vehicular Access

Vehicular access to the Project Site would be the same for the CEQA Proposed Project and CEQA Reduced Density Alternative and would be primarily from Wescoat Road, Cody Road, and Girard Road, as shown in Figure 2-12, Conceptual Internal Vehicular Circulation Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative**.**

The proposed street improvements for vehicular access within the Project Site include:

- Realignment of Cody Road to the east along the northern boundary of the Project Site.
- Realignment of Girard Road to the north along the southern boundary of the Project Site.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

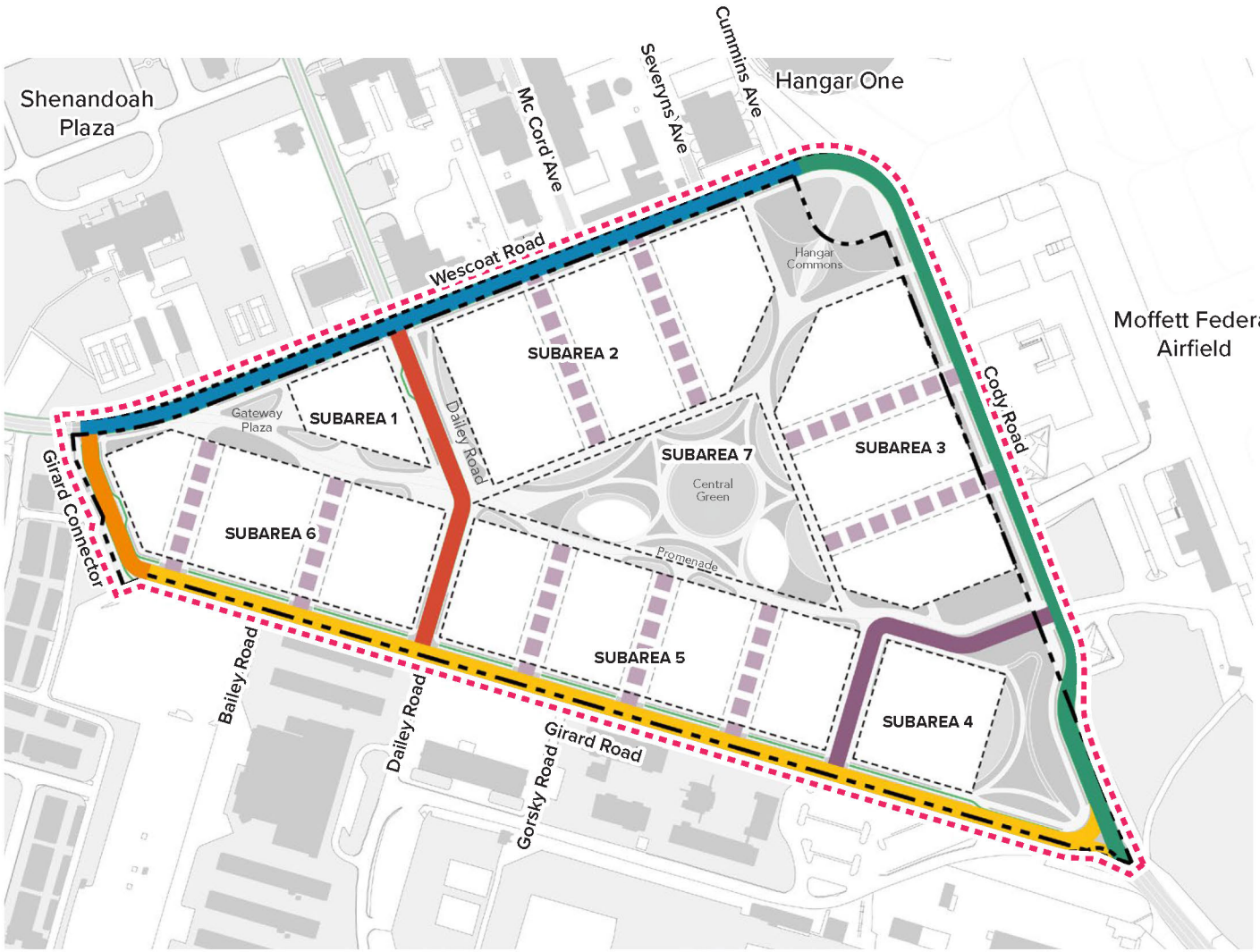


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Figure 2-11
Open Campus
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

- Project Site
- Parcel Boundary
- Cody Road
- Wescoat Road
- Girard Connector
- Girard Road
- Dailey Road
- Shared Use Street
- Subarea 4 Street

0 100 200 400 Feet

N

Note: Images are conceptual until after project approval. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

Graphics ... 104894 (9-10-2025) TG

Figure 2-12
Conceptual Internal Vehicular Circulation Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative
Berkeley Space Center at NASA Research Park

- Construction of the Girard Connector to provide a connection from Girard Road to Wescoat Road.
- Extension of and improvements to Dailey Road between Subareas 1, 2, 5 and 6 to connect Girard Road to Wescoat Road in the western portion of the Project Site.
- Connection of Girard Road to Cody Road in the southeastern portion of the Project Site for access to Research and Office buildings, Student/Faculty Housing, and parking structures off Girard Road as well as accessing Shared Use Streets within Subareas 5 and 6.
- Construction of the Subarea 4 Street between Subareas 3, 4, and 5 to connect Girard Road to Cody Road in the southeastern portion of the Project Site for access to the Project Site's parking structure in Subarea 4 and loading access to portions of Subareas 3 and 7.
- Construction of Girard Road between Dailey Road and Wescoat Road for access to Research and Office buildings, Student/Faculty Housing, and parking structure within Subarea 6 as well as Shared Use Streets within Subarea 6.
- Improvements to Wescoat Road, along Subareas 1, 2, and 6 for bicycle lanes and access to Project Site.
- Construction of Shared Use Streets[32] within each Subarea that would generally terminate at the Central Green and Promenade. The Shared Use Streets would provide vehicular access to primarily loading and service areas.

For each design review application, driveway access points along perimeter roads (i.e., Cody Road, Wescoat Road, and Girard Road) to the Project Site would be evaluated to determine if they warrant new signals or signage, per the California Manual of Uniform Traffic Control Devices, in connection with NASA's NRP Design Review Board process (pursuant to APR 8822.1).

2.3.5.4 Loading Access

On- and off-street loading throughout the Project Site would rely on a combination of centralized loading docks and curb cuts, ensuring adequate circulation and providing access for trucks and other large vehicles. The centralized loading docks would be between proposed buildings on the Shared Use Streets, minimizing the space required for off-street loading areas. To increase servicing flexibility for truck parking, flex curbs would be utilized to reduce the competition for curb space. Loading docks and service areas would be screened from view from public streets. In addition, the CEQA Proposed Project and CEQA Reduced Density Alternative would enforce restrictions on the size of trucks to maintain truck circulation in areas away from the center of the site. During peak operational hours, vehicles accessing the Project Site would be limited to approximately 40 feet in length. However, larger vehicles would be able to access the Project Site for loading during off-peak delivery hours (i.e., before 7:00 a.m. or after 9:00 p.m. under Open Campus conditions, which are discussed in this section under the *Open Campus* subheading).

[32] *Shared Use Streets* would not include formal distinctions for spaces that would be used by vehicles and bicyclists. Shared Use Streets would include shared-use markings for bike and vehicular uses as well as pedestrian sidewalks. The lane width for Shared Use Streets would be increased to provide the turning radii and clearances needed to access the building loading docks for delivery and logistical nodes. Sidewalks would be provided for pedestrian use.

2.3.5.5 Emergency Vehicle Access

Emergency vehicle access would be provided from both the interior and exterior of the Project Site. Access for emergency vehicle aerial apparatuses would be provided along the outer perimeter of the Project Site, along Wescoat Road, Cody Road, and Girard Road. Interior emergency vehicle access would be provided around the Central Green and the Promenade, as well as from Dailey Road, Shared Use Streets, and the proposed Subarea 4 Street in the southeastern portion of the Project Site.

2.3.5.6 Pedestrian/Bicycle Circulation and Parking

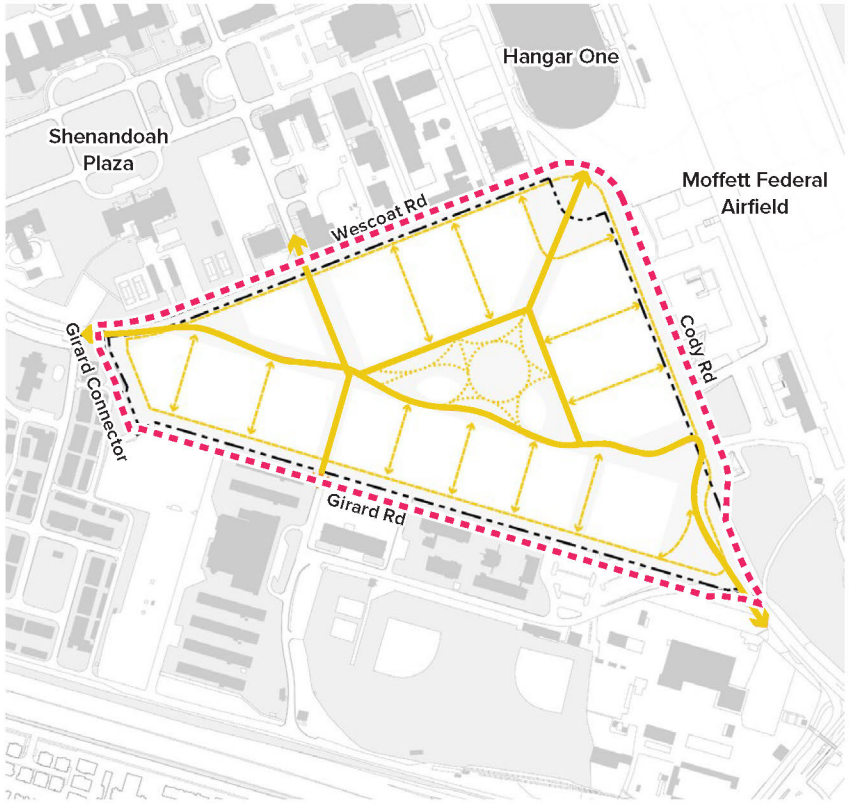
Pedestrian and bicycle circulation within the Project Site would be the same for the CEQA Proposed Project and CEQA Reduced Density Alternative and would include a network of dedicated bicycle lanes, pathways, and landscaped areas for pedestrians and bicyclists, as shown in Figure 2-13, Conceptual Pedestrian and Bicycle Circulation Plans for the CEQA Proposed Project and CEQA Reduced Density Alternative. The proposed pedestrian network would primarily include a Promenade with a multi-modal, car-free connection through the Project Site in the east–west direction, sidewalks along the Dailey Road extension in the western portion of the Project Site, and a pathway along the boundary of the Central Green to Hangar Commons. In addition, the pedestrian network would include the Shared Use Streets between buildings. Primary building entrances and lobbies would be accessible along frontages facing the Central Green and Promenade, while service entrances would be located away from the Central Green, closer to the exterior of the Project Site.

The proposed bicycle network would include the Promenade through the Project Site in the east–west direction, the Dailey Road extension in the western portion of the Project Site, and a pathway along the boundary of the Central Green. In addition, the bicycle circulation improvements along the boundaries of the Project Site include the construction of Class II bicycle lanes on both sides of Wescoat Road, Cody Road, and Girard Road. The proposed bicycle network would provide access and connections to other portions of NASA ARC north of the Project Site and to the Bayshore/NASA VTA light rail station south of the Project Site.

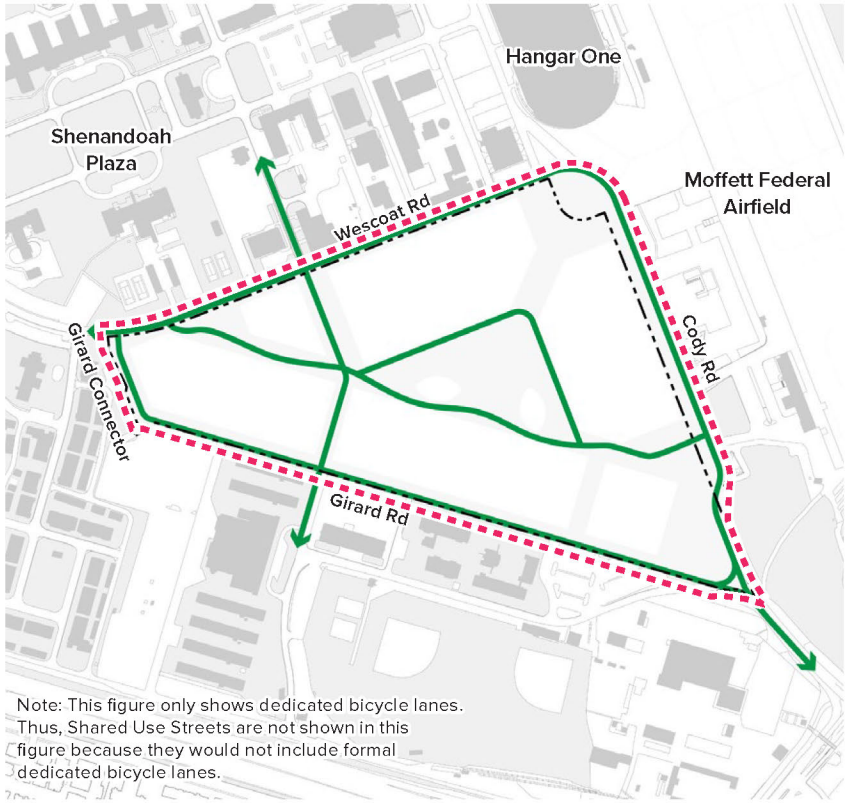
Short- and long-term bicycle parking spaces would be provided throughout the Project Site. Class II short-term bicycle racks would be provided in easily accessible locations close to building entrances, while Class I long-term bicycle parking would be provided in covered and secured structures equipped with card-key or other security technology for access control. Tables 2-11 and 2-12 summarize the proposed bicycle parking ratios and approximate number of bicycle parking spaces for the CEQA Proposed Project and CEQA Reduced Density Alternative, respectively. The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same fixed parking ratios; however, different numbers of parking spaces would be provided depending on the amount of square footage constructed. The CEQA Proposed Project and CEQA Reduced Density Alternative will adhere to the Maximum and Minimum Development Parameters set forth in the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

Pedestrian Circulation Plan



Bicycle Circulation Plan



LEGEND

Project Site

Parcel Boundary

Note: Images are conceptual until after project approval. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

Graphics ... 104894 (9-10-2025) TG

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Figure 2-13

Conceptual Pedestrian and Bicycle Circulation Plans for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

Table 2-11. Proposed Bicycle Parking for the CEQA Proposed Project

	Bicycle Parking Ratios [a]		CEQA Proposed Project (NEPA Build Alternative 1) Minimum Bicycle Parking		
Land Use	**Short-Term Bicycle Parking (Class II)**	**Long-Term Bicycle Parking (Class I)**	**Proposed Land Use (sf)**	**Minimum Short-Term Bicycle Parking (Class II)**	**Minimum Long-Term Bicycle Parking (Class I)**
Research and Office Uses, Conference Uses, and Active Uses					
Office	0.1875 spaces/1,000 sf	0.75 spaces/1,000 sf	350,000	66	263
Lab and R&D	0.1875 spaces/1,000 sf	0.345 spaces/1,000 sf	1,390,000	261	480
Academic	1.5 spaces/10 students[b]	2.25 spaces/10 employees plus 1.5 spaces/10 students[b]	260,000	27	277
Conference Center	—	—	25,000	—	—
Active Uses	0.75 spaces/ 1,000 sf	0.15 spaces/1,000 sf	90,000	68	14
Residential Uses					
Short-Term Lodging	1.5 space/10 units	1.5 space/10 units	75,000 (100 units)[c]	15	113
Student/Faculty Housing	1.5 space/10 units	1.5 space/10 units	130,000 (145 units)[c]	22	195
Total				***459***	***1,342***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.

Notes:

sf = square feet; R&D = research and development

a. The bicycle parking ratios are fixed. The actual number of bicycle parking spaces to be constructed depends on the square footage constructed. The CEQA Proposed Project will adhere to the Maximum and Minimum Development Parameters and the Standards set forth in the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

b. Refer to Table 2-8 and 2-9 for the number of anticipated employees and students that would be generated by the CEQA Proposed Project.

c. Refer to Table 2-8 for the number of proposed units under the CEQA Proposed Project.

Table 2-12. Proposed Bicycle Parking for the CEQA Reduced Density Alternative

	Bicycle Parking Ratios[a]		CEQA Reduced Density Alternative (NEPA Build Alternative 2) Minimum Bicycle Parking		
Land Use	**Short-Term Bicycle Parking (Class II)**	**Long-Term Bicycle Parking (Class I)**	**Proposed Land Use (sf)**	**Minimum Short-Term Bicycle Parking (Class II)**	**Minimum Long-Term Bicycle Parking (Class I)**
Research and Office Uses, Conference Uses, and Active Uses					
Office	0.1875 spaces/1,000 sf	0.75 spaces/1,000 sf	190,000	36	143
Lab and R&D	0.1875 spaces/1,000 sf	0.345 spaces/1,000 sf	750,000	141	259
Academic	1.5 spaces/10 students[b]	2.25 spaces/10 employees plus 1.5 spaces/10 students[b]	140,000	14	149
Conference Center	—	—	25,000	—	—
Active Uses	0.75 spaces/ 1,000 sf	0.15 spaces/1,000 sf	90,000	68	14
Residential Uses					
Short-Term Lodging	1.5 space/10 units	1.5 space/10 units	75,000 (100 units)[c]	15	113
Student/Faculty Housing	1.5 space/10 units	1.5 space/10 units	130,000 (145 units)[c]	22	195
Total				***296***	***873***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.

Notes:

sf = square feet; R&D = research and development

a. The bicycle parking ratios are fixed. The actual number of bicycle parking spaces to be constructed depends on the square footage constructed. The CEQA Reduced Density Alternative will adhere to the Maximum and Minimum Development Parameters and the Standards set forth in the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

b. Refer to Table 2-8 and 2-9 for the number of anticipated employees and students that would be generated by the CEQA Reduced Density Alternative.

c. Refer to Table 2-8 for the number of proposed units under the CEQA Reduced Density Alternative.

As discussed under the *Transportation Demand Management* subheading in Section 2.3.5, *Transportation and Circulation*, the CEQA Proposed Project and CEQA Reduced Density Alternative would include a project-specific TDM plan to reduce the vehicle trips and associated vehicle miles traveled (VMT) generated by the proposed project. The project-specific TDM plan includes on-site Class I and II bicycle parking. Under the CEQA Proposed Project, a minimum of approximately 459 short-term bicycle parking spaces and a minimum of approximately 1,342 long-term bicycle parking spaces would be provided throughout the Project Site. Under the CEQA Reduced Density Alternative, a minimum of approximately 296 short-term bicycle parking spaces and a minimum of approximately 873 long-term bicycle parking spaces would be provided throughout the Project Site.

2.3.5.7 Vehicular Parking

All proposed parking would be provided in two above-ground parking garages. Subarea 4 would include a parking garage; Subarea 6 would include either an above-ground parking garage or a podium parking structure. The height of the parking garages would be consistent with the height of the other proposed buildings, as described in Section 2.3.2.4, *Building Heights and Stepdown Zone*. The parking garages would be available for use by employees, students, faculty, guests, and visitors associated with any of the proposed uses in each Subarea.

The Project Site's proximity to the Bayshore/NASA VTA light rail station, along with the project-specific TDM plan, is projected to result in lower parking demand; the TDM plan is described in this section under the *Transportation Demand Management* subheading. Table 2-13 summarizes the proposed minimum parking ratios and approximate number of parking spaces for the CEQA Proposed Project and CEQA Reduced Density Alternative. The CEQA Proposed Project and CEQA Reduced Density Alternative would have the same fixed parking ratios; however, the CEQA Proposed Project and CEQA Reduced Density Alternative would provide different numbers of parking spaces, depending on the amount of square footage constructed under the CEQA Proposed Project and CEQA Reduced Density Alternative. The CEQA Proposed Project and CEQA Reduced Density Alternative will adhere to the Maximum and Minimum Development Parameters and the Standards set forth in the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*). Under the CEQA Proposed Project, the proposed project would include up to approximately 3,419 parking spaces, whereas the CEQA Reduced Density Alternative would include up to approximately 2,063 parking spaces. In addition, the CEQA Proposed Project and CEQA Reduced Density Alternative would include parking spaces designed to meet California Building Code accessible parking, carpool/vanpool, EV charging station, and EV-capable requirements.

Table 2-13. Proposed Vehicular Parking for the CEQA Proposed Project and CEQA Reduced Density Alternative

		CEQA Proposed Project (NEPA Build Alternative 1)		CEQA Reduced Density Alternative (NEPA Build Alternative 2)	
Land Use	**Parking Ratio[a,b]**	**Proposed Land Use (sf)**	**Parking Spaces**	**Proposed Land Use (sf)**	**Parking Spaces**
Student/Faculty Housing and Short-Term Lodging Uses					
Short-Term Lodging	1.3 spaces/unit	100 units	130	Same	Same
Student/Faculty Housing	1 spaces/unit	145 units	145	Same	Same
Total Parking Spaces	—	—	*275*	Same	Same
Research and Office Uses, Conference Uses, and Active Uses					
Office	1.5 spaces/ 1,000 sf	350,000	525	190,000	285
Laboratory and R&D	1.5 spaces/ 1,000 sf	1,390,000	2,085	750,000	1,125
Academic	1.3 spaces/ 1,000 sf	260,000	338	140,000	182
Conference Uses	1.7 spaces/ 1,000 sf	25,000	43	Same	Same
Active Uses	1.7 spaces/ 1,000 sf	90,000	153	Same	Same
Total Parking Spaces	—	—	*3,144*	—	*1,788*
Total	—	—	***3,419***	—	***2,063***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.

Notes:

sf = square feet; R&D = research and development

a. The parking ratio includes a shared parking reduction target of 15 percent, which is applied evenly to each proposed land use in order to reduce the number of parking spaces required for the CEQA Proposed Project and CEQA Reduced Density Alternative.

b. The parking ratios are fixed. The actual number of parking spaces to be constructed depends on the square footage constructed. The CEQA Proposed Project and CEQA Reduced Density Alternative will adhere to the Maximum and Minimum Development Parameters and the Standards set forth in the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*).

2.3.5.8 Transportation Demand Management

The CEQA Proposed Project and CEQA Reduced Density Alternative would include a project-specific TDM plan to reduce the vehicle trips and associated vehicle miles traveled (VMT) generated by the proposed project through a range of design features (e.g., mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle infrastructure, preferential carpool and vanpool parking, limited automobile parking supply, and ample bicycle parking) and ongoing operational programs (e.g., transit pass/subsidy programs, shuttles, and participation in the NRP Transportation Management Association) to achieve TDM mode-shift targets and thereby reduce the number of trips made by project-generated employees, students/faculty and visitors. Appendix 2-4 of this joint EIR/EIS includes the project-specific TDM plan.[33] The project-specific TDM plan is designed to reduce the trip generation by 22 percent as part of the CEQA Proposed Project and CEQA Reduced Density Alternative. The 22 percent TDM reduction aligns with the TDM requirements in the 2002 PEIS. Because the proposed project is

33 The project-specific TDM Plan is tentative, as transportation-related studies may validate the approach in the TDM Plan or require adjustments to the TDM Plan.

anticipated to be built out in phases, the project-specific TDM plan anticipates an increase in mode shares at each development phase. Overall, the CEQA Proposed Project and CEQA Reduced Density Alternative would implement TDM measures that would complement its mixed-use land use program as well as its proximity to the Bayshore/NASA VTA light rail station. Ultimately, the project-specific TDM plan would include a list of TDM features and programs, an estimate of potential trip reductions, and a recommended monitoring program.

As discussed above, the project-specific TDM plan would include, but not be limited to, the following design features:

- **Passenger pick up/drop off areas:** The proposed project would include passenger pick up/drop off areas with ridesharing on the Girard Connector, Girard Road, Dailey Road, Wescoat Road, and Subarea 4 Street. Some of the passenger pick up/drop off areas on Dailey Road would include a proposed shuttle stop (discussed below). The passenger pick up/drop off areas on the Girard Connector and Girard Road would include flex curbs, which also allows for loading.
- **Shuttle:** The proposed project would establish a shuttle system to service "last mile" connections between the Project Site and nearby transit hubs, including the Mountain View Caltrain station and the Bayshore/NASA VTA light rail station. There would be one shuttle stop within the Project Site on Dailey Road.
- **Transit:** The proposed project would plan to reroute VTA's 51 bus from North Akron Road to Wescoat Road and move the VTA bus stop from South Akron Road to the edge of the Project Site at the corner of Wescoat Road and McCord Avenue.

2.3.5.9 Transit Priority Areas

In accordance with California Senate Bill (SB) 743, aesthetics and parking shall not be considered in determining if a project has the potential to result in significant environmental effects under CEQA, provided the project meets the following criteria under California Public Resources Code Section 21099, Modernization of Transportation Analysis for Transit-Oriented Projects:

- The project is on an infill site,
- The project is in a Transit Priority Area (TPA), or
- The project is a residential, mixed-use residential, or employment-center project.

An infill site is defined as a lot within an urban area that has been previously developed or a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses (Public Resources Code Section 21099[a][4]). A TPA is defined as an area within 0.5 mile of an existing or planned major transit stop, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program or applicable regional plan (Public Resources Code Section 21099[a][7]). Examples include a rail transit station, ferry terminal served by transit, or the intersection of two or more major bus routes. Public Resources Code Section 21099 does not provide a definition for a residential or mixed-use residential project, however, Public Resources Code Section 21099[a][1] defines an employment center project as one that is located on a property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a TPA.

The proposed project meets all of the above criteria. The Project Site is a qualifying infill site. The Limits of Work, which include the Project Site, are currently developed with 18 buildings. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations. Most of the perimeter of the Project Site adjoins urban uses. The Metropolitan Transportation Commission (MTC) has identified locations for TPAs within the Bay Area. The Project Site is within a TPA because of its proximity to the Bayshore/NASA VTA light rail station, as shown in Figure 2-14, Transit Priority Area Map.[34] The CEQA Proposed Project and CEQA Reduced Density Alternative meet the above criteria because they both consist of an employment center use with a floor area ratio of 1.6 and 1.0, respectively. The CEQA Proposed Project would construct more Research and Office Uses than the CEQA Reduced Density Alternative. Because the CEQA Proposed Project and CEQA Reduced Density Alternative meet the three TPA criteria, the EIR portion of this joint document does not consider aesthetics or vehicular parking in determining the significance of impacts under CEQA. However, Section 3.2, *Aesthetics and Visual Resources,* of this joint EIR/EIS includes a discussion of the potential impacts of the proposed project related to aesthetics for informational purposes and for consistency with the aesthetics and visual resources analysis required under NEPA and the EIS portion of this joint document.

2.3.6 Utilities

In addition to proposed redevelopment of the Project Site (see Section 2.3.2, *Characteristics*), the CEQA Proposed Project and the CEQA Reduced Density Alternative include the same off-site utility improvements outside of the Project Site but within NASA ARC (unless otherwise noted), as described in this section. The CEQA Proposed Project and the CEQA Reduced Density Alternative would have the same infrastructure for utilities (i.e., wet and dry utilities) installed on-site and off-site as well as the same utility connection points to those utilities. The design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[35] The specifics regarding utility connections and designs will be evaluated through NASA's NRP Design Review Board process in connection with NASA's approval of the proposed project pursuant to APR 8822.1, and through NASA's Construction Permit Review Process, established by APD 8829.1. In addition, tenants/sub-tenants may need to execute a Reimbursable Space Act Agreement with NASA that allows NASA to convey certain utilities and for the tenants to reimburse NASA for consumption and conveyance.

[34] Metropolitan Transportation Commission. 2021. *Transit Priority Areas*. Available: https://opendata.mtc.ca.gov/datasets/transit-priority-areas-2021-1/explore?location=37.408725%2C-122.057220%2C15.36. Accessed: December 30, 2025.

[35] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project, Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

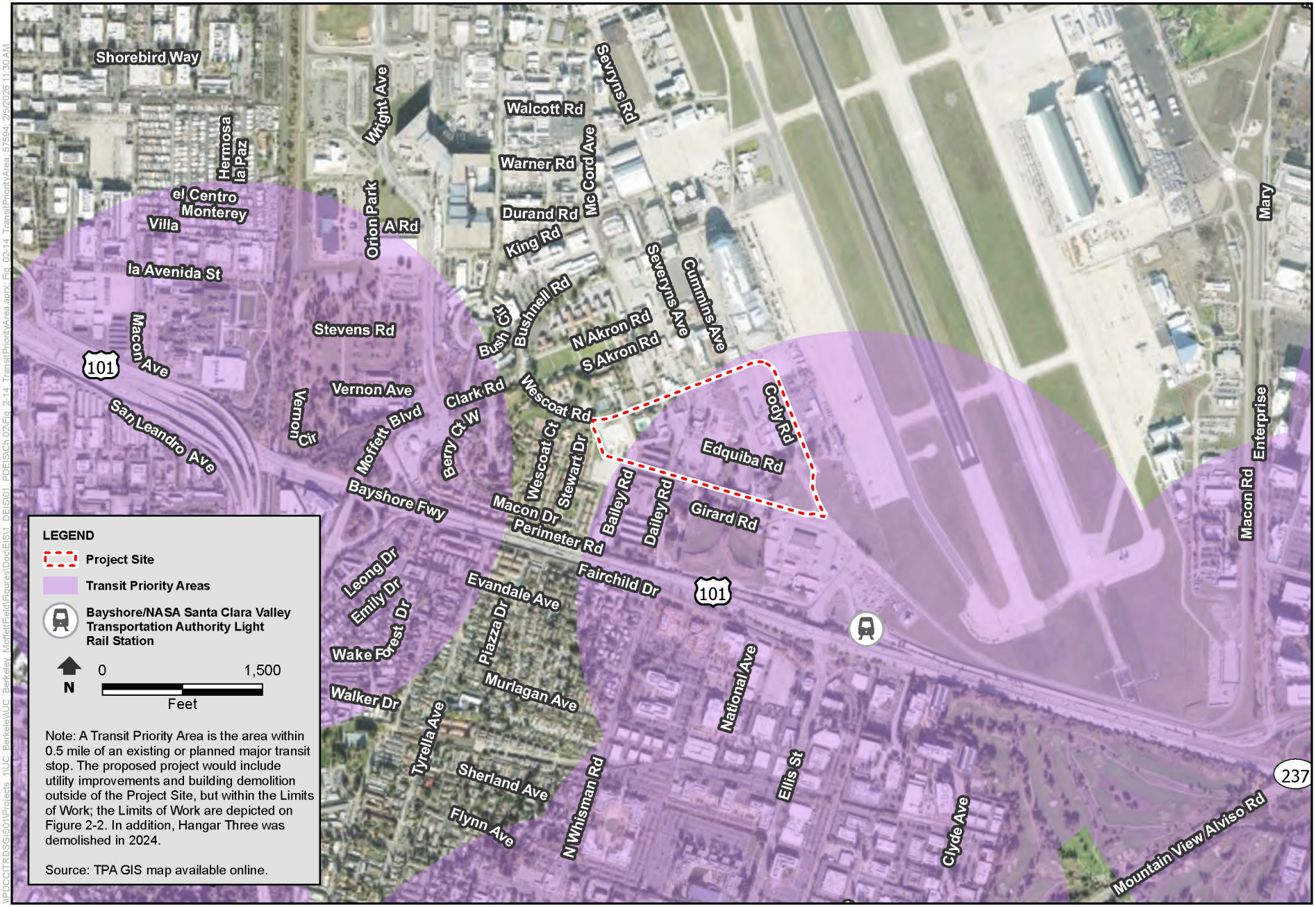


Figure 2-14
Transit Priority Area Map
Berkeley Space Center at NASA Research Park

The Project Proponent would compensate NASA for services provided to the proposed project via the Institutional Shared Pool (ISP). The ISP is the mechanism by which NASA charges its tenants for costs for common levels of services provided throughout its Property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), and additional demand services above the common levels of service. The Project Proponent would comply with the requirements of the ISP on an annual basis.

2.3.6.1 Water

The Project Site is located within the San Francisco Public Utilities Commission (SFPUC) suburban retail service area, operating under a regulatory framework that differs from that of wholesale customers.[36] Therefore, NASA obtains potable water from SFPUC and owns and operates the potable water distribution system to all occupants on federal property, and will continue to be the potable water service provider for the Project Site. Existing potable water demand at the Project Site is estimated at 0.6 acre-feet per year; this is less than 0.1 percent of total historical NASA ARC demand, which averaged 574 afy from 2019 to 2023.[37]

The total potable water demand would be approximately 124 acre-feet per year for the CEQA Proposed Project.[38] NASA ARC and NRP, including the Project Site, are served by the 18-inch Tyrella Feed, one of three feeds that connect directly to the SFPUC Hetch Hetchy Aqueduct. The NASA-owned Tyrella Feed starts immediately north of U.S. 101, crosses under it to the south where the flow is read by an SFPUC master meter at the corner of Tyrella Avenue and Hetch Hetchy Trail, and then enters NASA ARC at South Perimeter Road in Wescoat Village.

Water Main Connection Options

The CEQA Proposed Project and the CEQA Reduced Density Alternative would include 10-inch and 12-inch water mains on-site that would be routed from the connection on the southwest side of the site to the proposed buildings through a looped system that would extend east–west along Girard Road and north of the center of the Project Site, as shown in Figure 2-15a, Conceptual Utilities Plan (Water). Backflow preventors, meters, and pressure regulators would be installed on water supply lines. Three sampling ports would also be installed near representative population areas. In addition, dead-end mains would be provided along all shared-use roads for building services and fire hydrants.

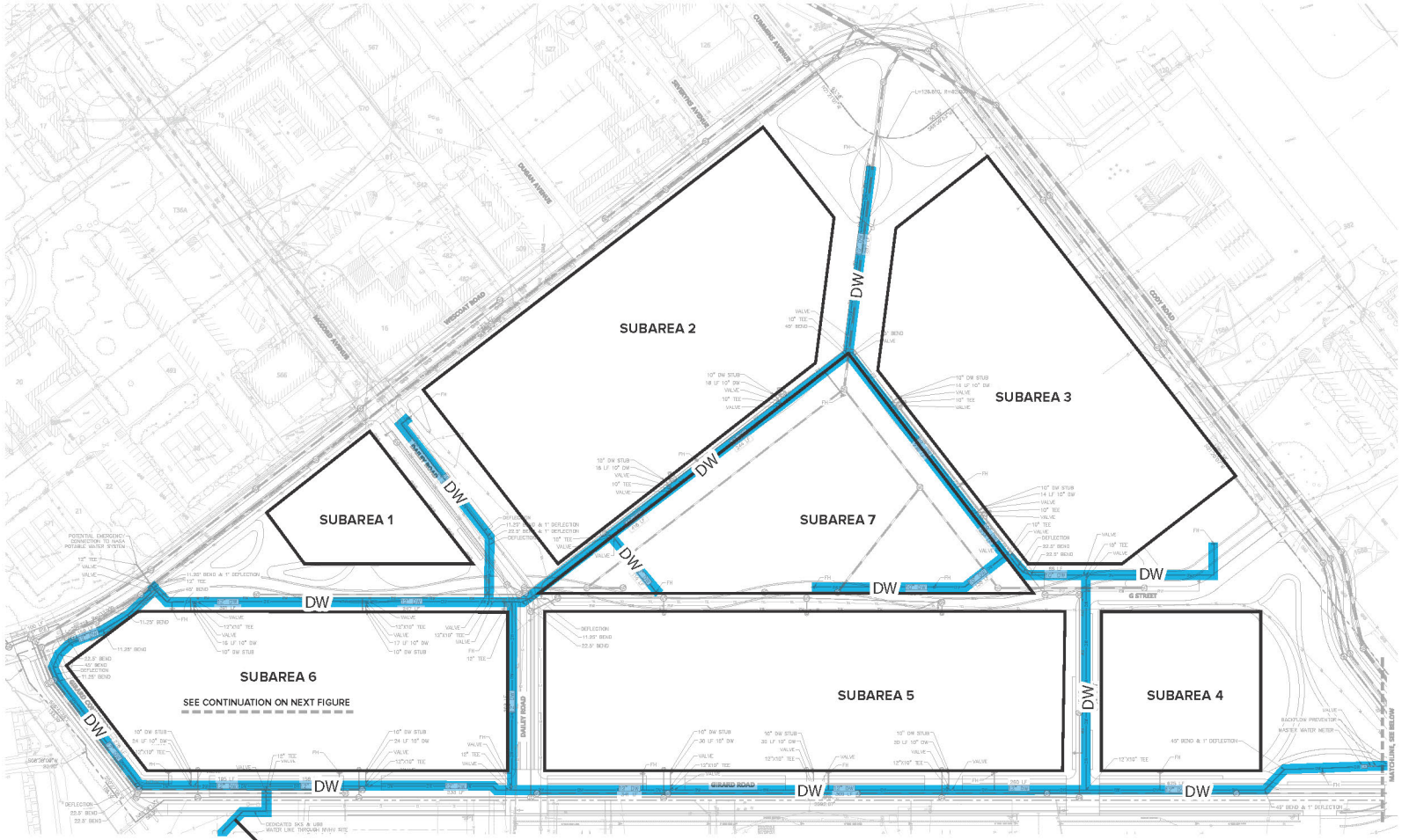
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[36] The SFPUC *in-city system* serves a residential population of nearly 844,000 in addition to San Francisco–based businesses; *suburban retail customers* include a residential population of approximately 2,000, as well as businesses and institutions, in San Mateo, Santa Clara, Alameda, Tuolumne, and San Joaquin Counties. San Francisco Public Utilities Commission. 2026. *Draft 2025 UWMP and WSCP.* Available: https://www.sfpuc.gov/sites/default/files/documents/2025-UWMP-Public-Draft.pdf. Accessed: March 27, 2026.

[37] *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park* (Water Supply Evaluation) prepared by EKI Environment and Water, April 2026. See Appendix 3.18-1 of this joint EIR/EIS.

[38] *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park* (Water Supply Evaluation) prepared by EKI Environment and Water, April 2026. See Appendix 3.18-1 of this joint EIR/EIS.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: This figure does not show the proposed water mains that would be routed through each Subarea. Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (2-6-2026) TG

Figure 2-15a
Conceptual Utilities Plan (Water)
Berkeley Space Center at NASA Research Park

The Tyrella Feed would provide potable water and fire flow water to the Project Site. As discussed below and shown in Figure 2-15b, Conceptual Utilities Plan (Tyrella Feed Water Main Connection Options 1 and 2), the CEQA Proposed Project and the CEQA Reduced Density Alternative could include two possible routings for the off-site water mains and connection to the Tyrella Feed: Tyrella Feed Water Main Connection Option 1 and Tyrella Feed Water Main Connection Option 2.

- **Tyrella Feed Water Main Connection Option 1:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to an existing 18-inch Tyrella Feed at the parking lot near the main gate on Clark Road. A dedicated 12-inch water main line could be installed along Clark Road, Wescoat Road, and the Girard Connector, entering the Project Site in Subarea 6 at the intersection of Wescoat Road and Girard Connector. Under Water Main Connection Option 1, the project's off-site water improvements would remain within NASA ARC.
- **Tyrella Feed Water Main Connection Option 2:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to the Tyrella Feed through a new master meter connection near the intersection of South Perimeter Road and Wescoat Court. A dedicated 12-inch water main line could be installed along South Perimeter Road and east of Bailey Road, entering the Project Site in Subarea 6 east of the intersection of the Girard Connector and Girard Road. Under Water Main Connection Option 2, the project's off-site water improvements (along South Perimeter and Baily Roads) would cross over Army controlled land, requiring approval of an easement by the Army.

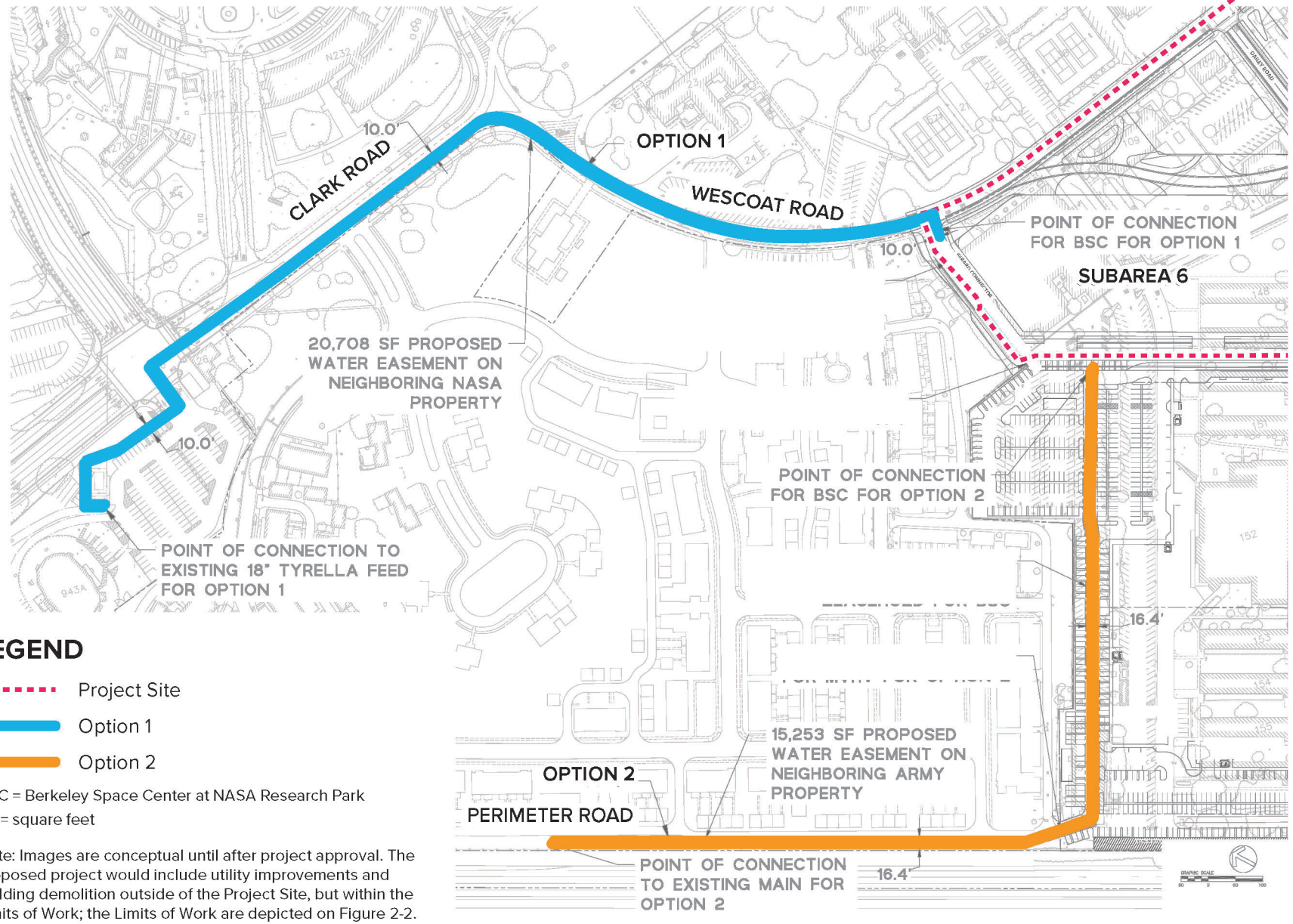
The potable water system could also include an emergency backup connection to the NASA water system—specifically, the P500—at the intersection of Cody Road and Girard Road at the southeast corner of the Project Site. This connection would also be capable of backfeeding NASA's water system in case of emergencies.

2.3.6.2 Recycled Water

There is no existing use of recycled water at the Project Site. The total recycled water demand would be approximately 160 acre-feet per year for the CEQA Proposed Project.[39] While the City of Sunnyvale and Mountain View both have recycled water systems adjacent to NASA ARC, non-potable water demands for the proposed project (landscape irrigation, cooling, indoor flushing, and cleaning of parking structures) would be supplied by Mountain View through a new NASA service connection to the city's recycled water distribution system. The City of Sunnyvale's system runs along the east side of NASA ARC; the Mountain View recycled water system extends to NASA ARC at the northwest corner of the Bay View area. As described in Section 3.18, *Utility and Service Systems*, of this joint EIR/EIS, it is anticipated that the City of Mountain View's service availability would be extended (i.e., the flow of recycled water would be extended) to the south along RT Jones Road via an existing main line not currently in service to the main gate on Clark Road to provide a recycled water connection to the NRP. The existing main line is owned and operated by NASA; this service extension, which would consist of loading the main line with recycled water, is not part of the CEQA Proposed Project or the CEQA Reduced Density Alternative.

[39] EKI. 2026. *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park*. April. See Appendix 3.18-1 of this joint EIR/EIS.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (9-10-2025) TG

Figure 2-15b

Conceptual Utilities Plan (Tyrella Feed Water Main Connection Options 1 and 2)

Berkeley Space Center at NASA Research Park

Recycled Water Main Connection Options

The CEQA Proposed Project and the CEQA Reduced Density Alternative would include 6- to 12-inch recycled water mains on-site with branches throughout the Project Site to serve the proposed buildings and irrigated areas, as shown in Figure 2-16a, Conceptual Utilities Plan (Recycled Water). The on-site recycled water system would be looped internally. As discussed below and shown in Figure 2-16b, Conceptual Utilities Plan (RT Jones Road Recycled Water Main Connection Options 1 and 2), the CEQA Proposed Project and the CEQA Reduced Density Alternative could include two possible routings for the off-site recycled water mains to one point of connection to the existing recycled water main in RT Jones Road near the main gate: RT Jones Road Recycled Water Main Connection Option 1 and RT Jones Road Recycled Water Main Connection Option 2.

- **RT Jones Road Recycled Water Main Connection Option 1:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to the existing recycled water main in RT Jones Road via a new 12-inch main along Clark Road and Wescoat Road, entering the Project Site in Subarea 6 at the intersection of Wescoat Road and the Girard Connector. Under Recycled Water Option 1, the project's off-site recycled water improvements would remain within NASA ARC.
- **RT Jones Road Recycled Water Main Connection Option 2:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to the existing recycled water main in RT Jones Road via a new 12-inch recycled water main in the parking lot near the main gate on Clark Road, along South Perimeter Road, and east of Bailey Road, entering the Project Site in Subarea 6 east of the intersection of the Girard Connector and Girard Road. Recycled Water Option 2 would require the project's off-site recycled water improvements (along Clark, South Perimeter and Bailey Roads) to cross over Army controlled land, requiring approval of an easement by the Army.

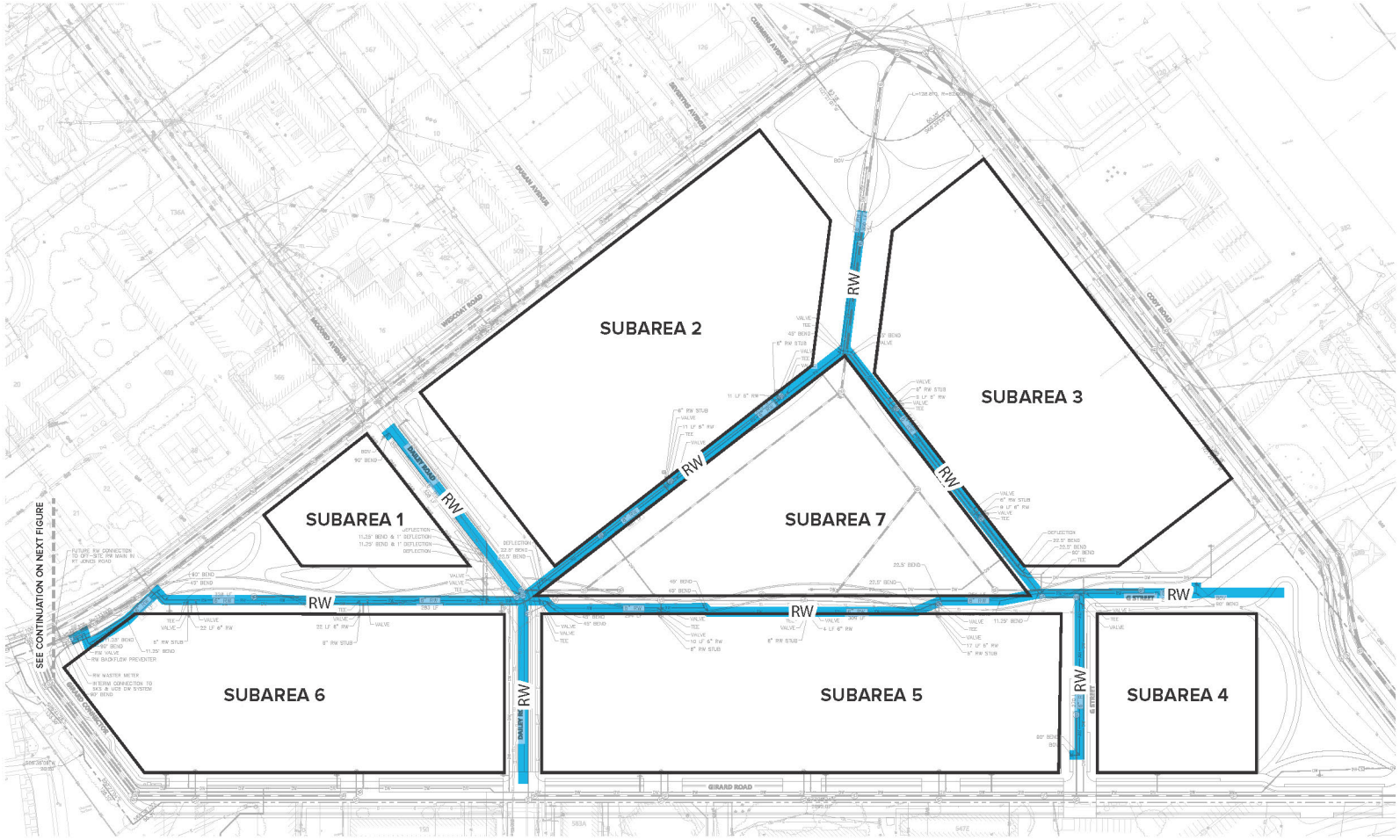
CEQA Proposed Project with the Water Reuse Facility Option

Only the CEQA Proposed Project includes the WRF Option. The WRF Option could be implemented in addition to the recycled water main connection options discussed above. The WRF Option would include an approximately 15,000-square-foot WRF that would produce recycled water to serve the proposed buildings and irrigated areas, as shown in Figure 2-17, Conceptual Utilities Plan (Water Reuse Facility Option). The facility would process all of the CEQA Proposed Project's wastewater; and the facility would reduce the CEQA Proposed Project's demand for recycled water.[40] The facility's anticipated production would be approximately 37,000 to 44,000 gpd. A backup connection to the City of Mountain View's recycled water system would supplement the CEQA Proposed Project's anticipated demand for recycled water for emergency purposes.

The WRF Option would incorporate the facility on the ground floor of the parking structure located in Subarea 6 near Girard Road; there would be no reduction in the number of parking spaces provided in Subarea 6 as a result of the WRF Option due to the flexibility in the design of the parking structure. The WRF Option would also include an approximately 300-foot pressurized main along the Girard Connector that would connect the WRF to the recycled water distribution infrastructure within the rest of the Project Site (see Section 2.3.6.2, *Recycled Water*). The WRF Option would

[40] The WRF Option would comply with NASA's Regulatory Review Procedures for On-Site Blackwater Treatment and Reuse.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

RW Proposed Recycled Water Line

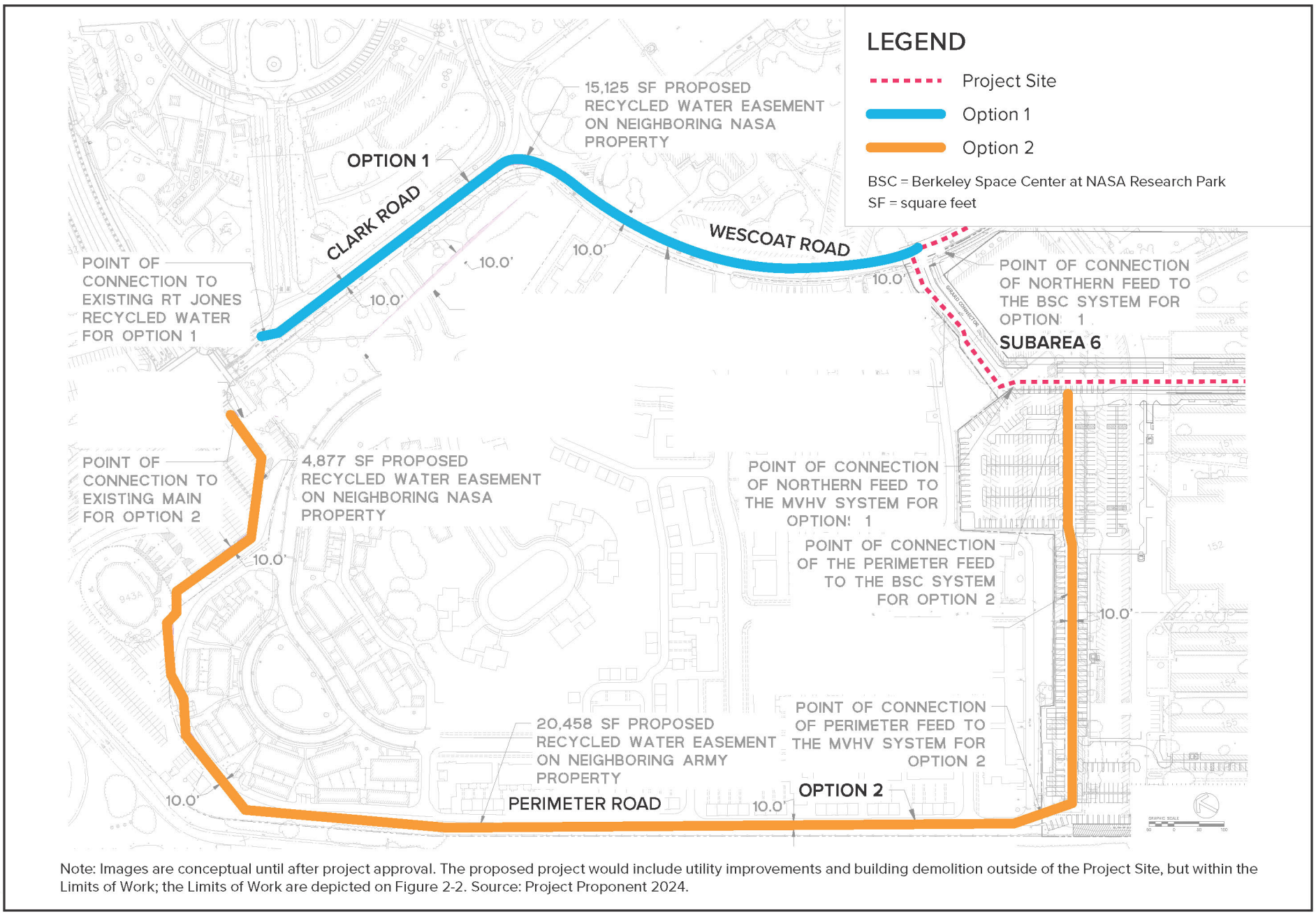
Note: This figure does not show the proposed recycled water lines that would be routed through each Subarea. Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (2-8-2026) TG

Figure 2-16a
Conceptual Utilities Plan (Recycled Water)
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. Source: Project Proponent 2024.

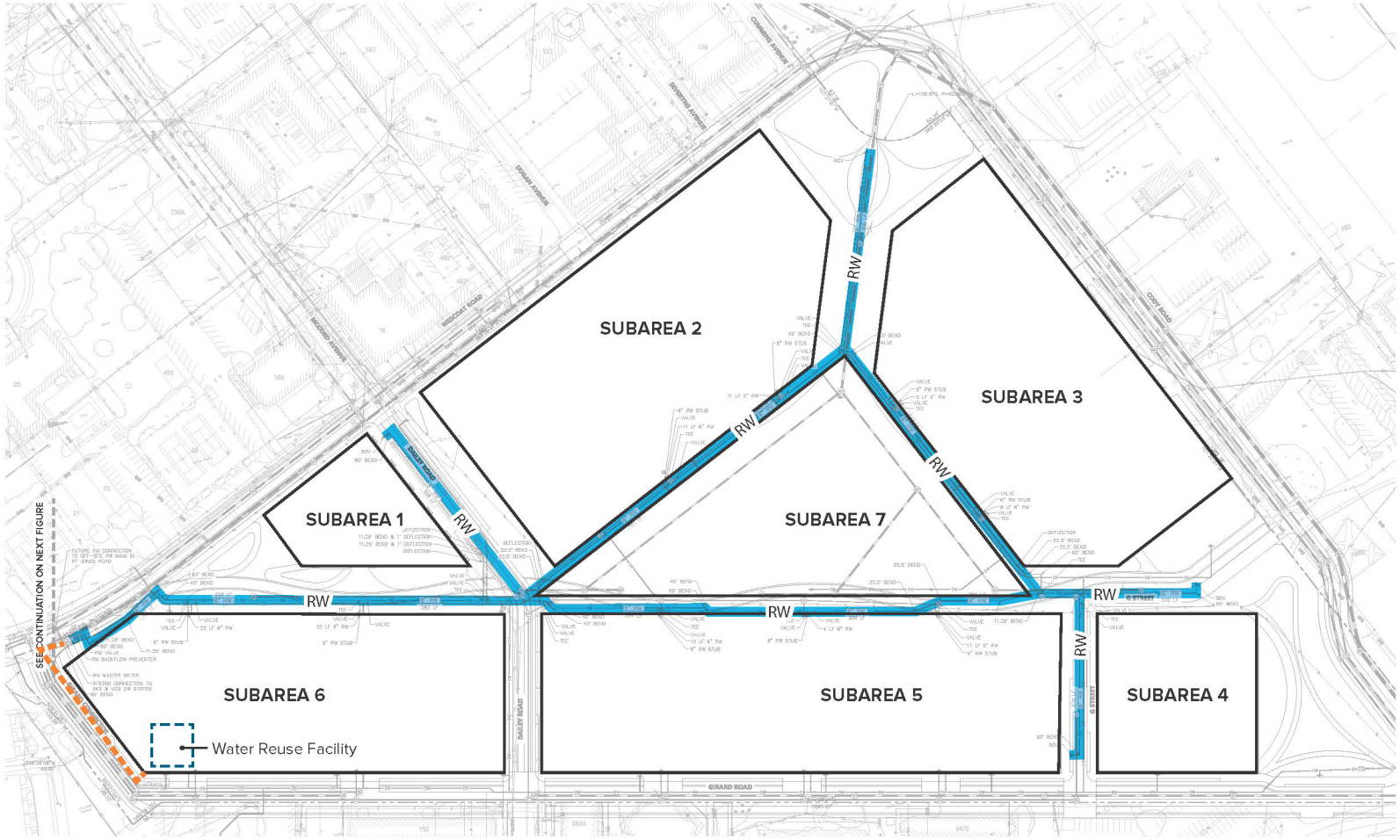
Graphics ... 104894 (2-10-2026) TG

Figure 2-16b

Conceptual Utilities Plan (RT Jones Road Recycled Water Main Connection Options 1 and 2)

Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

RW Proposed Recycled Water Line

Pressurized Main

Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (2-8-2026) TG

Figure 2-17

Conceptual Utilities Plan (Water Reuse Facility Option)

Berkeley Space Center at NASA Research Park

include a sewer lift station, which would be sized appropriately to the needs of the proposed project, in the southwest corner of the Project Site (see Section 2.3.6.3, *Wastewater*), near Girard Road and the Girard Connector.

The WRF Option would be constructed in two phases to align with buildout of the CEQA Proposed Project. The first phase would occur at the end of Phase 1 of construction to serve operations related to buildout occurring during Phases 1 and 2 of the CEQA Proposed Project (see Section 2.3.4.3, *Schedule and Phasing*); this would include the wastewater treatment process, recycled water distribution pump system, and all tankage needed for process and waste streams. The first phase of construction would also include the construction of all tanks and major structures as well as the installation of approximately 50 percent of the required equipment needed to serve the CEQA Proposed Project. The second phase of construction would occur at the end of Phase 3 of construction to serve operations related to buildout occurring during Phases 3 and 4 of the CEQA Proposed Project; this would include installation of the remaining 50 percent of the required equipment needed to serve the CEQA Proposed Project.

The WRF Option would not require excavation to depths greater than otherwise required for the CEQA Proposed Project for typical utility improvements (i.e., approximately 3 to 4 feet bgs as discussed in Section 2.3.4.2, *Ground Disturbance and Excavation*).

2.3.6.3 Wastewater

The Project Site's existing sanitary sewer flow currently goes to the City of Sunnyvale's system. The City of Mountain View will be the wastewater service provider for the proposed project. Existing buildings at the Project Site are not individually metered**.** According to NASA, existing wastewater generation at the Project Site is approximately 32,366 gallons per day (gpd), based on the square footage of existing buildings; this wastewater generation does not account for historic inflow and infiltration existing sewer collection pipes. The average dry-weather flow and peak wet-weather flow increase in wastewater generation at the Project Site, which would go to the City of Mountain View's system, is estimated at approximately 440,279 gpd and 837,529 gpd, respectively, under the CEQA Proposed Project.[41]

The Project Site is located between the Palo Alto Regional Water Quality Control Plant, which serves Mountain View, and the City of Sunnyvale Water Pollution Control Plant, which serves Sunnyvale. The existing sewer system at the Project Site collects and conveys all sewer discharges to the City of Sunnyvale Point of Compliance located in the golf course east of Moffett Federal Airfield, which ultimately discharges to the City of Sunnyvale Water Pollution Control Plant. The Project Site is currently served by an existing 8-inch main in Cody Road and a 10-inch main in Wescoat Road.

Groundwater dewatering would not be required during operation of the CEQA Proposed Project or the CEQA Reduced Density Alternative. No additional dewatering beyond that required by the Responsible Parties is anticipated during operational phases of the CEQA Proposed Project and the CEQA Reduced Density Alternative.

[41] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan.* Spring.

Wastewater Main Connection Options

The CEQA Proposed Project and the CEQA Reduced Density Alternative would include 8-inch, 10-inch, and 12-inch sewer lines throughout the Project Site to serve the proposed buildings, as shown in Figure 2-18a, Conceptual Utilities Plan (Wastewater). Wastewater generated from the Project Site would be routed off-site through an on-site sewer lift station in the southwest corner of the Project Site, near Girard Road and the Girard Connector. As part of the CEQA Proposed Project and the CEQA Reduced Density Alternative, a new connection to and a new meter would be installed at the point of connection to the City of Mountain View's wastewater main in RT Jones Road. As discussed below and shown in Figure 2-18b, Conceptual Utilities Plan (Mountain View Wastewater Main Connection Options 1 and 2), the CEQA Proposed Project and the CEQA Reduced Density Alternative could include two possible routings for the off-site sewer and connection to the City of Mountain View's wastewater main: Mountain View Wastewater Main Connection Option 1 and Mountain View Wastewater Main Connection Option 2.

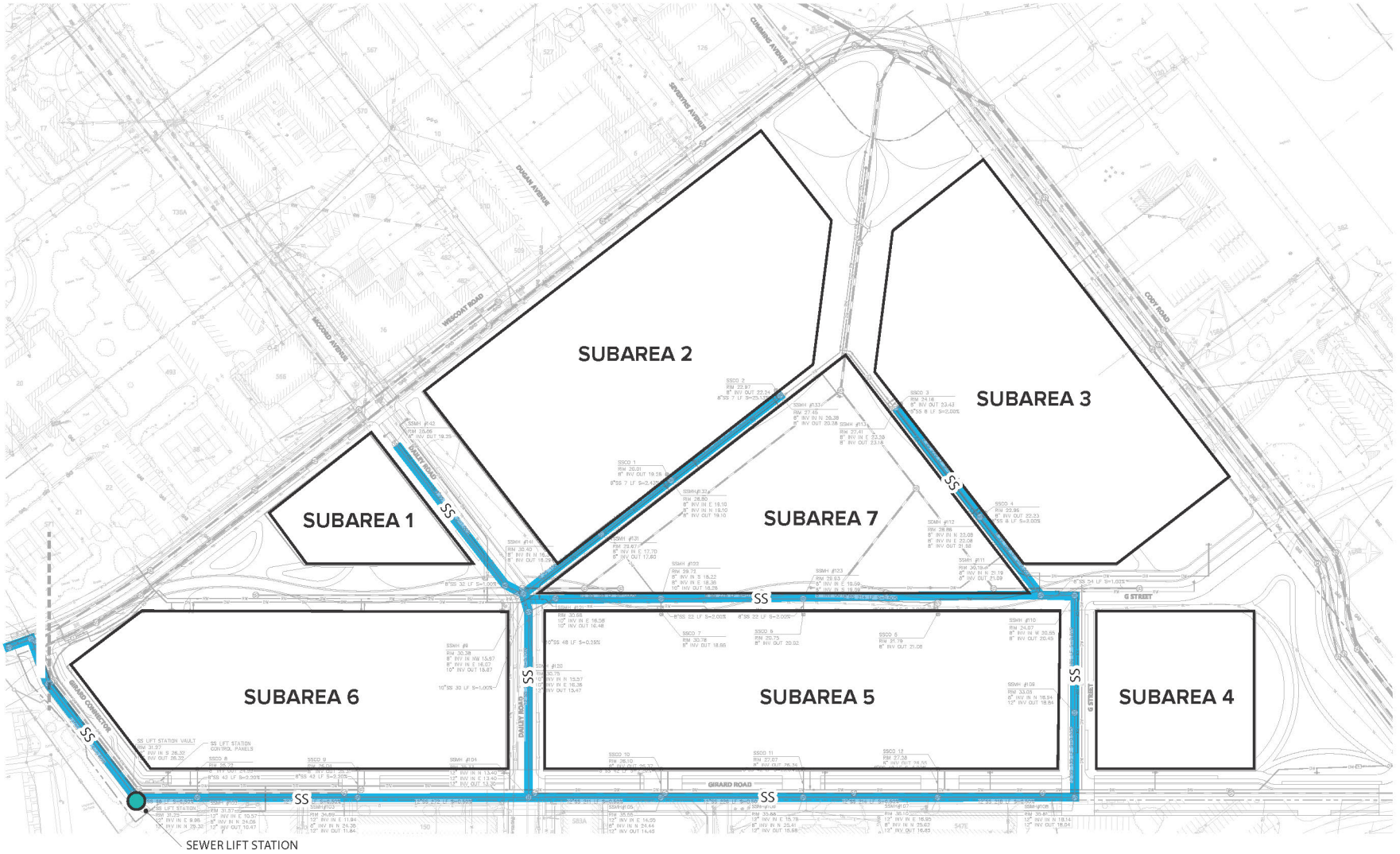
- **Mountain View Wastewater Main Connection Option 1:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to the City of Mountain View's wastewater main in RT Jones Road via a new 12-inch main along Clark Road and Wescoat Road, entering the Project Site in Subarea 6 east of the intersection of the Girard Connector and Girard Road. Under Wastewater Main Connection Option 1, the project's off-site wastewater improvements (along Clark and Wescoat Roads) would remain within NASA ARC.
- **Mountain View Wastewater Main Connection Option 2:** The CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to the City of Mountain View's wastewater main in RT Jones Road via a new 12-inch main south of Clark Road and along Wescoat Road, entering the Project Site in Subarea 6 at the intersection of Wescoat Road and the Girard Connector. Wastewater Main Connection Option 2 would cross over Army controlled land, requiring easement approval from the Army requiring easement approval from the Army.

2.3.6.4 Stormwater

The combined existing 10-year peak stormwater discharge rate is approximately 18.29 cubic feet per second (cfs), and the existing 10-year stormwater volume is approximately 203,838 cubic feet (cf). The proposed stormwater system would contain the 10-year storm in pipes without surcharging,[42] contain the 25-year storm in pipes with surcharging, and contain the 100-year storm in curbs with no flooding of buildings. NASA ARC campus has two stormwater drainage systems, a western drainage system and an eastern drainage system. The flow and volume noted above is the cumulative amount from both systems. The majority of the Project Site is located in the western drainage system; only a portion on the southeastern edge of the Project Site is located in the eastern drainage system. The western drainage system comprises five subsystems that drain to the western diked marsh or eastern diked marsh, both of which are approximately 1 mile north of the Project Site. The diked marshes ultimately discharge farther north into NASA ARC's stormwater retention pond. The stormwater retention pond does not have an outfall, and loses water through evaporation.

[42] *Surcharging* is when the pipe cannot release the amount of stormwater fast enough, so it begins to back up into the stormwater system.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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SS Proposed Wastewater Line

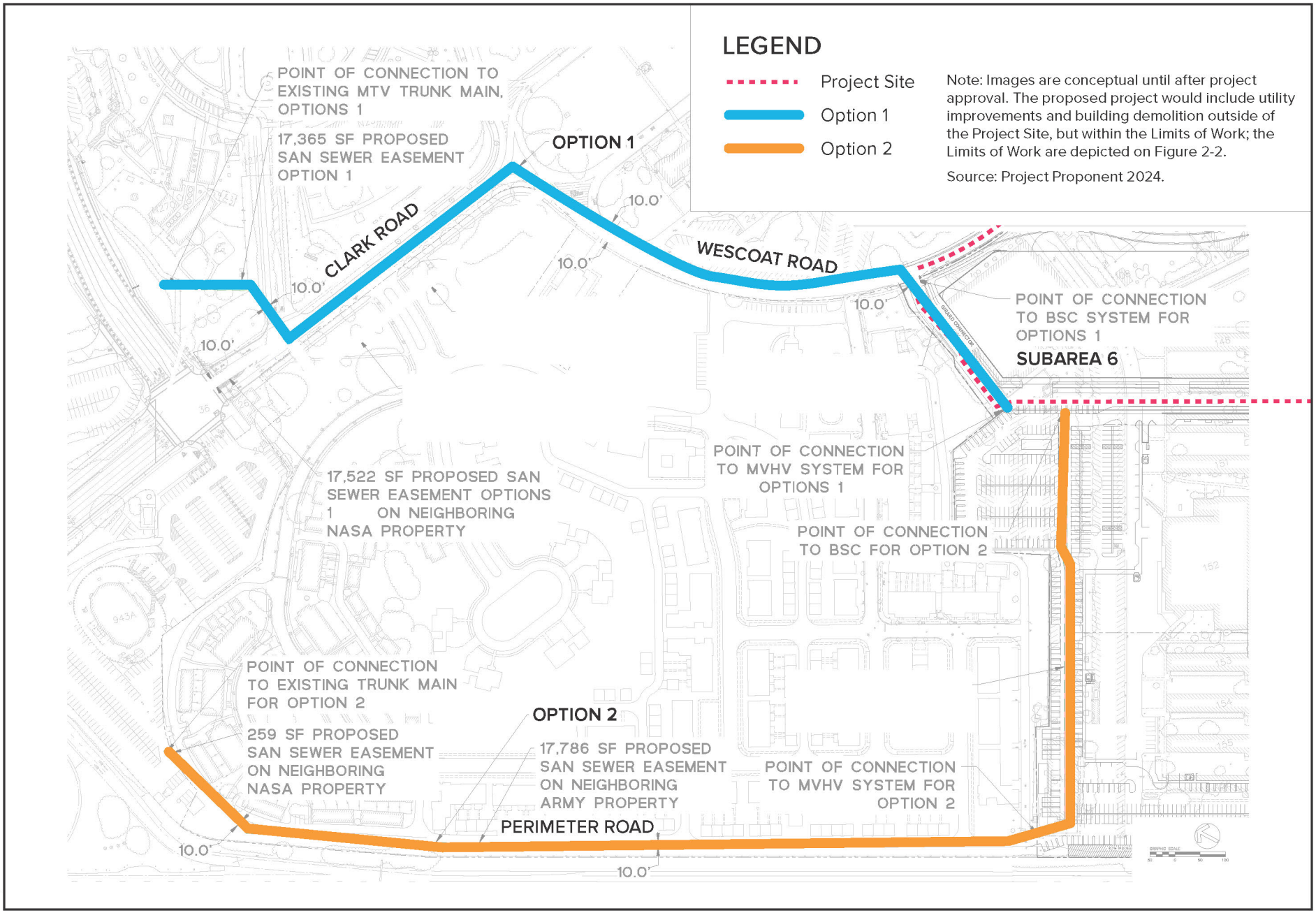
Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (9-10-2025) TG

Figure 2-18a
Conceptual Utilities Plan (Wastewater)
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (9-10-2025) TG

Figure 2-18b

Conceptual Utilities Plan (Mountain View Wastewater Main Connection Options 1 and 2)

Berkeley Space Center at NASA Research Park

Based on the Maximum and Minimum Development Parameters, as established in the Master Plan included in Appendix 2-1 of this joint EIR/EIS, the CEQA Proposed Project and the CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site to approximately 79 percent, or a 9 percent increase from existing conditions. The increase in impervious surface area would result in a 10-year peak stormwater discharge rate of approximately 18.0 cfs and a peak volume of approximately 263,338 cf. The CEQA Proposed Project and the CEQA Reduced Density Alternative would meter flows leaving the Project Site so that the peak discharge rate would not exceed the existing discharge rate of 18.29 cfs. This would be accomplished through detention involving building oversized pipes on-site at the northern end of the Project Site as well as a proposed orifice and weir to meter flows leaving the Project Site. In addition, the CEQA Proposed Project and the CEQA Reduced Density Alternative would incorporate a retention pond to treat the approximately 60,600 cf increase in stormwater volume compared with existing conditions. The retention basin in the northern corner of the Project Site, within the Hangar Commons, would be approximately 0.5 acre in size and approximately 3 feet deep.

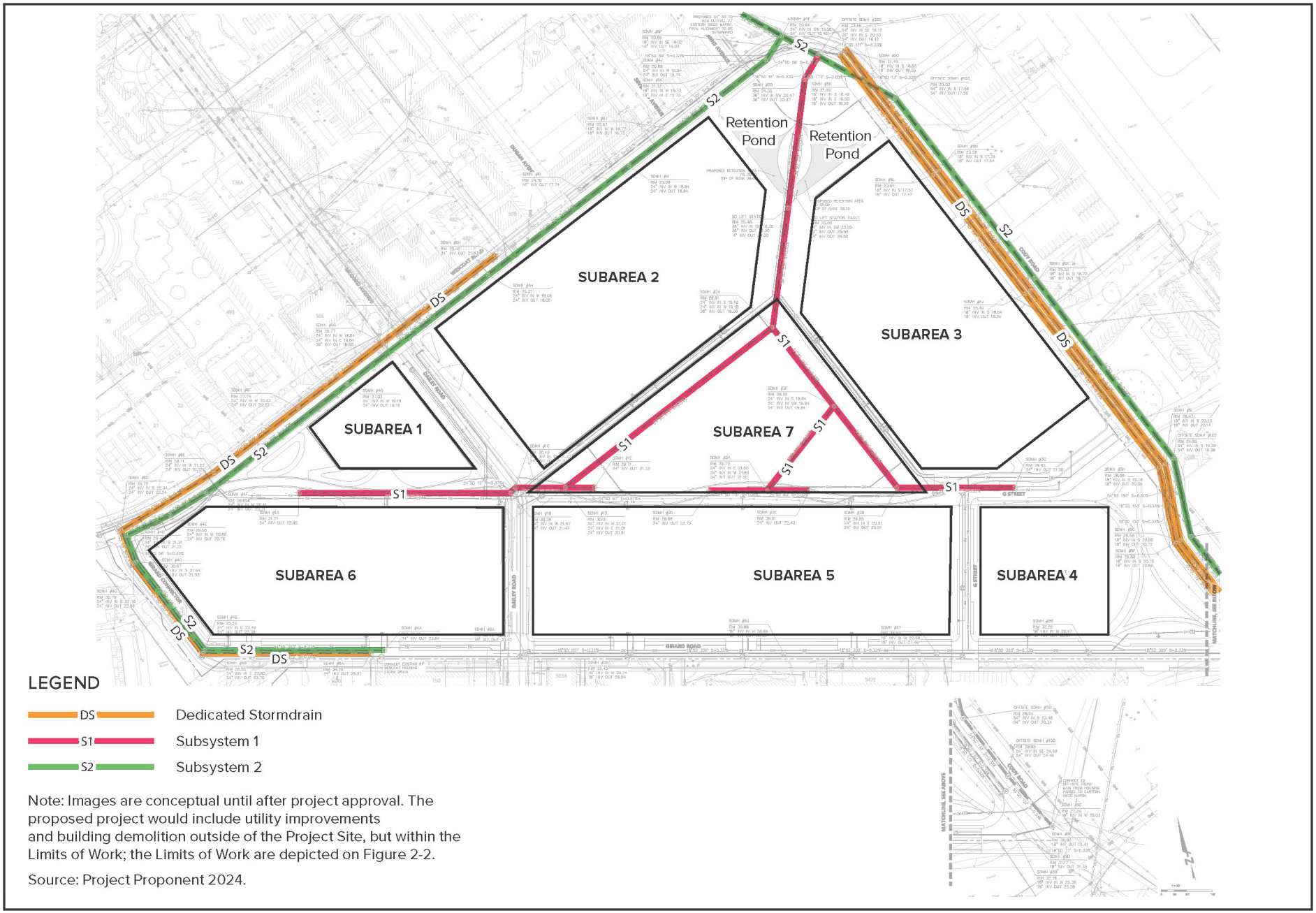
The CEQA Proposed Project and the CEQA Reduced Density Alternative would be required to maintain stormwater flows by not exceeding existing flows and volumes that leave the Project Site. The proposed on-site stormwater drainage system would consist of two subsystems, as shown in Figure 2-19a, Conceptual Utilities Plan (Stormwater). Subsystem 1 would make up approximately 23.5 acres on the interior of the Project Site. All stormwater from Subsystem 1 would drain to the northeast corner of the Project Site and then be discharged into the 0.50-acre retention pond and the eastern diked marsh trunk main. As mentioned above, flows would be metered upstream of the connection to the trunk main to ensure that the project's flow rate would not exceed the existing flow rate. Subsystem 2 would make up approximately 15.1 acres on the perimeter of the Project Site, along Girard Road, and the portion of the Wescoat Road and Cody Road within the lease boundary.

As an option, the CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to three existing NASA storm drain mains along the northern boundary of the Project Site or construct a new off-site storm drain main, which would connect directly to the eastern diked marsh, as shown in Figure 2-19b, Conceptual Utilities Plan (Stormwater-Eastern Diked Marsh Trunk Main).

For the purposes of this joint EIR/EIS, it is assumed the off-site storm drain main and the outfall at the eastern diked marsh would be constructed as part of the proposed project.[43] Subsystem 2 would discharge to the eastern diked marsh trunk main; these improvements would not require any significant detention or retention as they are being replaced close to in-kind. As part of the proposed project, swale and rap would be installed at the eastern diked marsh outfall and typical maintenance activities at the eastern diked marsh outfall would include removal of accumulated sediment, removal of trash and debris to maintain storage capacity, vegetation control, and inspection and repair of the embankments and dewatering devices. In addition, the separate dedicated storm drain systems in Wescoat Road, Girard Road, and Cody Road would continue to flow into NASA's existing storm drain system, as the drainage pattern of each road is not changing, so the downstream system has capacity to accept these flows.

[43] The area West of Lindbergh Avenue, where the proposed off-site storm drain main and the outfall at the eastern diked marsh would be constructed, is federally owned but within the City of Mountain View's boundary. This falls under proprietary jurisdiction and is thus subject to certain state regulations.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



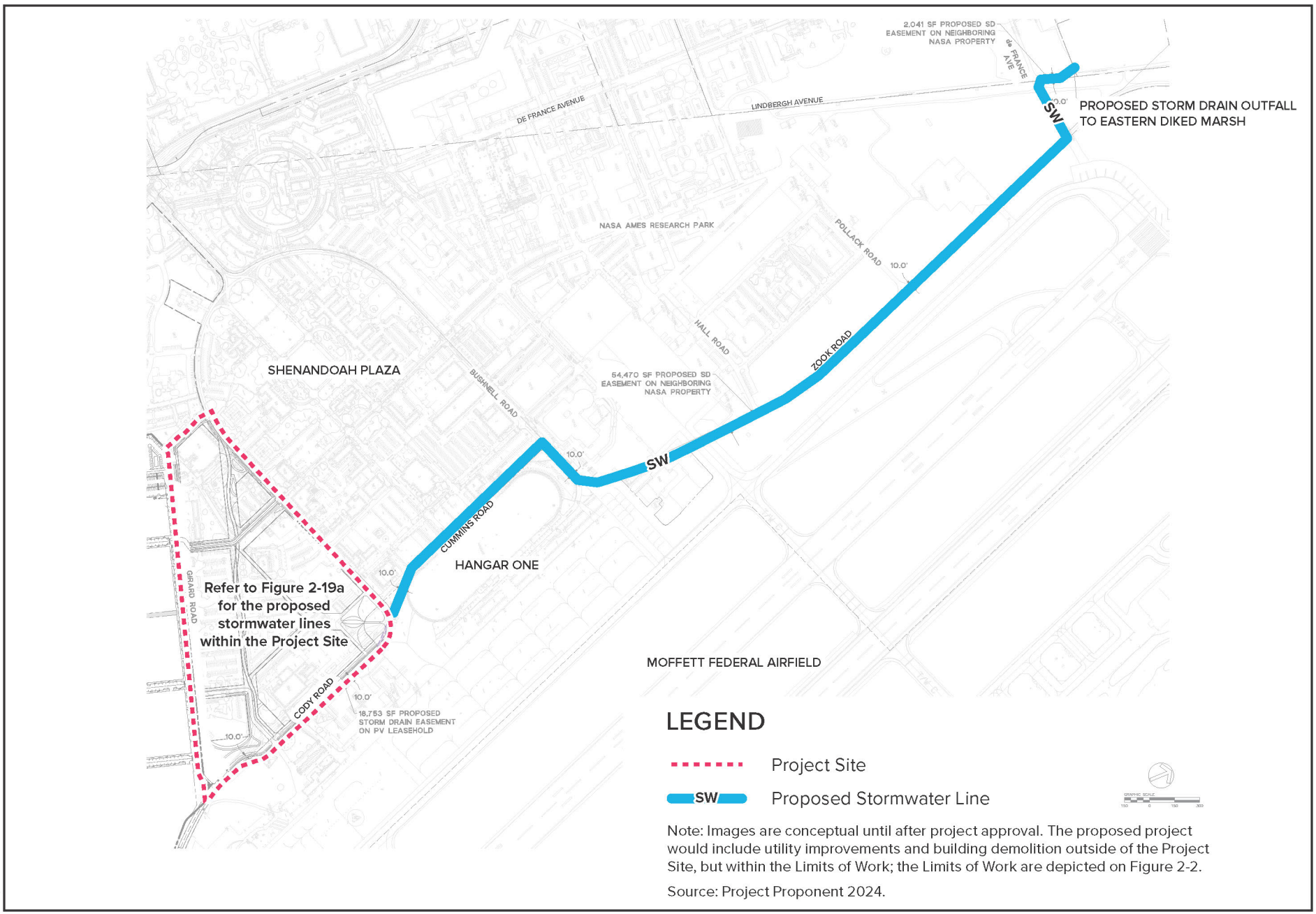
Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (9-10-2025) TG

Figure 2-19a
Conceptual Utilities Plan (Stormwater)
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2024.

Graphics ... 104894 (3-24-2026) TG

Figure 2-19b

Conceptual Utilities Plan (Stormwater—Eastern Diked Marsh Trunk Main)

Berkeley Space Center at NASA Research Park

The NPDES Construction General Permit requires development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified qualified SWPPP developer. A SWPPP includes construction and post-construction requirements. The CEQA Proposed Project and the CEQA Reduced Density Alternative would include the development and implementation of a SWPPP, including, but not limited to, the following BMPs: employee training, erosion and sediment controls, good housekeeping, material handling and waste management, preventive maintenance, quality assurance and recordkeeping, and spill and leak prevention and response. The CEQA Proposed Project and the CEQA Reduced Density Alternative would be subject to the NPDES C.3 requirements, which require stormwater to be treated prior to being discharged to San Francisco Bay. To treat stormwater discharges from the Project Site, the CEQA Proposed Project and the CEQA Reduced Density Alternative would incorporate a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells.[44] In addition, the proposed open space would incorporate bioretention areas along the Promenade within the Central Green and a self-treating lawn area, also within the Central Green. Street stormwater runoff would be treated with flow-through planters.

2.3.6.5 Energy

Under the CEQA Proposed Project and the CEQA Reduced Density Alternative, all new building systems (e.g., HVAC, mechanical systems) would be supplied by electricity, eliminating the need for connections to PG&E's natural gas infrastructure for building operations. However, gases (e.g. oxygen, CO_2, nitrogen, natural gas) may be used by tenants for research purposes in laboratories within the Research and Office Uses. The proposed laboratories would be supported through gas tanks, either within the laboratories, or at a central location within a building, or located in working yards. It is anticipated that a small amount of gases for research purposes only would be used under the CEQA Proposed Project and the CEQA Reduced Density Alternative.

Currently, the Project Site is served by PG&E, which currently provides power to NASA ARC. The existing 2.4-kilovolt (kV) switchgear located in Building 104, which currently serves infrastructure adjacent to the Project Site, would be relocated as part of the project. The switchgear would be relocated outside of the Project Site but within NASA ARC. The project would connect directly to the existing PG&E system and route an electrical duct back to the Project Site. Electrical lines would then be routed under the interior streets on the Project Site to the proposed buildings.

The CEQA Proposed Project and the CEQA Reduced Density Alternative would require the relocation and replacement of existing gas infrastructure; however, none of the proposed gas infrastructure would serve the CEQA Proposed Project and the CEQA Reduced Density Alternative. An existing gas main runs south to north through the Project Site within Dailey Road, then continues from the east side of Building 104 to Shenandoah Plaza. The gas main would be relocated to follow the alignment of Dailey Road to the intersection of Wescoat Road. It would then follow Wescoat Road east and ultimately connect to the NASA natural gas main near Building 509. In addition, the existing PG&E natural gas meter and manifold would be relocated to the connection to the existing NASA gas main along the north side of Wescoat Road near Building 509.

[44] *Silva Cells* are suspended pavement systems that prevent soil compaction around tree roots, while allowing trees to grow freely without buckling sidewalks and treating stormwater on-site.

The CEQA Proposed Project and CEQA Reduced Density Alternative would include twelve diesel emergency generators with Tier 4 Final engines installed at the Project Site to provide emergency power, offering a maximum power capacity of more than 670 brake horsepower per generator, for a total of 6 megawatts in back-up generation capacity. If either the WRF Option or the CUP Option is implemented as part of the CEQA Proposed Project, one additional diesel emergency generator would be installed at the Project Site. The emergency generators would be installed within enclosures and screened from view from interior streets and surrounding areas; the emergency generators would be installed on the roofs of the proposed buildings or in working yards. In general, periodic testing would occur for up to four hours at each generator. Generator testing would occur monthly; it is likely that multiple generators, but not all generators, would be tested on the same day. Thus, generator testing would most likely occur on multiple days each month. Generator testing would not exceed 50 hours per generator per year. Generator testing would align with Bay Area Air District standards and permitting requirements. For the purposes of this joint EIR/EIS, it is assumed each of the generators would run 150 hours per year, including 50 hours for testing and 100 hours for emergency power, consistent with Bay Area Air District–required assumptions.

In addition, the CEQA Proposed Project and the CEQA Reduced Density Alternative would include the construction and operation of PV systems and battery energy storage systems, as discussed in Section 2.3.2.7, *Sustainability Features*.

2.3.6.6 Solid Waste

The CEQA Proposed Project and the CEQA Reduced Density Alternative would contract with Recology for solid waste disposal and recycling. Once collected, solid waste and recyclables would be transported to Recology's Sunnyvale Materials Recovery and Transfer (SMaRT) station for sorting. Nonrecyclable waste from the SMaRT station would be transported to the Kirby Canyon Landfill in San José.

Throughout construction, waste would be source separated and tracked to divert it away from landfills, with a target of recycling more than 50 percent of construction and demolition waste. During operation, the project would implement waste management strategies to divert approximately 85 percent of waste from landfills.

2.3.6.7 Telecommunications

Existing NASA telecommunication lines run underneath roadways throughout the Project Site, including Dailey Road, Edquiba Road, and Wescoat Road. Existing NASA critical telecommunications infrastructure, which is subsurface, would remain in place within the Project Site. New telecommunication services to the Project Site would be connected to the existing infrastructure east of the Project Site at Ellis Street and run along Cody Road to the southeast corner of the site. The on-site telecommunication system would be built as a joint trench with electrical services and located either in the roadway or under the sidewalk.

2.3.6.8 Heating, Ventilation, and Air-Conditioning Systems

The CEQA Proposed Project and the CEQA Reduced Density Alternative would include building-by-building HVAC systems. The building-level systems would include air-source heat pumps for all heating, package air-conditioning units for cooling at buildings without office or laboratory space, and water-cooled chillers for cooling at buildings with office and/or laboratory spaces. Air filtration

for all laboratory and research and development space would meet or exceed code requirements. To comply with CALGreen code requirements (Section 160.2), building HVAC units would have an air filtration system with air filters with a designated efficiency equal to or greater than Minimum Efficiency Reporting Value (MERV) 13.

CEQA Proposed Project with the Central Utility Plant Option

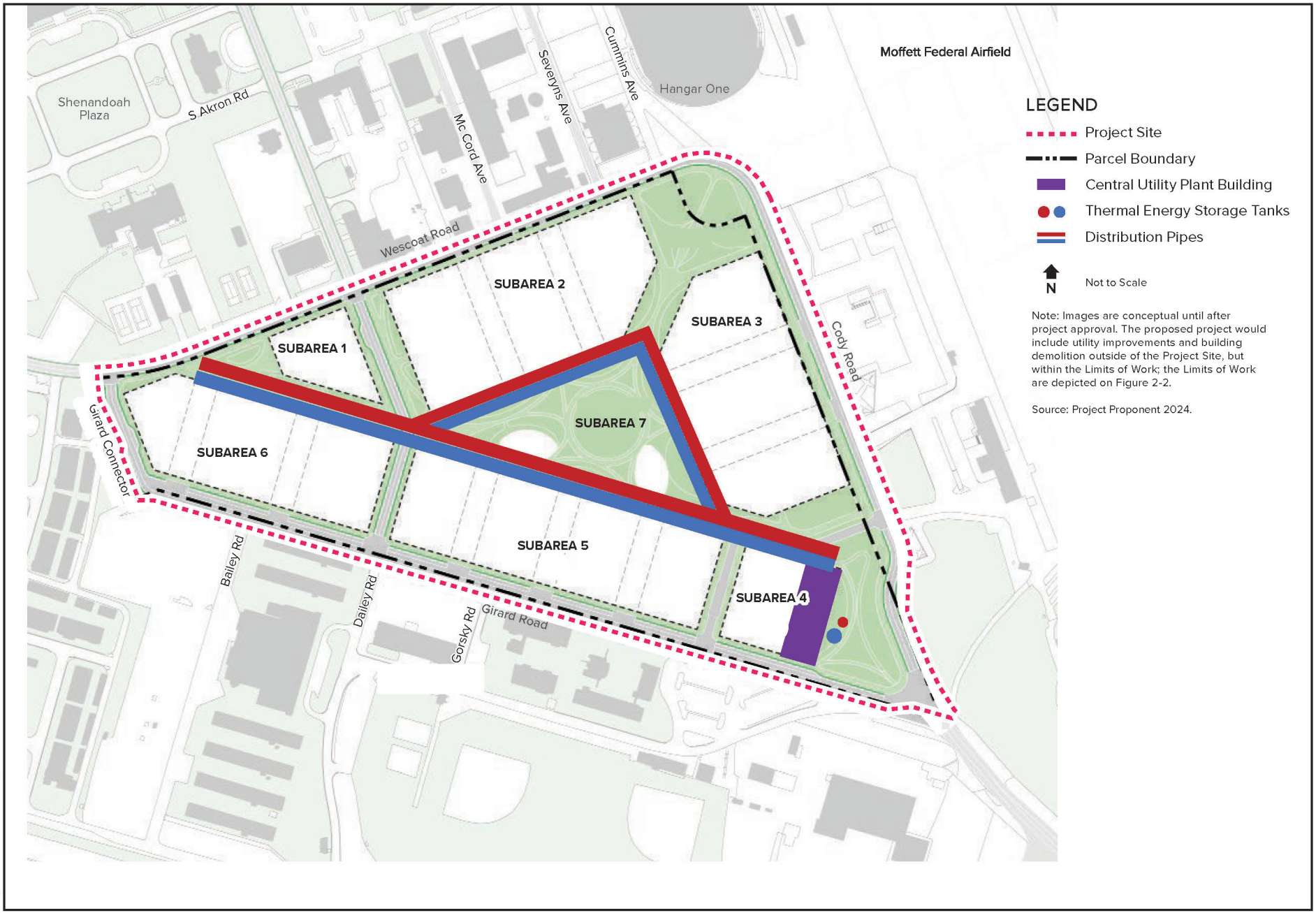
Only the CEQA Proposed Project includes the CUP Option. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building HVAC systems (see 2.3.6.8., *Heating, Ventilation, and Air-Conditioning Systems*). The CUP would be incorporated within the parking garage in Subarea 4, as shown in Figure 2-20, Conceptual Utilities Plan (Central Utility Plant Option). The approximately 12,600 gsf CUP would be located on the ground floor of the parking garage and have an internal floor-to-floor height of 20 feet. The square footage for the CUP building would result in a larger building area at Subarea 4, but the building area would not be considered occupiable space due to its mechanical use. The CUP building would fit within the maximum height of the parking garage proposed under the project. The CUP would require additional equipment on the roof deck of the parking structure compared to the CEQA Proposed Project without the CUP Option; the equipment would be screened from public view at ground level, with a limited number of minor protrusions allowed for exhaust fans and other small appurtenances.

The CUP system would include a four-pipe heating and cooling system with thermal energy storage (TES) tanks, as shown in Figure 2-20. In addition, the CUP system would comprise air-source heating pumps, heat recovery chillers, and water-cooled chillers. The distribution system would loop around Subarea 7, with larger distribution pipes concentrated along Subareas 4, 5, and 6. The largest distribution pipe would be approximately 36 inches. As buildout occurs and demand increases, the sizes for the distribution pipe sizes would be reduced; proposed connections to buildings would range from 3 inches to 30 inches due to the variety of building demands. The two aboveground TES tanks would be located adjacent to the parking garage. The TES tanks would include a chilled water tank (approximately 55 feet in diameter and 70 feet high) and a hot-water tank (approximately 45 feet in diameter and 65 feet high). The TES tanks would be screened from public view at ground level by trees and vegetation.

The CUP system, including the TES tanks, would be constructed during Phase 1 of construction (see Section 2.3.4.3, *Schedule and Phasing*) and initially screened from public view per the proposed Development Guidelines (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*). Additional equipment would be installed as needed during future phases to meet the demands of the buildings as they are constructed and become operational. Similar to other utility infrastructure that would be installed as part of the project, connections to the CUP system would be provided for each building at the time the building is constructed. The CUP system would be all electric.

The CUP Option would require excavation to 11 feet bgs for the distribution pipes, which would be greater than the excavation for typical utility improvements that would otherwise be required for the CEQA Proposed Project (see Section 2.3.4.2, *Ground Disturbance and Excavation*).

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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Figure 2-20
Conceptual Utilities Plan (Central Utility Plant Option)
Berkeley Space Center at NASA Research Park

2.3.7 Off-Site Utility Improvements and Demolition

Implementation of the proposed project would include demolition of all existing buildings within the Limits of Work. In addition, as discussed above, the proposed project also includes Off-Site Areas consisting of utility improvements and building demolition. Together, the Project Site and the Off-Site Areas comprise the Limits of Work, as depicted on Figure 2-2 and as more fully described below.

As part of the CEQA Proposed Project and the CEQA Reduced Density Alternative, certain off-site utility improvements may be constructed within the limits of Zook Road, Cummins Avenue, Wescoat Road, Bailey Road, Perimeter Road, Cody Road, Clark Road, and Moffett Boulevard, dependent on utility layout options selected and to the extent feasible (i.e., where the improvements would not be physically prevented by other existing utilities or physical constraints), as described in Section 2.3.6, Utilities. Any off-site utility improvements required for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be subject to review and approval by NASA (for work within NASA jurisdiction) and/or potentially other landowners or entities with jurisdiction. In addition, as part of the CEQA Proposed Project and the CEQA Reduced Density Alternative, existing Buildings 543, 583A, 583C, 547E, and 944 would be demolished to accommodate the proposed off-site utility improvements and realignment of Girard Road.

2.4 Description of the No Student/Faculty Housing Variant/Sub-Alternative

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative: the No Student/Faculty Housing Variant/Sub-Alternative (Variant).[45] Both the CEQA Proposed Project and the CEQA Reduced Density Alternative include the Variant. The Variant would replace the 130,000 square feet of Student/Faculty Housing in Subarea 6 with 130,000 square feet of Research and Office Uses under both the CEQA Proposed Project and CEQA Reduced Density Alternative. Specifically, the Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses. The Variant would have the same type of land uses; the same general site plan; the same maximum building height; the same amount of Conference Uses, Active Uses, Short-Term Lodging, and open space; the same number of guests; the same roadway infrastructure; the same utility infrastructure; the same parking ratio; and the same construction activities proposed and evaluated under the CEQA Proposed Project and CEQA Reduced Density Alternative, unless otherwise noted below. Because the amount of Research and Office Uses and the number of Student/Faculty Housing units would be different under the Variant, the number of bicycle parking spaces, and the number of residents, employees, and students would likewise change.

The types of land uses shown in Figure 2-21, Conceptual Land Use Plan (No Student/Faculty Housing Variant), would be the same for the Variant under the CEQA Proposed Project and the CEQA Reduced Density Alternative. Similar to the CEQA Proposed Project and the CEQA Reduced Density Alternative, the proposed buildings under the Variant would have a maximum height of approximately 80 feet, with an exceedance of up to 25 feet (i.e., approximately 105 feet in total)

[45] Throughout this joint EIR/EIS, *Variant* refers to both the Variant (under CEQA) and the Sub-Alternative (under NEPA).

allowed for mechanical screens and a limited number of minor protrusions allowed for exhaust fans and other small appurtenances. Tables 2-14 and 2-15 provide a summary of the maximum square footage of proposed land uses for the CEQA Proposed Project with Variant and the CEQA Reduced Density Alternative with the Variant, respectively.

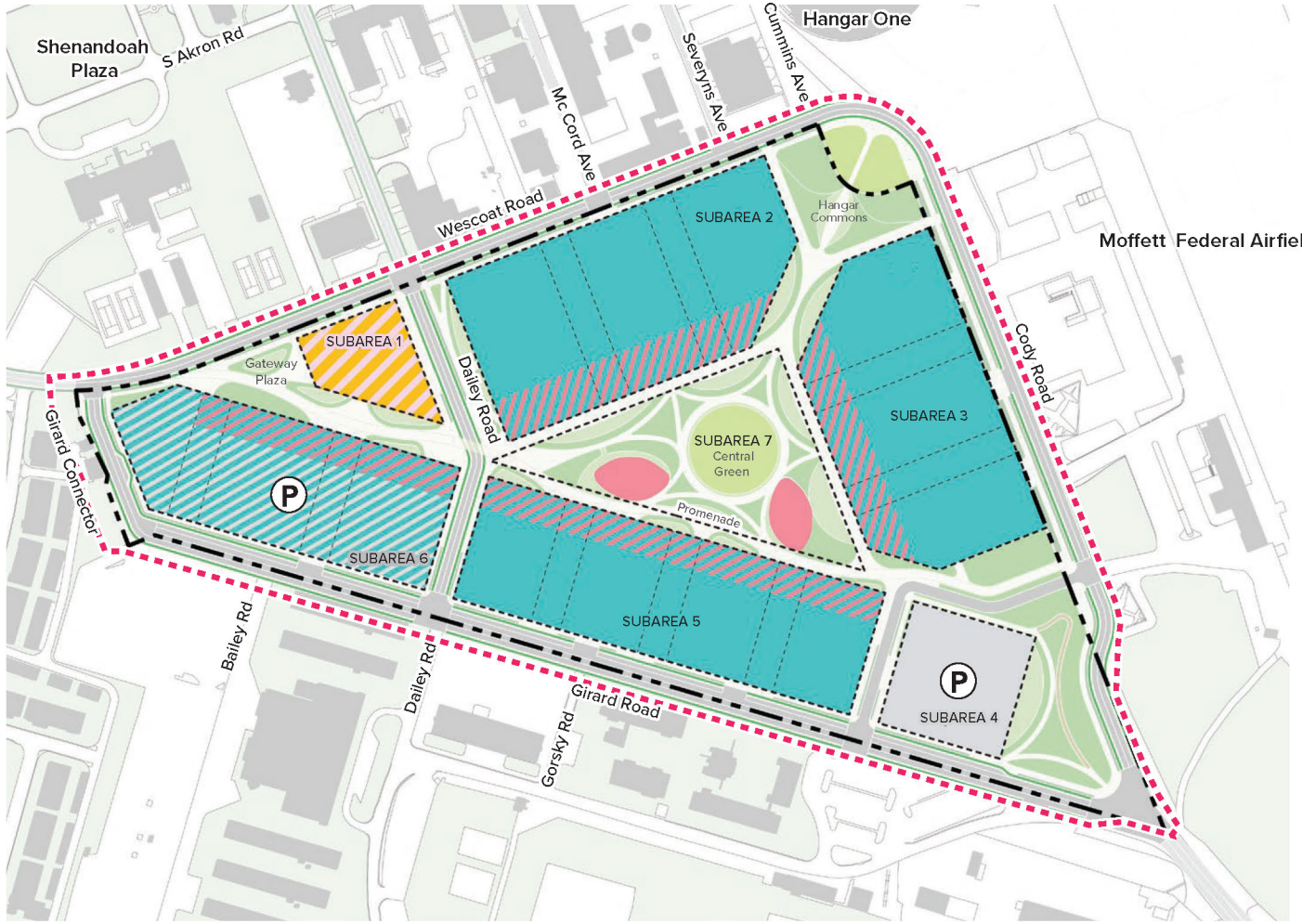
The number of Short-Term Lodging units would be the same for the CEQA Proposed Project and the CEQA Reduced Density Alternative; thus, the on-site population for this use would be the same for the CEQA Proposed Project or the CEQA Reduced Density Alternative with the Variant, as shown in Table 2-16. The Variant would result in approximately 200 Short-Term Lodging guests and no residents under the CEQA Proposed Project and the CEQA Reduced Density Alternative.

The CEQA Proposed Project with the Variant would result in more employees and students than the CEQA Reduced Density Alternative with the Variant because the CEQA Proposed Project with the Variant would include more square footage for Research and Office Uses, as shown in Table 2-17. The CEQA Proposed Project with the Variant and CEQA Reduced Density Alternative with the Variant would include the same amount of square footage for Conference Uses and Active Uses; thus, the on-site population for these uses would be the same, as shown in Table 2-17. Accounting for the 42 existing employees who would no longer work at the Project Site with implementation of the Variant, the CEQA Proposed Project with the Variant would result in approximately 6,518 net new employees and students, whereas the CEQA Proposed Project would result in approximately 6,132 net new employees and students. The CEQA Reduced Density Alternative with the Variant would result in approximately 3,770 net new employees and students, whereas the CEQA Reduced Density Alternative would result in approximately 3,384 net new employees and students.

The Variant would not change the basic characteristics of the CEQA Proposed Project and the CEQA Reduced Density Alternative. The Variant would provide flexibility in the project's design, would occur in the same Limits of Work as the CEQA Proposed Project and the CEQA Reduced Density Alternative, and would have the same objectives, purpose and need, background, and development controls, but with specific differences. Additionally, even with the removal of Student/Faculty Housing as part of the Variant, like the CEQA Proposed Project and the CEQA Reduced Density Alternative, the Variant would still meet the criteria of a TPA as described in Section 2.3.5.9, *Transit Priority Areas*. The Variant is a variation of a component of the CEQA Proposed Project and the CEQA Reduced Density Alternative.

This potential difference in proposed land use is identified as a variant because it may or may not be included as part of the project during implementation. The Project Proponent will decide whether to implement the Variant prior to construction of buildings within Subarea 6. The Variant is not an "alternative" within the meaning of CEQA. Rather, the Variant is considered a potential alteration to the CEQA Proposed Project and the CEQA Reduced Density Alternative, as described in this chapter. The final decision as to whether to adopt the CEQA Proposed Project and the CEQA Reduced Density Alternative with or without the No Student/Faculty Housing Variant will be made after completion of the final joint EIR/EIS.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2025.

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Figure 2-21

Conceptual Land Use Plan (No Student/Faculty Housing Variant)

Berkeley Space Center at NASA Research Park

Table 2-14. Maximum Square Footage of Proposed Uses by Subarea for the CEQA Proposed Project with the Variant

Land Use	Subarea 1 (sf)	Subarea 2 (sf)	Subarea 3 (sf)	Subarea 4 (sf)	Subarea 5 (sf)	Subarea 6 (sf)	Subarea 7 (sf)	*Total (sf)*
Research and Office Uses	—	680,000	600,000	—	550,000	300,000	—	***2,130,000***
Office	—	*120,000*	*100,000*	—	*100,000*	*55,000*	—	*375,000*
Laboratory and R&D	—	*470,000*	*420,000*	—	*380,000*	*210,000*	—	*1,480,000*
Academic	—	*90,000*	*80,000*	—	*70,000*	*35,000*	—	*275,000*
Conference Uses	25,000	—	—	—	—	—	—	***25,000***
Active Uses	5,000	15,000	15,000	—	30,000	10,000	15,000	***90,000***
Housing and Lodging	75,000	—	—	—	—	—	—	***75,000***
Short-Term Lodging	*75,000*	—	—	—	—	—	—	*75,000*
Total (sf)	***105,000***	***695,000***	***615,000***	***—***	***580,000***	***310,000***	***15,000***	***2,320,000***
Parking	—	—	—	555,000	—	525,000	—	***1,080,000***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
sf = square feet; R&D = research and development

Table 2-15. Maximum Square Footage of Proposed Uses by Subarea for the CEQA Reduced Density Alternative with the Variant

Land Use	Subarea 1 (sf)	Subarea 2 (sf)	Subarea 3 (sf)	Subarea 4 (sf)	Subarea 5 (sf)	Subarea 6 (sf)	Subarea 7 (sf)	*Total (sf)*
Research and Office Uses	—	340,000	310,000	—	310,000	250,000	—	***1,210,000***
Office	—	*60,000*	*55,000*	—	*55,000*	*45,000*	—	*215,000*
Laboratory and R&D	—	*235,000*	*215,000*	—	*215,000*	*175,000*	—	*840,000*
Academic	—	*45,000*	*40,000*	—	*40,000*	*30,000*	—	*155,000*
Conference Center	25,000	—	—	—	—	—	—	***25,000***
Active Uses	5,000	15,000	15,000	—	30,000	10,000	15,000	***90,000***
Housing and Lodging	75,000	—	—	—	—	—	—	***75,000***
Short-Term Lodging	*75,000*	—	—	—	—	—	—	*75,000*
Total (sf)	***105,000***	***355,000***	***325,000***	***—***	***340,000***	***260,000***	***15,000***	***1,400,000***
Parking	—	—	—	555,000	—	525,000	—	***1,080,000***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
sf = square feet; R&D = research and development

Table 2-16. Proposed Guests Under the CEQA Proposed Project with the Variant and CEQA Reduced Density Alternative with the Variant

	Proposed Units	Generation Rate	Guests
Existing			
Existing Residents on the Project Site	—	—	0
CEQA Proposed Project with the Variant and CEQA Reduced Density Alternative with the Variant			
Short-Term Lodging Guests	100 units	2 occupants/unit	200
Total Net New Guests	—	—	***200***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.

Table 2-17. Proposed Employees and Students Under the for the CEQA Proposed Project with the Variant and CEQA Reduced Density Alternative with the Variant

	CEQA Proposed Project (NEPA Build Alternative 1)			CEQA Reduced Density Alternative (NEPA Build Alternative 2)		
	Proposed Land Use (sf)	**Generation Rate**	**Employees**	**Proposed Land Use (sf)**	**Generation Rate**	**Employees**
Existing						
Existing Employees or Tenants on the Project Site	—	—	42	—	—	42
Variant						
Research and Office Uses						
Office	375,000	279 sf/employee[a]	1,344	215,000	279 sf/employee[a]	771
Laboratory and R&D	1,480,000	405 sf/employee[b]	3,654	840,000	405 sf/employee[b]	2,074
Academic	275,000	234 sf/employee[c]	1,175	155,000	234 sf/employee[c]	662
Conference Uses	25,000 (20 rooms)	1 employee per room[d]	20	Same as CEQA Proposed Project	1 employee per room[d]	20
Active Uses	90,000	500 sf/ employee[e]	180	Same as CEQA Proposed Project	500 sf/ employee[e]	180
Total Proposed Employees	—	—	*6,373*	—	—	*3,707*
Total Proposed Students (based on academic square footage)	275,000	0.00068 sf/ student[f]	*187*	155,000	0.00068 sf/ student	*105*
Total Net New Employees and Students (accounting for the existing employees who would no longer work at the Project Site with implementation of the Variant)	—	—	***6,518***	—	—	***3,770***

Source: Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.
Note: sf = square feet

2.5 Reviews and Approvals by Lead Agencies, Responsible Agencies, and Other Agencies

UC Berkeley is part of the University of California, a constitutionally created entity of the State of California (State), with "full powers of organization and government" (California Constitution, Article IX, Section 9). As a constitutionally created State entity, UC Berkeley is not subject to the municipal regulations of local governments (e.g., general plans or zoning ordinances) for uses on property owned or controlled by UC Berkeley that are in furtherance of UC Berkeley's educational mission. Similarly, as a federal agency, NASA is not subject to the jurisdiction of regulations at the city, county, or State level, unless that authority is explicitly authorized by federal law or NASA policy or otherwise delegated by the federal government to the State for implementation and enforcement. For these reasons, the local land use regulations discussed in Section 2.2.3, *Land Use Designations*, not applicable to the CEQA Proposed Project or the CEQA Reduced Density Alternative are presented are for informational purposes only.

This section describes the approvals and permits by the Lead Agencies as well as the reviews and approvals by Responsible Agencies and Other Agencies.

2.5.1 UC Regents Approvals

Section 1.3.1.3, *CEQA Final EIR/EIS and Consideration of Project Approval*, in Chapter 1, *Introduction*, of this joint EIR/EIS describes the process by which the UC Regents will consider the project for approval. The joint Final EIR/EIS (consisting of the joint Draft EIR/EIS and the responses to comments) will be considered by the UC Regents to certify the joint Final EIR/EIS and then approve or deny the proposed project application. The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under CEQA. The UC Regents is the CEQA Lead Agency for the proposed project and would provide authorization before the proposed action is submitted for NASA's approval. UC Berkeley Physical and Environmental Planning is the office of record for UC Berkeley's environmental documentation.

2.5.2 NASA Permits and Approvals

Section 1.3.2.3, *NEPA Final EIR/EIS and Consideration of Project Approval*, in Chapter 1, *Introduction*, describes the process by which NASA will consider the project for approval. The Project Proponent will require NASA's approval to proceed following analysis consistent with NEPA. NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. After the Final EIS is published, NASA will prepare a ROD explaining why NASA has chosen to undertake a proposed action, identifying what the proposed action is, and any mitigation identified in the EIR/EIS that NASA is including. NASA is the final decision-making body regarding the project-specific discretionary development entitlements.

Reviews and permits from NASA that are anticipated to be required for the CEQA Proposed Project and the CEQA Reduced Density Alternative include, but are not limited to, the following:

- Design review by NASA pursuant to APR 8822.1 (see Section 2.3.1, *Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines*); and
- Construction Permitting by NASA pursuant to APD 8829.1.

2.5.3 Reviews and Approvals by Responsible Agencies and Other Agencies

Permits and other approvals related to state and federal requirements anticipated to be required for the CEQA Proposed Project and the CEQA Reduced Density Alternative include, but are not limited to, the following:

- Bay Area Air District permit for stationary sources;
- San Francisco Bay RWQCB Clean Water Act Section 401 water quality certification;
- U.S. Army Corps of Engineers permit under Section 404 of the Clean Water Act;
- Army approval of easements for utility infrastructure;
- Consultation pursuant to Section 7 of the federal Endangered Species Act with the U.S. Fish and Wildlife Service;
- Consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) and CEQA;
- Approval of the EPA and San Francisco Bay RWQCB for relocation or removal of any remediation system components;
- Approval of the EPA and San Francisco Bay RWQCB for the Spring 2026 project-specific EIMP;
- State Water Resources Control Board Division of Drinking Water (DDW) Application and Report of Waste Discharge (ROWD) for coverage under Order WQ 2014-0153-DWQ, and Compliance with the California Code of Regulations (CCR) Title 22 for production, distribution and use of recycled water;
- Reviews and permits associated with services to be provided by local service providers, such as the City of Mountain View, for utilities;
- Encroachment permit or similar for any roadway in City of Mountain View, City of Sunnyvale, VTA, or California Department of Transportation (Caltrans) rights-of-way; and
- Completion of a Settlement Agreement and Covenant Not to Sue with the EPA.

Chapter 3
Affected Environment/Environmental Setting and Environmental Impacts

This chapter describes the affected environment/environmental setting and potential environmental impacts that the Berkeley Space Center at NASA Research Park (proposed project/proposed action) could have on existing environmental conditions for each resource topic or environmental issue evaluated in this joint environmental impact report/environmental impact statement (EIR/EIS). Descriptions of the affected environment/environmental setting and impacts for each resource topic are provided in the 18 sections that make up Chapter 3 of this joint EIR/EIS. The environmental analysis in this chapter has been prepared in accordance with the California Environmental Quality Act (CEQA), as amended (Public Resources Code Section 21000, et seq.). A discussion of project impacts in accordance with NEPA is provided separately in Chapter 4, *Environmental Impact Statement.*

3.1 Introduction

As required by CEQA, State CEQA Guidelines Section 15125, and the National Environmental Policy Act (NEPA), this joint EIR/EIS provides a description of the affected environment/environmental setting, focusing on resources and conditions potentially subject to impacts as a result of the proposed project.

This chapter addresses the affected environment/environmental setting associated with the proposed project in relation to the following resource topic sections:

- Section 3.2, *Aesthetics and Visual Resources*
- Section 3.3, *Air Quality*
- Section 3.4, *Biological Resources*
- Section 3.5, *Cultural Resources*
- Section 3.6, *Energy*
- Section 3.7, *Geology, Soils, and Paleontological Resources*
- Section 3.8, *Greenhouse Gas Emissions*
- Section 3.9, *Hazards and Hazardous Materials*
- Section 3.10, *Hydrology and Water Quality*
- Section 3.11, *Land Use and Planning*
- Section 3.12, *Noise*
- Section 3.13, *Population and Housing*
- Section 3.14, *Public Services*
- Section 3.15, *Recreation*
- Section 3.16, *Transportation and Traffic*
- Section 3.17, *Tribal Cultural Resources*
- Section 3.18, *Utility and Service Systems*
- Section 3.19, *Effects Not Found to Be Significant (Aesthetics and Vehicular Parking, Agriculture and Forestry Resources, Mineral Resources, and Wildfire)*

3.1.1 Organization of This Chapter

Each resource topic or environmental issue in this chapter is given its own section, and each section contains the subsections listed below.

- **Affected Environment/Environmental Setting**—This describes existing baseline conditions, including the environmental context and background, to the extent needed to understand the environmental impacts of the proposed project.
- **Plans, Policies, and Regulations**—This summarizes plans, policies, and regulations considered in the analysis of the project's potential impacts on each resource topic.

  UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

  Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.
- **Impacts and Mitigation Measures**—This describes the physical environmental impacts of the proposed project for each resource topic, as well as any mitigation measures that could reduce potentially significant impacts to less-than-significant levels. This section begins with a listing of the significance criteria, referred to as thresholds of significance, used to assess the severity of the environmental impacts for that particular resource topic based on Appendix G of the State CEQA Guidelines. This section also includes a topic-specific "Methods for Analysis" description explaining the parameters, assumptions, and data used to inform the analysis.

3.1.2 CEQA Methodology

State CEQA Guidelines Section 15151 provides guidance for preparation of an adequate environmental impact report (EIR):

- An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of the environmental consequences of a project.

- An evaluation of the environmental impacts of a project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in light of what is reasonably feasible.
- Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. (The courts have looked not for perfection but for adequacy, completeness, and a good-faith effort at full disclosure.)

In practice, this guidance suggests that EIR preparers should adopt a reasonable methodology upon which to estimate impacts and make reasonable assumptions, using the best information available.

Pursuant to State CEQA Guidelines Section 15161, this is a project-level EIR. It serves to provide environmental clearance for the proposed project and support all necessary approvals and entitlements. For purposes of the EIR analysis, the following are evaluated within Chapter 3:

- CEQA Proposed Project (NEPA Build Alternative 1)
- CEQA Reduced Density Alternative (NEPA Build Alternative 2)

3.1.3 No Student/Faculty Housing Variant/Sub-Alternative

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative: the No Student/Faculty Housing Variant/Sub-Alternative (Variant). For purposes of the EIR analysis, the following are evaluated within Chapter 3 in addition to the CEQA Proposed Project and the CEQA Reduced Density Alternative:

- CEQA Proposed Project with No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)
- CEQA Reduced Density Alternative with No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

For some resource areas, the impacts under the Variant would be the same as those under the CEQA Proposed Project or CEQA Reduced Density Alternative. For those resources, further analysis is not needed, as explained within the respective resource sections. However, in some cases, the impacts under the Variant would differ from the impacts identified for the CEQA Proposed Project or CEQA Reduced Density Alternative. The differences between the CEQA Proposed Project, the CEQA Proposed Project with the Variant, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant are analyzed quantitatively throughout this chapter, as applicable. Unless otherwise stated, all mitigation measures described in Chapter 3 required to reduce impacts associated with the CEQA Proposed Project or CEQA Reduced Density Alternative would be applicable to the CEQA Proposed Project with the Variant and the CEQA Reduced Density Alternative with the Variant.

3.1.4 Mitigation Measures

If the Draft EIR analysis determines that a significant impact would occur, the impact is classified as significant, and mitigation measures are identified to reduce, eliminate, or avoid the adverse effect. Mitigation measures identified in this Draft EIR were developed in accordance with State CEQA Guidelines Section 15126.4(a)(1)(A), which states:

> The discussion of mitigation measures shall distinguish between measures that are proposed by project proponents to be included in a project and other measures proposed by the lead, responsible, or trustee agency or other persons that were not included but the agency determines could reasonably be expected to reduce adverse impacts if required as conditions of approving the project. This discussion shall identify mitigation measures for each significant environmental effect identified in the EIR.

In this joint EIR/EIS, mitigation measures are provided immediately following each significant or potentially significant impact. Project-specific mitigation measures are numbered and lettered to correspond to their impact number. For example, Mitigation Measures AQ-1, AQ-2, and AQ-3 refer to the first mitigation measures in Section 3.3, *Air Quality,* of this joint EIR/EIS. In addition, where applicable, the terms "CEQA-only" in this chapter, or "NEPA-only" in Chapter 4, *Environmental Impact Statement*, are included in the name of a mitigation measure to identify whether it is required to reduce a CEQA impact or is applicable to a NEPA impact, respectively. If no such terms are included, the mitigation measure applies to CEQA and NEPA impacts.

If the proposed project is approved by The Regents of the University of California (UC Regents), a Mitigation Monitoring and Reporting Program (MMRP) must be adopted. Pursuant to State CEQA Guidelines Section 15097, an MMRP is a mechanism for monitoring and reporting revisions to a project or conditions of approval that the public agency required as mitigation to lessen or avoid a significant environmental effect. As the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under the California Environmental Quality Act (CEQA) and NASA's approval to proceed following analysis consistent with the National Environmental Policy Act (NEPA).[1] The MMRP for the proposed project will identify the specific monitoring actions that will be completed, the various entities that will oversee completion of the mitigation, and a timeline for implementation of the measures. Implementation of the mitigation measures in the MMRP will eliminate or reduce the severity of the significant impacts identified in the joint EIR/EIS.

3.1.5 Significance Determinations

In accordance with State CEQA Guidelines Section 15022(a), the University of California, Berkeley uses the impact significance criteria designated by CEQA and suggested by State CEQA Guidelines Appendix G.[2] The criteria, as well as the Office of Planning and Research *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018), are used to evaluate the impacts of the proposed project throughout this document. The criteria are listed under the subsection *Thresholds of Significance* throughout this chapter.

[1] UC Regents is a legal entity that includes all of the University of California campuses.

[2] UC Berkeley is preparing the EIR on behalf of the UC Regents.

In determining whether impacts are significant, an EIR compares the potential impacts of a project with pre-project environmental conditions. State CEQA Guidelines Sections 15125(a) and 15162.2(a) specify that the baseline normally consists of physical conditions that existed at the time the Notice of Preparation (NOP) was published or the time the environmental analysis began. With the proposed project, the NOP release date of June 21, 2024, serves as the environmental baseline from which impacts of the proposed project are generally measured. However, as noted in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, for the purposes of the analysis in this joint EIR/EIS, Open Campus conditions are accounted in baseline conditions. Specifically, the baseline for Phase 1 construction analysis (i.e., project-related activities before Phase 1 occupancy) is a typical existing-conditions baseline scenario because Open Campus improvements would not be completed yet. The baseline conditions for all operational analyses and Phases 2 to 4 construction analyses is a future baseline scenario that accounts for Open Campus improvements.

For each impact identified, a level of significance is determined, using the following classifications.

- ***No Impact***. No impact denotes situations in which there is no possibility of an adverse effect on the environment.
- ***Less than Significant***. Less-than-significant impacts are effects that are noticeable but not at a level that would exceed established or defined thresholds or effects that are already reduced to a level below such thresholds (e.g., through compliance with applicable laws or features of the project).
- ***Less than Significant with Mitigation***. Less than significant with mitigation is the conclusion when impacts would be significant or potentially significant, but implementation of project-specific mitigation measures would reduce impacts to a level of less than significant.
- ***Significant and Unavoidable***. Significant and unavoidable is the conclusion if impacts are identified as significant or potentially significant, and mitigation measures would not diminish the effects to less-than-significant levels.

In this chapter, impacts are defined using an alphanumeric system that identifies the environmental topic associated with the impact. For example, Impact CEQA-CUL-1 denotes the first impact in Section 3.5, *Cultural Resources*. The abbreviated codes used to identify the environmental issues discussed in this chapter are listed below.

- AES – Aesthetics
- AQ – Air Quality
- BIO – Biological Resources
- CUL – Cultural Resources
- ENE – Energy
- GEO – Geology, Soils, and Paleontology
- GHG – Greenhouse Gases
- HAZ – Hazards and Hazardous Materials
- HYD – Hydrology and Water Quality
- LU – Land Use and Planning
- NOI – Noise and Vibration
- POP – Population and Housing
- PS – Public Services
- REC – Recreation
- TRAN – Transportation and Traffic
- TCR – Tribal Cultural Resources
- UTIL – Utility and Service Systems

3.1.6 Approach to Cumulative Impacts Analysis

State CEQA Guidelines Section 15355 defines cumulative impacts. In addition, State CEQA Guidelines Section 15130(b)(1) sets forth the two primary approaches to the analysis of cumulative impacts that are used in this Draft EIR. The cumulative analysis can be based on (1) a list of past, present, and reasonably anticipated future projects producing related impacts that could combine with those of a proposed project or (2) a summary of a projection contained in a general plan or related planning document.

The methodology used depends on which approach accurately captures the cumulative context for the resource topic being analyzed. An introductory statement that defines the cumulative geographic context being analyzed and whether the approach is list based or projections based is included at the beginning of each cumulative impacts section.

3.1.6.1 Projections-Based Approach

Where the cumulative analysis relies on a projections-based approach, the projections identified for NASA ARC, the City of Sunnyvale, the City of Mountain View, and/or Santa Clara County are used. The summary of the projections provided below is based on a review of each jurisdiction's land use development plans.

NASA Ames Development Plan (NADP)[3]

- 1,930 residential units
- 4,909 residents
- 7,088 employees

Sunnyvale General Plan (Buildout 2035) + Housing Element Update (Buildout 2040)[4]

- 17,158 residential units
- 222,210 residents
- 108,640 jobs

Mountain View General Plan (Buildout 2030) + Housing Element Update (Buildout 2040)[5]

- 70,100 residential units
- 148,200 residents
- 133,000 jobs

[3] NASA. 2025. *Berkeley Space Center at NASA Research Park—NASA ARC Buildout Assumptions*. The CEQA Reduced Density Alternative is included within the assumptions evaluated in the 2002 PEIS.

[4] City of Sunnyvale. 2023. *Initial Study/Proposed Negative Declaration, 2023–2031 Housing Element Update*. October 2023.

[5] City of Mountain View. 2022. *City of Mountain View Housing Element Update, Response to Comments/Final Environmental Impact Repor*t. November 2022.

County of Santa Clara General Plan (Buildout 2010) + Housing Element update (Buildout 2040)[6]

- 881,655 residential units
- 2,538,320 residents
- 1,478,600 jobs

3.1.6.2 List-Based Approach

Where the cumulative analysis relies on a list-based approach, a list of projects that are currently proposed, approved, or under development within NASA ARC at the approximate time of the NOP release date of June 21, 2024 is used. Table 3.1-1 summarizes projects that are currently proposed, approved, or under development in NASA ARC (i.e., the cumulative projects) and Figure 3.1-1 depicts the locations of the cumulative projects. Cumulative Projects 1 through 5 include individual development projects in NASA ARC. Cumulative Projects 6 through 11 include the remaining developable area programmed in the NADP for NASA ARC that has not been allocated towards any current projects. Cumulative Projects 6 through 11 are grouped by land use type within the four areas at NASA ARC (i.e., NRP, Eastside/Airfield, Bay View, and Ames Campus). Cumulative Projects 12 through 18 include projects at Moffett Air National Guard Base.

The cumulative analysis for each topic in Section 3.2, *Aesthetics*, through Section 3.18, *Utility and Service Systems*, identifies which projects (if any) in Table 3.1-1 have the potential to combine with the proposed project and result in a cumulative impact, based on characteristics such as distance from the Project Site and the project type. The identified projects are considered in the cumulative analysis.

6 County of Santa Clara. 2023. *Santa Clara County Housing Element and Stanford Community Plan Update Draft Environmental Impact Repor*t. June 2023.

Table 3.1-1. Cumulative Projects in the NASA Ames Research Campus[1, 2, 3]

No.	Name	Address	Brief Description	Office (sf)	Retail/ Commercial (sf)	R&D/Light Industrial (sf)	Other (sf)	Hotel (rooms)	Residential (sf)	Status (i.e., proposed, approved, under construction, or completed)	Timeline for Status (i.e., date completed, date construction will begin, date construction will end)
1	United States Geological Survey (USGS) Lab B800	455 South Akron Road	Construction of 50,000 sf laboratory building	—	—	50,000	—	—	—	Completed	June 2024
2	USGS B19 Relocation	Northwest corner of Akron Road and McCord Avenue	Rehabilitation of Building 19 for relocation of USGS office	69,000	—	—	52,000[4]	—	—	Completed	June 2025
3	Planetary Ventures Moffett Federal Airfield (PV MFA) Hangar One Reskinning	Hangar One	Abatement and recoating of Hangar One to address environmental concerns; would include sub-slab depressurization	—	—	—	355,013[5]	—	—	Completed	Temporary Certificate of Occupancy: August 2025 Certificate of Occupancy: December 2025
4	PV MFA Hangar Three Remediation	Hangar Three	Demolition of Hangar Three to eliminate structural hazards	—	—	-433,738	—	—	—	Completed	2025
5	PV MFA Bus Operations and Maintenance Facility Improvements	East Aircraft Parking Apron (MF1002), northeast of Hangar Three	Remodel, reconfiguration, and expansion of existing Google Bus Fleet Maintenance Facility	—	—	—	15,020[6]	—	—	Completed	September 2024
6	—	NRP area at NASA ARC	Remaining unallocated buildout of educational uses	—	—	—	21,945	—	—	Proposed	n/a

No.	Name	Address	Brief Description	Office (sf)	Retail/ Commercial (sf)	R&D/Light Industrial (sf)	Other (sf)	Hotel (rooms)	Residential (sf)	Status (i.e., proposed, approved, under construction, or completed)	Timeline for Status (i.e., date completed, date construction will begin, date construction will end)
7	—	NRP area at NASA ARC	Remaining unallocated buildout of residential uses	—	—	—	—	—	1,843,000	Proposed	n/a
8	—	NRP area at NASA ARC	Remaining unallocated buildout of public uses	—	—	—	12,000[7]	—	—	Proposed	n/a
9	—	Ames Campus area at NASA ARC	Remaining unallocated buildout of office/high density R&D uses	—	—	—	320,981[8]	—	—	Proposed	n/a
10	—	Eastside/Airfield area at NASA ARC	Remaining unallocated buildout of industrial uses	—	—	12,000	—	—	—	Proposed	n/a
11	—	Eastside/Airfield area at NASA ARC	Remaining unallocated buildout of technical/low density office/R&D uses	—	—	—	90,000[9]	—	—	Proposed	n/a
12	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Demolish Buildings 654, 655, 656, 657, 658, 659, 660, 661, and 669, and construct a composite maintenance facility (Building 649)	—	—	—	-60,083 +46,600	—	—	Proposed	n/a
13	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct an aircraft maintenance facility (Building 652)	—	—	—	23,930	—	—	Under Construction	n/a
14	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct an aircraft maintenance facility (Building 652)	—	—	—	12,900	—	—	Under Construction	n/a

No.	Name	Address	Brief Description	Office (sf)	Retail/ Commercial (sf)	R&D/Light Industrial (sf)	Other (sf)	Hotel (rooms)	Residential (sf)	Status (i.e., proposed, approved, under construction, or completed)	Timeline for Status (i.e., date completed, date construction will begin, date construction will end)
15	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct a squadron operations facility (Building 665).	—	—	—	29,600	—	—	Under Construction	n/a
16	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct an aerospace pararescue and recovery facility (Building 664).	—	—	—	10,000	—	—	Under Construction	n/a
17	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct a consolidated MSA	—	—	—	13,430	—	—	Proposed	n/a
18	—	Moffett Air National Guard Base (south of Hangar Two)[2]	Construct a flight simulator facility for the HH-60 and HC-130J flight simulators	—	—	—	21,200	—	—	Proposed	n/a
Total				***69,000***	—	***-371,738***	***964,536***	**—**	***1,843,000***	**—**	**—**

Source: NASA. 2025. *Berkeley Space Center at NASA Research Park—NASA ARC Buildout Assumptions*. December 16; National Guard Bureau. 2021. *Moffett Air National Guard Base Installation Development Plan Executive Summary—129th Rescue Wing, Moffett Federal Airfield, California Air National Guard, Mountain View, California*. July 9.

Notes:

sf= square feet; n/a = not available

1 This list is current as of December 2025 and includes projects at NASA ARC.

2 For the projects at the Moffett Air National Guard Base, only projects that could combine with the proposed project to contribute to a cumulative impact are included in this table.

3 NASA is currently in the process of updating the NASA Ames Master Plan. However, the plan is in the preliminary planning stages and not enough details about the plan are known at this time. Therefore, the Ames Master Plan updates is not included as an identified cumulative project in this list.

4 This total includes storage uses.

5 This total includes factory and storage uses.

6 This total includes space for a bus fleet maintenance facility.

7 This total includes public uses.

8 This total includes a mix of office and high-density R&D uses.

9 This total includes a mix of technical, low-density office, and R&D uses.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

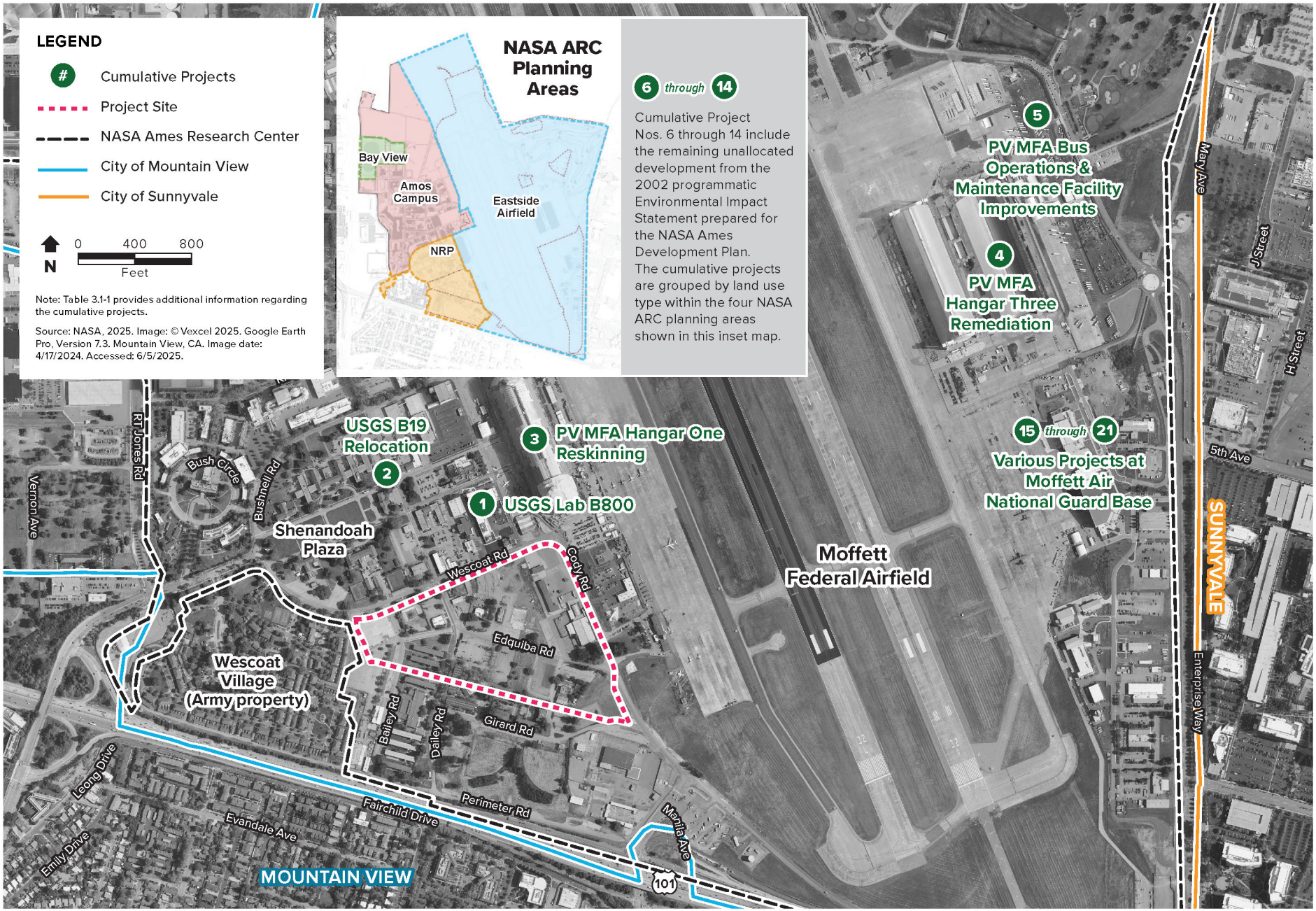


Figure 3.1-1
Cumulative Projects
Berkeley Space Center at NASA Research Park

3.2 Aesthetics and Visual Resources

For purposes of CEQA for the Berkeley Space Center at NASA Research Park (proposed project/proposed action), aesthetics and visual resources are not considered for environmental impacts. In accordance with Senate Bill (SB) 743, aesthetics and parking impacts shall not be considered in determining if a project has the potential to result in significant environmental effects, provided the project meets the following criteria under Public Resources Code Section 21099, Modernization of Transportation Analysis for Transit-Oriented Projects:

- The project is on an infill site,
- The project is in a Transit Priority Area (TPA), and
- The project is a residential, mixed-use residential, or employment-center project.

An infill site is a lot located within an urban area that has been previously developed or a vacant site where at least 75 percent of the perimeter of the site adjoins or is separated only by an improved public right-of-way from parcels that are developed with qualified urban uses (Public Resources Code Section 21099[a][4]). A TPA is defined as an area within 0.5 mile of an existing or planned major transit stop, such as a rail transit station, ferry terminal served by transit, or the intersection of two or more major bus routes (Public Resources Code Section 21099[a][7]).

The proposed project meets all of the above criteria. The Limits of Work, which include the Project Site, are currently developed with 18 buildings. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations. Most of the perimeter of the Project Site adjoins urban uses. The Metropolitan Transportation Commission (MTC) has identified locations for TPAs within the Bay Area. The Project Site is within a TPA because of its proximity to the Bayshore/NASA Santa Clara Valley Transportation Authority (VTA) light rail station, as shown in Figure 2-14, Transit Priority Area Map, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, of this joint environmental impact report/environmental impact statement (EIR/EIS).[1] As discussed in Chapter 2, the proposed project meets the above criteria because it consists of an employment-center and mixed-use residential project.

Because the proposed project meets the three TPA criteria, the EIR portion of this joint EIR/EIS does not consider aesthetics or vehicular parking in determining the significance of impacts under the California Environmental Quality Act (CEQA). Appendix 3.2-1 of this joint EIR/EIS includes a discussion of the proposed project's potential changes to the visual environment; for the purposes of CEQA, this information is provided for informational purposes. Section 4.5.2, *Aesthetics and Visual Resources*, in Chapter 3, *Environmental Impact Analysis*, provides an analysis of aesthetics and visual resources required under the National Environmental Policy Act (NEPA).

[1] Metropolitan Transportation Commission. 2021. *Transit Priority Areas*. Available: https://opendata.mtc.ca.gov/datasets/MTC::transit-priority-areas-2021-1/explore. Accessed: December 30, 2025.

3.3 Air Quality

3.3.1 Introduction

This section evaluates the potential impacts on air quality resources that could result from construction and operation of the Berkeley Space Center at the NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project:

- *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report* (Air Quality, Health Risk, and GHG Technical Report) prepared by ICF, February 2026 (Appendix 3.3-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to air quality resources include the following recommendations by the United States Environmental Protection Agency (EPA), Region 9.

- Identify air quality and health impacts from construction and demolition activities, including addressing potential for encountering asbestos. This issue is addressed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impacts CEQA-AIR-2 and CEQA-AIR-3 and Section 4.5.3.4, *Environmental Consequences*, under Impacts NEPA-AIR-2 and NEPA-AIR-3.
- Disclose the Project Site attainment status with the national ambient air quality standards (NAAQS), and analyze project-related emissions of particulate matter (PM), carbon monoxide (CO), nitrogen oxides (NO_X), sulfur oxides, and fugitive dust. This issue is addressed in Section 3.3.2, *Affected Environment/Environmental Setting*; Section 3.3.7, *Impacts and Mitigation Measures*, under Impact CEQA-AIR-2; and Section 4.5.3.4, *Environmental Consequences*, under Impact NEPA-AIR-2.
- Incorporate mitigation for construction- and operations-related emissions. This issue is addressed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact CEQA-AIR-2 and Section 4.5.3.4, *Environmental Consequences*, under Impact NEPA-AIR-2.
- Identify sensitive receptors throughout and around the Project Site and disclose a strategy to reduce construction-related impacts on sensitive receptors. This issue is addressed in Section 3.3.2, *Affected Environment/Environmental Setting*; Section 3.3.7, *Impacts and Mitigation Measures*, under Impact CEQA-AIR-3; and Section 4.5.3.4, *Environmental Consequences*, under Impact NEPA-AIR-3.

The Carpenters Union Local 405 also requested analysis and mitigation (if necessary) of construction workers commuting to the Project Site. This issue is addressed under Impact CEQA-AIR-2, and under Impact NEPA-AIR-2 in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS.

3.3.2 Affected Environment/Environmental Setting

For the purposes of analyzing air quality, two geographic scales define the study area consistent with Bay Area Air District (Air District) guidance.[1] The *regional* study area is the San Francisco Bay Area Air Basin (SFBAAB) ("Regional Air Quality Study Area"); the *local* study area is the Project Site plus areas within 1,000 feet of the Project Site ("Local Air Quality Study Area"). These study areas encompass the areas directly and indirectly affected by construction and operation of the proposed project.

3.3.2.1 Criteria Pollutants

Criteria pollutants make up a group of six common air pollutants for which the federal government and the State of California have set NAAQS and California ambient air quality standards (CAAQS), respectively. Criteria pollutants are defined as ozone, CO, lead (Pb), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and PM, which consists of particulates 10 microns in diameter or less (PM_{10}) and 2.5 microns in diameter or less ($PM_{2.5}$). Ozone is considered a regional pollutant because its precursors affect air quality on a regional scale. NO_X and reactive organic gases (ROG) react photochemically to form ozone. This reaction occurs at some distance downwind of the emissions source. Pollutants such as CO, NO_2, SO_2, and Pb are considered local pollutants. They tend to accumulate in the air locally. PM is both a local and a regional pollutant.

Concentrations of criteria pollutants are commonly used indicators of ambient air quality. Criteria pollutant concentrations can be used to determine acceptable levels of exposure. The ambient air quality standards for these pollutants are set with an adequate margin of safety for public health and the environment (Clean Air Act [CAA] Section 109). Epidemiological, controlled human exposure, and toxicology studies evaluate potential health and environmental effects of criteria pollutants and form the scientific basis for new and revised ambient air quality standards.

Table 3.3-1 provides a brief description of the sources and potential effects of the six criteria pollutants. The primary criteria pollutants generated by the proposed project would be ozone precursors (NO_X and ROG), CO, SO_2, and PM.[2,3] Additional narrative on the sources and health effects of these pollutants is provided in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. The Air Quality, Health Risk, and GHG Technical Report also summarizes the most recent criteria pollutant emissions inventory for the SFBAAB.

1 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

2 Pb is also a criteria pollutant. The project would not introduce new sources of Pb and would handle existing Pb (mainly in old paint) according to state and federal requirements. There are state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulates. However, these pollutants are typically associated with industrial sources, which are not included as part of the proposed project. Accordingly, they are not evaluated further.

3 Most emissions of NO_X are in the form of nitric oxide (NO). Conversion to NO_2 occurs in the atmosphere as pollutants disperse downwind. Accordingly, NO_2 is not considered a local pollutant of concern for the project and is not evaluated further.

Table 3.3-1. Sources and Potential Health and Environmental Effects of Criteria Pollutants

Pollutant	Primary Sources	Potential Effects [a]
Ozone	Formed by a chemical reaction between ROG and NO_X in the presence of sunlight. Primary sources of ROG and NO_X are vehicle exhaust, industrial combustion processes, gasoline storage and transport, solvents, paints, and landfills.	Inflammation of mucous membranes and airways in lungs; wheezing; coughing, along with pain when inhaling deeply; decreased lung capacity; aggravation of lung and heart problems; reduced crop yields; and damage to plants, rubber, some textiles, and dyes.
Particulate matter (PM)	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, equipment, and vehicles.	Irritation of airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Carbon monoxide (CO)	A component of combustion-engine exhaust that is formed when carbon in fuel is not burned completely.	Reduced ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impaired vision and dizziness that can lead to unconsciousness or death.
Nitrogen dioxide (NO_2)	Motor vehicles, electric utilities, and other sources that burn fuel.	Aggravation of lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming and nutrient overloading, which deteriorates water quality. Brown discoloration of the atmosphere.
Sulfur dioxide (SO_2)	Petroleum refineries, cement manufacturing processes, metal processing facilities, locomotives, large ships, and fuel combustion in diesel engines.	Aggravation of lung and heart problems. Converts to sulfuric acid, which can damage marble, iron, and steel. Damage to crops and natural vegetation. Impaired visibility.
Lead (Pb)	Metal refineries, smelters, battery manufacturers, iron and steel producers, and racing and aircraft industries that use leaded fuels.	Anemia; damage to the kidneys, liver, brain, reproductive and nervous systems, and other organs; and neurological problems, including learning deficits and lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: California Air Resources Board. 2026. Criteria Pollutants. Available: https://ww2.arb.ca.gov/criteria-pollutants. Accessed: March 17, 2026.
IQ = intelligence quotient; NO_X = nitrogen oxides; ROG = reactive organic gases
[a] The health effects described in this table may occur at certain concentrations among certain members of the public. The specific concentrations at which health effects are observed depends on the pollutant (e.g., ozone, PM_{10}), an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure.

3.3.2.2 Toxic Air Contaminants

Toxic air contaminants (TAC)[4] are pollutants that may or contribute to an increased risk of mortality or serious illness. For TACs that are known or suspected carcinogens, the California Air Resources Board (CARB) has consistently found that there are no levels or thresholds below which exposure is risk free. Individual TACs vary greatly in the risks they present. At a given level of exposure, one TAC

[4] TAC is synonymous with hazardous air pollutants (HAP); both terms are used in this document.

may pose a hazard that is many times greater than another. TACs are identified and their toxicity is studied by the California Office of Environmental Health Hazard Assessment (OEHHA). The primary TACs of concern associated with the proposed project are diesel particulate matter (DPM), asbestos, trichloroethene, tetrachloroethene, 1,2-dichloroethene, vinyl chloride, and 1,1-dichloroethane. The latter five pollutants were identified by EPA as the risk-based site-specific cleanup levels, with trichloroethene to be used as an indicator compound to track remediation progress.[5]

Table 3.3-2 provides a brief description of the sources and health effects of the seven primary TACs of concern associated with the proposed project. Additional narrative on the sources and health effects of these pollutants is provided in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/ EIS.

Table 3.3-2. Sources and Potential Health and Environmental Effects of Project TACs

Pollutant	Primary Sources	Potential Effects
Diesel particulate matter (DPM)	Generated by diesel-fueled equipment and vehicles.	Short-term exposure can cause acute irritation (e.g., eye, throat, bronchial), neurophysiological symptoms (e.g., lightheadedness, nausea), and respiratory symptoms (e.g., coughing, phlegm). DPM is classified as carcinogenic to humans.
Asbestos	Naturally occurring fibrous silicate minerals found in ultramafic rock that has undergone partial or complete alteration to serpentine rock (or serpentinite) and often contains chrysotile asbestos. Previously used as insulation and fireproofing in buildings.	Inflammation of the lungs, respiratory ailments (e.g., asbestosis, which is scarring of lung tissue that results in constricted breathing), and cancer (e.g., lung cancer and mesothelioma, which is cancer of the linings of the lungs and abdomen).
Trichloroethene (TCE)	Human-made chemical that can be found in contaminated groundwater and soil.	Affects to liver, nervous and immune systems, lungs, and kidneys, and the brain. Link to fetal development issues. Long-term exposure can increase the risk of developing kidney cancer and non-Hodgkin lymphoma.
Tetrachloroethene (PCE)	Human-made chemical used in dry cleaning and textile processing, metal degreasing, and other consumer and industrial applications. It can be found in contaminated groundwater and soil.	Affects nervous and respiratory systems, eyes, liver, and kidneys. Suspected carcinogen based on the development of liver tumors in mice and kidney tumors in male rats.
1,2-Dichloroethene (1,2-DCE)	Human-made chemical used as a solvent for gums, waxes, oils, and fats. It can be found in contaminated groundwater and soil.	Affects nervous system, liver, kidneys, and lungs. Skin and eye irritant.
Vinyl chloride	Human-made chemical used to produce polyvinyl chloride plastic that can be found in contaminated groundwater and soil.	Affects nervous and cardiovascular systems. Link to fetal development issues. Vinyl chloride is classified as carcinogenic to humans.

[5] U.S. Environmental Protection Agency. 2010. *Record of Decision Amendment for the Vapor Intrusion Pathway for the Middlefield-Ellis-Whisman (MEW) Site, Mountain View.* California Superfund Site. August.

Pollutant	Primary Sources	Potential Effects
1,1-Dichloroethane (1,1-DCA)	Human-made chemical used in chemical manufacturing and can be found in contaminated groundwater and soil.	Long-term exposure may cause irregulate heartbeats and kidney effects. Possible human carcinogen.

Source: International Agency for Research on Cancer. 2012. Diesel Engine Exhaust Carcinogenic. June 12. Press release No. 213. Available: https://www.iarc.fr/wp-content/uploads/2018/07/ pr213_E.pdf. Accessed: March 18, 2026.
U.S. Environmental Protection Agency. 2024. *Learn About Asbestos*. Last updated: August 2, 2024. Available: https://www.epa.gov/asbestos/learn-about-asbestos#effects. Accessed: April 1, 2025.
U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 1997. *Fact Sheet Tetrachloroethylene.* Available: https://semspub.epa.gov/work/05/923408.pdf. Accessed: May 31, 2024.
U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 2015. *Fact Sheet 1,1-Dichloroethane.* Available: https://www.atsdr.cdc.gov/toxfaqs/tfacts133.pdf Accessed: May 30, 2024.
U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 2022. *Clinical Effects of Trichloroethylene.* Available: https://www.atsdr.cdc.gov/csem/ trichloroethylene/clinical_effects.html Accessed: May 29, 2024.
U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 2024. *Vinyl Chloride Fact Sheet*. Available: https://www.atsdr.cdc.gov/toxfaqs/tfacts20.pdf. Accessed: May 31, 2024.
U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. 2025. *Fact Sheet on 1,2-Dichloroethenei.* Available: https://www.atsdr.cdc.gov/toxfaqs/tfacts87.pdf. Accessed: August 8, 2025.

3.3.2.3 Regional Air Quality Setting

Although the primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted from those sources, meteorological conditions and topography are also important factors. Atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. Unique geographic features throughout the state define 15 air basins with distinctive regional climates. The proposed project is in the SFBAAB.

Climate in the SFBAAB is affected by the marine air flow and the basin's proximity to the San Francisco Bay Area and terrain. Within the Santa Clara Valley subregion, temperatures are relatively consistent throughout the year, and prevailing winds flow from the northwest to southeast. Wind speeds are greatest in the spring and summer and weakest in the fall and winter. These summer winds can transport ozone precursors from surrounding counties to the Santa Clara Valley, where they concentrate in the southeast. High summer temperatures and stable air also promote ozone formation, which can be recirculated by southerly drainage flows in the late evening and early morning and the prevailing north-westerlies in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of CO and PM. This movement of the air up and down the valley increases the impact of the pollutants significantly.[6]

Based on existing air quality conditions, the SFBAAB and counties within the air basin are designated by EPA and CARB as nonattainment, maintenance, attainment, or unclassified for the NAAQS and CAAQS. The four designations are further defined as:

- **Nonattainment**—areas where monitored pollutant concentrations consistently violate the standard in question

6 Bay Area Air District. 2017. *California Environmental Quality Act Air Quality Guidelines*. May.

- **Maintenance**—areas where monitored pollutant concentrations exceeded the standard in question in the past but are no longer in violation of that standard
- **Attainment**—areas where pollutant concentrations meet the standard in question over a designated period
- **Unclassified**—areas where data are insufficient for determining whether a pollutant is violating the standard in question

Table 3.3-3 summarizes the attainment status of Santa Clara County in the SFBAAB with regard to the NAAQS and CAAQS.

Table 3.3-3. Federal and State Attainment Status for Santa Clara County

Criteria Pollutant	Federal (NAAQS) Designation	State (CAAQS) Designation
Ozone (8-hour standard)	Marginal nonattainment	Nonattainment
CO	Attainment	Attainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Moderate nonattainment [a]	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(no federal standard)	Attainment
Hydrogen sulfide	(no federal standard)	Unclassified
Visibility-reducing particles	(no federal standard)	Unclassified

Source: California Air Resources Board. 2025. *Maps of State and Federal Area Designations*. Available: http://www.arb.ca.gov/desig/adm/adm.htm. Accessed: April 1, 2025.

U.S. Environmental Protection Agency. 2025. Nonattainment Areas for Criteria Pollutants (Green Book). Last revised: March 31, 2025. Available: https://www.epa.gov/green-book. Accessed: April 9, 2025

Notes:

CO = carbon monoxide; NO_2 = nitrogen dioxide; $PM_{2.5}$ = particulate matter with a diameter less than or equal to 2.5 microns; PM_{10} = particulate matter with a diameter less than or equal to 10 microns; SO_2 = sulfur dioxide

[a] The EPA lowered the annual PM NAAQS on February 7, 2024 from 12 to 9 micrograms per cubic meter. CARB has submitted initial recommendations for area designations under the new standard, which include a nonattainment designation for the San Francisco Bay Area. Final designations under the revised standard are expected in February 2026.

3.3.2.4 Project Site

At Moffett Federal Airfield, which is part of the National Aeronautics and Space Administration Ames Research Center (NASA ARC), the summers are long, warm, arid, and mostly clear. The winters are short, cold, wet, and partly cloudy. The predominant wind direction is from the north northwest. The average hourly wind speed in Moffett Field experiences mild seasonal variation over the course of the year. The windier part of the year lasts for 5 months, from March to August, with average wind speeds of more than 7 miles per hour. The windiest month of the year is June, with an average hourly wind speed of almost 9 miles per hour. About a third of all hours at Moffett Field are in calm conditions (wind speed less than 2 miles per hour).[7]

[7] Proposed Berkeley Space Center Master Plan, Spring 2026. See Appendix 2-1 of this joint EIR/EIS.

The existing air quality conditions in the Local Air Quality Study Area can be characterized by ambient monitoring data. CARB collects ambient air quality data from a network of air monitoring stations throughout the state. The nearest monitoring station to the Project Site is the San José-Jackson Street monitoring station, which is approximately 9.4 miles southeast of the Project Site. Table 3.3-4 lists air quality trends from the data collected at San José-Jackson Street for the past 5 years. This station is representative of the Local Air Quality Study Area because the climate, topography, and urban setting are like those of the Local Air Quality Study Area. During the 2019 to 2023 monitoring period, exceedances were recorded at the monitoring station for the state and federal 8-hour ozone standards, state PM_{10} standards, and federal $PM_{2.5}$ standards.

Table 3.3-4. Ambient Air Quality Monitoring Data Measured at the San José-Jackson Street Station

Pollutant Standards	2019	2020	2021	2022	2023
Ozone					
Maximum 1-hour concentration (ppm)	0.095	0.106	0098	0.090	0.087
Maximum 8-hour concentration (ppm)	0.081	0.085	0.084	0.074	0.068
Measured number of days standard exceeded					
CAAQS 1-hour standard (> 0.09 ppm)	1	1	3	0	0
CAAQS 8-hour standard (> 0.070 ppm)	2	2	4	1	0
NAAQS 8-hour standard (> 0.070 ppm)	2	2	4	1	0
Carbon Monoxide (CO)					
Maximum 8-hour concentration (ppm)	1.3	1.5	1.5	1.4	1.4
Maximum 1-hour concentration (ppm)	1.7	1.8	1.7	1.7	1.9
Measured number of days standard exceeded					
NAAQS 8-hour standard (> 9 ppm)	0	0	0	0	0
CAAQS 8-hour standard (> 9.0 ppm)	0	0	0	0	0
NAAQS 1-hour standard (> 35 ppm)	0	0	0	0	0
CAAQS 1-hour standard (> 20 ppm)	0	0	0	0	0
Nitrogen Dioxide (NO_2)					
State maximum 1-hour concentration (ppb)	59	51	47	46	58
State second-highest 1-hour concentration (ppb)	59	50	47	46	53
Annual average concentration (ppb)	10	9	8	9	9
Measured number of days standard exceeded					
CAAQS 1-hour standard (180 ppb)	0	0	0	0	0
Particulate Matter (PM_{10})					
National maximum 24-hour concentration (µg/m^3)	75.4	134.9	42.8	41.1	*
National second-highest 24-hour concentration (µg/m^3)	53.6	91.0	41.4	41.1	*
State maximum 24-hour concentration (µg/m^3)	77.1	137.1	45.1	44.5	*
State second-highest 24-hour concentration (µg/m^3)	56.0	90.8	41.2	43.2	*
National annual average concentration (µg/m^3)	18.4	24.6	19.6	20.5	*
State annual average concentration (µg/m^3)	19.1	*	20.1	21.3	*
Measured number of days standard exceeded					
NAAQS 24-hour standard (> 150 µg/m^3)	0	0	0	0	*
CAAQS 24-hour standard (> 50 µg/m^3)	4	10	0	0	*

Pollutant Standards	2019	2020	2021	2022	2023
Particulate Matter ($PM_{2.5}$)					
National maximum 24-hour concentration (µg/m³)	27.6	120.5	38.1	36.2	49.0
National second-highest 24-hour concentration (µg/m³)	27.4	113.8	30.2	36.0	33.5
State maximum 24-hour concentration (µg/m³)	34.4	120.5	38.1	36.2	49.0
State second-highest 24-hour concentration (µg/m³)	29.9	113.8	31.6	36.0	33.5
National annual average concentration (µg/m³)	9.0	11.5	8.8	10.1	8.1
State annual average concentration (µg/m³)	9.1	11.5	8.9	10.1	8.2
Measured number of days standard exceeded					
NAAQS 24-hour standard (> 35 µg/m³)	0	12	1	2	1

Sources: California Air Resources Board. 2024. *iADAM: Air Quality Data Statistics (Top 4 Summary).* Available: https://www.arb.ca.gov/adam/topfour/topfour1.php. Accessed: May 20, 2024.

U.S. Environmental Protection Agency. 2024. *Monitor Values Report.* Available: https://www.epa.gov/outdoor-air-quality-data/monitor-values-report. Accessed: May 20, 2024.

CAAQS = California ambient air quality standards; CO = carbon monoxide; NAAQS = national ambient air quality standards; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ppb = parts per billion; ppm = parts per million; SO_2 = sulfur dioxide; > = greater than; * = not applicable or insufficient or no data available to determine the value; µg/m³ = micrograms per cubic meter

The existing health risk conditions in the Local Air Quality Study Area can be characterized by data published by OEHHA and EPA. OEHHA identifies the project census tract (06085504700) as experiencing slightly lower air pollution and secondary effects (e.g., socioeconomic) than the rest of the state. Traffic and DPM are the two most burdened exposure indicators, whereas cleanup sites and hazardous waste are the highest ranked environmental effects.[8] EPA identifies the entire Project Site as Vapor Intrusion Study Area, which refers to areas where the estimated TCE shallow groundwater concentrations exceed 5 parts per billion (ppb). Recent (2024) air sampling within the Project Site did not identify TCE or PCE levels above EPA's cleanup action levels. Likewise, outdoor and indoor air samples collected at Building 16, which is on the other side of Wescoat Road, just beyond the Limits of Work, did not show any exceedances after the Navy installed a sub-slab depressurization (SSD) at Building 16 in 2024.[9] Further discussion on Vapor Intrusion can be found in Chapter 3.9, *Hazards and Hazardous Material*, Section 3.9.2.2.

Beyond groundwater contamination, there are several stationary sources within the Local Air Quality Study Area that contribute to ambient TAC concentrations. Table 3.3-5 identifies stationary sources within 1,000 feet of the Project Site and on NASA ARC property.[10] U.S. 101 and several major roadways are also within the Local Air Quality Study Area. No rail emissions are within 1,000 feet of the Project Site. Modeling performed by the Air District indicates that the Project Site has an estimated existing cancer risk between 4.3 per million and 12.7 per million due to nearby on-road mobile sources. The annual $PM_{2.5}$ concentration due to on-road mobile sources at the Project Site is between 0.12 microgram per cubic meter (µg/m³) and 0.34 µg/m³. For both cancer risk and annual

8 Office of Environmental Health Hazard Assessment. 2024. *CalEnviroScreen 4.0*. Available: https://experience.arcgis.com/experience/11d2f52282a54ceebcac7428e6184203/page/CalEnviroScreen-4_0/. Accessed; May 21, 2024.

9 U.S. Navy. 2024. *Draft 2024 Installation Restoration Site 28 Air Sampling and Vapor Intrusion Tier Response Evaluation Report, Former Naval Air Station Moffett Field, Mountain View, CA.* November. Prepared by Titan Environmental Solutions, Inc., Fullerton, CA.

10 The Air District has identified several source types that do not pose a significant health impact even in combination with other nearby sources. This includes non-diesel standby generators and boilers. These sources per Air District guidance are excluded from table.

$PM_{2.5}$, the maximums are located along the southwest area of the proposed project development area, while the lower bound values are located at the most northerly corner of the proposed project development area.[11]

Table 3.3-5. Existing and Planned Stationary Sources within the Local Air Quality Study Area

Facility Name/ Bldg. ID	Source Type
CA Air National Guard	Unknown
Federal Aviation Administration	Diesel Generator
Moffett Field Commissary	Diesel Generator
Avports LLC	Diesel Generator
AMES Research Center (550-1049)	Diesel Generator
AMES Research Center (550-REM)	Diesel generators
AMES Research Center (550-3)	Nonretail Gas Station
Building 15	SSD system
Building 567	SSD system
Hanger 1	SSD system

Source: Bay Area Air District. 2024. Permit to Operate Emergency Standby Diesel Generator Set, Facility ID: 20825, Moffett Field Commissary/DCA.
AECOM. 2021. Air Quality Technical Report (AQTR) for the NASA Ames Development Plan. December.

3.3.2.5 Sensitive and Worker Receptors

The Air District defines sensitive receptors as "children, the elderly, and those with preexisting serious health problems."[12] Land uses where sensitive receptors are located and where there is reasonable expectation of continuous human exposure include "schools and schoolyards, parks and playgrounds, day-care centers and preschools, hospices, dormitories, prisons, nursing homes, hospitals, and residential communities."[13] Analyses performed by CARB indicate that providing a separation of at least 1,000 feet from diesel sources and high-traffic areas would reduce exposure to air contaminants and decrease asthma symptoms in children.[14] This CARB study demonstrates that DPM concentrations and resultant health effects decline as a function of distance from the emissions source.

The Air District defines worker receptors as off-site locations "where people work, including indoor and outdoor areas and commercial/industrial areas currently zoned or planned to be zoned for manufacturing, light or heavy industry, office, or retail activity."[15] The Air District's Guidelines note that lead agencies may elect to consider these receptors in air quality health risk assessment. UC

[11] Bay Area Air District. 2022. *Mobile-Source Screening Map*. Available: https://www.baaqmd.gov/ plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling. Accessed: March 12, 2026.

[12] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

[13] Ibid.

[14] California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April. Sacramento, CA.

[15] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. Appendix E Recommended Methods for Screening and Modeling Local Risks and Hazards. August.

Berkeley and NASA have elected to include both existing off-site workers and future on-site workers in this analysis.

Figure 3.3-1, Receptor Types in the Local Air Quality Study Area, shows the receptor types and locations in the Local Air Quality Study Area (within 1,000 feet of the Project Site). Table 3.3-6 summarizes the number of sensitive buildings by receptor type within the Local Air Quality Study Area and identifies the nearest distance to the Project Site for each receptor type. As shown, residential uses are the most common receptor type within the Local Air Quality Study Area. Other receptor types include worker, educational, daycare, and parks. There are no senior centers, nursing homes, pre-schools, K–12 schools, or medical or institutional (i.e., prison) facilities in the Local Air Quality Study Area. According to NASA, the existing buildings south of the Project Site (and outside the Limits of Work) are currently unoccupied and are anticipated to remain unoccupied during construction of the proposed project; thus, the existing buildings south of the Project Site are not considered receptors within the Local Air Quality Study Area.[16] The proposed Student/Faculty Housing units would be constructed within Subarea 6 in Building 12 during Phase 4 (for a conceptual site plan showing the possible locations of the proposed buildings, see Figure 3.12-2 in Section 3.12, *Noise*, of this joint EIR/EIS).

Table 3.3-6. Receptor Types in the Local Air Quality Study Area

Receptor Type	Number of Buildings	Nearest Distance (feet) to Project Site
Workers – On-Site (i.e., Future Workers in On-Site Buildings, not Construction Workers)	12[a]	n/a
Workers – Off-Site (i.e., Existing and Future Workers in NASA Research Park)	42	21
Residential[b]	136	46
Worker - Undefined	15	99
Educational - University	2	283
Daycare – Church[c]	2	612
Park	1	725
Worker - Off-Site (i.e., Existing and Future Workers in NASA Ames Campus)	1	943

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Notes:

n/a = not applicable

[a] For a conceptual site plan showing the possible locations of the proposed buildings, see Figure 3.12-2 in Section 3.12, *Noise*, of this joint EIR/EIS.

[b] The garages associated with residential uses are not considered sensitive receptors.

[c] Churches are not generally considered sensitive receptors. However, the facilities (including an outbuilding) are identified because they could include an on-site daycare or play yard.

[16] According to NASA, it is anticipated that the recreational fields south of the Project Site would be used intermittently (e.g., on a weekly basis for a few hours at a time) during construction of the proposed project; thus, the sports fields are not considered sensitive receptors according to Air District CEQA Guidelines. In addition, some of the existing buildings south of the Project Site would require occasional maintenance and other intermittent activities during project construction, but would remain unoccupied.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

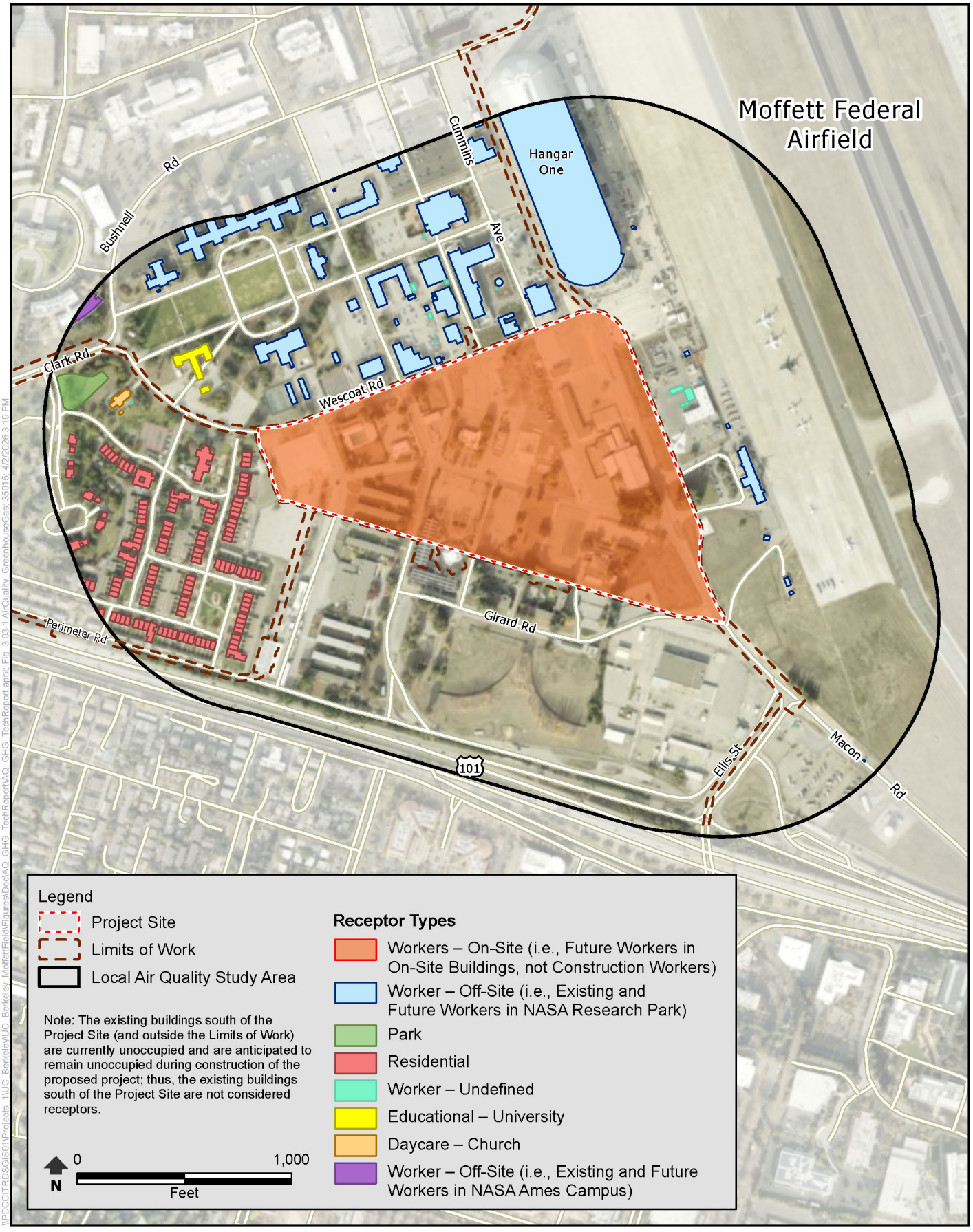


Figure 3.3-1
Receptor Types and Locations in the Local Air Quality Study Area
Berkeley Space Center at NASA Research Park

3.3.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use guidance from the Air District for the analysis of air quality associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use guidance from the state and the Air District, supplemented with federal standards, as part of the analysis for air quality associated with the project.

Plans, policies, and regulations considered in the analysis of the proposed project's impacts related to air quality are identified in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. A list of plans, policies, and regulations considered in the analysis is provided below.

- Clean Air Act and National Ambient Air Quality Standards
- Conformity Rule
- Non-Diesel Rule
- Vehicle Fuel Emission Standards
- NASA Ames Development Plan
- California Clean Air Act and California Ambient Air Quality Standards
- State Tailpipe Emission Standards
- Air District Regulations, CEQA Air Quality Guidelines, and Clean Air Foundation Program
- Metropolitan Transportation Commission and Association of Bay Area Governments Sustainable Communities Strategy

3.3.4 CEQA Findings

This section describes the environmental impacts of the proposed project on air quality in accordance with CEQA. It describes the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on air quality in accordance with NEPA is provided separately in Section 4.5.3, *Air Quality*, in Chapter 4, *Environmental Impact Statement*.

3.3.5 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have the potential to have a significant effect on air quality if it would result in any of the following conditions.

Would the project:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
- Expose sensitive receptors to substantial pollutant concentrations?
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to regional or local air quality (including receptor exposure to pollution and odors)?

Each of these conditions is evaluated based on guidance outlined in the Air District's *CEQA Air Quality Guidelines*.[17] Thresholds specific to each of the impact conditions are further defined in the following subsections.

3.3.5.1 Conflict with Applicable Air Quality Plans

The current air quality attainment plan for the SFBAAB is the 2017 Clean Air Plan. According to the Air District's *CEQA Air Quality Guidelines*, a determination of consistency with the 2017 Clean Air Plan should demonstrate that a project achieves the following.[18]

- Supports the primary goals of the air quality plan
- Includes applicable control measures from the air quality plan
- Does not disrupt or hinder implementation of any air quality plan control measures

According to Air District guidance, a project would not conform to the applicable air quality plan (i.e., 2017 Clean Air Plan) and would therefore result in a significant impact under CEQA by not supporting the primary goals of the 2017 Clean Air Plan, including applicable control measures, or disrupting or hindering implementation of control measures from the 2017 Clean Air Plan.

[17] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

[18] Ibid.

3.3.5.2 Result in a Cumulatively Considerable Net Increase in Criteria Pollutants

The Air District has developed recommended thresholds to evaluate whether a project's emissions would result in a cumulatively considerable adverse contribution to existing air quality conditions by not attaining the federal ozone or $PM_{2.5}$ standards. The SFBAAB is in nonattainment for ozone and $PM_{2.5}$, reflecting an existing significant cumulative impact. Because impacts from criteria pollutants are cumulative in nature, the project-level and cumulative impact threshold are the same. If a project's net emissions are below the thresholds, the proposed project would not be expected to result in a significant impact or a cumulatively considerable contribution to a significant cumulative impact. However, if any of the thresholds summarized in Table 3.3-7 are exceeded, net emissions generated by the proposed project could result in a significant impact and make a cumulatively considerable contribution to significant cumulative impacts under CEQA. A net increase in emissions under CEQA is defined as predicted project emissions minus predicted emissions under existing conditions (CEQA No-Project/Existing Conditions Alternative).

Table 3.3-7. Air District Project-Level Regional Criteria Pollutant Thresholds

Pollutant	Construction	Operation
ROG	54 lb/day	54 lb/day or 10 tons/year
NO_X	54 lb/day	54 lb/day or 10 tons/year
PM_{10}	82 lb/day (exhaust) Best management practices (dust)	82 lb/day or 15 tons/year (total)
$PM_{2.5}$	54 lb/day (exhaust) Best management practices (dust)	54 lb/day or 10 tons/year (total)

Source: Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.
lb = pound; NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

The Air District's thresholds are based on the federal New Source Review program offset requirements. The Air District has determined that use of these offset requirements as thresholds of significance for criteria pollutants is an appropriate and effective means of promoting consistency in significance determinations in the environmental review process. Thus, the Air District's thresholds were set as the total emissions thresholds associated within the New Source Review program to help attain the national ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS).[19] Projects that exceed these thresholds could degrade regional air quality in the SFBAAB and contribute to unhealthy air quality conditions. Additional context on potential health outcomes of regional criteria pollutants generated by the proposed project is presented in Section 3.3.7, *Impacts and Mitigation Measures*.

[19] Ibid.

3.3.5.3 Expose Sensitive Receptors to Substantial Pollutant Concentrations

Carbon Monoxide

Heavy traffic congestion can contribute to high levels of CO. Individuals exposed to such "hot spots" may have a greater likelihood of developing adverse health effects. The Air District has adopted screening criteria that provide a conservative indication of whether project-generated traffic would cause a potential CO hot spot. A project would not cause localized violations of the CAAQS for CO if the Air District's CO screening criteria, summarized below, are met.[20]

- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., a tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).
- The project would be consistent with an applicable congestion management program (CMP) established by the county congestion management agency for designated roads or highways, the regional transportation plan, and local congestion management agency plans.

If the screening criteria are not met, a quantitative analysis, through site-specific dispersion modeling of project-related CO concentrations would be necessary. CO concentrations would result in a significant impact under CEQA if they exceed the CAAQS or NAAQS.

The Air District does not consider construction-generated CO to be a significant pollutant of concern because construction activities typically do not generate substantial quantities of this particular pollutant.[21]

Particulate Matter

The Air District adopted an incremental $PM_{2.5}$ concentration-based significance threshold in which a "substantial" contribution at the project level for an individual source is defined as total (i.e., exhaust and fugitive) $PM_{2.5}$ concentrations exceeding 0.3 $\mu g/m^3$. Exceedance of this threshold would result in a significant impact under CEQA.

Toxic Air Contaminants

Long-term exposure to certain TACs can lead to cancer, birth defects, and damage to the brain and nervous systems. The Air District has adopted incremental cancer and hazard thresholds to evaluate receptor exposure to single sources of TAC emissions. The "substantial" TAC threshold defined by the Air District is exposure of a sensitive receptor to an individual emissions source, resulting in a project-level excess cancer risk level of more than 10 in 1 million or a non-cancer (i.e., chronic or acute) hazard index greater than 1.0.[22] Exceedances of these thresholds would result in a significant impact under CEQA.

[20] Ibid.

[21] Ibid.

[22] Ibid.

In addition to these numeric thresholds, the Air District considers the storage or use of acutely hazardous materials near receptors to be significant. The Air District also considers a project to have a significant asbestos impact if it does not comply with the applicable regulatory requirements outlined in Air District Regulation 11, Rule 2.[23]

3.3.5.4 Result in Odor Emissions

The Air District and CARB have identified several types of land uses as being commonly associated with odors, such as landfills, wastewater treatment facilities, and animal processing centers.[24,25] The Air District's *CEQA Air Quality Guidelines* further defines a significant odor impact as five confirmed odor complaints per year averaged over 3 years.[26] Exceedances of these thresholds would result in a significant impact under CEQA.

3.3.5.5 Result in Cumulatively Considerable Contribution to a Significant Regional or Local Air Quality Impact

The Air District has developed project-level thresholds that are derived from region-specific modeling that demonstrates the air basin can cumulatively accommodate project emissions below the threshold levels without affecting the attainment of the health-protective NAAQS or CAAQS, as required by the local air quality plans.[27] Thus, exceedance of any project-level threshold identified in Section 3.3.7, under Impact CEQA-AIR-1, *Conflict with Applicable Air Quality Plans*, through Impact CEQA-AIR-4, *Result in Odor Emissions*, would constitute a cumulatively considerable and significant impact under CEQA. In addition, the Air District considers projects to have a cumulatively considerable adverse impact on health from localized $PM_{2.5}$ if sensitive receptors are exposed to $PM_{2.5}$ concentrations from local sources within 1,000 feet, including existing sources, project-related sources, and reasonably foreseeable future sources, that exceed 0.8 $\mu g/m^3$.[28] The Air District also considers projects to have a cumulatively considerable DPM impact if they contribute to DPM emissions that, when combined with cumulative sources within 1,000 feet of sensitive receptors, result in excess cancer risk levels of more than 100 in 1 million or a hazard index greater than 10.0.[29]

3.3.6 Methods for Analysis

This section summarizes the methods used to analyze potential air quality impacts. The quantification methodology is applicable to the analysis of impacts under CEQA and effects under NEPA. The *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report* (Air Quality, Health Risk, and GHG Technical Report) prepared by ICF, April 2026 (Appendix 3.3-1 of this joint EIR/EIS) provides additional detail on the analysis, including specific modeling assumptions and outputs.

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23 Ibid.

24 Ibid.

25 California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April. Sacramento, CA.

26 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

27 Ibid.

28 Ibid.

29 Ibid.

3.3.6.1 Mass Emissions Modeling[30]

Construction

The buildout of the proposed project would occur over four phases, spanning approximately 14 years. Based on current information, it is anticipated construction would begin, at the earliest, in 2027. However, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions because of improvements in engine technology and regulations to reduce combustion emissions. Accordingly, the construction analysis reflects a conservative representation of emissions.

Construction activities have the potential to create air quality impacts through the use of heavy-duty construction equipment, along with construction workers' vehicle trips, on-road truck trips, paving operations, and the application of architectural coatings. In addition, fugitive dust emissions would result from removal of the existing structures and earthmoving activities. Criteria pollutant and ozone precursor emissions from construction activities were estimated using the California Emissions Estimator Model (CalEEMod), version 2022, and project-specific construction data (e.g., schedule, equipment, on-site and off-site truck volumes) provided by the project engineering team. The CEQA Proposed Project and the CEQA Reduced Density Alternative would result in the same types of land uses in the same locations and with the same maximum building heights; however, the internal floor-to-floor heights of the research buildings would be different. Accordingly, there is no measurable difference in the model parameters for the CEQA Proposed Project and the CEQA Reduced Density Alternative, except for architectural coatings. Construction of the Water Reuse Facility (WRF) Option or Central Utility Plant (CUP) Option would require additional off-road equipment and on-road vehicles, beyond that required for construction of the CEQA Proposed Project.

Emissions modeling for each construction year is presented in Section 3.3.7, *Impacts and Mitigation Measures*, under the subheading *Construction* in Impact CEQA-AIR-2.

30 As discussed in the Air Quality, Health Risk, and GHG Technical Report, the air quality analysis uses mobile source emission rates from EMFAC2021 with CARB's off-model adjustments. While CARB has released EMAFC2025 version 2.1.0, the tool was not available at the time the Notice of Preparation was issued for the environmental document. EMFAC2025 also has not yet been approved by EPA. The off-model adjustment factors for EMFAC2021 address Congressional Resolutions that disapproved EPA's decisions to grant California waivers for several regulations, including Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle, Heavy-Duty Vehicle and Engine Emission Warranty and Maintenance Provisions (Warranty Phase 1), and Heavy-Duty Omnibus (Omnibus). While the action is currently being litigated, no injunction has been issued to block the revocation, and California can no longer enforce the regulations. Emissions of NOx, ROG, PM_{10}, and $PM_{2.5}$ from construction and operational mobile sources have been adjusted based on CARB guidance to remove the estimated emissions benefits attributed to the regulations. The Air Quality, Health Risk, and GHG Technical Report provides emission results without the regulatory adjustments for informational purposes.

Full Operations

Operations would generate criteria pollutant and ozone precursor emissions from mobile, area, stationary, and fugitive sources.[31,32] Emissions from these sources were modeled using CalEEMod, guidance from the Air District[33] and project-specific operating data provided by the project engineering team and Fehr & Peers.[34] As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the proposed project would incorporate various sustainability strategies that will minimize potential impacts on air quality. The operational air quality analysis accounts for an all-electric design (i.e., no natural gas) and vehicle miles traveled (VMT) benefits from sustainable transportation, as quantified by the project transportation consultants.[35]

Full buildout was assumed to occur in 2041, which is the first year following completion of construction. However, based on information available at the time of the technical analysis, emissions were quantified assuming project operations would begin in 2040. It is projected that the emissions intensity of some operational sources, such as vehicle operation, in 2041 would be lower than under 2040 conditions because of potential improvements in engine technology and regulations to reduce combustion emissions. Accordingly, the operations analysis reflects a conservative representation of emissions.

Emissions modeling under full buildout is presented in Section 3.3.7, *Impacts and Mitigation Measures*, under the subheading *Full Operations* in Impact CEQA-AIR-2.

Concurrent Construction and Operations

In addition to full buildout, operational modeling was conducted for years that could overlap with construction. Partial building operation could begin in 2032, following completion of the first phase of construction. Accordingly, concurrent construction and partial operational activities would occur from 2032 through 2040, resulting in higher average daily and annual emissions than those of either component when analyzed separately. For purposes of analysis, partial operational emissions were quantified for the land uses constructed during the first three phases. Emissions were quantified for the first year following completion of construction for each phase and held constant for all future

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31 The project includes an all-electric design; it would not generate criteria pollutants directly from electricity consumption. As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, gases (e.g., oxygen, carbon dioxide, nitrogen, natural gas) may be used by tenants for research purposes in laboratories within the Research and Office Uses. Some types of gas combustion (e.g., natural gas) can generate criteria pollutant emissions. The specific types and quantities of gases needed to support future research are not known; thus, any resulting emissions cannot be accurately quantified at this time. Any emissions generated by tabletop gas combustion are expected to be minor as these devices hold limited quantities of gas (e.g., 50 milliliters) and would be used sporadically for research purposes. Given the expected limited emissions, inclusion of tabletop gas combustion in the analysis would not change any significance determinations. The project does not include construction of any new natural gas infrastructure (only relocations and replacement).

32 Both the CEQA Proposed Project and CEQA Reduced Density Alternative would remove 227 existing trees during construction and plant 1,283 new trees, resulting in the net addition of 1,056 trees. Trees can improve air quality by absorbing ozone, NO_2, and SO_2 and removing particulate matter. These air pollution benefits are conservatively excluded from the project analysis. Based on the modeling presented in Appendix 3.3-1, net average daily reductions are expected to range from 0.79 pound to less than 0.01 pound, depending on the pollutant.

33 Bay Area Air District. 2021. *Permit Handbook*. August.

34 Tan, Valerie. Senior transportation planner, Fehr & Peers. July 19, 2025—email message to ICF regarding BSC Moffett (AQ and noise coordination regarding transportation data).

35 Ibid.

years through 2040. This approach is conservative because annual operational emissions for each phase are likely to decrease each year due to declining emissions rates from improvements in vehicle technologies and emission controls. As noted above, the emissions results are also conservative because the modeling was conducted assuming construction and operations would begin one year sooner than anticipated based on current information.

Emissions modeling for each year of partial operations and overlapping construction is presented in Section 3.3.7, *Impacts and Mitigation Measures*, under the subheading *Concurrent Construction and Operations* in Impact CEQA-AIR-2.

3.3.6.2 Health Risk Assessment[36]

A health risk assessment (HRA) was conducted to assess the potential impacts associated with public exposure to TACs[37] and localized $PM_{2.5}$ exhaust and fugitive dust during construction and operation of the proposed project. The HRA was conducted using the *Guidance Manual for Preparation of Health Risk Assessments*[38] and the Air District's *CEQA Air Quality Guidelines*.[39] The American Meteorological Society/EPA Regulatory Model (AERMOD) dispersion model (Version 24142) was used to estimate pollutant concentrations at specific distances from emission sources and CARB's Hot Spots Analysis & Reporting Program (HARP2) software was used to estimate the cancer risk, chronic and acute hazard index via HARP2's Risk Assessment Standalone Tool (RAST), Version 22118.

The modeling domain included all on-site receptors (future residents and employees associated with the proposed project within the Project Site) and off-site receptors (existing and future residents and employees outside of the Project Site, but within the Local Air Quality Study Area. Figure 3.3-1 in Section 3.3.2, *Affected Environment/Environmental Setting,* shows the receptor types, including modeled sensitive receptors (residential and daycare) and the modeled worker receptors (on-site workers, off-site workers, park, undefined workers, educational) in the Local Air Quality Study Area. On-site residential receptors were evaluated for the longest duration stay for the proposed Student/Faculty Housing, which would be a total of 8 years. Off-site residential receptors were evaluated using a 30-year cancer risk exposure duration following Air District guidance.[40] Off-site and future on-site workers were evaluated using the 25-year cancer risk for worker receptors following OEHHA guidance.[41] OEHHA guidance was also used to define other factors that affect the pollutant dose that a receptor would receive, including but not limited to age-specific daily breathing rates and exposure time, frequencies, and duration.

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36 The health risk assessment modeling accounts for mobile source emissions of DPM and $PM_{2.5}$ that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

37 As noted in Section 3.3.2, *Affected Environment/Environmental Setting*, the primary TACs of concern associated with the proposed project and included in the HRA are DPM, asbestos, trichloroethene, tetrachloroethene, 1,2-dichloroethene, vinyl chloride, and 1,1-dichloroethane.

38 Office of Environmental Health Hazard Assessment. 2015. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* February. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: July 15, 2024.

39 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. Appendix E Recommended Methods for Screening and Modeling Local Risks and Hazards. August.

40 Ibid.

41 Office of Environmental Health Hazard Assessment. 2015. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* February. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: July 15, 2024.

As discussed in Section 3.3.6.1, *Mass Emissions Modeling*, buildout of the proposed project would occur over four phases. Emissions and exposure to sensitive populations would vary across these phases and duration of the entire construction period. Therefore, the following five exposure scenarios were evaluated to capture the period of maximum impact on each sensitive population and location. The maximum impact from each of these scenarios is reported in Section 3.3.7, *Impacts and Mitigation Measures*.

- **Scenario 1.** Off-site receptors' exposure beginning at the start of Phase 1 construction.
- **Scenario 2.** Off-site and on-site Phase 1 receptors' exposure beginning at the start of Phase 2 construction.
- **Scenario 3.** Off-site and on-site Phase 1 and Phase 2 receptors' exposure beginning at the start of Phase 3 construction.
- **Scenario 4.** Off-site and on-site Phase 1, Phase 2, and Phase 3 receptors' exposure beginning at the start of Phase 4 construction.
- **Scenario 5.** Off-site and on-site Phase 1, Phase 2, Phase 3, and Phase 4 receptors' exposure to full operations.

3.3.7 Impacts and Mitigation Measures

Impact CEQA-AIR-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-4. Low-VOC Coatings during Construction AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations AQ-6. Electric Landscaping Equipment during Operations AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction	Significant and Unavoidable with Mitigation

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
		GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Mitigated TDM Plan that Further Reduces VMT	
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

[a] Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required during concurrent construction and operations.

CEQA Proposed Project (NEPA Build Alternative 1)

The CAA requires a State Implementation Plan or an air quality control plan to be prepared for areas where air quality violates the NAAQS. The most recently adopted air quality control plan for the SFBAAB is the Air District's 2017 Clean Air Plan. The 2017 Clean Air Plan does not include control measures that apply directly to individual development projects. Rather, the Air District and its partner agencies work collaboratively to implement measures across the following sectors: stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-greenhouse gas (GHG) pollutants.[42]

As discussed in Section 3.3.5, *Thresholds of Significance*, the Air District's *CEQA Air Quality Guidelines* outline three criteria for determining project-level consistency with the 2017 Clean Air Plan. The criteria are assessed below.

Criteria 1—Does the project support the primary goals of the air quality plan?

The 2017 Clean Air Plan includes two primary goals:

- **Protect Air Quality and Health at the Regional and Local Scale**: Attain all State and national air quality standards and eliminate disparities among San Francisco Bay Area (Bay Area) communities in the cancer health risk from TACs.
- **Protect the Climate**: Reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

[42] Bay Area Air District. 2017. *2017 Clean Air Plan: Spare the Air, Cool the Climate*. April

The proposed project would redevelop a site with largely vacant buildings and densify the area through the construction of multi-story research and development (R&D), academic, and residential buildings. The Project Site is an infill site, defined by Public Resources Code Section 2109(a)(4) as a lot in an urban area that has been previously developed or a vacant site where at least 75 percent of the perimeter of the site adjoins or is separated by only an improved public right-of-way from parcels that are developed with qualified urban uses. Furthermore, the proposed project is in a Transit Priority Area, which is defined by Public Resources Code Section 21099(a)(7) as an area within 0.5 mile of an existing or planned major transit stop, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program or applicable regional plan. The nearest transit stop (Bayshore/NASA Santa Clara Valley Transportation Authority [VTA] light rail station) is within 0.5 mile, providing convenient public transit access for future employees and residents.

The proposed project would incorporate various sustainability strategies that would help protect air quality, human health, and the climate. Sustainability features of the proposed project are discussed further in Chapter 2, *Proposed Project/Proposed Action and Alternatives*. These features would be achieved through individual sustainability strategies to reduce energy consumption, water consumption, and waste generation. Key sustainability strategies are discussed under Criteria 2 in Table 3.3-8. Refer to Section 3.8, *Greenhouse Gas Emissions*, for additional discussion on how the proposed project supports the Bay Area's GHG reduction goals.

Although the project design and sustainability features are consistent with the overarching goals of the 2017 Clean Air Plan, buildout of the proposed project would result in operational ROG and PM_{10} emissions above the Air District's thresholds (refer to Impact CEQA-AIR-2). Although exceedances of the Air District's thresholds do not specifically correlate to project-level violations of CAAQS, they do indicate that the proposed project would result in a cumulatively considerable increase to regional pollution in the SFBAAB. This additional pollutant load may hinder the Air District's ability to attain the CAAQS at the air basin level. As discussed under Impact CEQA-AIR-3, the proposed project would also result in new sources of TACs and $PM_{2.5}$ that could expose receptors to additional health risks during construction and long-term operation. Given that the proposed project census tract is a state-designated low-income community (Assembly Bill [AB] 1550), these additional risks may hinder the Air District's ability to eliminate health disparities among Bay Area communities. Accordingly, the CEQA analysis conservatively finds that the CEQA Proposed Project (with or without the WRF Option or CUP Option) would not support the primary goals of the 2017 Clean Air Plan.

Criteria 2—Does the project include applicable control measures from the air quality plan?

The 2017 Clean Air Plan recognizes that community design dictates individual travel mode and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and GHGs from motor vehicles is to channel future Bay Area growth into vibrant urban communities where goods and services are co-located and people have a range of viable transportation options. To that end, the 2017 Clean Air Plan includes control measures that are aimed at reducing air pollution in the SFBAAB. Table 3.3-8 summarizes project consistency with applicable control measures identified in the 2017 Clean Air Plan (grouped by sector).

Table 3.3-8. Proposed Project Consistency with Applicable Control Measures of the 2017 Clean Air Plan

Sector	Consistency Analysis
Stationary Sources	Control measures in this sector target primarily individual stationary source categories (e.g., boilers), most of which are not applicable to the proposed project. New stationary sources of emissions associated with the proposed project include emergency generators, cooling towers, and, to the extent they include permitted equipment, laboratories. Stationary sources are regulated directly by the Air District. New stationary sources installed under the proposed project would comply with all applicable Air District rules and regulations; this includes securing required permits. Thus, the proposed project would not conflict with control measures within the stationary source sector.
Transportation	Control measures in this sector focus on reducing vehicle trips and VMT by promoting active transportation and high-quality transit, improving traffic congestion, and transitioning the vehicle fleet from high-emitting vehicles to zero-emissions vehicles. The proposed project includes numerous design elements (e.g., pedestrian circulation improvements, bicycle circulation improvements and bicycle parking, transportation demand management [TDM] measures) that would reduce VMT and encourage alternative forms of transportation. As noted above under Criteria 1, the site is within 0.5 mile of the Bayshore/NASA VTA light rail station and within walking and biking distance. The proposed project would meet the CALGreen Tier 2 nonresidential voluntary requirement for EV parking (i.e., as of 2025 45 percent of all spaces to be EV capable and 33 percent of the EV spaces to have EV supply equipment). Thus, the proposed project would not conflict with control measures within the transportation sector.
Energy	Control measures in this sector focus on decarbonization and promoting energy efficiency and conservation. The proposed project would install photovoltaic systems as a strategy for generating power on-site and offsetting the energy use from each proposed building. The proposed building design would respond to the climate by optimizing thermal comfort through passive cooling and windbreaks and prioritizing daylight within floor plates buildings and outdoor spaces. These design elements would increase use of renewable energy and promote energy efficiency and conservation. Thus, the proposed project would not conflict with control measures within the energy sector.
Buildings	Control measures in this sector target improved energy efficiency, an all-electric building design, and net-zero GHG buildings. In addition to the design features noted above in the Energy sector, the proposed project would achieve, at a minimum, an LEED Silver rating. The proposed project would also have an all-electric design for new building systems (e.g., HVAC, mechanical). These design elements would result in buildings that outperform the current 2022 California Building Energy Title 24 energy efficiency standards. Thus, the proposed project would not conflict with control measures within the building sector.
Agriculture	The proposed project does not include farming or agriculture. Therefore, the proposed project would not conflict with control measures within the agriculture sector.
Natural and Working Lands	Control measures in this sector focus on increasing carbon sequestration and promoting urban tree planting. Although construction would require removal of 227 trees, the proposed project would plant approximately 1,283 new trees. These trees would increase carbon sequestration and provide shade to reduce urban heat-island effects. Thus, the proposed project would not conflict with control measures within the natural and working lands sector.

Sector	Consistency Analysis
Waste Management	Control measures in this sector focus on methane capture (at waste management facilities) and waste diversion away from landfills through efforts to reduce, reuse, and recycle. The proposed project includes color-coded receptables to separate waste by stream (landfill, recycle, compost), smart waste collection bins to encourage proper disposal of waste, waste compaction equipment to reduce the volume of waste, and textile recycle and cardboard take-back programs. Through these design elements, the proposed project would divert more than 85 percent of waste from landfills. Thus, the proposed project would not conflict with control measures within the waste sector.
Water	Control measures in this sector focus on reducing emissions from water treatment facilities and increasing water conservation. The proposed project would incorporate potable water conservation features (e.g., low-flow flush-and-flow fixtures for indoor water use), a drip irrigation system, and drought-friendly and ecologically appropriate plantings. In addition, the on-site recycled water system would serve the proposed buildings and irrigated areas. Thus, the proposed project would not conflict with control measures within the water sector.
Super-GHG Pollutants	Control measures in this sector focus on reducing short-lived climate pollutants on a sector-by-sector basis (e.g., agriculture, oil refineries, refrigerants). Centrifugal chillers installed in project buildings would be charged with R-513a, and air-source heat pumps would be charged with R-545b. R-513a and R-545b are considered substances with low global war mining potential (GWP) and replacements for hydrofluorocarbons with high GWP. Thus, the proposed project would not conflict with control measures within the super-GHG pollutants sector.

CALGreen = California Green Building Standards Code; EV = electric vehicle; GWP = global warming potential; HVAC = heating, ventilation, and air-conditioning; LEED = Leadership in Energy and Environmental Design; NASA = National Aeronautics and Space Administration; TDM = transportation demand management; VMT = vehicle miles traveled; VTA = Santa Clara Valley Transportation Authority

Criteria 3—Does the project disrupt or hinder implementation of any air quality plan control measures?

The proposed project does not hinder implementation of any control measures in the 2017 Clean Air Plan (see Table 3.3-8). At the project level, the following control measures are directly applicable to the proposed project: TR2-Trip Reduction Programs, TR9-Bicycle and Pedestrian Access and Facilities, EN2-Decrease Electricity Demand, BL1-Green Buildings, BL-2 Decarbonize Buildings, NW2-Urban Tree Planting, WA3-Green Waste Diversion, WA4-Recycling and Waste Reduction, and WR2-Support Water Conservation. Other control measures are not directly applicable to the proposed project, such as those involving research and regional collaboration or those that are policies and practices for the Air District and/or its partner agencies to adopt. Although these types of measures are not applicable, the proposed project would not hinder the measures from being implemented by the Air District or other agencies.

Conclusion

Based on the discussion above, the proposed project would incorporate all applicable control measures of the 2017 Clean Air Plan and would not disrupt or hinder any control measures. The same sustainability strategies described above for the CEQA Proposed Project would be implemented with the CUP or WRF Options. The CUP Option would further support the 2017 Clean Air Plan energy sector goals by optimizing local energy generation and distribution, which in turn

improves overall system generation and energy conservation. The WRF Option would further support the 2017 Clean Air Plan water sector goals by reusing water on-site, which in turn reduces the need to transport water over long distances and conserves energy. However, because the CEQA Proposed Project (with or without the WRF Option or CUP Option) would result in criteria pollutant emissions (see Impact CEQA-AIR-2) and cancer risk and $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3), the proposed project could impede protection of regional air quality and elimination of health disparities under state standards. Therefore, the proposed project could obstruct implementation of the 2017 Clean Air Plan under CEQA. This impact would be potentially significant before mitigation.

Mitigation Measures

The full text of the mitigation measures is provided under the primary impact trigger. For example, Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, TRANS-1 are required to address emissions quantified and disclosed under Impact CEQA-AIR-2. Additional context and information regarding Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, and TRANS-1 is provided in Impact CEQA-AIR-2.

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Fugitive Dust Control

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations (Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required):

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 are required mitigation measures that will reduce project-generated emissions during construction and operation and associated health risk from receptor exposure to TACs and $PM_{2.5}$. These measures are described under Impacts CEQA-AIR-2, CEQA-AIR-3, CEQA-GHG-1, CEQA-HAZ-1, and CEQA-TRAN-2. As discussed under Impact CEQA-AIR-2, while these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds. Cancer and $PM_{2.5}$ risks would likewise exceed the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the CEQA Proposed Project (with or without the WRF Option or CUP Option) could impede protection of regional air quality and elimination of health disparities under state standards, and it could obstruct implementation of the 2017 Clean Air Plan under CEQA, even with Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1. There is no feasible mitigation beyond these measures and the project design features to eliminate the conflict. The impact is significant and unavoidable.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Proposed Project with the No Student/Faculty Housing Variant/Sub-Alternative (Variant). The same sustainability strategies described for the CEQA Proposed Project would be implemented under the Variant. Like the CEQA Proposed Project, the Variant would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risk and $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the Variant could impede protection of regional air quality and elimination of health

disparities under state standards, and it would obstruct the implementation of the 2017 Clean Air Plan under CEQA. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations (Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required):

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 are required mitigation measures that will reduce project-generated emissions during construction and operation and associated health risk from receptor exposure to TACs and $PM_{2.5}$. These measures are described under Impacts CEQA-AIR-2, CEQA-AIR-3, CEQA-GHG-1, CEQA-HAZ-1, and CEQA-TRAN-2. As discussed under Impact CEQA-AIR-2, while these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds. Cancer and $PM_{2.5}$ risks would likewise exceed the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the Variant could impede protection of regional air quality and elimination of health disparities under state standards, and it could obstruct the implementation of the 2017 Clean Air Plan, even with Mitigation Measures AQ-1 through AQ-9, GHG-1, HAZ-1, and TRAN-1. There is no feasible mitigation beyond these measures and the project design features to eliminate the conflict. The impact is significant and unavoidable.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative. The same sustainability strategies described for the CEQA Proposed Project would be implemented under the CEQA Reduced Density Alternative. Like the CEQA Proposed Project, the CEQA Reduced Density Alternative would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risk and $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). In addition, as discussed under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, the CEQA Reduced Density Alternative will result in a cumulatively considerable contribution to global climate change from mobile sources. The analysis therefore finds that the CEQA Reduced Density Alternative could impede protection of regional air quality and climate and elimination of health disparities under state standards, and it would obstruct the implementation of the 2017 Clean Air Plan. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations (Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required):

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 are required mitigation measures that will reduce project-generated emissions during construction and operation and associated health risk from receptor exposure to TACs and $PM_{2.5}$. These measures are described under Impacts CEQA-AIR-2, CEQA-AIR-3, CEQA-GHG-1, CEQA-HAZ-1, and CEQA-TRAN-2. As discussed under Impact CEQA-AIR-2, while these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds. Cancer and $PM_{2.5}$ risks would likewise exceed the Air District's thresholds (see Impact CEQA-AIR-3), and the CEQA Reduced Density Alternative would not meet regional VMT goals for the purposes of GHG reduction (see Impact CEQA-GHG-1). The analysis therefore finds that the CEQA Reduced Density Alternative could impede protection of regional air quality and climate and elimination of health disparities under state standards, and it could obstruct the implementation of the 2017 Clean Air Plan under CEQA, even

with Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1. There is no feasible mitigation beyond these measures and the project design features to eliminate the conflict. The impact is significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative compared to the CEQA Reduced Density Alternative with the Variant. The same sustainability strategies described above for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be implemented under the CEQA Reduced Density Alternative with the Variant. Like the CEQA Proposed Project and CEQA Reduced Density Alternative, the Variant would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risk and $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). In addition, as discussed under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, the Variant will result in a cumulatively considerable contribution to global climate change from mobile sources. The analysis therefore finds that the Variant could impede protection of regional air quality and climate and elimination of health disparities under state standards, and it would obstruct the implementation of the 2017 Clean Air Plan under CEQA. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations (Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required):

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1 are required mitigation measures that will reduce project-generated emissions during construction and operation and associated health risk from receptor exposure to TACs and $PM_{2.5}$. These measures are described under Impacts CEQA-AIR-2, CEQA-AIR-3, CEQA-GHG-1, CEQA-HAZ-1, and CEQA-TRAN-2. As discussed under Impact CEQA-AIR-2, while these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds. Cancer and $PM_{2.5}$ risks would likewise exceed the Air District's thresholds (see Impact CEQA-AIR-3), and the Variant would not meet regional VMT goals for the purposes of GHG reduction (see Impact CEQA-GHG-1). The analysis therefore finds that the Variant could impede protection of regional air quality and climate and elimination of health disparities under state standards, and it could obstruct the implementation of the 2017 Clean Air Plan under CEQA, even with Mitigation Measures AQ-1 through AQ-9, HAZ-1, GHG-1, and TRAN-1. There is no feasible mitigation beyond these measures and the project design features to eliminate the conflict. The impact is significant and unavoidable.

Impact CEQA-AIR-2: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant (construction) Potentially Significant (full operations) Potentially Significant (concurrent construction and operations)	<u>Construction</u> AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3: Fugitive Dust Control AQ-4. Low-VOC Coatings during Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan <u>Operations</u> AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations AQ-6. Electric Landscaping Equipment during Operations TRAN-1. Mitigated TDM Plan that Further Reduces VMT <u>Concurrent Construction and Operations[a]</u> AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions	Less than Significant with Mitigation (construction) Significant and Unavoidable with Mitigation (full operations) Less than Significant with Mitigation (concurrent construction and operations)
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant (construction) Potentially Significant (full operations)	Same as CEQA Proposed Project	Less than Significant with Mitigation (construction) Significant and Unavoidable with Mitigation

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
	Potentially Significant (concurrent construction and operations)		(full operations) Less than Significant with Mitigation (concurrent construction and operations)
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

[a] Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required during concurrent construction and operations.

Santa Clara County does not currently attain the NAAQS or CAAQS for ozone and $PM_{2.5}$ or the CAAQS for PM_{10}. The impact analysis focuses on these pollutants and their precursors. It evaluates regional air quality impacts using the Air District's thresholds in Table 3.3-7.

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Construction of the CEQA Proposed Project (with or without the WRF Option or CUP Option) has the potential to create short-term air quality impacts through the use of heavy-duty construction equipment, construction workers' vehicle trips, on-road truck trips, paving operations, and the application of architectural coatings. In addition, fugitive dust emissions would result from removal of the existing structures and earthmoving activities. Emissions may vary substantially over the construction duration, depending on the level of activity, length of the individual construction activity, the types of equipment, number of personnel, and soil moisture content.

Construction-related emissions for the CEQA Proposed Project (with and without the WRF Option or CUP Option) have been calculated using the methods described in Section 3.3.6.1, *Mass Emissions Modeling*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 3.3-9 summarizes the results of the modeling for the CEQA Proposed Project. Emissions are presented for each year of construction to capture the sum of emissions from the multiple activity categories occurring within the same year. Emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-9. Estimated Average Daily Unmitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project[a]

	Average Daily (pounds per day) [b]			
Year	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2027	7	**73**	3	3
2028	10	**89**	3	3
2029	9	**84**	2	2
2030	11	**78**	2	2
2031	21	52	1	1
2032	15	**139**	4	3
2033	20	**183**	4	4
2034	30	**101**	2	2
2035	8	**85**	2	2
2036	25	**89**	2	2
2037	15	48	1	1
2038	10	**102**	2	2
2039	28	**108**	2	2
2040	19	52	1	1
Air District Threshold[c]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** and underline.

[b] Presents the average emissions estimate during a single day of construction in each year.

[c] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significance without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Construction of the WRF in 2038 and 2039 or the CUP in 2035 and 2036 would require additional off-road equipment and on-road vehicles beyond what is required for construction of the CEQA Proposed Project, resulting in additional short-term emissions during these years. Table 3.3-10 summarizes estimated unmitigated emissions for the CEQA Proposed Project in 2038 and 2039 with construction of the WRF Option. Table 3.3-11 summarizes estimated unmitigated emissions for the CEQA Proposed Project in 2035 and 2036 with construction of the CUP Option. Emissions during all other construction years would be the same as presented in Table 3.3-9 for the CEQA Proposed Project. Emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-10. Estimated Average Daily Unmitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project with the WRF Option[a]

	Average Daily (pounds per day)[c]			
Select Construction Years[b]	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2038	12	**118**	2	2
2039	28	**116**	2	2
Air District Threshold[d]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The WRF would be constructed in 2038 and 2039. Emissions during all other construction years would be the same as presented in Table 3.3-9 for the CEQA Proposed Project.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-11. Estimated Average Daily Unmitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project with the CUP Option[a]

	Average Daily (pounds per day)[c]			
Select Construction Years[b]	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2035	10	**105**	2	2
2036	26	**99**	2	2
Air District Threshold[d]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The CUP would be constructed in 2035 and 2036. Emissions during all other construction years would be the same as presented in Table 3.3-9 for the CEQA Proposed Project.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-9 indicates that construction of the CEQA Proposed Project would exceed the Air District's average daily NO_X threshold in all years except 2031, 2037, and 2040. These are transition years where construction activity from one major phase winds down and the activity for another phase begins to ramp up. Compared to the CEQA Proposed Project, the intensity of emissions would be greater with the WRF Option or CUP Option during the years of facility construction (see Tables 3.3-10 and 3.3-11). Construction of the CEQA Proposed Project with the WRF Option would exceed the Air District's average daily NO_X threshold in 2038 and 2039, and construction of the CEQA Proposed Project with the CUP Option would exceed the Air District's average daily NO_X threshold in 2035 and 2036. As reported in Table 3.3-9 for the CEQA Proposed Project, exceedances of the NO_X threshold would also occur in all other years except 2031, 2037, and 2040 under the CEQA Proposed Project with the WRF Option or the CUP Option. Fugitive dust emissions would be uncontrolled prior to mitigation, and thus conflict with the Air District's fugitive dust threshold. For the CEQA Proposed Project (with and without the WRF Option or CUP Option), there would be no exceedances of the Air District's ROG, PM_{10} (exhaust), or $PM_{2.5}$ (exhaust) thresholds.

NO_X emissions are associated primarily (about 90 to 95 percent, depending on the year) with the use of heavy-duty off-road equipment. More off-road equipment would be required during Phases 2 and 4 because more buildings would be constructed during these phases (Appendix 3.3-1). Concurrent construction of the buildings and use of additional off-road equipment, combined with other emission sources (e.g., haul trucks), would result in the exceedances shown in Tables 3.3-9 through 3.3-11. Construction NO_X emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation. Likewise, uncontrolled fugitive dust emissions are considered potentially significant under CEQA before mitigation.[43]

Full Operations

Operation of the CEQA Proposed Project (with and without the WRF Option or CUP Option) has the potential to create long-term air quality impacts through the generation of emissions from mobile, area, fugitive, and stationary sources. Emissions resulting from these sources were quantified according to the methods summarized in Section 3.3.6.1, *Mass Emissions Modeling*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 3.3-12 summarizes the results of the modeling for the CEQA Proposed Project. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project are fully occupied immediately following construction. Total emissions under existing (2024) conditions are also presented; refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives*, for additional detail. The net increase in operational emissions of the CEQA Proposed Project is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Except for stationary sources, operational emissions under the CEQA Proposed Project with the WRF Option or CUP Option would be the same as presented in Table 3.3-12 for the CEQA Proposed Project. One additional emergency generator would be maintained to support the WRF or CUP. The CUP would also only operate eight cooling towers instead of twelve. Tables 3.3-13 and 3.3-14 present estimated unmitigated operational emissions for the CEQA Proposed Project with the WRF

[43] Note that the Spring 2026 project-specific Environmental Issues Management Plan requires compliance with dust control measures recommended by the Air District.

Option or CUP Option, respectively. Emissions from mobile, area, and fugitive sources would be the same as estimated for the CEQA Proposed Project, and they are included in the tables to enable a total emissions summation. Total emissions under existing (2024) conditions are also presented. The net increase in operational emissions of the CEQA Proposed Project with the WRF Option or CUP Option is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Tables 3.3-12 through 3.3-14 indicate that future net operational emissions under full-build conditions would exceed the Air District's daily and annual thresholds for ROG and PM_{10} with and without the WRF Option or CUP Option. Compared to the CEQA Proposed Project, the WRF Option would result in slightly higher emissions due to operation of an additional generator. The additional generator at the CUP would also result in slightly higher ROG and NO_X emissions. However, PM_{10} and $PM_{2.5}$ emissions would be slightly reduced under the CUP Option due to the operation of fewer cooling towers. The project design includes several policies that would reduce operational criteria pollutant emissions. Emissions benefits achieved by all-electric design and sustainable transportation policies have been incorporated into the emissions modeling presented in Tables 3.3-12 through 3.3-14.

Although sustainable project design features would reduce the severity of growth-oriented criteria pollutants by supporting energy-efficient buildings and fostering active and alternative transportation, the CEQA Proposed Project (with and without the WRF Option or CUP Option) would still generate ROG and PM_{10} emissions above the Air District's thresholds. ROG emissions would be primarily the result of consumer products, architectural coatings, and landscaping equipment (i.e., area sources). PM_{10} emissions would be primarily the result of private vehicle trips. Operations ROG and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Table 3.3-12. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	41.1	34.9	119.2	30.5	7.5	6.4	21.8	5.6
Area	68.3	0.6	0.1	0.1	12.5	0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.8	2.7	13.8	13.8	0.1	0.5	2.5	2.5
Total	117.9	38.1	133.1	44.4	21.5	7.0	24.3	8.1
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**116.0**	37.6	**132.4**	44.3	**21.2**	6.9	**24.2**	8.1
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-13. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the WRF Option[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	41.1	34.9	119.2	30.5	7.5	6.4	21.8	5.6
Area	68.3	0.6	0.1	0.1	12.5	0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total WRF	118.0	38.4	133.1	44.5	21.5	7.0	24.3	8.1
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**116.1**	37.8	**132.5**	44.3	**21.2**	6.9	**24.2**	8.1
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-14. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the CUP Option[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	41.1	34.9	119.2	30.5	7.5	6.4	21.8	5.6
Area	68.3	0.6	0.1	0.1	12.5	0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	9.2	9.2	0.2	0.5	1.7	1.7
Total CUP	118.0	38.4	128.6	39.9	21.5	7.0	23.5	7.3
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**116.1**	37.8	**127.9**	39.7	**21.2**	6.9	**23.3**	7.2
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Concurrent Construction and Operations

Occupancy of buildings constructed during Phase 1 could begin as early as 2032. Accordingly, concurrent construction and partial operational activities would occur from 2032 through 2040, resulting in higher average daily and annual emissions than either component when analyzed separately. Partial operational emissions were quantified according to the methods summarized in Section 3.3.6.1, *Mass Emissions Modeling*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 3.3-15 summarizes the results of the unmitigated modeling for the CEQA Proposed Project.

The WRF would be constructed in 2038 and 2039 and begin operation in 2041. Prior to 2038, concurrent construction and net partial operational activities under the CEQA Proposed Project with the WRF Option would be the same as analyzed for the CEQA Proposed Project (Table 3.3-15). Table 3.3-16 presents concurrent unmitigated construction and net partial operational emissions for the CEQA Proposed Project with the WRF Option for those years in which emissions would differ from the CEQA Proposed Project (i.e., 2038 through 2040).

The CUP would be constructed in 2035 and 2036 and would begin operation in 2038. Prior to 2035, concurrent construction and net partial operational activities under the CEQA Proposed Project with the CUP Option would be the same as analyzed for the CEQA Proposed Project (Table 3.3-15).[44] Table 3.3-17 presents concurrent unmitigated construction and net partial operational emissions for the CEQA Proposed Project with the CUP Option for those years in which emissions would differ from the CEQA Proposed Project (i.e., 2035 through 2040).

In Tables 3.3-15 through 3.3-17, emissions from existing land uses (Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives*) are subtracted from the operational results. Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

[44] Without the CUP Option, two cooling towers would operate during Phase 1 and five cooling towers during Phases 1 and 2. These towers would generate minor amounts of PM_{10} and $PM_{2.5}$ that would not occur prior to 2035 with the CUP Option. Although these emissions would be reduced with the CUP Option, the reduction would be negligible compared to the CEQA Proposed Project.

Table 3.3-15. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Year	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
2032[c]	47	**150**	51	17	9	**27**	9	3
2033[c]	53	**194**	51	17	10	**35**	9	3
2034[c]	**63**	**112**	47	15	**11**	**20**	9	3
2035[d]	**80**	**109**	**99**	32	**15**	**20**	**18**	6
2036[d]	**96**	**112**	**95**	31	**18**	**21**	**17**	6
2037[d]	**86**	**72**	**90**	30	**16**	**13**	**16**	5
2038[e]	**102**	**131**	**125**	41	**19**	**24**	**23**	7
2039[e]	**120**	**138**	**120**	40	**22**	**25**	**22**	7
2040[e]	**109**	**78**	**111**	37	**20**	**14**	**20**	7
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Unmitigated construction emissions (Table 3.3-9) plus unmitigated operational emissions from buildings constructed during Phase 1. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[d] Unmitigated construction emissions (Table 3.3-9) plus unmitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Unmitigated construction emissions (Table 3.3-9) plus unmitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-16. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project with the WRF Option[a]

Select Construction Year[b]	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]
2038[d]	**104**	**148**	**125**	41	**19**	**27**	**23**	7
2039[d]	**120**	**145**	**120**	40	**22**	**27**	**22**	7
2040[d]	**109**	**78**	**111**	37	**20**	**14**	**20**	7
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The WRF would be constructed in 2038 and 2039 and begin operation in 2041. Emissions prior to 2038 would be the same as presented in Table 3.3-15 for the CEQA Proposed Project.

[c] Total emissions consist of exhaust and fugitive dust emissions.

[d] Unmitigated construction emissions (Table 3.3-10 for 2038 and 2039; Table 3.3-9 for 2040) plus unmitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-17. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project with the CUP Option[a]

Select Construction Year[b]	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]
2035[d]	**82**	**129**	**92**	25	**15**	**24**	**17**	5
2036[d]	**97**	**123**	**87**	24	**18**	**22**	**16**	4
2037[d]	**86**	**72**	**82**	22	**16**	**13**	**15**	4
2038[e]	**103**	**132**	**119**	35	**19**	**24**	**22**	6
2039[e]	**120**	**138**	**114**	34	**22**	**25**	**21**	6
2040[e]	**109**	**78**	**105**	31	**20**	**14**	**19**	6
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The CUP would be constructed in 2035 and 2036 and begin operation in 2038. Emissions prior to 2035 would be the same as presented in Table 3.3-15 for the CEQA Proposed Project.

[c] Total emissions consist of exhaust and fugitive dust emissions.

[d] Unmitigated construction emissions (Table 3.3-11 for 2035 and 2036; Table 3.3-9 for 2037) plus unmitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Unmitigated construction emissions (Table 3.3-9) plus unmitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Overlapping construction and net partial operational activities would result in the following additional or worsened exceedances of Air District thresholds during the construction period for the CEQA Proposed Project (with or without the WRF Option or CUP Option):

- Average daily and annual ROG: 2034 to 2040
- Average daily and annual NO_X: 2032 to 2040
- Average daily and annual PM_{10}: 2035 to 2040

The analysis indicates that combined construction and net partial operational emissions would exceed the Air District's ROG, NO_X, and PM_{10} thresholds even with project design features. Combined ROG, NO_X, and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

All project contractor(s) must use electric-powered lifts (including aerial, scissor, and man), welders, air compressors, and mini-excavators. Diesel- or fossil-fuel-powered lifts, welders, air compressors, and mini-excavators during construction are prohibited. The Project Proponent shall verify that the requirement to use electric versions of these equipment types is identified in construction bids and on architectural plans.

All other types of off-road equipment (i.e., non-lifts, welders, air compressors, and mini-excavators) with diesel engines greater than 25 horsepower must use EPA-certified Tier 4 Final engines. This mandate does not preclude use of engines that meet certification standards more stringent than Tier 4 Final, if commercially available at the time of construction. A copy of each unit's certified tier specification, emissions rating, and any required CARB permit or Bay Area Air District operating permit shall be made available to NASA at the time of mobilization of each piece of equipment.

All other types of off-road equipment with diesel engines less than 25 horsepower (i.e., non-Tier 4) shall be required to use renewable diesel fuel that meets the most recent ASTM D975 specification for ultra-low sulfur diesel and has a carbon intensity no greater than 50 percent of diesel with the lowest carbon intensity among petroleum fuels sold in California. Each project contractor shall provide NASA with annual reports of renewable diesel purchase records and equipment fuel consumption. Pursuant to the In-Use Off-Road Diesel-Fueled Fleets Regulation (In-Use Regulation), contractors shall also be required to submit to CARB an affirmation that the fleet complied with the renewable diesel mandate in each year that annual reporting is required under the In-Use Regulation.

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

All project contractor(s) must achieve the following minimum zero-emission on-road vehicle performance standards, as commercially and financially available and feasible at the time of construction (i.e., within 100 miles of the Project Site and equivalent powered and capable zero-emission vehicle can cost no more than 50 percent more (1.5 times) than its internal

combustion counterpart). The standards must be achieved based on the total number of vehicles onsite used to construct the proposed project over the duration of each contract. The Project Proponent shall verify that the performance standards are identified in construction bids and on architectural plans.

- 25 percent zero-emission light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with Phases 1 and 2 (e.g., on-site vehicles, contractor vehicles).
- 50 percent zero-emission light-duty on-road vehicles (e.g., passenger cars, light-duty trucks) associated with Phases 3 and 4 (e.g., on-site vehicles, contractor vehicles).
- 25 percent zero-emission heavy-duty on-road vehicles associated with Phases 1 and 2 (e.g., for hauling, material delivery and soil import/export).
- 50 percent zero-emission heavy-duty on-road vehicles associated with Phases 3 and 4 (e.g., for hauling, material delivery and soil import/export).

Mitigation Measure AQ-3. Fugitive Dust Control

All project contractor(s) shall be required to comply with the Air District's current basic control measures for fugitive dust. The Air District's current basic control measures are drawn from their 2023 CEQA Guidelines, Table 5-2, and are identified below. Compliance with the following control measures is required by the Spring 2026 project-specific Environmental Issues Management Plan and shall be identified in construction bids.

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt trackout onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 miles per hour.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

All project contractor(s) must use certified (e.g., Greenguard or Green Seal) low-volatile organic compound (VOC) paints (i.e., less than 50 grams per liter of VOC) or, when feasible, no-VOC paints (i.e., less than 5 grams per liter of VOC) during construction. The Project Proponent shall verify that the requirement to use low-VOC (and/or no-VOC) paints is identified in construction bids and on architectural plans.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

All non-residential tenants must use certified (e.g., Greenguard or Green Seal) no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where not locally and commercially available, use low-VOC paints (i.e., less than 50 grams per liter of VOC). NASA shall require no-VOC and low-VOC paints as a condition of occupancy for all non-residential tenants. The Project Proponent shall require all janitorial contracts mandate use of water-based or low-VOC cleaning products.

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

All landscaping equipment must use zero-emission equipment over conventional gasoline-fueled counterparts. This includes all chainsaws, chippers, lawn mowers, leaf blowers/vacuums, riding mowers, tillers, trimmers, and any other equipment used to maintain landscaping features. Gasoline- or fossil-fuel-powered landscaping equipment during operations is prohibited. The Project Proponent shall require all landscaping contracts mandate use of electric equipment.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations. Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required.

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

The Project Proponent shall offset combined construction and net partial operational ROG and PM_{10} emissions that exceed the Air District's annual thresholds to quantities below 10 tons and

15 tons per year, respectively. The preferred means of undertaking such off-site mitigation will be through a partnership with the Air District's Clean Air Foundation (Foundation), as follows:

- The Project Proponent, or its designee, shall pay a mitigation fee and an administrative fee in accordance with the provisions of the Foundation's established mitigation fee program to reduce the project impacts from combined construction and net partial operational ROG and PM_{10} emissions to a less-than-significant level (i.e., below 10 tons and 15 tons per year, respectively).
- The Project Proponent, or its designee, shall pay the mitigation and administrative fees for each of the construction years, as determined by the Foundation, in full prior to NASA approval of the tentative map, parcel map, or planned development permit for the associated construction phase.
- An alternative payment plan may be negotiated by the Project Proponent, or its designee, based on the timing of construction activities or other construction phases that are expected to exceed the Air District's threshold of significance. Any alternative payment plan must be acceptable to the Air District and agreed upon in writing prior to NASA approval of the tentative map, parcel map, or planned development permit. The alternative payment plan must cover the full quantity of required offsets, and full payment must be provided prior to the completion of construction.
- In coordination with the Air District, the Project Proponent, or its designee, may reanalyze combined construction and net partial operational ROG and PM_{10} from the proposed project prior to starting construction to update the required mitigation and administrative fees.
    - The analysis must be conducted using Air District approved emissions model(s) and the fee rates published at the time of reanalysis.
    - The analysis must use the latest available engineering data for the proposed project. Consistent with the methodology used in this joint EIR/EIS, emission factors may account for enacted regulations that will influence future year emissions intensities (e.g., fuel efficiency standards for on-road vehicles).
    - The analysis must include all required mitigation measures as specified in this joint EIR/EIS. The analysis may include additional measures to reduce construction emissions if deemed feasible and equally effective or superior by the lead agency and Project Proponent. All on-site measures assumed in the analysis must be included in the construction contracts and be enforceable by the lead agency.

Significance After Mitigation

Construction

Mitigation Measures AQ-1 and AQ-2 would be required to reduce NO_X emissions from off-road equipment and on-road vehicles, respectively. Mitigation Measure AQ-1 would require electrification of lifts, welders, air compressors, and mini-excavators. These types of equipment are commonly electrified and used during the vertical construction and architectural coatings sub-phases, which contribute substantially to unmitigated NO_X emissions. Electrified equipment does not generate criteria pollutants directly. Mitigation Measure AQ-1 further specifies that all other types of off-road equipment with diesel engines greater than 25 horsepower must use Tier 4 Final engines. Off-road equipment with engines less than 25 horsepower would be required to use

renewable diesel fuel. Mitigation Measure AQ-2 would minimize on-road exhaust emissions (including NO_X) through performance standards for use of zero-emission vehicles. Mitigation Measure AQ-3 is required to comply with the Air District's basic fugitive dust control measures. Actions undertaken pursuant to Mitigation Measure HAZ-1 to comply with the Environmental Issues Management Plan (EIMP) would likewise help minimize dust, and the measure is therefore to address air quality impacts. Although unmitigated ROG emissions are not predicted to exceed the Air District's threshold (see Tables 3.3-9 through 3.3-11), Mitigation Measure AQ-4 would also be required during construction to address overlapping construction and partial operational emissions, which are assessed under *Concurrent Construction and Operations*. Mitigation Measure GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, would achieve additional criteria pollutant reductions through requirements for idling limitations, local sourcing of materials, and other BMPs.

Tables 3.3-18 through 3.3-20 summarize estimated construction emissions for the CEQA Proposed Project, CEQA Proposed Project with the WRF Option, and CEQA Proposed Project with the CUP Option, respectively, with Mitigation Measures AQ-1 and AQ-4. Mitigation Measures AQ-3 and HAZ-1 would control fugitive dust and does not directly reduce ROG, NO_X, or particulate matter (PM) exhaust. Although Mitigation Measure AQ-2 would reduce emissions from fossil-fuel vehicles, the reductions are not specifically quantified because the measure establishes fleetwide performance standards as opposed to individual vehicle mandates. Thus, construction contractors have flexibility in meeting the standards and can select various combinations of zero-emission vehicles and fossil-fuel vehicles across their fleets, based on commercial availability and cost effectiveness. Likewise, the emissions benefits of Mitigation Measure GHG-1 are not fully quantified for the reasons discussed in Section 3.8. Tables 3.3-19 and 3.3-20 only present emissions for those years during which construction of the WRF or CUP would occur. Emissions during all other construction years would be the same as presented in Table 3.3-18 for the CEQA Proposed Project.

Table 3.3-18. Estimated Average Daily Mitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project[a]

	Average Daily (pounds per day)[b]			
Year	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2027	1	25	< 1	< 1
2028	3	20	1	1
2029	2	11	< 1	< 1
2030	3	10	< 1	< 1
2031	8	12	< 1	< 1
2032	4	30	1	1
2033	5	22	1	1
2034	11	16	< 1	< 1
2035	2	21	1	< 1
2036	10	16	< 1	< 1
2037	6	12	< 1	< 1
2038	3	26	1	1
2039	10	17	< 1	< 1
2040	7	5	< 1	< 1
Air District Threshold[c]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-1 and AQ-4. Mitigation Measure AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG, NO_X, or PM exhaust emissions. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** and underline.

[b] Presents the average emissions estimate during a single day of construction in each year.

[c] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significance without best management practices.

$PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases; NO_X = nitrogen oxides.

Table 3.3-19. Estimated Average Daily Mitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project with the WRF Option[a]

Select Construction Years[b]	Average Daily (pounds per day)[c]			
	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2038	3	27	1	1
2039	10	17	1	< 1
Air District Threshold[d]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-1 and AQ-4. Mitigation Measure AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG, NO_X, or PM exhaust emissions. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The WRF would be constructed in 2038 and 2039. Emissions during all other construction years would be the same as presented in Table 3.3-18 for the CEQA Proposed Project.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-20. Estimated Average Daily Mitigated Criteria Pollutant Emissions from Construction of the CEQA Proposed Project with the CUP Option[a]

Select Construction Years[b]	Average Daily (pounds per day)[c]			
	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
2035	2	23	1	1
2036	10	16	< 1	< 1

Select Construction Years[b]	Average Daily (pounds per day)[c]			
	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Air District Threshold[d]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-1 and AQ-4. Mitigation Measure AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG, NO_X, or PM exhaust emissions. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The CUP would be constructed in 2035 and 2036. Emissions during all other construction years would be the same as presented in Table 3.3-18 for the CEQA Proposed Project.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Tables 3.3-18 through 3.3-20 indicate that construction of the CEQA Proposed Project (with or without the WRF Option or CUP Option) would not exceed the Air District's average daily NO_X threshold with Mitigation Measure AQ-1. Mitigation Measures AQ-2 and GHG-1 would achieve additional NOx reductions beyond those shown in the table. Mitigation Measures AQ-3 and HAZ-1 ensure compliance with the Air District's fugitive dust control threshold. Mitigation Measure AQ-4 would further reduce ROG emissions from architectural coatings. The Air District's thresholds were established to prevent emissions from new projects in the SFBAAB from contributing to violations of the NAAQS and CAAQS. Because mitigated construction emissions would not exceed the Air District's thresholds, the CEQA Proposed Project (with or without the WRF Option or CUP Option) would not result in cumulatively considerable increase to regional pollution in the SFBAAB. This impact is less than significant with mitigation under CEQA.

Full Operations

Mitigation Measures AQ-5 and AQ-6 are required to reduce ROG emissions from area sources. Mitigation Measure AQ-5 would require, at a minimum, low-VOC paints and cleaning supplies for non-residential uses. Mitigation Measure AQ-6 would require use of zero-emission landscaping equipment over conventional gasoline-fueled counterparts. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions. Mitigation Measure TRAN-1 would require enhancements to the project-specific transportation demand management (TDM) plan to further reduce trips and VMT.

Tables 3.3-21 through 3.3-23 summarize estimated emissions for the CEQA Proposed Project, CEQA Proposed Project with the WRF Option, and CEQA Proposed Project with the CUP Option, respectively, under full-build conditions with Mitigation Measures AQ-5, AQ-6, and TRAN-1. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-21. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project[a]

Source	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
Project (2041)								
Mobile	38.0	32.2	110.2	28.3	6.9	5.9	20.1	5.2
Area	49.2 [c]	< 0.1	< 0.1	< 0.1	9.0	< 0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.8	2.7	13.8	13.8	0.1	0.5	2.5	2.5
Total	95.7	34.9	124.0	42.1	17.5	6.4	22.6	7.7
Existing (2024)[d]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[e]	**93.8**	34.3	**123.4**	41.9	**17.1**	6.3	**22.5**	7.6
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-22. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the WRF Option[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	38.0	32.2	110.2	28.3	6.9	5.9	20.1	5.2
Area	49.2 [c]	< 0.1	< 0.1	< 0.1	9.0	< 0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total WRF	95.8	35.1	124.1	42.1	17.5	6.4	22.6	7.7
Existing (2024)[d]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[e]	**93.9**	34.6	**123.4**	41.9	**17.1**	6.3	**22.5**	7.6
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-23. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the CUP Option[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	38.0	32.2	110.2	28.3	6.9	5.9	20.1	5.2
Area	49.2 [c]	< 0.1	< 0.1	< 0.1	9.0	< 0.1	< 0.1	< 0.1
Fugitive	7.7	< 0.1	< 0.1	< 0.1	1.4	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	9.2	9.2	0.2	0.5	1.7	1.7
Total CUP	95.8	35.1	119.5	37.5	17.5	6.4	21.8	6.8
Existing (2024)[d]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[e]	**93.9**	34.6	**118.8**	37.3	**17.1**	6.3	**21.7**	6.8
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Tables 3.3-21 through 3.3-23 indicate that ROG and PM_{10} emissions would still exceed the Air District's thresholds with project design features and mitigation. The project design features and Mitigation Measures AQ-5, AQ-6, and TRAN-1 collectively represent best-available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. Ongoing and forthcoming regulatory programs led by CARB and the Air District will continue to reduce ROG and PM10 emissions in the SFBAAB. These reductions are often achieved through statewide and regional rulemaking—such as CARB's Consumer Products Regulations and updates to the Air District's Regulation 8, Organic Compounds—which operate independently of any individual development project. It is likely that by the proposed project's full buildout year, emissions associated with consumer products (ROG) and mobile sources (ROG and PM10) would be lower than those reflected in this analysis because of additional state and regional regulatory programs.

There is no feasible mitigation beyond Mitigation Measures AQ-5, AQ-6, and TRAN-1 and the project design features to reduce operational ROG and PM_{10} emissions below the Air District's thresholds. As discussed under *Concurrent Construction and Operations*, Mitigation Measure AQ-7 is required to offset ROG and PM_{10} emissions generated from 2035 through 2040. Although this measure is accepted to address 6 years of near-term emissions, it is not considered feasible to mitigate the long-term operational ROG or PM_{10} impact identified in Tables 3.3-21 through 3.3-23 for the following reasons:

- The potential for significant cost escalation creates economic uncertainty that could place an undue financial burden on the proposed project. CARB publishes annual cost-effectiveness limits for emission reduction projects funded through the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program). Although not all local air district incentive programs are administered through the Carl Moyer Program, the published cost-effectiveness limit provides a reasonable measure to estimate potential mitigation cost. Over a 30-year operational analysis period, purchasing operational offsets for ROG and PM_{10} emissions over the Air District's annual thresholds would result in approximately $26.7 million in fees for the CEQA Proposed Project. This estimate is based on the current (2024) base limit of $60,000 per ton and a 5 percent administrative fee.[45] The Carl Moyer Program cost-effectiveness limit reflects the cost of regulations and technology and has historically increased year over year. For example, the cost-effectiveness limit in 1998 was $12,000 per ton. In 2015 and 2021, the base limits were $18,262 per ton and $33,000 per ton, respectively.[46] Thus, not only the cost, but the rate of annual increase, is accelerating. Full buildout of the CEQA Proposed Project is expected no sooner than 2041. Based on the pattern of cost escalation between 1998 and 2024, it is reasonable that operational mitigation fees would likely be double or triple the $26.7 million estimate based on the 2024 cost-effectiveness base limit.
- It is unknown, and impossible to predict, if regional ROG and PM_{10} offsets will be available in the quantities required to successfully mitigate operational emissions over a 30-year period beginning in 2041. Emission reduction projects funded through CEQA mitigation must exceed reductions that would otherwise occur through law, regulation, or legally binding mandate. Federal, state, and local air quality regulations have expanded considerably over the past 30

[45] California Air Resources Board. 2024. *The Carl Moyer Program Guidelines, 2024 Revisions.* Appendix E: Cost-Effectiveness Limits, Discount Rates, and Capital Recovery Factors. Available: https://ww2.arb.ca.gov/sites/default/files/2024-11/Appendix% 20E_2024%20GL%20mssvh.pdf. Accessed: May 8, 2025

[46] Ibid.

years. Although this has improved air quality management and protections, it constrains the voluntary emission reduction market. In other words, with regulations already achieving relatively low emissions rates through mandated technologies or performance standards, there are fewer opportunities for additional reductions. More stringent compliance obligations for many state regulations, such as the Advanced Clean Truck and Innovative Clean Transit, are set to phase in over the next 10 to 20 years. Thus, the availability of voluntary criteria pollutant offsets is likely to become more limited over time. Because ROG and PM_{10} are regional pollutants, they must be mitigated within the same air basin (or neighboring air basin with equal or worse ambient air quality designation) to address project-level impacts. This geographic restriction further constrains offset availability.

Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the CEQA Proposed Project (with and without the WRF Option or CUP Option) would be significant and unavoidable.

Concurrent Construction and Operations

Mitigation Measures AQ-1 through AQ-6, GHG-1, HAZ-1, and TRAN-1 are required to reduce NO_X, ROG, and PM_{10} emissions during concurrent construction and partial operations. Tables 3.3-24 through 3.3-26 summarize estimated mitigated emissions for the CEQA Proposed Project, CEQA Proposed Project with the WRF Option, and CEQA Proposed Project with the CUP Option, respectively, during concurrent construction and net partial operations. The tables include anticipated emissions benefits from Mitigation Measures AQ-1, AQ-3 through AQ-6, and TRAN-1 (Mitigation Measure AQ-2, HAZ-1, and GHG-1 are not quantified or fully quantified for the reasons discussed above under *Construction*). Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA. Tables 3.3-25 and 3.3-26 only present those years during which emissions would differ from the CEQA Proposed Project (i.e., 2038 to 2040 for the WRF Option and 2035 to 2040 for the CUP Option). Emissions during all other construction years would be the same as presented in Table 3.3-24 for the CEQA Proposed Project.

Table 3.3-24. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Year	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
2032[c]	31	39	45	14	6	7	8	2
2033[c]	32	32	45	14	6	6	8	2
2034[c]	38	26	43	13	7	5	8	2
2035[d]	**62**	43	**91**	30	**11**	8	**17**	5
2036[d]	**69**	37	**87**	29	**13**	7	**16**	5
2037[d]	**65**	33	**84**	28	**12**	6	**15**	5
2038[e]	**78**	53	**115**	38	**14**	10	**21**	7
2039[e]	**86**	44	**111**	37	**16**	8	**20**	7
2040[e]	**82**	32	**103**	34	**15**	6	**19**	6
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Construction emissions include Mitigation Measures AQ-1, AQ-3, and AQ-4 (Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified [off-road engine controls]). Operational emissions include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Mitigated construction emissions (Table 3.3-18) plus mitigated operational emissions from buildings constructed during Phase 1. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[d] Mitigated construction emissions (Table 3.3-18) plus mitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Mitigated construction emissions (Table 3.3-18) plus mitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-25. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project with the WRF Option[a]

	Average Daily (pounds per day)				Annual (tons per year)			
Select Construction Year[b]	**ROG**	**NO_X**	**PM_{10} (total)[c]**	**$PM_{2.5}$ (total)[c]**	**ROG**	**NO_X**	**PM_{10} (total)[c]**	**$PM_{2.5}$ (total)[c]**
2038[d]	**79**	54 [e]	**115**	38	**14**	10 [e]	**21**	7
2039[d]	**86**	44	**111**	37	**16**	8	**20**	7
2040[d]	**82**	32	**103**	34	**15**	6	**19**	6
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Construction emissions include Mitigation Measures AQ-1, AQ-3, and AQ-4 (Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified [off-road engine controls]). Operational emissions include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The WRF would be constructed in 2038 and 2039 and begin operation in 2041. Emissions during years prior to 2038 would be the same as presented in Table 3.3-24 for the CEQA Proposed Project.

[c] Total emissions consist of exhaust and fugitive dust emissions.

[d] Mitigated construction emissions (Table 3.3-19 for 2038 and 2039; Table 3.3-18 for 2040) plus net mitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Unrounded values are below thresholds (53.7 pounds per day and 9.8 tons per year).

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-26. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Proposed Project with the CUP Option[a]

Select Construction Year[b]	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]	ROG	NO_X	PM_{10} (total)[c]	$PM_{2.5}$ (total)[c]
2035[d]	**62**	45	**84**	22	**11**	8	**15**	4
2036[d]	**69**	38	79	21	**13**	7	14	4
2037[d]	**65**	33	76	20	**12**	6	14	4
2038[e]	**78**	53	**110**	32	**14**	10	**20**	6
2039[e]	**86**	44	**106**	31	**16**	8	**19**	6
2040[e]	**82**	32	**98**	29	**15**	6	**18**	5
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Construction emissions include Mitigation Measures AQ-1, AQ-3, and AQ-4 (Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified [off-road engine controls]). Operational emissions include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The CUP would be constructed in 2035 and 2036 and begin operation in 2038. Emissions during years prior to 2035 would be the same as presented in Table 3.3-24 for the CEQA Proposed Project.

[c] Total emissions consist of exhaust and fugitive dust emissions.

[d] Mitigated construction emissions (Table 3.3-20 for 2035 and 2036; Table 3.3-18 for 2037) plus mitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Mitigated construction emissions (Table 3.3-18) plus mitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

The analysis indicates that combined construction and net partial operational emissions would exceed the Air District's ROG and PM_{10} thresholds even with project design features and Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1. Mitigation Measure AQ-7 is required to offset ROG and PM_{10} emissions in 2035 through 2040 to levels below Air District thresholds. The maximum total offset commitment may be recalculated prior to the start of construction as described under Mitigation Measure AQ-7. The mitigation obligation may therefore change as regulations change and new control technologies become available and effective. Mitigation Measure AQ-7 ensures that ROG and PM_{10} generated by combined construction and partial operation of the CEQA Proposed Project (with and without the WRF Option or CUP Option) would not exceed Air District thresholds. As such, neither ROG nor PM_{10} emissions would contribute a cumulatively considerable significant level of air pollution such that regional air quality within the SFBAAB would be degraded. But for the reasons described above, ROG and PM_{10} emissions during project operations after the 6 years of overlapping construction and operations would not be mitigated to a less-than-significant and less-than-cumulatively considerable level. This impact would be significant and unavoidable.

Potential Health Outcomes of Cumulatively Considerable Regional Criteria Pollutant Emissions

All criteria pollutants that would be generated by the proposed project are associated with some form of health risk. The California Supreme Court decision in *Sierra Club v. County of Fresno* (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch decision) clarifies that environmental documents must connect a project's regional air quality impacts to specific health effects or explain why it is not technically feasible to perform such an analysis. The Air District's CEQA Guidelines outline five criteria that should be included in project-level air quality analyses to demonstrate compliance with the Friant Ranch decision. Each of these criteria are addressed in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS, which includes a discussion of the quantitative analysis performed, and limitations with respect to calculation of mitigation measures. The analysis presented in Appendix 3.3-1 concludes that models currently available to quantitatively evaluate health effects of regional air pollution are not appropriately applied at the project level. Accordingly, limitations of existing models preclude accurate meaningful analysis to correlate project-level criteria pollutant emissions and health effects for decision makers and the public, and such analysis is not included in this joint EIR/EIS.

Ultimately, Santa Clara County does not attain the NAAQS or CAAQS for ozone and $PM_{2.5}$ or the CAAQS for PM_{10}. Certain individuals residing in areas that do not meet the ambient air quality standards could be exposed to pollutant concentrations that cause or aggravate acute and/or chronic health conditions (e.g., asthma, lost workdays, premature mortality), regardless of the proposed project.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Construction

The same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the Variant. The intensity of construction for the CEQA Proposed Project with or without the Variant would therefore be the same, except for architectural coatings. Because the Variant does not include residential construction during Phase 4, the total coated area from architectural coatings, which generate ROG emissions, would be lower under the Variant.

Table 3.3-27 summarizes estimated ROG emissions from construction of Phase 4 under the Variant. Emissions are compared to the Air District's project-level thresholds to determine significance under CEQA. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-9 for the CEQA Proposed Project.

Table 3.3-27. Estimated Average Daily Unmitigated ROG Emissions from Construction of Phase 4 Under the CEQA Proposed Project with the Variant[a]

	Average Daily (pounds per day)[c]
Selected Construction Year[b]	**Unmitigated**
2037	15
2038	10
2039	26
2040	19
Air District Threshold[d]	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The intensity of construction for the CEQA Proposed Project with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-9 for the CEQA Proposed Project.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

ROG = reactive organic gases

Table 3.3-27 indicates that ROG emissions generated during Phase 4 under the CEQA Proposed Project with the Variant would not exceed the Air District's threshold. ROG emissions would be comparable to those generated under the CEQA Proposed Project, albeit slightly reduced in 2039 and increased (as rounded) in 2040. Emissions of all other pollutants during all construction years

would be the same the CEQA Proposed Project (see Table 3.3-9), and as such, the following impact findings also apply to the Variant:

- No exceedances of the Air District's ROG, PM_{10} (exhaust), or $PM_{2.5}$ (exhaust) thresholds
- Violation of the Air District's fugitive dust control threshold
- Exceedances of the Air District's NO_X threshold in all years except 2031, 2037, and 2040

Construction NO_X emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation. Likewise, uncontrolled fugitive dust emissions are considered potentially significant under CEQA before mitigation.

Full Operations

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the Variant. Table 3.3-28 presents estimated unmitigated operational emissions for the Variant under full-build conditions. Total emissions under existing (2024) conditions are also presented; refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for additional detail. The net increase in operational emissions of the Variant is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-28 indicates that future net operational emissions for the Variant under full-build conditions would exceed the Air District's daily and annual thresholds for ROG and PM_{10}. This impact finding is the same as the CEQA Proposed Project, although compared to the CEQA Proposed Project, the Variant would result in slightly greater net emissions due primarily to increased VMT and trip generation. Operations ROG and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Concurrent Construction and Operations

The intensity of concurrent construction and net partial operational emissions for the CEQA Proposed Project with or without the Variant would be the same, except for ROG emissions during Phase 4. Table 3.3-29 summarizes estimated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Variant. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-15 for the CEQA Proposed Project. Emissions from existing land uses (Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives*) are subtracted from the operational results. Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-28. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the Variant[a]

Source	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
Project (2041)								
Mobile	41.9	35.6	121.5	31.2	7.6	6.5	22.2	5.7
Area	68.2	0.6	0.1	0.1	12.4	0.1	< 0.1	< 0.1
Fugitive	8.2	< 0.1	< 0.1	< 0.1	1.5	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total	119.1	39.1	135.5	45.1	21.7	7.1	24.7	8.2
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**117.3**	38.5	**134.8**	44.9	**21.4**	7.0	**24.6**	8.2
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-29. Estimated Average Daily and Annual Unmitigated ROG Emissions from Concurrent Construction and Partial Operation of the CEQA Proposed Project with the Variant[a]

Selected Construction Year[b]	Average Daily (pounds per day)[c]	Annual (tons per year)[d]
2037	**86**	**16**
2038	**102**	**19**
2039	**118**	**22**
2040	**110**	**20**
Air District Threshold[e]	54	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The intensity of construction for the CEQA Proposed Project with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-15 for the CEQA Proposed Project. For Phase 4 (2037–2040), results reflect construction emissions (Table 3.3-27) plus operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] Presents the total emissions estimate during each year of construction.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

ROG = reactive organic gases

The intensity of combined ROG emissions during Phase 4 would be comparable to those generated under the CEQA Proposed Project. The impact conclusions for all analysis years and pollutants would be the same as the CEQA Proposed Project, and combined construction and net partial operational emissions of the Variant would exceed the following Air District thresholds (see Tables 3.3-15 and 3.3-29):

- Average daily and annual ROG: 2034 to 2040
- Average daily and annual NO_X: 2032 to 2040
- Average daily and annual PM_{10}: 2035 to 2040

The analysis indicates that combined construction and net partial operational emissions would exceed the Air District's ROG, NO_X, and PM_{10} thresholds even with project design features. Combined ROG, NO_X, and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations. Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required.

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Construction

Mitigation Measures AQ-1 and AQ-2 would be required to reduce NO_X emissions from off-road equipment and on-road vehicles, respectively. Mitigation Measure GHG-1 would also achieve NOx reductions through idling limitations, local sourcing of materials, and other BMPs. Mitigation Measures AQ-3 are required to comply with the Air District's basic fugitive dust control measures and the EIMP. Mitigation Measure AQ-4 would also be required during construction to address overlapping construction and partial operational emissions, which are assessed under the sub-header *Concurrent Construction and Operations*.

As discussed above, the intensity of NO_X emissions generated by construction of CEQA Proposed Project with or without the Variant would be the same. Table 3.3-18 above summarizes estimated

construction emissions for the CEQA Proposed Project with Mitigation Measures AQ-1 and AQ-4. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls) for the reasons discussed above under *Construction* for the CEQA Proposed Project. Mitigation Measures AQ-3 and HAZ-1 do not directly reduce ROG, NO_X, or PM exhaust). The table indicates that construction of the Variant would not exceed the Air District's average daily NO_X threshold with Mitigation Measure AQ-1. Mitigation Measures AQ-2 and GHG-1 would achieve additional NOx reductions beyond those shown in the table. Mitigation Measures AQ-3 and HAZ-1 ensure compliance with the Air District's fugitive dust control threshold. Mitigation Measure AQ-4 would further reduce ROG emissions from architectural coatings. Because mitigated construction emissions would not exceed the Air District's thresholds, the Variant would not result in cumulatively considerable increase to regional pollution in the SFBAAB. This impact is less than significant with mitigation under CEQA.

Full Operations

Mitigation Measures AQ-5 and AQ-6 are required to reduce ROG emissions from area sources. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions. Mitigation Measure TRAN-1 would require enhancements to the project-specific TDM plan to further reduce trips and VMT, and this measure would reduce mobile source emissions. Table 3.3-30 summarizes estimated emissions for the Variant under full-build conditions with Mitigation Measures AQ-5, AQ-6, and TRAN-1. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-30 indicates that ROG and PM_{10} emissions would still exceed the Air District's thresholds with project design features and mitigation. The project design features and Mitigation Measures AQ-5, AQ-6, and TRAN-1 collectively represent best-available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. For the reasons discussed above for the CEQA Proposed Project, there is no feasible mitigation beyond these measures and the project design features to reduce operational ROG and PM_{10} emissions below the Air District's thresholds. Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the Variant would be significant and unavoidable.

Concurrent Construction and Operations

Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1 are required to reduce NO_X, ROG, and PM_{10} emissions during concurrent construction and partial operations. As discussed above, the intensity of concurrent construction and net partial operational emissions for the CEQA Proposed Project with or without the Variant would be the same, except for ROG emissions during Phase 4. Table 3.3-31 summarizes estimated mitigated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Variant. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-24 for the CEQA Proposed Project. Table 3.3-31 includes anticipated emissions benefits from Mitigation Measures AQ-1, AQ-3 through AQ-6, and TRAN-1 (Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or fully quantified for the reasons discussed above under *Construction* for the CEQA Proposed Project). Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-30. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Proposed Project with the Variant [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	38.8	32.9	112.4	28.8	7.1	6.0	20.5	5.3
Area	48.9 [c]	< 0.1	< 0.1	< 0.1	8.9	< 0.1	< 0.1	< 0.1
Fugitive	8.2	< 0.1	< 0.1	< 0.1	1.5	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total	96.7	35.8	126.2	42.6	17.6	6.5	23.0	7.8
Existing (2024)[d]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[e]	**94.8**	35.2	**125.6**	42.4	**17.3**	6.4	**22.9**	7.7
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-31. Estimated Average Daily and Annual Mitigated ROG Emissions from Concurrent Construction and Partial Operation of the CEQA Proposed Project with the Variant[a]

Selected Construction Year[b]	Average Daily (pounds per day)[c]	Annual (tons per year)[d]
2037	**65**	**12**
2038	**78**	**14**
2039	**85**	**16**
2040	**82**	**15**
Air District Threshold[e]	54	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline. Emissions results include Mitigation Measures AQ-2, AQ-4 through AQ-6, and TRAN-1. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG emissions.

[b] The intensity of construction for the CEQA Proposed Project with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-24 for the CEQA Proposed Project. For Phase 4 (2037–2040), results reflect construction emissions plus operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] Presents the total emissions estimate during each year of construction.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

ROG = reactive organic gases

The analysis indicates that project design features and Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1 would reduce NO_X emissions to below Air District thresholds. However, as shown in Tables 3.3-24 and 3.3-31, ROG and PM_{10} emissions would remain elevated. Mitigation Measure AQ-7 is required to offset ROG and PM_{10} emissions in 2035 through 2040 to levels below Air District thresholds. Mitigation Measure AQ-7 ensures that ROG and PM_{10} generated by combined construction and partial operation of the Variant would not exceed Air District thresholds. As such, neither ROG nor PM_{10} emissions would contribute a cumulatively considerable significant level of air pollution such that regional air quality within the SFBAAB would be degraded. However, for the reasons described above, ROG and PM_{10} emissions during project operations after the 6 years of overlapping construction and operations would not be mitigated to a less-than-significant and less-than-cumulatively considerable level. This impact would be significant and unavoidable.

Potential Health Outcomes of Cumulatively Considerable Regional Criteria Pollutant Emissions

The potential health outcomes of cumulatively considerable ROG and PM_{10} emissions generated during operation of the Variant are the same as described above for the CEQA Proposed Project.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Construction

The same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative. The intensity of construction for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be the same except for a slight reduction in the duration of the "core and shell" and "architectural coating" sub-phases for research buildings under the CEQA Reduced Density Alternative. The interior coated area of research buildings under the CEQA Reduced Density Alternative would likewise be slightly reduced from the CEQA Proposed Project.

Table 3.3-32 summarizes estimated unmitigated construction emissions for the CEQA Reduced Density Alternative. Emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-32. Estimated Average Daily Unmitigated Criteria Pollutant Emissions from Construction of the CEQA Reduced Density Alternative [a]

	Average Daily (pounds per day)[b]			
Year	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2027	7	**73**	3	3
2028	10	**89**	3	3
2029	9	**84**	2	2
2030	10	**72**	2	2
2031	19	44	1	1
2032	15	**139**	4	3
2033	20	**180**	4	4
2034	29	**91**	2	2
2035	8	**85**	2	2
2036	25	**86**	2	2
2037	13	38	1	1
2038	10	**102**	2	2
2039	27	**106**	2	2
2040	17	42	< 1	< 1
Air District Threshold [c]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Presents the average emissions estimate during a single day of construction in each year.

[c] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-32 indicates that construction of the CEQA Reduced Density Alternative would exceed the Air District's average daily NO_X threshold in all years except 2031, 2037, and 2040. These findings are the same as the CEQA Proposed Project, although the intensity of emissions (i.e., average daily pounds) would be slightly reduced during some construction years under the CEQA Reduced Density Alternative. Construction NO_X emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation. Likewise, uncontrolled fugitive dust emissions are considered potentially significant under CEQA before mitigation.

Full Operations

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative. Table 3.3-33 presents estimated unmitigated operational emissions for the CEQA Reduced Density Alternative under full-build conditions. Total emissions under existing (2024) conditions are also presented; refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for additional detail. The net increase in operational emissions of the CEQA Reduced Density Alternative is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-33 indicates that future net operational emissions for the CEQA Reduced Density Alternative under full-build conditions would exceed the Air District's daily and annual thresholds for ROG and PM_{10}. This finding is the same as the CEQA Proposed Project, although compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would result in slightly lower net emissions due to reduced VMT and trip generation (mobile sources), consumer products (area sources), and lab space (fugitive sources). Operations ROG and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Concurrent Construction and Operations

Table 3.3-34 presents concurrent unmitigated construction and net partial operational emissions for the CEQA Reduced Density Alternative. Emissions from existing land uses (Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives*) are subtracted from the operational results. Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-33. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Reduced Density Alternative [a]

Source	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
Project (2041)								
Mobile	28.0	23.7	81.1	20.8	5.1	4.3	14.8	3.8
Area	48.4	0.6	0.1	0.1	8.8	0.1	< 0.1	< 0.1
Fugitive	4.1	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Stationary	0.8	2.7	13.8	13.8	0.1	0.5	2.5	2.5
Total	81.4	27.0	95.1	34.7	14.8	4.9	17.4	6.3
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**79.5**	26.5	**94.4**	34.5	**14.5**	4.8	**17.2**	6.3
Air District Threshold[e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-34. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Partial Operation of the CEQA Reduced Density Alternative [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Year	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
2032[c]	34	**146**	39	14	6	**27**	7	3
2033[c]	39	**187**	38	14	7	**34**	7	3
2034[c]	48	**98**	34	11	9	**18**	6	2
2035[d]	**54**	**101**	75	26	10	**18**	14	5
2036[d]	**70**	**102**	70	25	**13**	**19**	13	5
2037[d]	**59**	54[f]	65	23	**11**	10[f]	12	4
2038[e]	**71**	**122**	**93**	33	**13**	**22**	**17**	6
2039[e]	**88**	**126**	**88**	31	**16**	**23**	**16**	6
2040[e]	**77**	**59**	78	28	**14**	**11**	14	5
Air District Threshold [g]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Unmitigated construction emissions (Table 3.3-32) plus unmitigated operational emissions from buildings constructed during Phase 1. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[d] Unmitigated construction emissions (Table 3.3-32) plus unmitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Unmitigated construction emissions (Table 3.3-32) plus unmitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f.] Unrounded values are below thresholds (53.9 pounds per day and 9.8 tons per year).

[g] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-34 indicates that combined construction and net partial operational emissions under the CEQA Reduced Density Alternative would exceed the following Air District thresholds even with project design features:

- Average daily and annual ROG: 2035 to 2040
- Average daily and annual NO_X: 2032 to 2036 and 2038 through 2040
- Average daily and annual PM_{10}: 2038 and 2039

These impact findings are the same as the CEQA Proposed Project, although the intensity of emissions (i.e., average daily pounds and annual tons) would be reduced during some construction years under the CEQA Reduced Density Alternative. Combined ROG, NO_X, and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low-VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations. Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required.

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Construction

Mitigation Measures AQ-1 and AQ-2 would be required to reduce NO_X emissions from off-road equipment and on-road vehicles, respectively. Mitigation Measure GHG-1 would also achieve NOx reductions through idling limitations, local sourcing of materials, and other BMPs. Mitigation Measures AQ-3 and HAZ-1 are required to comply with the Air District's basic fugitive dust control measures and the EIMP. Mitigation Measure AQ-4 would also be required during construction to address overlapping construction and partial operational emissions, which are assessed under *Concurrent Construction and Operations*.

Table 3.3-35 summarizes estimated construction emissions for the CEQA Reduced Density Alternative, with Mitigation Measures AQ-1 and AQ-4. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls) for the reasons discussed above under *Construction* for the CEQA Proposed Project. Mitigation Measures AQ-3 and HAZ-1 do not directly reduce ROG, NO_X, or PM exhaust.

Table 3.3-35. Estimated Average Daily Mitigated Criteria Pollutant Emissions from Construction of the CEQA Reduced Density Alternative [a]

	Average Daily (pounds per day)[b]			
Year	**ROG**	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**
2027	1	25	< 1	< 1
2028	3	20	1	1
2029	2	11	< 1	< 1
2030	3	9	< 1	< 1
2031	8	12	< 1	< 1
2032	4	29	1	1
2033	5	21	1	1
2034	11	15	< 1	< 1
2035	2	21	1	< 1
2036	10	15	< 1	< 1
2037	5	11	< 1	< 1
2038	3	26	1	1
2039	10	17	< 1	< 1
2040	7	4	< 1	< 1
Air District Threshold [c]	54	54	82	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of

emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-1 and AQ-4. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG, NO_X, or PM exhaust emissions. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Presents the average emissions estimate during a single day of construction in each year.

[c] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Like the CEQA Proposed Project, Table 3.3-35 indicates that construction of the CEQA Reduced Density Alternative would not exceed the Air District's average daily NO_X threshold with Mitigation Measure AQ-1. Mitigation Measures AQ-2 and GHG-1 would achieve additional NOx reductions beyond those shown in the table. Mitigation Measures AQ-3 and HAZ-1 ensure compliance with the Air District's fugitive dust control threshold. Mitigation Measure AQ-4 would further reduce ROG emissions from architectural coatings. Because mitigated construction emissions would not exceed the Air District's thresholds, the CEQA Reduced Density Alternative would not result in cumulatively considerable increase to regional pollution in the SFBAAB. This impact is less than significant with mitigation.

Full Operations

Mitigation Measures AQ-5 and AQ-6 are required to reduce ROG emissions from area sources. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions. Mitigation Measure TRAN-1 would require enhancements to the project-specific TDM plan to further reduce trips and VMT, and this measure would reduce mobile source emissions. Table 3.3-36 summarizes estimated emissions for the CEQA Reduced Density Alternative under full-build conditions with Mitigation Measures AQ-5, AQ-6, and TRAN-1. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-36 indicates that ROG and PM_{10} emissions would still exceed the Air District's thresholds with project design features and mitigation. The project design features and Mitigation Measures AQ-5, AQ-6, and TRAN-1 collectively represent best-available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. For the reasons discussed above for the CEQA Proposed Project, there is no feasible mitigation beyond these measures and the project design features to reduce operational ROG and PM_{10} emissions below the Air District's thresholds. Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the CEQA Reduced Density Alternative would be significant and unavoidable.

Concurrent Construction and Operations

Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1 are required to reduce NO_X, ROG, and PM_{10} emissions during concurrent construction and partial operations. Table 3.3-37 summarizes estimated mitigated emissions for the CEQA Reduced Density Alternative during concurrent construction and net partial operations. The table includes anticipated emissions benefits from Mitigation Measures AQ-1, AQ-3 through AQ-6, and TRAN-1 (Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or fully quantified for the reasons discussed above under *Construction* for the CEQA Proposed Project). Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-36. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Reduced Density Alternative [a]

Source	Average Daily (pounds per day)				Annual (tons per year)			
	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
Project (2041)								
Mobile	25.9	22.0	75.1	19.2	4.7	4.0	13.7	3.5
Area	30.9 [c]	< 0.1	< 0.1	< 0.1	5.6	< 0.1	< 0.1	< 0.1
Fugitive	4.1	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Stationary	0.8	2.7	13.8	13.8	0.1	0.5	2.5	2.5
Total	61.8	24.6	88.9	33.0	11.3	4.5	16.2	6.0
Existing (2024)[d]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[e]	**59.9**	24.0	**88.2**	32.9	**10.9**	4.4	**16.1**	6.0
Air District Threshold[f]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-37. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of the CEQA Reduced Density Alternative [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Year	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
2032[c]	19	36	34	11	3	7	6	2
2033[c]	19	28	33	11	4	5	6	2
2034[c]	26	21	30	10	5	4	6	2
2035[d]	38	36	68	24	7	7	12	4
2036[d]	46	30	64	23	8	5	12	4
2037[d]	41	25	60	21	8	5	11	4
2038[e]	49	44	**86**	30	9	8	**16**	5
2039[e]	**56**	35	82 [f]	29	**10**	6	15 [f]	5
2040[e]	52	22	73	27	10 [f]	4	13	5
Air District Threshold [g]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Construction emissions include Mitigation Measures AQ-1, AQ-3, and AQ-4 (Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified [off-road engine controls]). Operational emissions include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Mitigated construction emissions (Table 3.3-35) plus mitigated operational emissions from buildings constructed during Phase 1. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[d] Unmitigated construction emissions (Table 3.3-35 plus unmitigated operational emissions from buildings constructed during Phases 1 and 2. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[e] Unmitigated construction emissions (Table 3.3-35) plus unmitigated operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[f] Unrounded values are below threshold (81.9 pounds per day and 14.9 tons per year for PM_{10} in 2039 and 9.5 tons per year of ROG in 2040).

[g] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

The analysis indicates that combined construction and net partial operational emissions would exceed the Air District's ROG and PM_{10} thresholds even with project design features and Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1. Mitigation Measure AQ-7 is required to offset ROG emissions in 2039 and PM_{10} emissions in 2038 to levels below Air District thresholds. Mitigation Measure AQ-7 ensures that ROG and PM_{10} generated by combined construction and partial operation of the CEQA Reduced Density Alternative would not exceed Air District thresholds. As such, neither ROG nor PM_{10} emissions would contribute a cumulatively considerable significant level of air pollution such that regional air quality within the SFBAAB would be degraded. However, for the reasons described above, ROG and PM_{10} emissions during project operations after the 6 years of overlapping construction and operations would not be mitigated to a less-than-significant and less-than-cumulatively considerable level. This impact would be significant and unavoidable.

Potential Health Outcomes of Cumulatively Considerable Regional Criteria Pollutant Emissions

The potential health outcomes of cumulatively considerable ROG and PM_{10} emissions generated during operation of the CEQA Reduced Density Alternative are the same as described above for the CEQA Proposed Project.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Construction

The same construction activities proposed and evaluated under the CEQA Reduced Density Alternative would occur with the Variant. The intensity of construction for the CEQA Reduced Density Alternative with or without the Variant would therefore be the same, except for architectural coatings. Because the Variant does not include residential construction during Phase 4, the total coated area from architectural coatings, which generate ROG emissions, would be lower with the Variant.

Table 3.3-38 summarizes estimated ROG emissions from construction of Phase 4 with the Variant. Emissions are compared to the Air District's project-level thresholds to determine significance under CEQA. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-32 for the CEQA Reduced Density Alternative.

Table 3.3-38. Estimated Average Daily Unmitigated ROG Emissions from Construction of Phase 4 under the CEQA Reduced Density Alternative with the Variant [a]

	Average Daily (pounds per day)[c]
Selected Construction Year [b]	Unmitigated
2037	13
2038	10
2039	26
2040	17
Air District Threshold [d]	54

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The intensity of construction for the CEQA Proposed Project with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-32 for the CEQA Reduced Density Alternative.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] In developing the average daily thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA. The Air District also considers fugitive dust emissions significant without best management practices.

ROG = reactive organic gases

Table 3.3-38 indicates that ROG emissions generated during Phase 4 under the CEQA Reduced Density Alternative with the Variant would not exceed the Air District's threshold. ROG emissions would be comparable to those generated under the CEQA Proposed Project, albeit slightly reduced in 2039 and increased (as rounded) in 2040. Emissions of all other pollutants during all construction years would be the same the CEQA Reduced Density Alternative (see Table 3.3-32), and as such, the following impact findings also apply to the Variant:

- No exceedances of the Air District's ROG, PM_{10} (exhaust), or $PM_{2.5}$ (exhaust) thresholds
- Violation of the Air District's fugitive dust control threshold
- Exceedance of the Air District's NO_X threshold in all years except 2031, 2037, and 2040

Construction NO_X emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation. Likewise, uncontrolled fugitive dust emissions are considered potentially significant under CEQA before mitigation.

Full Operations

The same operational sources proposed and evaluated under the CEQA Reduced Density Alternative would occur under the Variant. Table 3.3-39 presents estimated unmitigated operational emissions for the Variant under full-build conditions. Total emissions under existing (2024) conditions are also presented; refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for additional detail. The net increase in

operational emissions of the Variant is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-39 indicates that future net operational emissions for the Variant under full-build conditions would exceed the Air District's daily and annual thresholds for ROG and PM_{10}. This finding is the same as the CEQA Reduced Density Alternative, although compared to the CEQA Reduced Density Alternative, the Variant would result in greater net emissions due primarily to increased VMT and trip generation. Operations ROG and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Concurrent Construction and Operations

The intensity of concurrent construction and net partial operational emissions for the CEQA Reduced Density Alternative with or without the Variant would be the same, except for ROG emissions during Phase 4. Table 3.3-40 summarizes estimated unmitigated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Variant. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-34 for the CEQA Reduced Density Alternative. Emissions from existing land uses (Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives*) are subtracted from the operational results. Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

The intensity of combined ROG emissions during Phase 4 would be comparable to those generated under the CEQA Reduced Density Alternative. The impact conclusions for all analysis years and pollutants would be the same as the CEQA Reduced Density Alternative, and combined construction and net partial operational emissions of the Variant would exceed the following Air District thresholds (see Tables 3.3-34 and 3.3-40):

- Average daily and annual ROG: 2035 to 2040
- Average daily and annual NO_X: 2032 to 2036 and 2038 through 2040
- Average daily and annual PM_{10}: 2038 and 2039

The analysis indicates that combined construction and net partial operational emissions would exceed the Air District's ROG, NO_X, and PM_{10} thresholds even with project design features. Combined ROG, NO_X, and PM_{10} emissions above the Air District's threshold are considered potentially significant under CEQA before mitigation.

Table 3.3-39. Estimated Average Daily and Annual Unmitigated Criteria Pollutant Emissions from Operation of the CEQA Reduced Density Alternative with the Variant [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	28.8	24.5	83.6	21.4	5.3	4.5	15.3	3.9
Area	48.2	0.6	0.1	0.1	8.8	0.1	< 0.1	< 0.1
Fugitive	4.6	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total	82.5	28.0	97.6	35.3	15.1	5.1	17.8	6.4
Existing (2024)[c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change[d]	**80.6**	27.4	**96.9**	35.1	**14.7**	5.0	**17.7**	6.4
Air District Threshold [e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[d] Total project (2041) emissions minus total existing (2024) emissions.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-40. Estimated Average Daily and Annual Unmitigated ROG Emissions from Concurrent Construction and Partial Operation of the CEQA Reduced Density Alternative with the Variant [a]

Selected Construction Year [b]	Average Daily (pounds per day)[c]	Annual (tons per year)[d]
2037	**59**	**11**
2038	**71**	**13**
2039	**87**	**16**
2040	**77**	**14**
Air District Threshold [e]	54	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] The intensity of construction for the CEQA Reduced Density Alternative with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-34 for the CEQA Reduced Density Alternative. For Phase 4 (2037–2040), results reflect construction emissions (Table 3.3-38) plus operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] Presents the total emissions estimate during each year of construction.

[e] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

ROG = reactive organic gases

Mitigation Measures

The following mitigation measure(s) are required during construction.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

Mitigation Measure AQ-4. Low VOC Coatings during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

The following mitigation measure(s) are required during operations.

Mitigation Measure AQ-5. Low-VOC Non-Residential Coatings and Cleaning Supplies during Operations

Mitigation Measure AQ-6. Electric Landscaping Equipment during Operations

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-1 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

The following mitigation measure is required during concurrent construction and partial operations. Mitigation Measures AQ-1 through AQ-6, GHG-1, and TRAN-1 are also required.

Mitigation Measure AQ-7. Offset Combined Construction and Net Partial Operational ROG and PM_{10} Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Significance After Mitigation

Construction

Mitigation Measures AQ-1 and AQ-2 would be required to reduce NO_X emissions from off-road equipment and on-road vehicles, respectively. Mitigation Measure GHG-1 would also achieve NOx reductions through idling limitations, local sourcing of materials, and other BMPs. Mitigation Measures AQ-3 are required to comply with the Air District's basic fugitive dust control measures and EIMP. Mitigation Measure AQ-4 would also be required during construction to address overlapping construction and partial operational emissions, which are assessed under *Concurrent Construction and Operations*.

As discussed above, the intensity of NO_X emissions generated by construction of CEQA Reduced Density Alternative with or without the Variant would be the same. Table 3.3-35 above summarizes estimated construction emissions for the CEQA Reduced Density Alternative with Mitigation Measures AQ-1 and AQ-4. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls) for the reasons discussed above under *Construction* for the CEQA Proposed Project. Mitigation Measures AQ-3 and HAZ-1 do not directly reduce ROG, NO_X, or PM exhaust. The table indicates that construction of the Variant would not exceed the Air District's average daily NO_X threshold with Mitigation Measure AQ-1. Mitigation Measures AQ-2 and GHG-1 would achieve additional NOx reductions beyond those shown in the table. Mitigation Measures AQ-3 and HAZ-1 ensure compliance with the Air District's fugitive dust control threshold. Mitigation Measure AQ-4 would further reduce ROG emissions from architectural coatings. Because mitigated construction emissions would not exceed the Air District's thresholds, the Variant would not result in cumulatively considerable increase to regional pollution in the SFBAAB. This impact is less than significant with mitigation under CEQA.

Full Operations

Mitigation Measures AQ-5 and AQ-6 are required to reduce ROG emissions from area sources. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions. Mitigation Measure TRAN-1 would require enhancements to the project-specific TDM plan to further reduce trips and VMT, and this measure would reduce mobile source emissions. Table 3.3-41 summarizes estimated emissions for the Variant under full-build conditions with Mitigation Measures AQ-5, AQ-6, and TRAN-1. The net emissions are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-41 indicates that ROG and PM_{10} emissions would still exceed the Air District's thresholds with project design features and mitigation. The project design features and Mitigation Measures AQ-5, AQ-6, and TRAN-1 collectively represent best-available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. For the reasons discussed above for the CEQA Proposed Project, there is no feasible mitigation beyond these measures and the project design features to reduce operational ROG and PM_{10} emissions below the Air District's thresholds. Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the Variant would be significant and unavoidable.

Concurrent Construction and Operations

Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1 are required to reduce NO_X, ROG, and PM_{10} emissions during concurrent construction and partial operations. As discussed above, the intensity of concurrent construction and net partial operational emissions for the CEQA Reduced Density Alternative with or without the Variant would be the same, except for ROG emissions during Phase 4. Table 3.3-42 summarizes estimated mitigated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Variant. Emissions of all other pollutants during all other construction years would be the same as presented in Table 3.3-37 for the CEQA Reduced Density Alternative. Table 3.3-42 includes anticipated emissions benefits from Mitigation Measures AQ-1, AQ-3 through AQ-6, and TRAN-1 (Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or fully quantified for the reasons discussed above under *Construction* for the CEQA Proposed Project). Total net emissions during each analysis year are compared to the Air District's project-level thresholds to determine significance under CEQA.

The analysis indicates that project design features and Mitigation Measures AQ-1 through AQ-6, HAZ-1, GHG-1, and TRAN-1 would reduce NO_X emissions to below Air District thresholds. However, as shown in Tables 3.3-37 and 3.3-42, ROG and PM_{10} emissions would remain elevated. Mitigation Measure AQ-7 is required to offset ROG emissions in 2039 and PM_{10} emissions in 2038 to levels below Air District thresholds. Mitigation Measure AQ-7 ensures that ROG and PM_{10} generated by combined construction and partial operation of the Variant would not exceed Air District thresholds. As such, neither ROG nor PM_{10} emissions would contribute a cumulatively considerable significant level of air pollution such that regional air quality within the SFBAAB would be degraded. However, for the reasons described above, ROG and PM_{10} emissions during project operations after the 6 years of overlapping construction and operations would not be mitigated to a less-than-significant and less-than-cumulatively considerable level. This impact would be significant and unavoidable.

Table 3.3-41. Estimated Average Daily and Annual Mitigated Criteria Pollutant Emissions from Operation of the CEQA Reduced Density Alternative with the Variant [a]

	Average Daily (pounds per day)				Annual (tons per year)			
Source	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**	**ROG**	**NO_X**	**PM_{10} (total)[b]**	**$PM_{2.5}$ (total)[b]**
Project (2041)								
Mobile	26.7	22.6	77.4	19.8	4.9	4.1	14.1	3.6
Area	30.5 [c]	< 0.1	< 0.1	< 0.1	5.6	< 0.1	< 0.1	< 0.1
Fugitive	4.6	< 0.1	< 0.1	< 0.1	0.8	< 0.1	< 0.1	< 0.1
Stationary	0.9	2.9	13.8	13.8	0.2	0.5	2.5	2.5
Total	62.7	25.5	91.2	33.6	11.4	4.7	16.6	6.1
Existing (2024) [c]	1.9	0.6	0.7	0.2	0.3	0.1	0.1	< 0.1
Net Change [d]	**60.8**	24.9	**90.5**	33.4	**11.1**	4.6	**16.5**	6.1
Air District Threshold [e]	54	54	82	54	10	10	15	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Emissions results include Mitigation Measures AQ-5, AQ-6, and TRAN-1. Exceedances of Air District thresholds (if any) are shown in **bold** with underline.

[b] Total emissions consist of exhaust and fugitive dust emissions.

[c] The mitigation analysis conservatively assumes only use of low-VOC paints (i.e., less than 50 grams per liter VOC), which is required, at a minimum, by Mitigation Measure AQ-5. The measure would also require no-VOC paints (i.e., less than 5 grams per liter of VOC) where locally (i.e., within 50 miles of the Project Site) and commercially available for the coating type. Where no-VOC paints are used, emissions would be less than presented above.

[d] Refer to Table 5-5 in Section 5.5.7.1, *CEQA No-Project/Existing Conditions Alternative,* in Chapter 5, *Other CEQA Information and Alternatives,* for emissions by source.

[e] Total project (2041) emissions minus total existing (2024) emissions.

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gases

Table 3.3-42. Estimated Average Daily and Annual Mitigated ROG Emissions from Concurrent Construction and Partial Operation of the CEQA Reduced Density Alternative with the Variant [a]

Selected Construction Year [b]	Average Daily (pounds per day)[c]	Annual (tons per year)[d]
2037	41	8
2038	49	9
2039	**56**	**10**
2040	52	10[e]
Air District Threshold [f]	54	10

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.3.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Values are rounded to the nearest whole number. Exceedances of Air District thresholds (if any) are shown in **bold** with underline. Emissions results include Mitigation Measures AQ-1, AQ-4 through AQ-6, and TRAN-1. Mitigation Measures AQ-2 and HAZ-1 are not quantified and Mitigation Measure GHG-1 is partially quantified (off-road engine controls). Mitigation Measures AQ-3 and HAZ-1 would not reduce ROG emissions.

[b] The intensity of construction for the CEQA Reduced Density Alternative with or without the Variant would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 3.3-37 for the CEQA Reduced Density Alternative. For Phase 4 (2037–2040), results reflect construction emissions plus operational emissions from buildings constructed during Phases 1 through 3. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses (Table 5-5) are subtracted from the operational results.

[c] Presents the average emissions estimate during a single day of construction in each year.

[d] Presents the total emissions estimate during each year of construction.

[e] Unrounded value is below threshold (9.6 tons per year).

[f] In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

ROG = reactive organic gases

Potential Health Outcomes of Cumulatively Considerable Regional Criteria Pollutant Emissions

The potential health outcomes of cumulatively considerable ROG and PM_{10} emissions generated during operation of the Variant are the same as described above for the CEQA Proposed Project.

Impact CEQA-AIR-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant (expose receptors to substantial localized carbon monoxide) Potentially Significant (expose receptors to substantial toxic air contaminants and localized particulate matter)	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation (expose receptors to substantial toxic air contaminants) Significant and Unavoidable with Mitigation (expose receptors to substantial localized particulate matter)
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Less than Significant (expose receptors to substantial localized carbon monoxide) Potentially Significant (expose receptors to substantial toxic air contaminants and localized particulate matter)	Same as CEQA Proposed Project	Less than Significant with Mitigation (expose receptors to substantial toxic air contaminants) Significant and Unavoidable with Mitigation (expose receptors to substantial localized particulate matter)
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Continuous engine exhaust may elevate localized CO concentrations. Certain people exposed to CO hot spots may have a greater likelihood of developing health effects such as fatigue, headaches, confusion, dizziness, and chest pain. CO hot spots are typically observed at heavily congested roadway intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day. Construction sites are less likely to result in localized CO hot spots due to the nature of construction activities, which normally utilize diesel-powered equipment for intermittent or short durations. Accordingly, this analysis focuses on potential CO hot spots associated with changes in vehicle traffic during operations.

CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day. The Air District's screening criteria for CO hot spots is 44,000 vehicles per hour at affected intersections and 24,000 vehicles per hour at affected intersections where vertical or horizontal mixing is limited (i.e., a tunnel). Projects electing to apply these screening criteria must be consistent with an applicable CMP. Traffic volumes at none of the affected intersections would exceed 24,000 vehicles per hour, nor are any study area intersections covered by a CMP.[47] Thus, the CEQA Proposed Project meets the Air District's CO screening criteria and would not contribute to any new localized violations of the health-protective NAAQS or CAAQS for CO. This impact is less than significant under CEQA.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

DPM is a carcinogen contained in the exhaust of diesel internal-combustion engines. Project-related construction activities would generate DPM (i.e., PM_{10} exhaust from diesel vehicles)[48] from the use of off-road equipment and heavy-duty trucks. PM_{10} exhaust and $PM_{2.5}$ exhaust and fugitive dust emissions would be generated from the use of off-road equipment, on-site soil movement, and heavy-duty trucks and worker vehicles traveling on paved and unpaved roads. Construction of the WRF Option or CUP Option would include the same TAC and $PM_{2.5}$ sources as the CEQA Proposed Project, with a small increase in construction emissions during years 2038 and 2039 and 2035 and 2036, respectively.

Operational activities would generate DPM from the use of delivery trucks and other heavy-duty vehicles traveling to and from the site, and the testing and use of Tier 4 emergency generators. $PM_{2.5}$ emissions would be generated by all vehicles traveling to and from the site, and testing and operation of emergency generators and cooling towers. Laboratories would generate ROG-based TACs. All these activities could expose on-site receptors (future residents and employees associated with the proposed project within the Project Site) and off-site receptors (existing and future residents and employees outside of the Project Site, but located within 1,000 feet of the Project Site) to incremental increases in health risks. Operation of the WRF Option or CUP Option would include the same TAC and $PM_{2.5}$ sources as the CEQA Proposed Project, althought they would both operate one additional emergnecy generator. Fewer cooling towers would also be operated under the CUP Option, and these would be centralized at the CUP facility.

[47] Tan, Valerie. Senior transportation planner, Fehr & Peers. May 20, 2025—email message to ICF regarding BSC Moffett (tech report and Draft EIR/EIS kick-off).

[48] Per Air District guidance, PM10 exhaust is used as a surrogate for DPM.

Health impacts from exposure to DPM include cancer risks and chronic non-cancer risks. Health impacts from exposure to ROG-based TACs include cancer risks, chronic non-cancer risks, and acute non-cancer risks. In addition, the HRA includes an evaluation of annual concentrations of $PM_{2.5}$.

Tables 3.3-43 through 3.3-45 present the maximum unmitigated health risks from construction and operations of the CEQA Proposed Project, CEQA Proposed Project with the WRF Option, and CEQA Proposed Project with the CUP Option, respectively, for off-site and on-site receptors under the five scenarios in Section 3.3.6.2, *Health Risk Assessment.* Health risks are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-43. Estimated Unmitigated Project-Level Health Risk Results from Modeled Scenarios for the CEQA Proposed Project

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]				
MEIR, existing off-site	**12.7**	0.05	0.01	**0.35**
MEIR, on-site	NA	NA	NA	NA
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]				
MEIR, existing off-site	**13.6**	0.05	0.01	**0.35**
MEIR, on-site	**15.2**	0.11	0.07	**0.97**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]				
MEIR, existing off-site	9.3	0.05	0.01	**0.35**
MEIR, on-site	9.5	0.11	0.07	**0.97**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]				
MEIR, existing off-site	**28.9**	0.05	0.01	**0.35**
MEIR, on-site	**21.9**	0.11	0.07	**0.97**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 5—Exposure to Project Buildout Operations[e]				
MEIR, existing off-site	2.3	< 0.01	0.01	0.04
MEIR, on-site	4.8	< 0.01	0.07	0.10
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.
Note: Exceedances of thresholds are indicated with bold and underlined text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Table 3.3-44. Estimated Unmitigated Project-Level Health Risk Results from Modeled Scenarios for the CEQA Proposed Project with WRF Option

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations (µg/m³)[f]
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]				
MEIR, existing off-site	**12.7**	0.05	0.01	**0.35**
MEIR, on-site	NA	NA	NA	NA
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]				
MEIR, existing off-site	**13.9**	0.05	0.01	**0.35**
MEIR, on-site	**15.2**	0.11	0.07	**1.02**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]				
MEIR, existing off-site	9.6	0.05	0.01	**0.35**
MEIR, on-site	9.7	0.11	0.07	**1.02**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]				
MEIR, existing off-site	**30.2**	0.05	0.01	**0.35**
MEIR, on-site	**22.6**	0.11	0.07	**1.02**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 5—Exposure to Project Buildout Operations[e]				
MEIR, existing off-site	2.3	< 0.01	< 0.01	0.04
MEIR, on-site	4.8	< 0.01	0.07	0.10
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Table 3.3-45. Estimated Unmitigated Project-Level Health Risk Results from Modeled Scenarios for the CEQA Proposed Project with CUP Option

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]				
MEIR, existing off-site	**12.8**	0.05	0.01	**0.34**
MEIR, on-site	NA	NA	NA	NA
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]				
MEIR, existing off-site	**13.6**	0.05	0.01	**0.34**
MEIR, on-site	**15.4**	0.11	0.07	**0.91**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]				
MEIR, existing off-site	9.4	0.05	0.01	**0.34**
MEIR, on-site	9.5	0.11	0.07	**0.91**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]				
MEIR, existing off-site	**28.9**	0.05	0.01	**0.34**
MEIR, on-site	**21.9**	0.11	0.07	**0.91**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 5—Exposure to Project Buildout Operations[e]				
MEIR, existing off-site	2.3	< 0.01	0.01	0.03
MEIR, on-site	4.8	< 0.01	0.07	0.04
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

As shown in Tables 3.3-43 through 3.3-45, there would be exceedances of the Air District project-level cancer risk threshold in Scenarios 1, 2, and 4, and exceedances of the Air District $PM_{2.5}$ threshold in Scenarios 1 through 4 for existing off-site residential receptors due to unmitigated project construction and operational activities. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold in Scenarios 2 and 4, and exceedances of the

$PM_{2.5}$ threshold in Scenarios 2 through 4 due to unmitigated project construction and operational activities. There would be no exceedances of thresholds during Scenario 5.

The primary cause of the cancer risk threshold for existing receptors is exposure to DPM during construction at the site, specifically exhaust from off-road equipment and on-site trucks, with smaller contributions from operational sources of TACs. The primary causes of the $PM_{2.5}$ concentration exceedances are on-site off-road equipment activity, earthmoving activities, and vehicle travel, which generates fugitive $PM_{2.5}$ from resuspended road dust.

Because non-cancer risks (chronic and acute) would not exceed the Air District's thresholds, these risks would be less than significant. However, cancer risk and annual $PM_{2.5}$ concentrations above the Air District's thresholds during construction and are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-3. Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Dust Control

All project contractor(s) comply with the Air District's current enhanced control measures for fugitive dust. The Air District's current enhanced control measures are drawn from their 2023 CEQA Guidelines, Table 5-3, and are identified below. The requirement to comply with the control measures shall be identified in construction bids.

- Limit the simultaneous excavation, grading, and ground-disturbing construction activities occurring within 1,000 feet of one another.
- Install wind breaks (e.g., trees, fences) on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Plant vegetative ground cover (e.g., fast-germinating native grass seed) in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the amount of excavated material or waste materials stored at the site.
- Hydroseed or apply non-toxic soil stabilizers to construction areas, including previously graded areas, that are inactive for at least 10 calendar days.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

The Project Proponent or its contractor(s) shall provide educational material for on-site workers on ways to reduce emissions exposure during construction of the proposed project as part of a pre-construction advisory that precedes construction of each phase. These materials shall provide recommendations to on-site workers (i.e., future employees of the proposed project) to reduce their exposure while indoors and outdoors. The information shall include recommendations to reduce emissions exposure and examples include the following:

- Keep doors and windows closed when working inside and active construction is taking place.
- Ensure any heating, ventilation, and air-conditioning (HVAC) systems in buildings on the Project Site are operating and fully functional when indoors.
- Ensure any Minimum Efficiency Reporting Value (MERV) 13 (or higher) filter systems in buildings on the Project Site are in working order.
- Avoid standing or taking breaks in the vicinity of idling diesel-powered construction equipment associated with the proposed project.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

Mitigation Measures AQ-1 through AQ-3, HAZ-1, and GHG-1 are required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure AQ-8 is required to further reduce $PM_{2.5}$ exposure during construction. The measure outlines the Air District's enhanced fugitive dust controls, which the Air District (2023:5-5) recommends are implemented when $PM_{2.5}$ exceeds thresholds and would occur near sensitive land uses. Mitigation Measure AQ-9 would provide education and guidance to construction workers on best practicies to reduce exposure to TAC during on-site work. Mitigation Measure TRAN-1 is required to reduce operations $PM_{2.5}$ risks. Collectively, these measures would reduce emissions directly generated by the CEQA Proposed Project and associated receptor exposure and health risks.

Table 3.3-46 presents the maximum mitigated cancer risk and annual $PM_{2.5}$ concentrations for the CEQA Proposed Project (with and without the WRF Option or CUP Option) for off-site and on-site

receptors under the five scenarios in Section 3.3.6.2, *Health Risk Assessment.* Mitigated non-cancer risks (chronic and acute) are not presented because these were determined to be less than significant (see Tables 3.3-43 through 3.3-45). The mitigated analysis accounts for anticipated reductions achieved by Mitigation Measures AQ-1, AQ-3, and TRAN-1. Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or not fully quantified for the reasons discussed under Impact CEQA-AIR-2. While Mitigation Measure AQ-8 would reduce $PM_{2.5}$ in the form of fugitive dust, specific emission reductions are not quantifiable, as advised by the Air District in its CEQA Guidelines and, therefore, are not accounted for in the results presented in Table 3.3-46.

Table 3.3-46. Estimated Mitigated Project-Level Cancer Risk and $PM_{2.5}$ Concentration Results from Modeled Scenarios for the CEQA Proposed Project, CEQA Proposed Project with WRF Option, and CEQA Proposed Project with CUP Option

	Cancer Risk (cases per million)[f]			Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]		
Receptor Type	**CEQA Proposed Project**	**WRF Option**	**CUP Option**	**CEQA Proposed Project**	**WRF Option**	**CUP Option**
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]						
MEIR, existing off-site	3.1	3.1	3.1	0.12	0.17	0.12
MEIR, on-site	NA	NA	NA	NA	NA	NA
Significance Threshold	10.0	10.0	10.0	0.3	0.3	0.3
Exceeds Threshold?	No	No	No	No	No	No
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]						
MEIR, existing off-site	3.7	4.1	3.7	0.12	0.17	0.12
MEIR, on-site	5.5	5.6	5.6	**0.42**	**0.43**	**0.37**
Significance Threshold	10.0	10.0	10.0	0.3	0.3	0.3
Exceeds Threshold?	No	No	No	Yes	Yes	Yes
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]						
MEIR, existing off-site	3.1	3.4	3.1	0.12	0.17	0.12
MEIR, on-site	5.2	5.4	5.2	**0.42**	**0.43**	**0.37**
Significance Threshold	10.0	10.0	10.0	0.3	0.3	0.3
Exceeds Threshold?	No	No	No	Yes	Yes	Yes
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]						
MEIR, existing off-site	8.7	9.9	8.7	0.12	0.17	0.12
MEIR, on-site	9.0	9.8	9.0	**0.42**	**0.43**	**0.37**
Significance Threshold	10.0	10.0	10.0	0.3	0.3	0.3
Exceeds Threshold?	No	No	No	Yes	Yes	Yes
Scenario 5—Exposure to Project Buildout Operations[e]						
MEIR, existing off-site	2.3	2.3	2.3	0.03	0.03	0.03
MEIR, on-site	4.8	4.8	4.8	0.09	0.09	0.04
Significance Threshold	10.0	10.0	10.0	0.3	0.3	0.3
Exceeds Threshold?	No	No	No	No	No	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Table 3.3-46 indicates that while mitigation would reduce cancer risks to less than significant, $PM_{2.5}$ concentrations would remain above the Air District $PM_{2.5}$ threshold during Scenarios 2 through 4, mainly due to construction $PM_{2.5}$ emissions, which are temporary in nature, at future on-site worker receptor locations. Pursuant to the California Building Code, the proposed project building heating, ventilation, and air conditioning (HVAC) units must have an air filtration system with air filters with a designated efficiency equal to or greater than Minimum Efficiency Reporting Value (MERV) 13 when tested in accordance with ASHRAE Standard 52.2.[49] Studies indicate that MERV-13 air filters can remove 75 to 90 percent of indoor particulate matter that is 0.3 microns in diameter or larger.[50, 51] DPM has the peak particle size at around 0.1 microns, indicating that the MERV 13 filters will tend to have a DPM removal efficiency of less than 75 percent. Therefore, a conservative assumption is that that MERV 13 filters would reduce the exposure of on-site receptors to $PM_{2.5}$ concentrations by 60 percent.

The maximum reported mitigated $PM_{2.5}$ concentration occurs under the CEQA Proposed Project with WRF option (see Table 3.3-46). Applying a MERV-13 removal efficiency of 60 percent would reduce the maximum reported annual $PM_{2.5}$ concentration to 0.18 µg/m^3, which is below the Air District's threshold of 0.3. However, HVAC units must be running for the filters to work, and their efficacy is reduced when windows are opened, or workers and residents are outdoors. Mitigation

[49] ICC Digital Codes. 2026. *2025 California Green Building Standards Code, Title 24, Part 11. Chapter 5 Nonresidential Mandatory Measures*. Available: https://codes.iccsafe.org/content/CAGBC2025P1/chapter-5-nonresidential-mandatory-measures. Accessed: April 1, 2026.

[50] American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 2008. *Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size*, 2007. ANSI/ASHRAE Addendum b to Standard 52.2-2007. Available: https://www.ashrae.org/file%20library/technical%20resources/standards%20and%20guidelines/standards%20addenda/52_2_2007_supplement_final.pdf. Accessed: October 9, 2025.

[51] Bay Area Air District. 2016. Planning Healthy Places *A Guidebook for addressing local sources of air pollutants in community planning.* May. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/planning-healthy-places/php_may20_2016-pdf.pdf. Accessed: October 9, 2025.

Measure AQ-9 requires implementation of safe work practices during construction to promote the efficacy of the MERV-13 filters and to minimize exposure to $PM_{2.5}$ emissions. However, it is not possible to ensure complete compliance with such measures and the impact determination does not rely on the 60 percent reduction in PM2.5 from operation of the project's MERV-13 filters.

Given that the full efficacy of project mitigation is not quantified, and benefits of MERV 13 air filters are not included in the analysis, $PM_{2.5}$ concentrations are likely to be lower than presented in Table 3.3-46. Nevertheless, to ensure risks are not underestimated under the most conservative exposure scenario, this analysis concludes that $PM_{2.5}$ exposure would exceed the Air District's threshold even after incorporation of Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1. These measures collectively represent best-available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact is significant and unavoidable.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between the CEQA Proposed Project and the CEQA Proposed Project with the Variant. While liminating residential land uses under the Variant would increase VMT by about 2 percent compared to the CEQA Proposed Project, the Variant would meet the Air District's screening criteria. Thus, it would not contribute to any new localized CO hot spots. This impact is less than significant under CEQA.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

The CEQA Proposed Project with the Variant would include the same TAC and $PM_{2.5}$ sources as the CEQA Proposed Project, with no appreciable difference in maximum emissions during construction (Scenarios 1 through 4), although the locations of some emission sources and receptors would differ. Operational (Scenario 5) TAC and $PM_{2.5}$ emissions associated with the Variant are similar to the CEQA Proposed Project, although the CEQA Proposed Project with the Variant would result in slightly less $PM_{2.5}$ concentration mainly because truck deliveries are no longer concentrated at the Building 12 loading dock. The estimated maximum cancer risk and non-cancer risks under the CEQA Proposed Project with the Variant for all modeled scenarios would be the same as presented in Table 3.3-43 for the CEQA Proposed Project. The maximum estimated $PM_{2.5}$ concentrations would differ slightly, primarily because of the change in distribution of $PM_{2.5}$ emissions with the Variant. The unmitigated annual $PM_{2.5}$ results for the CEQA Proposed Project with the Variant are presented in Table 3.3-47.

Table 3.3-47. Estimated Unmitigated Annual $PM_{2.5}$ Concentrations from Modeled Scenarios for the CEQA Proposed Project with the Variant

Receptor Type	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$) [a]
Scenario 1 – Exposure Starting at Beginning of Construction Phase 1 [a]	
MEIR, existing off-site	**0.35**
MEIR, on-site	NA
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 2 – Exposure Starting at Beginning of Construction Phase 2 [b]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 3 – Exposure Starting at Beginning of Construction Phase 3 [c]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 4 – Exposure Starting at Beginning of Construction Phase 4 [d]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 5 – Exposure to Project Buildout Operations [e]	
MEIR, existing off-site	0.04
MEIR, on-site	0.06
Significance Threshold	0.3
Exceeds Threshold?	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. Refer to Table 3.3-33 for estimated unmitigated cancer and non-cancer risks. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of $PM_{2.5}$ that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] Construction plus operational emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Tables 3.3-46 and 3.3-47 indicate that there would be exceedances of the Air District project-level cancer risk threshold in Scenarios 1, 2, and 4, and exceedances of the Air District $PM_{2.5}$ threshold in Scenarios 1 through 4 for existing off-site residential receptors due to unmitigated project construction and operational activities. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold in Scenarios 2 and 4, and exceedances of the $PM_{2.5}$ threshold in Scenarios 2 through 4 due to unmitigated project construction and operational activities. There would be no exceedances of thresholds during Scenario 5.

Because non-cancer risks (chronic and acute) would not exceed the Air District's thresholds, these risks would be less than significant. However, cancer risk and annual $PM_{2.5}$ concentrations above the Air District's thresholds during construction are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-3. Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 are required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 is required to reduce operations $PM_{2.5}$ risks. Collectively, these measures would reduce emissions directly generated by the proposed project and associated receptor exposure and health risks. As discussed above, estimated cancer and non-cancer health risks would be the same as presented for the CEQA Proposed Project (see Table

3.3-46). Annual $PM_{2.5}$ concentrations would differ slightly. The mitigated annual $PM_{2.5}$ results for the CEQA Proposed Project with the Variant are presented in Table 3.3-48. The mitigated analysis accounts for anticipated reductions achieved by Mitigation Measures AQ-1, AQ-3, and TRAN-1. Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or not fully quantified for the reasons discussed under Impact CEQA-AIR-2. While Mitigation Measure AQ-8 would reduce $PM_{2.5}$ in the form of fugitive dust, specific emission reductions are not quantifiable, as advised by the Air District in its CEQA Guidelines and, therefore, are not accounted for in the results presented in Table 3.3-48. In addition, Mitigation Measure AQ-9 (which would likely reduce PM2.5 to below the Air District's threshold) is not accounted for in the results presented in Table 3.3-48.

Table 3.3-48. Estimated Mitigated Annual $PM_{2.5}$ Concentrations from Modeled Scenarios for the CEQA Proposed Project with the Variant

Receptor Type	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$) [a]
Scenario 1 – Exposure Starting at Beginning of Construction Phase 1 [a]	
MEIR, existing off-site	0.13
MEIR, on-site	NA
Significance Threshold	0.3
Exceeds Threshold?	No
Scenario 2 – Exposure Starting at Beginning of Construction Phase 2 [b]	
MEIR, existing off-site	0.13
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 3 – Exposure Starting at Beginning of Construction Phase 3 [c]	
MEIR, existing off-site	0.13
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 4 – Exposure Starting at Beginning of Construction Phase 4 [d]	
MEIR, existing off-site	0.13
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 5 – Exposure to Project Buildout Operations [e]	
MEIR, existing off-site	0.04
MEIR, on-site	0.06
Significance Threshold	0.3
Exceeds Threshold?	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. Refer to Table 3.3-41 for estimated mitigated cancer and non-cancer risks. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] Construction plus operational emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Tables 3.3-46 and 3.3-48 indicate that while mitigation would reduce cancer risks to less than significant, $PM_{2.5}$ concentrations would remain above the Air District $PM_{2.5}$ threshold during Scenarios 2 through 4 mainly due to construction PM2.5 emissions, which are temporary in nature, at future on-site worker receptor locations.

As discussed above for the CEQA Proposed Project, MERV-13 air filters would be installed in all on-site buildings. Applying a MERV-13 removal efficiency of 60 percent would reduce the maximum reported annual $PM_{2.5}$ concentration for the Variant to 0.15 µg/m^3. HVAC units must be running for the filters to work, and their efficacy is reduced when windows are opened, or workers and are outdoors. Accordingly, this analysis does not account for MERV-13 filters or implementation of Mitigation Measure AQ-9 in the final impact determination.

Given that the full efficacy of project mitigation is not quantified, and benefits of MERV 13 air filters are not included in the analysis, $PM_{2.5}$ concentrations are likely to be lower than presented in Tables 3.3-46 and 3.3-48. Nevertheless, to ensure risks are not underestimated under the most conservative exposure scenario, this analysis concludes that $PM_{2.5}$ exposure would exceed the Air District's threshold even after incorporation of Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1. These measures collectively represent best-available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact is significant and unavoidable.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative. Vehicle traffic and associated mobile-source emissions would be lower under the CEQA Reduced Density Alternative. The CEQA Reduced Density Alternative would meet the Air District's screening criteria and thus would not contribute to any new localized CO hot spots. This impact is less than significant under CEQA.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

The CEQA Reduced Density Alternative would include the same TAC and $PM_{2.5}$ sources as the CEQA Proposed Project, with a small decrease in construction emissions during each phase of construction. Operational TAC and $PM_{2.5}$ emissions associated with the CEQA Reduced Density Alternative are likewise slightly lower due to reduced truck deliveries.

Table 3.3-49 presents the maximum unmitigated health risks for the CEQA Reduced Density Alternative for off-site and on-site receptors under the five scenarios in Section 3.3.6.2, *Health Risk Assessment.* Health risks are compared to the Air District's project-level thresholds to determine significance under CEQA.

Table 3.3-49. Estimated Unmitigated Project-Level Health Risk Results from Modeled Scenarios for the CEQA Reduced Density Alternative

Receptor Type	Cancer Risk (cases per million)[f]	Non-Cancer Chronic Risk[f]	Non-Cancer Acute Risk[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]				
MEIR, existing off-site	**12.4**	0.05	0.01	**0.33**
MEIR, on-site	NA	NA	NA	NA
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]				
MEIR, existing off-site	**13.1**	0.05	0.01	**0.33**
MEIR, on-site	**14.9**	0.10	0.07	**0.90**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]				
MEIR, existing off-site	8.9	0.05	0.01	**0.33**
MEIR, on-site	9.3	0.10	0.07	**0.90**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	Yes
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]				
MEIR, existing off-site	**27.8**	0.05	0.01	**0.33**
MEIR, on-site	**21.2**	0.10	0.07	**0.90**
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	Yes	No	No	Yes
Scenario 5—Exposure to Project Buildout Operations[e]				
MEIR, existing off-site	1.7	< 0.01	0.01	0.02
MEIR, on-site	4.8	< 0.01	0.07	0.03
Significance Threshold	10.0	1.0	1.0	0.3
Exceeds Threshold?	No	No	No	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with **bold and underlined** text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

As shown in Table 3.3-49, there would be exceedances of the Air District project-level cancer risk threshold in Scenarios 1, 2, and 4, and exceedances of the Air District $PM_{2.5}$ threshold in Scenarios 1 through 4 for existing off-site residential receptors due to unmitigated project construction and operational activities. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold in Scenarios 2 and 4, and exceedances of the $PM_{2.5}$ threshold in Scenarios 2 through 4 due to unmitigated project construction and operational activities. There would be no exceedances of thresholds during Scenario 5.

Because non-cancer risks (chronic and acute) would not exceed the Air District's thresholds, these risks would be less than significant. However, cancer risk and annual $PM_{2.5}$ concentrations above the Air District's thresholds during construction are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 are required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 is required to reduce operations $PM_{2.5}$ risks. Collectively, these measures would reduce emissions directly generated by the proposed project and associated receptor exposure and health risks. Table 3.3-50 presents the maximum mitigated cancer risk and annual $PM_{2.5}$ concentrations for the CEQA Reduced Density Alternative for off-site and on-site receptors under the five scenarios in Section 3.3.6.2, *Health Risk Assessment.* Mitigated non-cancer risks (chronic and acute) are not presented because they were determined to be less than significant (Table 3.3-49). The mitigated analysis accounts for anticipated reductions achieved by Mitigation Measures AQ-1, AQ-3, and TRAN-1. Mitigation Measures AQ-2, AQ-8, AQ-9, HAZ-1, and GHG-1 are not quantified or not fully quantified for the reasons discussed above for the CEQA Proposed Project.

Table 3.3-50. Estimated Mitigated Project-Level Cancer Risk and $PM_{2.5}$ Concentration Results from Modeled Scenarios for the CEQA Reduced Density Alternative

Receptor Type	Cancer Risk (cases per million)[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 1—Exposure Starting at Beginning of Construction Phase 1[a]		
MEIR, existing off-site	3.0	0.11
MEIR, on-site	NA	NA
Significance Threshold	10.0	0.3
Exceeds Threshold?	No	No
Scenario 2—Exposure Starting at Beginning of Construction Phase 2[b]		
MEIR, existing off-site	3.6	0.11
MEIR, on-site	5.5	**0.36**
Significance Threshold	10.0	0.3
Exceeds Threshold?	No	Yes
Scenario 3—Exposure Starting at Beginning of Construction Phase 3[c]		
MEIR, existing off-site	3.0	0.11
MEIR, on-site	5.2	**0.36**
Significance Threshold	10.0	0.3
Exceeds Threshold?	No	Yes

Receptor Type	Cancer Risk (cases per million)[f]	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$)[f]
Scenario 4—Exposure Starting at Beginning of Construction Phase 4[d]		
MEIR, existing off-site	8.4	0.11
MEIR, on-site	8.9	**0.36**
Significance Threshold	10.0	0.3
Exceeds Threshold?	No	Yes
Scenario 5—Exposure to Project Buildout Operations[e]		
MEIR, existing off-site	1.7	0.02
MEIR, on-site	4.8	0.03
Significance Threshold	10.0	0.3
Exceeds Threshold?	No	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with **bold and underlined** text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; $\mu g/m^3$ = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] For Scenario 1, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 17 years of operations for an off-site resident. For an off-site worker, the evaluation of cancer risk was modeled for an exposure duration with 13.5 years of construction and 12 years for operations.

[b] For Scenario 2, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years of construction and 21 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 9.5 years and 9.0 years of construction, respectively, and 16 years for operations.

[c] For Scenario 3, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years of construction and 24 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 6.5 years and 6.0 years of construction, respectively, and 19 years for operations.

[d] For Scenario 4, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years of construction and 27 years of operations for an off-site resident. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 3.5 years and 3.0 years of construction, respectively, and 22 years for operations.

[e] For Scenario 5, the evaluation of cancer risk was modeled for an exposure duration with 30 years of operations for off-site and on-site residents. For off-site and on-site workers, the evaluation of cancer risk was modeled for an exposure duration with 25 years for operations. Both residential and worker receptors were conservatively modeled for each scenario (i.e., Scenarios 1 to 4) with an additional 0.5 year of exposure duration (resulting in 25.5 years for workers and 30.5 years for residents) to cover any short period of time where both construction and operation may occur concurrently.

[f] Construction plus operational emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to cancer risk, hazard indices, and annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Table 3.3-50 indicates that while mitigation would reduce cancer risks to less than significant, $PM_{2.5}$ concentrations would remain above the Air District $PM_{2.5}$ threshold during Scenarios 2 through 4.

As discussed above for the CEQA Proposed Project, MERV-13 air filters would be installed in all on-site buildings. Applying a MERV-13 removal efficiency of 60 percent would reduce the maximum reported annual $PM_{2.5}$ concentration for the CEQA Reduced Density Alternative to 0.14 $\mu g/m^3$. HVAC units must be running for the filters to work, and their efficacy is reduced when windows are opened, or workers and residents are outdoors. Accordingly, this analysis does not account for MERV-13 filters or implementation of Mitigation Measure AQ-9in the final impact determination.

Given that the full efficacy of project mitigation is not quantified, and benefits of MERV 13 air filters are not included in the analysis, $PM_{2.5}$ concentrations are likely to be lower than presented in Table

3.3-50. Nevertheless, to ensure risks are not underestimated under the most conservative exposure scenario, this analysis concludes that $PM_{2.5}$ exposure would exceed the Air District's threshold even after incorporation of Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1. These measures collectively represent best-available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact is significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative and the CEQA Reduced Density Alternative with the Variant. Vehicle traffic and associated mobile-source emissions would be lower under the Variant, relative to the CEQA Proposed Project. The Variant would meet the Air District's screening criteria and thus would not contribute to any new localized CO hot spots. This impact is less than significant under CEQA.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

The CEQA Reduced Density Alternative with the Variant would include the same TAC and $PM_{2.5}$ sources as the CEQA Reduced Density Alternative, with no appreciable difference in maximum emissions during construction (Scenarios 1 through 4), although the locations of some emission sources and receptors would differ. Operational (Scenario 5) TAC and $PM_{2.5}$ emissions associated with the Variant are similar to the CEQA Reduced Density Alternative, although the CEQA Reduced Density Alternative with the Variant would result in slightly greater $PM_{2.5}$ emissions. The estimated maximum cancer risk and non-cancer risks under the CEQA Reduced Density Alternative with the Variant for all modeled scenarios would be the same as presented in Table 3.3-49 for the CEQA Reduced Density Alternative. The maximum estimated $PM_{2.5}$ concentrations would differ slightly, primarily because of the increased $PM_{2.5}$ contribution during operations. The unmitigated annual $PM_{2.5}$ results for the CEQA Reduced Density Alternative with the Variant are presented in Table 3.3-51.

Table 3.3-51. Estimated Unmitigated Annual $PM_{2.5}$ Concentrations from Modeled Scenarios for the CEQA Reduced Density Alternative with the Variant

Receptor Type	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$) [a]
Scenario 1 – Exposure Starting at Beginning of Construction Phase 1 [a]	
MEIR, existing off-site	**0.35**
MEIR, on-site	NA
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 2 – Exposure Starting at Beginning of Construction Phase 2 [b]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 3 – Exposure Starting at Beginning of Construction Phase 3 [c]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 4 – Exposure Starting at Beginning of Construction Phase 4 [d]	
MEIR, existing off-site	**0.35**
MEIR, on-site	**0.93**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 5 – Exposure to Project Buildout Operations [e]	
MEIR, existing off-site	0.04
MEIR, on-site	0.06
Significance Threshold	0.3
Exceeds Threshold?	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. Refer to Table 3.3-49 for estimated unmitigated cancer and non-cancer risks. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] Construction plus operational emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Tables 3.3-49 and 3.3-51 that there would be exceedances of the Air District project-level cancer risk threshold in Scenarios 1, 2, and 4, and exceedances of the Air District $PM_{2.5}$ threshold in Scenarios 1 through 4 for existing off-site residential receptors due to unmitigated project construction and operational activities. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold in Scenarios 2 and 4, and exceedances of the $PM_{2.5}$ threshold in Scenarios 2 through 4 due to unmitigated project construction and operational activities. There would be no exceedances of thresholds during Scenario 5.

Because non-cancer risks (chronic and acute) would not exceed the Air District's thresholds, these risks would be less than significant. However, cancer risk and annual $PM_{2.5}$ concentrations above the Air District's thresholds during construction are considered potentially significant under CEQA before mitigation.

Mitigation Measures

The following mitigation measure(s) are required.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

Mitigation Measure AQ-3. Fugitive Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2.

Mitigation Measure AQ-8. Enhanced Dust Control

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-3.

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1 in Section 3.8, *Greenhouse Gas Emissions*, of this joint EIR/ EIS.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 are required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 is required to reduce operations $PM_{2.5}$ risks. Collectively, these measures would reduce emissions directly generated by the proposed project and associated receptor exposure and health risks. As discussed above, estimated cancer and non-cancer risks during Scenarios 1 through 4 would be the same as presented for the CEQA Reduced Density Alternative (Table 3.3-50). Annual $PM_{2.5}$ concentrations would differ slightly, primarily because of the increased $PM_{2.5}$ contribution during operations. The mitigated annual $PM_{2.5}$ results for the CEQA Reduced Density Alternative with the Variant are presented in Table 3.3-52.

The mitigated analysis accounts for anticipated reductions achieved by Mitigation Measures AQ-1, AQ-3, and TRAN-1. Mitigation Measures AQ-2, HAZ-1, and GHG-1 are not quantified or not fully quantified for the reasons discussed under Impact CEQA-AIR-2. While Mitigation Measure AQ-8 would reduce $PM_{2.5}$ in the form of fugitive dust, specific emission reductions are not quantifiable, as advised by the Air District in its CEQA Guidelines. In addition, Mitigation Measure AQ-9 (which would likely reduce PM2.5 to below the Air District's threshold) is not accounted for in the results presented in Table 3.3-48.

Table 3.3-52. Estimated Mitigated Annual $PM_{2.5}$ Concentrations from Modeled Scenarios for the CEQA Reduced Density Alternative with the Variant

Receptor Type	Annual $PM_{2.5}$ Concentrations ($\mu g/m^3$) [a]
Scenario 1 – Exposure Starting at Beginning of Construction Phase 1 [a]	
MEIR, existing off-site	0.12
MEIR, on-site	NA
Significance Threshold	0.3
Exceeds Threshold?	No
Scenario 2 – Exposure Starting at Beginning of Construction Phase 2 [b]	
MEIR, existing off-site	0.12
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 3 – Exposure Starting at Beginning of Construction Phase 3 [c]	
MEIR, existing off-site	0.12
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 4 – Exposure Starting at Beginning of Construction Phase 4 [d]	
MEIR, existing off-site	0.12
MEIR, on-site	**0.39**
Significance Threshold	0.3
Exceeds Threshold?	Yes
Scenario 5 – Exposure to Project Buildout Operations [e]	
MEIR, existing off-site	0.03
MEIR, on-site	0.06
Significance Threshold	0.3
Exceeds Threshold?	No

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: Exceedances of thresholds are indicated with bold and underlined text. Refer to Table 3.3-49 for estimated mitigated cancer and non-cancer risks. As noted in Section 3.3.6.2, *Health Risk Assessment*, the health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

MEIR = Maximally Exposed Individual Receptor; µg/m3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter.

[a] Construction plus operational emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenarios 1 through 4. Operational-only emissions contributions to annual $PM_{2.5}$ concentrations are shown for Scenario 5.

Tables 3.3-50 and 3.3-52 indicate indicate that while mitigation would reduce cancer risks to less than significant, $PM_{2.5}$ concentrations would remain above the Air District $PM_{2.5}$ threshold during Scenarios 2 through 4.

As discussed above for the CEQA Reduced Density Alternative, MERV-13 air filters would be installed in all on-site buildings. Applying a MERV-13 removal efficiency of 60 percent would reduce the maximum reported $PM_{2.5}$ concentration for the Variant to 0.15 µg/m^3. HVAC units must be running for the filters to work, and their efficacy is reduced when windows are opened, or workers and residents are outdoors. Accordingly, this analysis does not account for MERV-13 filters or implementation of Mitigation Measure AQ-9 in the final impact determination.

Given that the full efficacy of project mitigation is not quantified, and benefits of MERV 13 air filters are not included in the analysis, $PM_{2.5}$ concentrations are likely to be lower than presented in Tables 3.3-50 and 3.3-52. Nevertheless, to ensure risks are not underestimated under the most conservative exposure scenario, this analysis concludes that $PM_{2.5}$ exposure would exceed the Air District's threshold even after incorporation of Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1. These measures collectively represent best-available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact is significant and unavoidable.

Impact CEQA-AIR-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

The generation and severity of odors is dependent on a number of factors, including the nature, frequency, and intensity of the source, wind direction, and the location of the receptor(s). Odors rarely cause physical harm, but can cause discomfort, leading to complaints to regulatory agencies.

Sources of odor during construction include diesel exhaust from construction equipment, asphalt paving, and application of architectural coatings. All odors would be localized, generally confined to the immediate area surrounding the construction site and would cease once construction activities have been completed. Construction of the CEQA Proposed Project (with or within the WRF Option or CUP Option) would use typical construction techniques. The equipment odors would be typical of most construction sites, temporary, and localized to the vicinity of the construction work area.

Further, construction activities would be subject to Air District rules that limit the amount of ROG emissions from architectural coatings and asphalt paving material, which can help reduce odors. Accordingly, construction is not anticipated to generate substantial odors that would result in violations of the Air District's odor complaint threshold or adversely affect a substantial number of people. This impact is less than significant under CEQA.

Land uses associated with operational odor complaints typically include landfills, wastewater treatment facilities, and animal processing centers.[52,53] The proposed project would include new academic, research, retail, administrative, parking, and short-term housing uses. None of these uses are associated with long-term sources of substantial odors, as identified by the Air District or CARB. As a result, operation of the CEQA Proposed Project (with or within the WRF Option or CUP Option) would not result in substantial odor impacts on existing or future receptors that would lead to violations of the Air District's odor compliant threshold or adversely affect a substantial number of people. This impact is less than significant under CEQA.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Proposed Project with the Variant. The potential for odor exposure may be reduced under the Variant because there would be no on-site residential receptors. This impact is less than significant under CEQA.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative. The potential for odor exposure may be reduced under the CEQA Reduced Density Alternative because there would be less construction. This impact is less than significant under CEQA.

Mitigation Measures

No mitigation is required for this impact.

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52 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

53 California Air Resources Board. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April. Sacramento, CA.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative compared to the CEQA Reduced Density Alternative with the Variant. The potential for odor exposure may be reduced under the Variant because there would be no on-site residential receptors. This impact is less than significant under CEQA.

Mitigation Measures

No mitigation is required for this impact.

3.3.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.3.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The evaluation of regional air quality impacts is an inherently cumulative approach because criteria pollutants, once emitted, mix into the atmosphere and affect a larger area than any individual project site. Thus, the regional air quality analysis does not consider individual planned projects in the vicinity of the proposed project. Rather, it uses the same thresholds as the project-level thresholds developed by the Air District, which are based on projections of future development compared to existing conditions. Criteria pollutant emissions that exceed air quality thresholds under modeled conditions are considered to reflect the cumulative impacts resulting from contributors within the SFBAAB. Exceedance of project-level thresholds indicates that there would be both a project-level and a cumulative impact.

The evaluation of localized air quality impacts from receptor exposure to CO hot spots and odors likewise considers project-level thresholds. The Air District's CO screening criteria are based on total intersection volumes and thus consider the proposed project's potential to cumulatively contribute to CO hot spots within the transportation network. The Air District's odor threshold is based community complaints against an individual facility, and thus evaluation of this threshold does not require identification of individual cumulative projects in the vicinity of construction and operational activities. Exceedance of the project-level CO and odor thresholds indicates that there would be both a project-level and a cumulative impact.

The evaluation of localized air quality impacts from receptor exposure to TACs considers the proposed project's incremental TAC risk and cumulative TAC risks from sources within 1,000 feet of the proposed project. The Air District considers projects to have a cumulatively considerable TAC impact if they contribute to TAC emissions that, when combined with cumulative sources within

1,000 feet of sensitive receptors, result in excess cancer risk levels of more than 100 in 1 million or a hazard index greater than 10.0.[54]

Impact CEQA-C-AIR-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to regional or local air quality (including receptor exposure to pollution and odors)? (Significant and Unavoidable)

Regional Air Quality

Santa Clara County does not currently attain the NAAQS or CAAQS for ozone and $PM_{2.5}$, or the CAAQS for PM_{10}, reflecting an existing significant cumulative impact. Because impacts from criteria pollutants are cumulative in nature, the project-level and cumulative impact thresholds for the analysis of regional air quality impacts are the same. Thus, the analysis and conclusions presented in Impact CEQA-AIR-2 characterize the cumulative regional air quality impacts of the proposed project. Emissions generated by the proposed project during the construction period would not contribute to a cumulative regional air quality impact under CEQA with mitigation. However, long-term operational emissions of ROG and PM_{10} would be cumulatively considerable under CEQA even after all feasible mitigation. This impact is significant and unavoidable.

Localized Air Quality

As discussed above in Impact CEQA-AIR-3, the proposed project meets the Air District's CO screening criteria and is not expected to contribute to any new localized CO hot spots. Likewise, buildout of the proposed project would not result in new or worsened odors that would affect a substantial number of people. Odors from construction diesel exhaust, paving activities, and architectural coatings, as well as limited operational operations would be similar to those generated by the surrounding environment, which includes adjacent residential, commercial, and aviation land uses, as well as traffic on U.S. 101. There is no existing significant cumulative odor impact from these sources in the vicinity of the Project Site. Accordingly, the proposed project's contribution to localized CO hot spots and odors would not be cumulatively considerable. This impact is less than significant.

Consistent with Air District guidance[55], a cumulative HRA was performed to assess potential health risks to sensitive receptors from exposure to TAC and $PM_{2.5}$ generated by the proposed project and background emission sources within 1,000 feet of the proposed project. The proposed project risk results (see Section 3.3.7) were used to identify the maximally affected receptor location for each of the health endpoints analyzed in the HRA (i.e., cancer risk, non-cancer risk, and annual $PM_{2.5}$ concentration). The greatest project cancer and non-cancer risk and $PM_{2.5}$ concentration is observed at the same receptor location. Cumulative health risks were determined by adding the total contribution from background sources to the modeled project risks at the location. Adding the highest project result to the total background risk provides a worst-case assessment and ensures cumulative health risks in the study area are not underreported.

The results of the cumulative impact assessment are summarized in Table 3.3-53. The proposed project contribution includes implementation of Mitigation Measures AQ-1, AQ-3, and TRAN-1 (Mitigation Measures AQ-2, AQ-8, AQ-9, GHG-1 are not quantified or not fully quantified).

[54] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

[55] Ibid.

Table 3.3-53. Maximum Cumulative Health Risks at the Maximally Affected Receptor [a]

Source	Cancer Risk (per million)	Non-Cancer Chronic Hazard Index	Non-Cancer Acute Hazard Index	Annual $PM_{2.5}$ Concentration (µg/m3)
Background				
Stationary sources [b]	58	0.19	<0.01	4.36
Roadway sources	9	0.03	NA	0.25
Total	**67**	**0.22**	**<0.01**	**4.61**
Project [a]				
CEQA Proposed Project	9	0.03	0.07	0.42
CEQA Proposed Project with WRF Option	10	0.03	0.07	0.44
CEQA Proposed Project with CUP Option	9	0.03	0.07	0.37
CEQA Proposed Project with Variant	9	0.03	0.07	0.39
CEQA Reduced Density Alternative	9	0.03	0.07	0.36
CEQA Reduced Density Alternative with Variant	9	0.03	0.07	0.39
Total Cumulative [c]				
CEQA Proposed Project	76	0.25	0.07	5.03
CEQA Proposed Project with WRF Option	77	0.25	0.07	5.04
CEQA Proposed Project with CUP Option	76	0.25	0.07	4.98
CEQA Proposed Project with Variant	76	0.25	0.07	5.00
CEQA Reduced Density Alternative	76	0.25	0.07	4.97
CEQA Reduced Density Alternative with Variant	76	0.25	0.07	5.00
Significance Threshold	100	10	10	0.8
Exceeds threshold?	**No**	**No**	**No**	**Yes**

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

$PM_{2.5}$ = particulate matter with a diameter of 2.5 microns or less; µg/m3 = micrograms per cubic meter

Note: Exceedances of thresholds are indicated with underlined text. As noted in Section 3.3.6.2, *Health Risk Assessment*, the project-level health risk assessment modeling accounts for mobile source emissions of PM2.5 that have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a] Represents the receptor with the highest project cancer, non-cancer risk, and $PM_{2.5}$ risk (future on-site, Scenarios 1 through 4). The receptor is located at UTM x, y: 583597.32, 4140578.25.

[b] Contribution from Air District permitted facilities and existing and planned sources on the NASA Ames property (see Table 3.3-5). Note that the background risks presented in this table may not match what is presented in Table 3.3-5. This is because Table 3.3-5 presents the background risk at the facility fenceline, whereas this table presents the combined background risk at the modeled receptor location. Air District Facility number 550-REM contributes the majority of Stationary Source cancer risk (30 per one million) and $PM_{2.5}$ concentration (4.4 ug/m^3). 550-REM represents the combined emissions of 37 generators rather than a single unit, so the modeled health risks will naturally appear higher than the individually located units. The higher impact is therefore a modeling artifact of the aggregation rather than an indication that any single generator within that group has unusually high emissions or parameters.

[c] Total background sources plus project. Values may not add due to rounding.

As shown in Table 3.3-53, background sources in combination with the proposed project would exceed the Air District's cumulative $PM_{2.5}$ concentration threshold. Background sources result in a $PM_{2.5}$ concentration above the Air District's cumulative threshold of 0.8 µg/m^3. The proposed project would contribute an additional 0.36 to 0.44 µg/m^3, depending on the alternative, resulting in a total maximum concentration of 4.97 to 5.04 µg/m^3.

As discussed in Section 3.3.7, buildings constructed at the Project Site are required to install MERV-13 air filters. Applying a MERV-13 removal efficiency of 60 percent would reduce the maximum annual $PM_{2.5}$ concentration to between 1.99 to 2.02 µg/m^{3}and would be above the Air District's cumulative threshold of 0.8 µg/m^3 However, HVAC units must be running for the filters to work, and their efficacy is reduced when windows are opened, or workers and residents are outdoors. Even with implementation of Mitigation Measure AQ-9, effective operation of the HVAC system cannot be guaranteed, and accordingly, this analysis does not account for MERV-13 benefits. Cumulative $PM_{2.5}$ concentrations at the maximally affected receptor location would be cumulatively considerable. This impact is significant and unavoidable and the proposed project's contribution to the impact cumulatively considerable.

3.4 Biological Resources

3.4.1 Introduction

This section evaluates the potential impacts on plant, wildlife, and wetland resources that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical studies prepared for the project.

- *Berkeley Space Center at NASA Research Park Biological Resources Technical Report* (Biological Resources Technical Report) prepared by ICF, April 2026 (Appendix 3.4-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])
- *Berkeley Space Center at NASA Research Park Aquatic Resources Delineation Report* (Aquatic Resources Delineation) prepared by ICF, April 2026 (Appendix 3.4-2 of this joint EIR/EIS)

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. NOP/NOI comments pertaining to biological resources include a recommendation to protect biological resources and minimize wildlife habitat degradation. This issue is addressed below in Section 3.4.7, *Impacts and Mitigation Measures*. In addition, the regional manager of the California Department of Fish and Wildlife (CDFW), Bay Delta Region, recommended the following:

- Within *Environmental Setting* section, include a full list or a table that notes the species' common name, scientific name, state/federal listing status, and habitat type preference and provides a determination regarding the potential to occur for all special-status species;
- Conduct baseline habitat assessments,
- Use California Natural Diversity Database (CNDDB) and previous studies performed in the area
- Determine if the Project Site contains special-status species or has the potential to support special-status species and if an incidental take permit (ITP) may be required
- Provide recommended mitigation for nesting birds
- Provide recommended mitigation for roosting bats
- Provide recommended mitigation measure for Crotch's bumble bee
- Provide recommended mitigation measure for western burrowing owl

These recommendations are addressed in detail in the Biological Resources Technical Report, and applicable mitigation measures are included under Impact CEQA-BIO-1.

3.4.2 Affected Environment/Environmental Setting

For the purposes of analyzing biological resources, the study area is defined as the Limits of Work plus a 50-foot buffer ("Biological Resources Study Area") to encompass all areas in which temporary or permanent impacts could occur for construction of the project components and in which indirect effects on biological resources could result. Figure 3.4-1 shows the biological resources in the Biological Resources Study Area.

Regional Setting

The proposed project is located on the San Francisco Peninsula in the Central Coast subregion of the California Floristic Province (Jepson Flora Project 2026). This region of California generally experiences wet, cool winters and dry, warm summers. The proposed project is approximately 2.7 mile south of the open waters of San Francisco Bay on relatively flat ground, with elevations ranging from approximately 5 to 36 feet above mean sea level. There are two soil map units in the Biological Resources Study Area —Urbanland-Hangerone complex, 0 to 2 percent slopes, drained, and Embarcadero silty clay loam, drained, 0 to 2 percent slopes.

Project Site

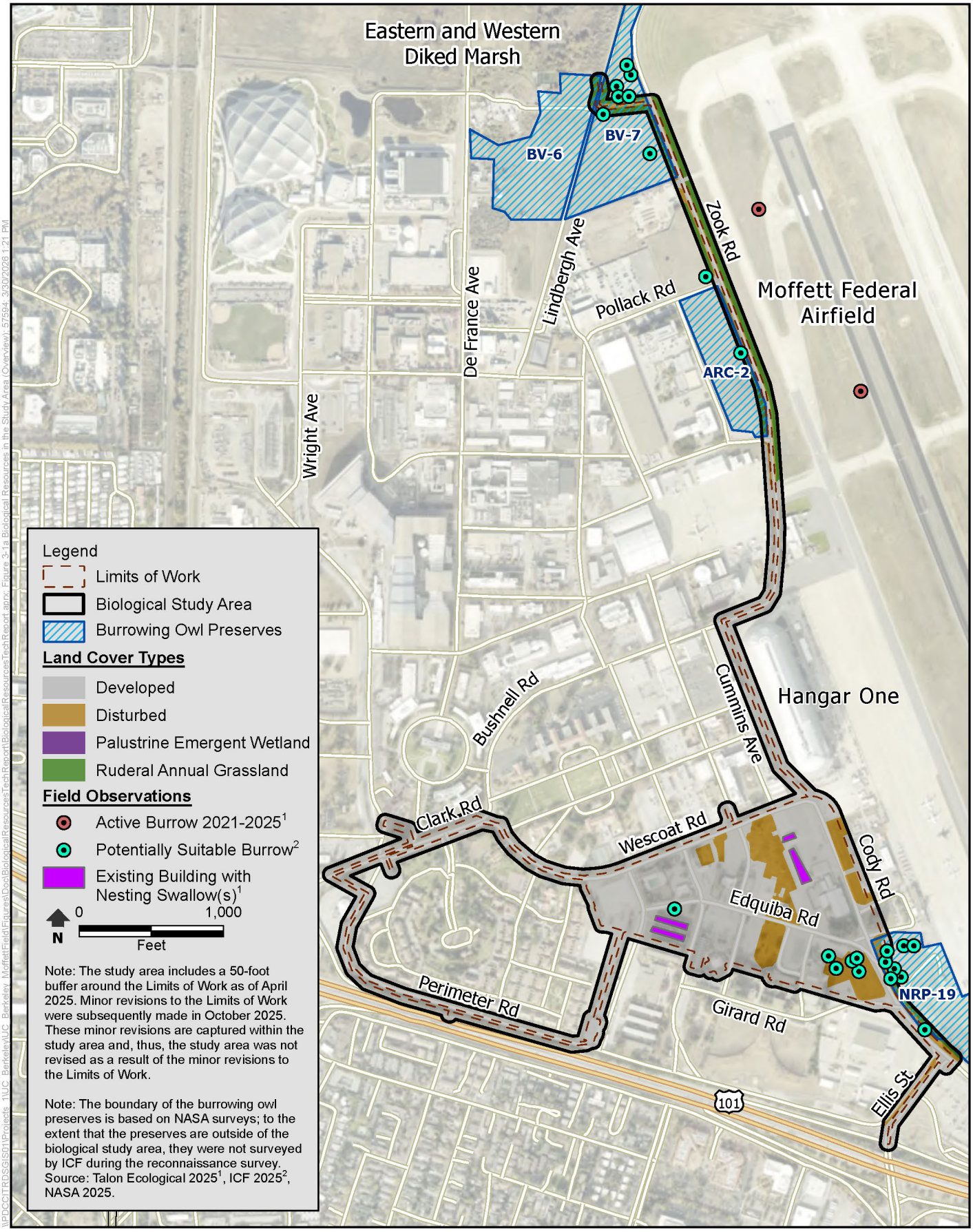
The Project Site is on federal land within the National Aeronautics and Space Administration's Ames Research Center (NASA ARC), an approximately 2,000-acre facility between U.S. 101 and the southwest edge of San Francisco Bay in Santa Clara County, California. Mountain View borders NASA ARC to the north and southwest, and Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of San Francisco and 8 miles north of San José.

The approximately 45-acre Limits of Work comprises the approximately 39-acre Project Site and approximately 6 acres of off-site areas (Off-Site Areas) where utility improvements and building demolition would occur. The Off-Site Areas are primarily within NASA ARC. The Project Site is relatively flat, with existing grades gradually sloping from south to north. The site is currently covered with a substantial amount of impervious hardscape. This includes roads, surface parking lots, streets, and paths, which, in total, cover approximately 70 percent of the site. Existing landscaping includes approximately 245 trees, which are located throughout the Project Site. Additional land cover within the Biological Resources Study Area includes native perennial grassland, ruderal annual grassland, and according to the Aquatic Resource Delineation Report 0.014 acre of palustrine emergent wetland. Disturbed areas such as vacant lots and road fringes with bare soil or low vegetation cover due to management [spraying] or excessive anthropogenic disturbance, are also present.

Critical Habitat

Critical habitat refers to areas designated by the U.S. Fish and Wildlife Service (USFWS) that include physical or biological features essential for the conservation of species listed as threatened or endangered under the Endangered Species Act (ESA). When a species is proposed for listing under the ESA, USFWS considers whether there are certain areas essential to the conservation of the species. There is no critical habitat within the Biological Resources Study Area.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



\\PDC\TRDSGIS01\Projects_1\UC_Berkeley\UC_Berkeley_MoffettField\Figures\DocBiological\ResourcesTechReport\BiologicalResourcesTechReport.aprx: Figure 3.4-1a Biological Resources in the Study Area (Overview) 57594 3/30/2026 1:21 PM

Figure 3.4-1a
Biological Resources in the Study Area (Overview)
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

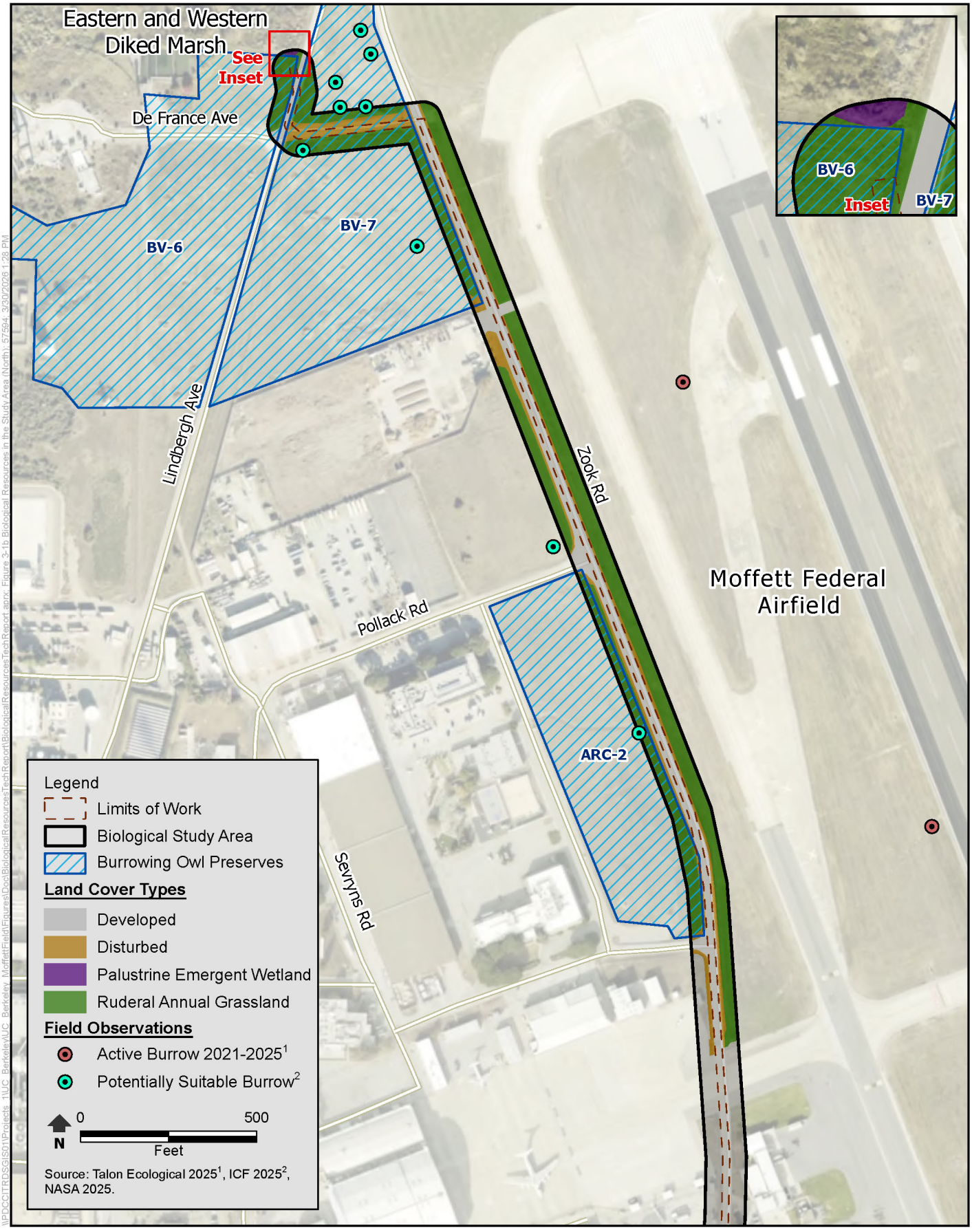


Figure 3.4-1b
Biological Resources in the Study Area (North)
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

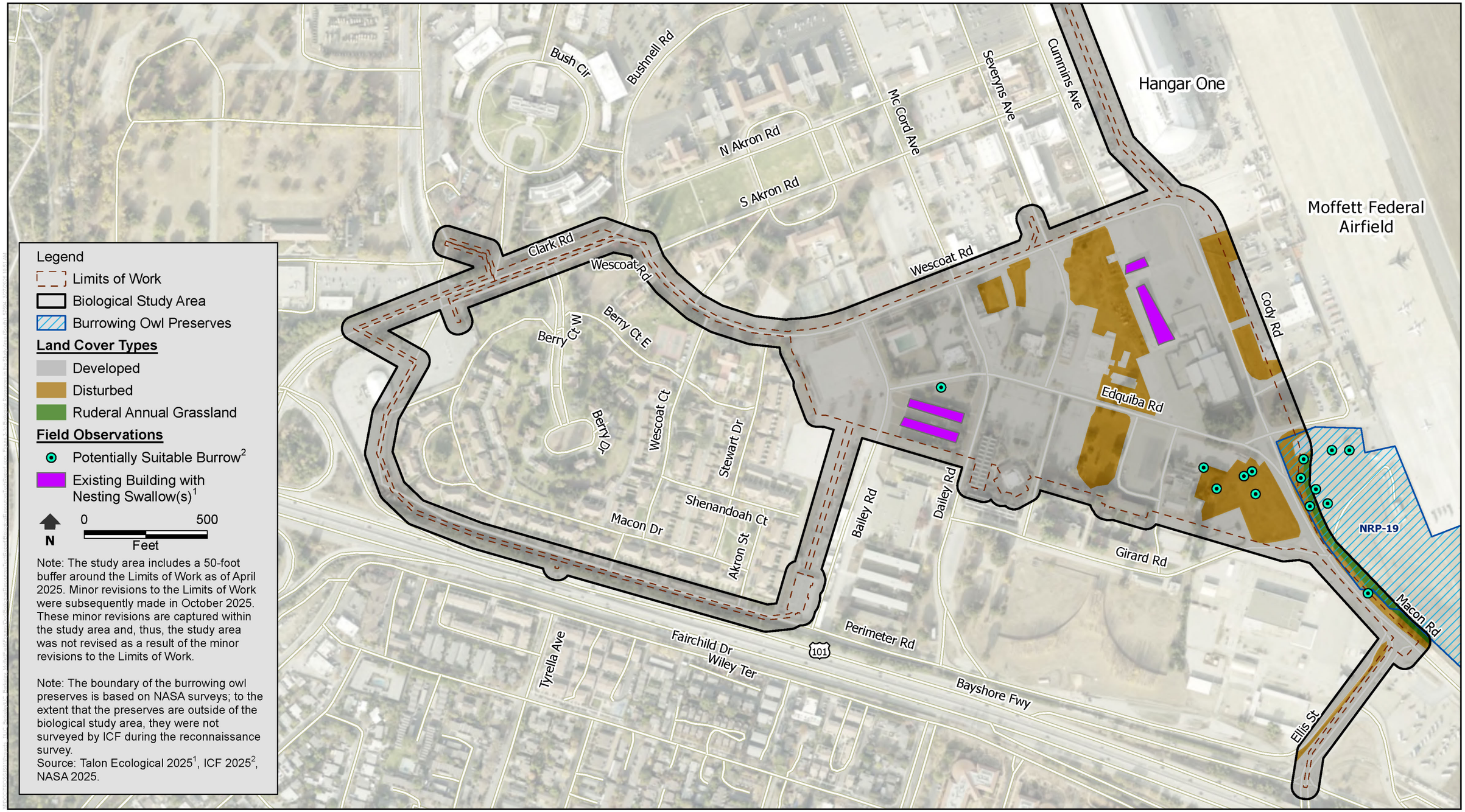


Figure 3.4-1c
Biological Resources in the Study Area (South)
Berkeley Space Center at NASA Research Park

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Special-Status Plant Species

In response to queries of the California Native Plant Society online Inventory of Rare and Endangered Plants of California and a search of the U.S. Geological Survey (USGS) Mountain View 7.5-minute quadrangle, CNDDB records from a 2-mile radius around the Limits of Work, and the USFWS Information for Planning and Consultation (IPaC) database, seven special-status plant species were determined to have the potential to occur in the Biological Resources Study Area. Of these, five were considered absent due to the lack of suitable habitat: California androsace (*Androsace elongata* ssp*. acuta*; California Rare Plant Rank [CRPR] 4.2), Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp. *palustre*; CRPR 1B.2), Santa Clara red ribbons (*Clarkia concinna* ssp*. automixa*; CRPR 4.3), Hoover's button-celery (*Eryngium aristulatum* var*. hooveri*; CRPR 1B.1), and California seablite (*Suaeda californica*; federal endangered, CRPR 1B.1). Alkali milk vetch (*Astragalus tener* var*. tener*; CRPR 1B.2) has low potential to occur, and Congdon's tarplant (*Centromadia parryi* ssp*. congdonii*; CRPR 1B.1) has high potential to occur in the ruderal grasslands, based on habitat requirements and specimen records in the vicinity.

Special-Status Wildlife Species

Fourteen special-status wildlife species were determined to have moderate to high potential to occur in the Biological Resources Study Area following CNDDB and USFWS IPaC database searches and observations during biological surveys. The wildlife species consist of Crotch's bumble bee (*Bombus crotchii*; California ESA [CESA] candidate), monarch butterfly (*Danaus plexippus*; federal ESA proposed), northwestern pond turtle (*Actinemys marmorata*; federal ESA proposed), snowy egret (*Egretta thula*), northern harrier (*Circus cyaneus*; California Species of Special Concern [SSC], USFWS Bird of Conservation Concern [BCC]), white-tailed kite (*Elanus leucurus*; California Fully Protected [FP]), California Ridgway's rail (*Rallus longirostris obsoletus*; federal ESA, CESA endangered, California FP), western burrowing owl (*Athene cunicularia hypugaea*; CESA candidate, California SSC, USFWS BCC), Alameda song sparrow (*Melospiza melodia pusillula*; California SSC, USFWS BCC), tricolored blackbird (*Agelaius tricolor*; CESA threatened, USFWS BCC), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*; California SSC, USFWS BCC), pallid bat (*Antrozous pallidus*; California SSC, Western Bat Working Group [WBWG] priority species), Townsend's big-eared bat (*Corynorhinus townsendii*; California SSC, WBWG), and hoary bat (*Lasiurus cinereus*; WBWG).

Sensitive Natural Communities

Sensitive natural communities are those natural communities with limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects. Sensitive natural communities are part of California's Natural Heritage Program, as maintained in the CNDDB; impact assessments are required under the California Endangered Species Act (CESA) and the California Environmental Quality Act (CEQA) Guidelines. Natural communities with ranks of S1 to S3 are considered sensitive. Certain types of waters of the State and waters of the United States are also considered sensitive natural communities. Sensitive natural communities in the Biological Resources Study Area include the native perennial grassland (S3) and the palustrine emergent wetland (S3). These features are 47 feet and 33 feet outside of the Limits of Work, respectively.

Wetland and Other Waters of the United States and Waters of the State

One palustrine emergent wetland that was dominated by creeping wildrye (*Elymus triticoides*) and Himalayan blackberry (*Rubus armeniacus*) was mapped within the Biological Resources Study Area. This feature is part of a larger stormwater retention pond that does not share a surface connection with any other body of water. The palustrine emergent wetland is 33 feet outside of the Limits of Work.

Wildlife Corridors-

Wildlife corridors are described as pathways or habitat linkages that connect discrete areas of natural open space that would otherwise be separated or fragmented by topography, changes in vegetation, or other natural or man-made obstacles, such as urbanization. The Biological Resources Study Area is located along the Pacific Flyway, an important route between breeding and wintering grounds for many migratory birds. One habitat linkage, the Bay Wetlands Missing Linkage, extends from just north and west of the Biological Resources Study Area northward along the west side of San Francisco Bay to just north of the Candlestick Point State Recreation Area. However, this linkage does not overlap the Biological Resources Study Area and would not be affected by the project.

Migratory Birds

Migratory birds, including raptors, have the potential to nest in the scattered trees and shrubs present in the Biological Resources Study Area as well as on the ground within and in the vicinity of the Biological Resources Study Area. Although migratory bird species are not considered special-status wildlife species, their occupied nests and eggs are protected by California Fish and Game Code Sections 3503 and 3503.5 and the Migratory Bird Treaty Act (MBTA). The generally accepted nesting season extends from February 1 through September 30.

Roosting Bats

Bats have the potential to occupy buildings and trees in the Biological Resources Study Area while roosting throughout the year; bats have also been recorded using cliff and barn swallow nests year-round[1]. Take of nongame mammals, including bats, is prohibited under California Fish and Game Code Section 4150, except as provided elsewhere in the California Fish and Game Code. Maternity season for bats typically extends from April to May through August to October.

Habitat Conservation Plans

Habitat conservation plans (HCPs) are required as part of an application for an ITP under Section 10 of the ESA. Although the proposed project is not subject to HCPs, an analysis of potential impacts on habitat conservation plans is included, in accordance with Appendix G of the State of California (State) CEQA Guidelines, to evaluate the proposed project's potential to conflict with the provisions of an applicable adopted HCP, Natural Community Conservation Plan (NCCP),[2] or other approved local, regional, or state HCP. The Project Site is within the Pacific Gas and Electric (PG&E) Bay Area Operations and Maintenance Habitat Conservation Plan, the scope of which is limited to operations

1 California Bat Working Group 2022. *Bats in Swallow Nests*. Revised: April 4, 2022. Available: https://www.calbatwg.org/resources/.https://www.calbatwg.org/resources/. Accessed: June 12, 2025.

2 NCCPs identify the measures necessary to conserve and manage natural biological diversity within a planning area while allowing compatible and appropriate economic development, growth, and other human uses.

and maintenance of PG&E facilities in nine San Francisco Bay Area counties: Sonoma, Marin, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco.

The Biological Resource Study Area is approximately 7 miles north and west of the area covered by the Santa Clara Valley HCP. The proposed project is not a covered activity under the Santa Clara Valley HCP; however, the Limits of Work overlap with lands at Moffett Federal Airfield identified for burrowing owl management under the Santa Clara Valley HCP/NCCP.[3] The Santa Clara Valley HCP/NCCP is currently being updated in response to the October 10, 2024, decision by the California Fish and Game Commission to grant burrowing owl "candidate" species status under CESA.

3.4.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

Plans, policies, and regulations considered in the analysis of the project's impacts related to biological resources are identified in the Biological Resources Technical Report (Appendix 3.4-1 of this joint EIR/EIS). A list of plans, policies, and regulations considered in the analysis is provided below.

- Endangered Species Act
- Migratory Bird Treaty Act
- Executive Order 13186
- Executive Order (EO) 13186, 13112, and 11990
- Section 401 and 404 of the Clean Water Act
- California Endangered Species Act
- California Fish and Game Code

[3] Santa Clara Valley Habitat Agency. 2012. *Final Santa Clara Valley Habitat Plan*. Accessed June. http://scvhabitatagency.org/178/Santa-Clara-Valley-Habitat-Plan.

- California Native Plant Protection Act
- Section 401 of the Clean Water Act
- Porter-Cologne Water Quality Control Act
- McAteer-Petris Act
- California Green Building Standards Code Non-Residential Voluntary Measure A5.107—Bird-Friendly Building Design
- Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan
- PG&E Bay Operations and Maintenance Habitat Conservation Plan
- Santa Clara County Heritage Tree Ordinance
- NASA Ames Development Plan

3.4.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on biological resources in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on biological resources in accordance with NEPA is provided separately in Section 4.5.4, *Biological Resources*, in Chapter 4, *Environmental Impact Statement*.

3.4.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on biological resources if it would result in any of the following conditions.

Would the project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS?
- Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

- Conflict with the provisions of an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to biological resources?

3.4.6 Methods for Analysis

The methods for the analysis of impacts on biological resources are based on professional standards and information cited throughout the Biological Resources Technical Report (Appendix 3.4-1 of this joint EIR/EIS). The key impacts were identified and evaluated according to the environmental characteristics of the area for the CEQA Proposed Project and the expected magnitude, intensity, and duration of activities related to construction and operation of the proposed project and alternatives.

Direct impacts are those effects that are directly caused by project construction and operation (even if it takes time for the resulting effect to develop). Indirect impacts are those that occur either later in time or at a distance from the project location but are reasonably foreseeable.

Permanent direct impacts on biological resources were quantified using the estimated amount of land cover that would be converted because of construction of new facilities and operation of the project (i.e., use of project facilities and associated utilities and infrastructure). Facility maintenance during project operations would include periodic maintenance for buildings, landscaping, the internal roadway network, and utility infrastructure. Scheduled maintenance activities would be infrequent and would occur in the early evening or morning hours, if possible, to avoid interfering with the project's peak hours of occupancy.

Impacts on biological resources identified within the Biological Resources Study Area were determined with use of geographic information system (GIS) software. The Limits of Work was overlaid on vegetation community data to quantify impacts associated with construction and operation of the proposed project. For construction of the stormwater line for the eastern diked marsh trunk main, the construction area was assumed to be completely within existing roads, with the exception of a 0.01-acre area for the northernmost 40 feet of the outfall.

The wildlife connectivity assessment assembled current data and information related to wildlife movement within the vicinity of the Biological Resources Study Area to qualitatively assess when and where the project could interfere with the movement of any native resident or migratory terrestrial wildlife species.

The CEQA Proposed Project and the CEQA Reduced Density Alternative represent differences in land use but would occur within the same footprints. Therefore, the impacts on biological resources would be the same under the CEQA Proposed Project and the CEQA Reduced Density Alternatives with and without the Variant.

3.4.7 Impacts Not Evaluated in Detail

Conflict with Local Policies or Ordinances Protecting Biological Resources

The Biological Resources Study Area is federally owned land; compliance with the Santa Clara County Heritage Tree Ordinance is not required. The Project Proponent has provided an analysis of the project's adherence to the requirements of the Santa Clara County Heritage Tree Ordinance in

Appendix 3.4-1; this information is provided for informational purposes. The proposed project would not conflict with local policies or ordinances protecting biological resources, resulting in no impact. This topic is not evaluated further.

3.4.8 Impacts and Mitigation Measures

***Impact CEQA-BIO-1*: *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-2. Preconstruction Surveys for Special-Status Species BIO-3. Exclusion Fencing BIO-4. Alkali Milk-Vetch and Congdon's Tarplant BIO-5. Monarch Butterfly Breeding Habitat BIO-6. Crotch's Bumble Bee BIO-7. Herbicide and Pesticide Use BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat BIO-12. Nesting Birds BIO-13. Roosting Bats	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Effects on Special-Status Plants

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project would have a potentially significant impact on special-status plants because of the permanent and temporary loss of habitat and potential for injury and mortality.

Effects on Special-Status Wildlife

Impacts on Monarch Butterfly and Crotch's Bumble Bee

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project could result in significant impacts on monarch butterfly because of the permanent and temporary loss of habitat, potential for injury and mortality, and disruption of normal behaviors. Although monarch butterflies do not overwinter at the Project Site, suitable nectar resources are present. Therefore, the species has moderate to high potential to occur. Therefore, impacts on the monarch butterfly would be potentially significant before mitigation.

As described in Appendix 3.4-1 Section 5.3.2.1, construction and operation of the CEQA Proposed Project could result in impacts on Crotch's bumble bee because of the permanent and temporary loss of habitat, potential for injury and mortality, and the disruption of normal behaviors. Therefore, impacts on the Crotch's bumble bee would be potentially significant before mitigation.

Impacts on Northwestern Pond Turtle

As described in Appendix 3.4-1, Section 5.3.2.1, construction of the CEQA Proposed Project could result in impacts on northwestern pond turtle because of the potenital for injury and mortality and the disruption of normal behaviors. Therefore, impacts on the northwestern pond turtle would be potentially significant before mitigation.

Impacts on Burrowing Owl and Other Special-Status Birds

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project could result in significant impacts on burrowing owl because of the permanent and temporary loss of habitat, potential for injury and mortality, and disruption of normal behaviors. Therefore, the CEQA Proposed Project could have a significant impact on burrowing owl.

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project could result in impacts on other special-status birds because of the potenital for injury and mortality and the disruption of normal behaviors during the breeding season (approximately February 1 through August 31). In addition, some special-status birds (e.g., white-tailed kite, tricolored blackbird, northern harrier, Ridgway's rail, snowy egret) may forage in the ruderal grassland or emergent marsh. Therefore, impacts on other special-status birds would be potentially significant before mitigation. Potential bird collisions with buildings are described below under *Impacts on Terrestrial Wildlife Movement.*

Impacts on Special-Status Bats

As described in Appendix 3.4-1, construction under the CEQA Proposed Project could result in significant impacts on special-status bats because of the permanent and temporary loss of habitat,

potential for injury and mortality, and disruption of normal behaviors. Therefore, impacts on special-status bats would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

All field management and construction personnel shall be trained by a qualified biologist experienced in construction monitoring as to the importance of protecting sensitive natural resources (e.g., special-status plants, birds, and mammals as well as designated critical and/or suitable habitats for these species) prior to any ground-disturbing activity for each construction phase. Preconstruction training shall be conducted so that construction personnel are aware of their responsibilities and the importance of compliance. All trainees shall be required to sign a sheet, indicating their attendance and completion of environmental training. Construction personnel shall be educated on the types of sensitive resources in the project area and the measures required to avoid and minimize impacts on these resources. Materials covered in the training program shall include environmental rules and regulations, along with specific site requirements to limit activities to approved work areas; timing restrictions; and instructions regarding avoidance of sensitive resource areas. In general, the training shall include the following components:

- A review of the special-status species and sensitive habitats that could be found in work areas, including known plant populations, bird nests or bat roosts, if present, and the location of burrowing owl preserves.
- Measures to avoid or minimize impacts on special-status species and their habitats.
- A review of all conditions and requirements of environmental permits, reports, and plans.
- Consequences for violations of the laws and regulations protecting resources.
- Boundaries of the work area.
- Exclusion and construction fencing methods and staking methods to protect resources.
- Roles and responsibilities, including an explanation regarding the authority of biological monitors to stop work, as required by permits and/or project approvals.
- What to do when special-status species are encountered (including dead, injured, stressed, or entrapped individuals) in work areas.

Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species

Prior to the start of construction in a work area for the current construction phase, preconstruction surveys shall be conducted for special-status plant and wildlife species by a qualified biologist(s) to inform implementation of avoidance and compensation measures that may be required if special-status species are observed.

Alkali milk-vetch and Congdon's tarplant surveys shall be required in suitable annual grassland habitat within 100 feet of work areas for the current construction phase. The purpose of the surveys is to inform implementation of the avoidance and compensation measures described below if alkali milk-vetch or Congdon's tarplant are observed. Surveys shall be initiated during the identifiable period of the year that precedes construction of each phase and be consistent

with the methods described in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*.[4]

Surveys for special-status wildlife species (Crotch's bumble bee, monarch butterfly, northwestern pond turtle, snowy egret, northern harrier, white-tailed kite, California Ridgway's rail, western burrowing owl, Alameda song sparrow, tricolored blackbird, saltmarsh common yellowthroat, pallid bat, Townsend's big-eared bat, and hoary bat) shall be conducted consistent with available established survey protocols for each species, such as in *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species*,[5] *Staff Report on Burrowing Owl Mitigation*,[6] and *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2019).

Mitigation Measure BIO-3. Exclusion Fencing

Prior to the start of construction in a work area for the current construction phase, the Project Proponent or its contractor(s) shall install high-visibility exclusion fencing and erosion control measures prior to any ground disturbance within 50 feet of environmentally sensitive areas (i.e., potential emergent wetlands, native perennial grassland, special-status species' habitats) under the guidance of a qualified biologist. The fencing shall be installed around the perimeter of native perennial grassland, potential emergent wetlands (potential habitat for Ridgway's rail and northwestern pond turtle), and burrowing owl preserves. Flagging or other visual barriers and/or signs may be installed in place of fencing (e.g. in the case of burrowing owl preserves to prevent perching on fence stakes by avian predators). The contractor, under the supervision of a qualified biologist, shall erect and maintain the exclusion fencing for the duration of the construction activity in that work area. Fencing and erosion control measures shall be inspected and maintained daily by the construction foreman until completion of the construction activity. Status of the fencing and erosion control measures shall also be verified and documented at least once a week by a biological monitor. Fencing shall be removed upon completion of construction activities in that work area and prior to demobilization. Activity exclusion zones for sensitive natural communities shall be a minimum of 50 feet; the zones shall be established around each sensitive natural community, the boundaries of which shall be clearly marked with construction exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if construction-related disturbances shall not occur within 250 feet of the sensitive natural community. The size of activity exclusion zones may be reduced below 50 feet through consultation with a qualified biologist if construction activities are conducted in the presence of a biological monitor.

Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant

In the event that avoidance of alkali milk-vetch or Congdon's tarplant is not feasible, seeds of alkali milk-vetch and/or Congdon's tarplant shall be collected by a qualified biologist with experience collecting native plant seeds prior to the start of construction in a work area for the

4 California Department of Fish and Wildlife. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline

5 California Department of Fish and Wildlife. 2023. *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inline. Accessed: July 14, 2023.

6 California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7. Sacramento, CA. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843. Accessed: June 13, 2025.

current construction phase. Seeds shall be stored and redistributed after the current construction phase is completed. Include the redistributed seeds in the planting palette for on-site restoration of temporarily disturbed grassland and/or the landscape design for open space, as described in the Development Guidelines.

Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat

Prior to the start of construction in a work area for the current construction phase, botanists shall identify and map locations of milkweed (monarch butterfly breeding habitat). If the Limits of Work overlaps with milkweed plants, milkweed plants shall be removed outside of the breeding season for monarch butterfly (February 15 through October 15). The Project Proponent shall compensate for the permanent loss of milkweed by planting native milkweed in the landscape design for open space at a ratio of 1:1 (one native milkweed planted for each milkweed plant removed) and by including native nectar plants for monarch butterfly such as goldenrods (*Solidago* spp.), asters (*Symphyotrichum* spp.; *Eurybia* spp.), coyotebrush (*Baccharis pilularis*), nettleleaf giant hyssop (*Agastache urticifolia*), yarrow (*Achillea millefolium*), coastal sand verbena (*Abronia latifolia*), bluedicks (*Dichelostemma capitatum*), seaside fleabane (*Erigeron glaucus*), coyote mint (*Monardella villosa*), gumplant (*Grindelia camporum*), and sunflowers (*Helianthus* spp.), among others[7] in planting palettes for on-site restoration of temporarily disturbed grassland and/or the landscape design for open space, as described in the Development Guidelines.

Mitigation Measure BIO-6. Crotch's Bumble Bee

Prior to any phase of construction and as long as the species is considered a candidate for listing under the California Endangered Species Act (CESA) or in the event that they become listed under CESA, a qualified biologist shall assess the work area through a desktop analysis and land cover assessment through site visits to determine whether the work area for the current phase of construction and immediately surrounding landscape within 50 feet has the potential to contain potential habitat for Crotch's bumble bees. This analysis shall identify whether the work area is a developed area with no landscaping (i.e., contains buildings; paved roads, sidewalks or parking lots; other built infrastructure; or mowed and irrigated lawns) or contains open grassland, ornamental landscaping or scrub habitats that could be potential Crotch's bumble bee foraging, nesting, or overwintering habitat.

If habitat suitable for Crotch's bumble bee is determined not to be present within the work area for the construction phase, then further measures would not be required.

If the work area contains suitable Crotch's bumble bee habitat, then the following measures shall be implemented prior to construction of the phase:

- Pre-construction surveys for Crotch's bumble bee and nests shall be conducted within all suitable habitat prior to initial ground-disturbing activities for the current construction phase. Surveys shall follow the survey methodologies set out in the CDFW *Survey Considerations for CESA Candidate Bumble Bee*.[8] The surveys can be phased with project buildout. The purpose of

7 Xerces Society for Invertebrate Conservation. 2025. Monarch Nectar Plants: California, Publication Serial Number 19-046. Version Number 01. Available: https://xerces.org/publications/plant-lists/monarch-nectar-plants-california. Accessed: April 9, 2026.

8 California Department of Fish and Wildlife. 2023. *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species.*

this survey shall be to identify active nest colonies inside of and within 50 feet of permanent and temporary impact areas. If Crotch's bumble bees are not detected during the pre-construction survey, no additional measures are required.

- If active Crotch's bumble bee nests are present within the Limits of Work or a 50-foot buffer surrounding the Limits of Work, an appropriate no disturbance buffer zone shall be established around the nest to reduce the risk of disturbance or accidental take. The buffer shall provide at least 50 feet of clearance around nest entrances.
    - If establishment of a no-work buffer is feasible, construction activities shall not occur within the no-work buffer until a qualified biologist determines that the colony is no longer active (i.e., no Crotch's bumble bees are seen flying in or out of the nest for three consecutive days, indicating the colony has completed its nesting season, and the next season's queens have dispersed from the colony). Once the nest has been determined inactive, construction activities within the no-work buffer(s) shall be allowed to resume.
    - If avoidance of the nest is not feasible, the Project Proponent or its contractor(s) shall consult with a qualified biologist familiar with Crotch's bumble bee biology, regulations, and conservation for recommendations on appropriate measures. The proposed measures must be approved by the NASA Ames Research Center Environmental Management Division (NASA ARC EMD) prior to proceeding.
- Mowing shall be minimized as much as feasible in suitable Crotch's bumble bee habitat. In areas where mowing is needed, the following measures to minimize potential take of Crotch's bumble bee shall be followed, to the extent feasible:
    - Mow outside of the blooming season (typically March through June), if feasible;
    - Mow at the highest cutting height possible to avoid disturbing nests or overwintering queens;
    - Avoid mowing from noon into the afternoon, the time of day when pollinators are most active; and
    - Mow at speeds less than 8 mph.
- During construction, vehicles on-site shall not exceed a speed of 15 mph. This requirement shall be posted with signage noted throughout the Project Site.

Mitigation Measure BIO-7. Herbicide and Pesticide Use

To minimize impacts on monarch butterfly and Crotch's bumble bee from herbicide and pesticide drift, application shall be limited to areas immediately adjacent to the proposed facilities and shall be conducted using handheld equipment. Herbicides and pesticides shall be applied only by applicators with current licenses and/or certifications from the California Department of Pesticide Regulation. The herbicide applicator shall follow the label directions. Spray nozzles shall be kept within 24 inches of target vegetation during spraying. The most current information on herbicide and pesticide toxicity on wildlife shall be used to inform future decisions about herbicide and pesticide use during operations.

Mitigation Measure BIO-8. Burrowing Owl Surveys

Prior to any ground disturbance for the current construction phase, a qualified biologist shall conduct pre-construction surveys in all areas identified as suitable habitat within 250 feet of the Limits of Work. Surveys shall be performed consistent with the methods described in the *Staff Report on Burrowing Owl Mitigation*.[9] The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the Limits of Work of the construction phase, particularly in areas within 250 feet of construction activities. Surveys shall be initiated no less than 14 days prior to initial construction activities for the phase, and the final survey shall conclude no more than 2 calendar days prior to construction of the phase.

Mitigation Measure BIO-9. Burrowing Owl Avoidance

If active burrowing owl burrows are detected during preconstruction surveys, the following shall apply:

1. No disturbance shall occur within 160 feet of active burrows during the non-breeding season (September 1 through January 31).
2. No disturbance shall occur within 250 feet of active burrows during the breeding season (February 1 through August 31).

If disturbance must occur within the breeding or non-breeding season buffer zones, the Project Proponent or its contractor(s) shall work with NASA Ames Research Center Environmental Management Division (NASA ARC EMD) prior to commencement of activities for each construction phase to adhere to and implement the measures listed below. Alternative measures to avoid impacts may be considered on a case-by-case basis in coordination with NASA ARC EMD and the approved qualified biologist.[10]

Prior to beginning any construction activity for the current construction phase within 250 feet of burrowing owl habitat, NASA ARC EMD must review and approve all vehicular access routes and staging areas.

Mitigation Measure BIO-10. Burrowing Owl Relocation

If occupied burrowing owl burrows cannot be avoided (i.e., disturbance within 160 feet of active burrows during the non-breeding season or 250 feet of active burrows during the breeding season would occur), the following measures shall be implemented in coordination with and subject to the approval of the NASA ARC EMD.

1. Passive Relocation
    a. Timing

[9] California Department of Fish and Game. 2012. *Staff Report on Burrowing Owl Mitigation*. March 7. Sacramento, CA. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83843. Accessed: June 13, 2025.

[10] As described in the NASA ARC Final Burrowing Owl Habitat Management Plan (Leidos 2022), the qualified biologist must have 1) familiarity with the western burrowing owl biology and its local ecology (i.e., Santa Clara County); 2) at least 2 years of experience with conducting habitat assessments as well as breeding and non-breeding season surveys for burrowing owls, or experience with such surveys conducted under the direction of an experienced western burrowing owl biologist; 3) familiarity with regulations related to burrowing owls and conservation; and 4)experience with analyzing impacts of development on burrowing owls and their habitat.

i. No passive relocation is allowed during the breeding season (February 1 through August 31). The destruction of burrows is only allowed outside the breeding season (September 1 through January 31). All artificial burrows shall be installed prior to the breeding season.

ii. Installation of artificial burrows must occur prior to activities that cause disturbance. A project is not allowed to proceed until NASA ARC EMD has verified the artificial burrows have been installed.

iii. Installation of artificial burrows must occur at least 1 week prior to passive relocation and burrow exclusion activities.

b. Surveys and Banding

i. The approved qualified biologist must conduct multiple surveys for a minimum of 2 weeks prior to the passive relocation. These surveys need to locate active burrows within the Limits of Work and buffer zone, identify satellite burrows outside the buffer zone, and observe owl behavior to establish the territory of the owl.

ii. Before passive relocation occurs, owls should be trapped and banded, at the discretion of the NASA ARC EMD, to track success. At least 2 weeks prior to exclusion, all owls may be banded by an approved qualified biologist who has a minimum of 2 years of bird banding experience and a Federal Bird Banding and Marking Permit.

c. Restrictions

i. Passive relocation should only be allowed if satellite burrows are located outside the 50-foot buffer zone to increase the chances of success. All passive relocation efforts must be coordinated with and approved by NASA ARC EMD.

ii. Burrows associated with ground squirrel colonies (i.e., dense clusters of interconnecting burrows that support multiple ground squirrels) must be protected to the extent they do not conflict with NASA infrastructure protection and aircraft safety requirements.

2. Exclusion Requirements

a. Short-term exclusion (for 1 to 4 weeks) must be avoided to the extent feasible and is only allowed if avoidance measures are not practicable. If short-term exclusion is the only available mechanism, install a one-way door, and once the owl leaves, collapse the burrow within the 1-4 week duration. Long-term exclusion (more than 4 weeks) is prohibited. If exclusion more than 4 weeks is necessary, passive relocation measures shall be implemented.

i. Burrowing owls may only be temporarily excluded from burrows in the Limits of Work and 50-foot buffer zone.

ii. Restoration. Burrows within the Limits of Work and 50-foot buffer that are temporarily excluded (i.e., not destroyed) must be restored to pre-project conditions (e.g., removal of wood blocks/one-way doors, digging out burrows by hand, and relocating squirrels to the area) in coordination with NASA ARC EMD.

b. Exclusion Procedures

i. Exclusion shall be conducted by installing one-way doors in burrow entrances. One-way doors shall be left in place for a minimum of 48 hours to ensure owls have left the burrow before excavation.

ii. The approved qualified biologist shall remove the one-way doors and verify that no owls are present before excavating the burrows. All burrows shall be excavated immediately after removal of the one-way doors.

c. Re-entry Prevention

i. If project activities do not occur within 5 days of removing the one-way doors, the Limits of Work and 250-foot buffer zone shall be resurveyed to verify that burrowing owls have not reoccupied the site.

ii. The Limits of Work and 250-foot buffer zone shall be resurveyed if the site remains inactive for more than 2 weeks during construction to ensure owls have not occupied the site in the interim period between the initial surveys and ground-disturbing activities.

3. Artificial Burrows

a. Replacement Ratio. Active natural and artificial burrows (i.e., burrows that have been active during the breeding season within the last 5 years) that are permanently excluded (i.e., destroyed) shall be replaced with artificial burrows at a 3:1 ratio.

b. Siting and Design. Artificial burrows must be installed within approximately 300 feet of the burrows to be destroyed, if feasible. If this distance is not feasible, the Project Proponent or its contractor(s) must coordinate with the approved qualified biologist to locate alternate sites (e.g., within burrowing owl preserves or other burrowing owl habitat). The location(s) and design of the artificial burrows will be developed in coordination with the NASA ARC EMD prior to installation.

c. Monitoring. Subsequent to installation of artificial burrows, the Limits of Work, buffer zone, and surrounding area must be monitored daily for at least 1 week to confirm owl use of the alternate burrows before destroying burrows in the Limits of Work. Burrow exclusion is not allowed until owl use of the artificial burrows and/or satellite burrows is confirmed by the approved qualified biologist.

d. Management. Activities must be minimized around the new artificial burrows, and these areas need to be managed to provide foraging habitat to the extent possible.

Mitigation Measure BIO-11. Burrowing Owl Habitat

If suitable burrowing owl habitat is temporarily disturbed or permanently lost or degraded (as determined by the qualified biologist and approved by NASA ARC EMD), the following measures shall be implemented.

1. Suitable burrowing owl habitat lost from project impacts shall be replaced at a 3:1 mitigation ratio.
2. All suitable burrowing owl habitat temporarily disturbed by ground-disturbing activities must be restored with native grasses and habitat (e.g., rocks, mulch, berms) to attract native insects and rodents and facilitate repopulation of ground squirrels.
3. The location of habitat restoration area(s) must be approved by the NASA ARC EMD.

4. Initial restoration activities associated with permanent habitat loss must commence prior to construction. NASA ARC EMD must verify that restoration activities have been initiated prior to construction activities.
5. Recommended native plant species include but are not limited to meadow barley, purple needlegrass, coast range melic, California poppy, California brome, Molate red fescue, monkey flower, purshings lotus, deerweed, Farewell to Spring, sky lupine, and small fescue.
6. Native seed dispersal within selected restoration areas should be scheduled for the beginning of the winter rainy season. If seed dispersal occurs during the dry months, irrigation shall be necessary.
7. All restoration areas must be maintained and monitored for up to 2 years to ensure the long-term success of the restoration (i.e., restoration areas provide suitable habitat for burrowing owl). The approved qualified biologist must conduct inspections (at a frequency agreed upon by the NASA ARC EMD) and coordinate maintenance requirements with the Project Proponent or its contractor(s). If restoration and/or ground squirrel repopulation efforts are not successful, the Project Proponent or its contractor(s) shall coordinate with the NASA ARC EMD to evaluate and implement additional activities (including potential ground squirrel relocation) to ensure the continued success of the restoration.

Mitigation Measure BIO-12. Nesting Birds

Timing Restrictions. To the maximum extent feasible, as determined by the contractor in coordination with a qualified biologist, construction activities, vegetation removal, and trimming shall be scheduled during the nonbreeding season of birds (September 1 through January 31) to avoid impacts on nesting birds if nesting birds are present. If construction activities, vegetation removal, and trimming cannot be conducted in accordance with this timeframe, surveys for nesting birds and additional protective measures shall be implemented as described below.

Preconstruction Surveys. A qualified wildlife biologist with knowledge of avian species and their behavior shall conduct nesting surveys before the start of each construction phase from locations where access is allowed. A minimum of three separate surveys shall be conducted within 30 days prior to construction of each phase, with the last two surveys conducted within 7 days and 3 days prior to construction. Surveys shall be conducted within the project construction and staging areas as well as all suitable nesting habitat (e.g., trees, shrubs, potential emergent wetland, grasslands, ruderal areas, cultivated lands, human-made structures) within 500 feet of the project construction and staging areas for the current construction phase to locate any active nest protected by the MBTA or by CDFW. If no active nests are detected during these surveys, no additional measures shall be required if construction begins within 3 calendar days. An additional survey shall be conducted after any construction breaks of 3 calendar days or more.

Non-Disturbance Buffer. If active nests are found in the survey area, non-disturbance buffers shall be established around the nest sites to avoid disturbance or destruction of the nest site until the end of the breeding season (September 1) or until a qualified wildlife biologist determines that the young have fledged and moved out of the work area (this date varies by species). Buffer distances vary by species and conservation status (e.g., listed species and fully protected species, for which take is prohibited, may warrant larger buffers than non-special-status species), but typically, these buffer distances are between 300 and 650 feet for

raptors and between 50 and 250 feet for other nesting birds. The extent of the buffers shall be determined by the qualified wildlife biologist(s) and established by taking into consideration the type and extent of the proposed activity occurring near the nest, the duration and timing of the activity, the line of sight between the nest and the disturbance, the sensitivity and the habituation of the birds and raptors to existing conditions, and the dissimilarity of the proposed activity to ambient levels of noise and other disturbances. The qualified wildlife biologist(s) shall mark the extent and locations of non-disturbance buffers on maps that shall be presented to construction personnel at morning tailboards or use flagging, fencing, or other suitable physical markers, depending on the species of birds, the size of the buffers, and the construction activities to be conducted in the work area.

Nest Monitoring. The qualified wildlife biologist(s) shall monitor the nests to ensure that construction activities shall not affect nest success. Buffers (described above) may be reduced if a full-time qualified biologist is present to monitor the nest. Active nests shall be monitored to track progress of nesting activities until the biologist determines that the young have fledged and are capable of independent survival or the nest site is no longer active. Monitoring will be conducted from locations where access is allowed.

Authority of Qualified Wildlife Biologist(s). If, during construction, the qualified wildlife biologist(s) determines that a nesting bird is disturbed by construction activities to the point where continued activities could lead to nest failure, the qualified wildlife biologist(s) shall have the authority to immediately stop work and provide additional protective measures (including increasing the non-disturbance buffer distance) that need to be implemented and continue monitoring the nest until determining that bird behavior has normalized.

Mitigation Measure BIO-13. Roosting Bats

To avoid take of roosting bats, a preconstruction survey of buildings to be demolished or trees to be trimmed or removed shall be conducted in areas affected by the current construction phase by a qualified wildlife biologist in accordance with *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions*.[11] If special-status roosting bats are found, an avoidance or mitigation plan prepared by a qualified wildlife biologist shall be developed and implemented to avoid take of roosting bats. Avoidance measures may include conducting construction, demolition, tree trimming, or tree removal outside of the hibernation (January–February) and maternal roosting (March 1–August 31) time periods and excluding bats from buildings after they have left the roost to forage at night by closing entrances. Mitigation may include the construction of bat boxes to accommodate displaced bats. If bat boxes are used, their success shall be monitored and reported to the NASA ARC EMD.

Significance after Mitigation

Alkali Milk-Vetch and Congdon's Tarplant

The impacts on alkali milk-vetch and Congdon's tarplant from the CEQA Proposed Project would be less than significant with implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, and BIO-4 by providing environmental awareness training to construction personnel, conducting surveys to identify

[11] Johnston, D. S., K. Briones, and C. Pincetich. 2019. California Bat Mitigation: A Guide to Developing Feasible and Effective Solutions. H. T. Harvey & Associates, Los Gatos, CA. Prepared for the California Department of Transportation, Office of Biological Studies, Sacramento, CA. Task Order 7, Agreement 43A0355.

populations of alkali milk-vetch and Congdon's tarplant, requiring avoidance measures if alkali milk-vetch and/or Congdon's tarplant are present during construction, and compensating for impacts on individuals with seed collection and redistribution.

Monarch Butterfly and Crotch's Bumble Bee

Impacts on monarch butterfly from the CEQA Proposed Project would be less than significant with implementation of Mitigation Measures BIO-1, BIO-5, and BIO-7, which require providing environmental awareness training to construction personnel, conducting surveys to identify native milkweed patches, compensating for impacts on breeding habitat with milkweed plants, and avoiding and minimizing potential effects of herbicide and pesticide use on monarch butterfly and its larval host and nectar plants. Impacts on Crotch's bumble bee from the CEQA Proposed Project would be less than significant with the implementation of Mitigation Measures BIO-1, BIO-6, and BIO-7 by providing environmental awareness training to construction personnel, requiring preconstruction surveys for bumble bees and avoidance measures if bumble bees are present during construction activities, and avoiding and minimizing potential effects of herbicide and pesticide use on Crotch's bumble bee and its nectar plants.

Northwestern Pond Turtle

Impacts on northwestern pond turtle from the CEQA Proposed Project would be less than significant with the implementation of Mitigation Measures BIO-1 and BIO-3, which require providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas, and installing exclusion fencing under the guidance of the qualified biologist to prevent northwestern pond turtle from entering work areas.

Burrowing Owl

Impacts on burrowing owl from the CEQA Proposed Project would be less than significant with the implementation of Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11, which require providing environmental awareness training to construction personnel; replacing lost habitat and reducing direct effects on the species, including habitat, noise, and visual disturbances; and implementing protective measures during maintenance and species-specific avoidance measures during construction. Existing NASA Ames Burrowing Owl Management Plan measures would continue to be implemented to reduce operational impacts on burrowing owl; therefore operational impacts would be less than significant.

Other Special-Status Birds

Impacts on other special-status nesting birds from the CEQA Proposed Project would be less than significant with the implementation of Mitigation Measures BIO-1 and BIO-12, which require environmental awareness training for construction personnel, preconstruction surveys during the breeding season, and avoidance measures if nesting birds are present during construction. Impacts on other special-status foraging birds from the CEQA Proposed Project would be less than significant with the implementation Mitigation Measures BIO-1 and BIO-3 by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas, and installing exclusion fencing between the work area and the palustrine emergent wetland under the guidance of the qualified biologist to prevent Ridgway's rail from entering work areas.

Special-Status Bats

Impacts on special-status bats from the CEQA Proposed Project would be less than significant with the implementation of Mitigation Measures BIO-1 and BIO-13, which require providing environmental awareness training to construction personnel, conducting preconstruction surveys, and implementing avoidance measures if special-status bats are present.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species

Mitigation Measure BIO-3. Exclusion Fencing

Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant

Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat

Mitigation Measure BIO-6. Crotch's Bumble Bee

Mitigation Measure BIO-7. Herbicide and Pesticide Use

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 through BIO-13 would reduce impacts to less than significant. Mitigation Measures BIO-1, BIO-2, BIO-3 and BIO-4 are identified to minimize potential impacts on alkali milk-vetch and Congdon's tarplant by providing environmental awareness training

to construction personnel, requiring pre-constructions surveys, implementing avoidance measures, and compensating for direct impacts on plants if avoidance is not feasible. Mitigation Measures BIO-1, BIO-5, and BIO-7 are identified to minimize potential impacts on monarch butterflies by providing environmental awareness training to construction personnel, requiring surveys to identify native milkweed patches, compensating for impacts on breeding habitat with milkweed plants, and avoiding and minimizing potential effects of herbicide and pesticide use on monarch butterfly and its larval host and nectar plants. Mitigation Measures BIO-1, BIO-6, and BIO-7 are identified to minimize potential impacts on Crotch's bumble bee by providing environmental awareness training to construction personnel, requiring preconstruction surveys for bumble bees, implementing avoidance measures if bumble bees are present during construction, and avoiding and minimizing potential effects of herbicide and pesticide use on Crotch's bumble bee and its nectar plants. Mitigation Measures BIO-1, BIO-2, and BIO-3 are identified to minimize potential impacts on northwestern pond turtle by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas; requiring preconstruction surveys for northwestern pond turtle; and installing exclusion fencing under the guidance of the qualified biologist to prevent northwestern pond turtle from entering work areas. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl by providing environmental awareness training to construction personnel, requiring preconstruction surveys for burrowing owls, implementing avoidance measures if burrowing owls are present during construction activities, and requiring compensation for loss of burrowing owl habitat. Furthermore, NASA Ames Burrowing Owl Management Plan measures would continue to be implemented to reduce operational impacts on burrowing owl. Mitigation Measures BIO-1 and BIO-10 are identified to minimize potential impacts on other special-status nesting birds by providing environmental awareness training to construction personnel, requiring preconstruction surveys during the breeding season, and implementing avoidance measures if nesting birds are present during construction. Mitigation Measures BIO-1 and BIO-12 are identified to minimize potential impacts on other special-status foraging birds by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas, and installing exclusion fencing between the work area and the potential emergent wetland under the guidance of the qualified biologist to prevent Ridgway's rail from entering work areas. Mitigation Measures BIO-1 and BIO-13 are identified to minimize potential impacts on special-status bats by providing environmental awareness to construction personnel, requiring preconstruction surveys, and implementing avoidance measures if roosting bats are present. As a result, effects related to directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species

Mitigation Measure BIO-3. Exclusion Fencing

Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant

Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat

Mitigation Measure BIO-6. Crotch's Bumble Bee

Mitigation Measure BIO-7. Herbicide and Pesticide Use

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 through BIO-13 would reduce impacts to less than significant. Mitigation Measures BIO-1, BIO-5, and BIO-7 are identified to minimize potential impacts on monarch butterflies by providing environmental awareness training to construction personnel, requiring surveys to identify native milkweed patches, compensating for impacts on breeding habitat with milkweed plants, and avoiding and minimizing potential effects of herbicide and pesticide use on monarch butterfly and its larval host and nectar plants. Mitigation Measures BIO-1, BIO-6, and BIO-7 are identified to minimize potential impacts on Crotch's bumble bee by providing environmental awareness training to construction personnel, requiring preconstruction surveys for bumble bees, implementing avoidance measures if bumble bees are present during construction, and avoiding and minimizing potential effects of herbicide and pesticide use on Crotch's bumble bee and its nectar plants. Mitigation Measures BIO-1, BIO-2, and BIO-3 are identified to minimize potential impacts on northwestern pond turtle by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas; requiring preconstruction surveys for northwestern pond turtle; and installing exclusion fencing under the guidance of the qualified biologist to prevent northwestern pond turtle from entering work areas. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl by providing environmental awareness training to construction personnel, requiring preconstruction surveys for burrowing owls, implementing avoidance measures if burrowing owls are present during construction activities, and requiring compensation for loss of burrowing owl habitat. Furthermore,

NASA Ames Burrowing Owl Management Plan measures would continue to be implemented to reduce operational impacts on burrowing owl. Mitigation Measures BIO-1 and BIO-10 are identified to minimize potential impacts on other special-status nesting birds by providing environmental awareness training to construction personnel, requiring preconstruction surveys during the breeding season, and implementing avoidance measures if nesting birds are present during construction. Mitigation Measures BIO-1 and BIO-12 are identified to minimize potential impacts on other special-status foraging birds by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas, and installing exclusion fencing between the work area and the potential emergent wetland under the guidance of the qualified biologist to prevent Ridgway's rail from entering work areas. Mitigation Measures BIO-1 and BIO-13 are identified to minimize potential impacts on special-status bats by providing environmental awareness to construction personnel, requiring preconstruction surveys, and implementing avoidance measures if roosting bats are present. As a result, effects related to directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-2. Preconstruction Surveys for Special-Status Species

Mitigation Measure BIO-3. Exclusion Fencing

Mitigation Measure BIO-4. Alkali Milk-Vetch and Congdon's Tarplant

Mitigation Measure BIO-5. Monarch Butterfly Breeding Habitat

Mitigation Measure BIO-6. Crotch's Bumble Bee

Mitigation Measure BIO-7. Herbicide and Pesticide Use

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 through BIO-13 would reduce impacts to less than significant. Mitigation Measures BIO-1, BIO-5, and BIO-7 are identified to minimize potential impacts on monarch butterflies by providing environmental awareness training to construction personnel, requiring surveys to identify native milkweed patches, compensating for impacts on breeding habitat with milkweed plants, and avoiding and minimizing potential effects of herbicide and pesticide use on monarch butterfly and its larval host and nectar plants. Mitigation Measures BIO-1, BIO-6, and BIO-7 are identified to minimize potential impacts on Crotch's bumble bee by providing environmental awareness training to construction personnel, requiring preconstruction surveys for bumble bees, implementing avoidance measures if bumble bees are present during construction, and avoiding and minimizing potential effects of herbicide and pesticide use on Crotch's bumble bee and its nectar plants. Mitigation Measures BIO-1, BIO-2, and BIO-3 are identified to minimize potential impacts on northwestern pond turtle by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas; requiring preconstruction surveys for northwestern pond turtle; and installing exclusion fencing under the guidance of the qualified biologist to prevent northwestern pond turtle from entering work areas. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl by providing environmental awareness training to construction personnel, requiring preconstruction surveys for burrowing owls, implementing avoidance measures if burrowing owls are present during construction activities, and requiring compensation for loss of burrowing owl habitat. Furthermore, NASA Ames Burrowing Owl Management Plan measures would continue to be implemented to reduce operational impacts on burrowing owl. Mitigation Measures BIO-1 and BIO-10 are identified to minimize potential impacts on other special-status nesting birds by providing environmental awareness training to construction personnel, requiring preconstruction surveys during the breeding season, and implementing avoidance measures if nesting birds are present during construction. Mitigation Measures BIO-1 and BIO-12 are identified to minimize potential impacts on other special-status foraging birds by providing environmental awareness training to construction personnel, including information regarding the stop-work authority of the qualified biologist if a special-status species is observed in work areas, and installing exclusion fencing between the work area and the potential emergent wetland under the guidance of the qualified biologist to prevent Ridgway's rail from entering work areas. Mitigation Measures BIO-1 and BIO-13 are identified to minimize potential impacts on special-status bats by providing environmental awareness to construction personnel, requiring preconstruction surveys, and implementing avoidance measures if roosting bats are present. As a result, effects related to directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species would be less than significant with mitigation.

Impact CEQA-BIO-2: Would the project have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-3. Exclusion Fencing	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

As described in Appendix 3.4-1, construction under the CEQA Proposed Project could result in significant impacts on perennial grassland, a sensitive natural community, through the temporary effects of sidecasting. Therefore, impacts on a sensitive natural community would be potentially significant before mitigation. Effects on emergent wetland communities are discussed under Impact CEQA-BIO-3.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 and BIO-3 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. As a result, impacts related to a sensitive natural community would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 and BIO-3 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. As a result, impacts related to a sensitive natural community would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 and BIO-3 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. As a result, impacts related to a sensitive natural community would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measure BIO-1 and BIO-3 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. As a result, impacts related to a sensitive natural community would be less than significant with mitigation.

Impact CEQA-BIO-3: Would the project have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	BIO-1. Environmental Resources Worker Awareness Training	Less than Significant with Mitigation

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
		BIO-3. Exclusion Fencing BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State	
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

As described in Appendix 3.4-1, the project is designed to not exceed operational existing conditions of the stormwater outfall within a 10-year storm event. Additionally, the outfall and connection to the off-site trunk main would incorporate an orifice and a weir to allow excess water to leave the system when the storage pipes are full for storms greater than a 10-year storm event. Construction under the CEQA Proposed Project could result in significant impacts on State or federally protected wetlands through the temporary effects of sidecasting and pollution during construction. During construction, sidecasting of excavated material could encroach on the wetland resource. Therefore, impacts on a wetland would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State

To the extent possible, the project shall avoid and minimize impacts on waters of the United States, including wetlands, and waters of the State by implementing the measures below.

- The project shall be designed, to the extent possible, to avoid and minimize direct and indirect impacts on waters of the United States, including wetlands, and waters of the State.
- Construction activities shall be avoided in saturated or ponded natural wetlands during the wet season (October through May)) to the maximum extent possible. Where such activities are unavoidable, protective practices, such as the use of padding or vehicles with balloon tires, shall be employed.
- All activities shall be completed promptly to minimize their duration and resultant impacts.

Mitigation Measure BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State

If it is not feasible for construction activities to avoid impacts on waters of the United States, including wetlands, or waters of the State, the following shall apply:

- The Project Proponent or its contractor(s) shall acquire all applicable permits.
- The Project Proponent or its contractor(s) shall demonstrate that there would be no net loss of wetlands and other waters of the United States or State-protected waters/wetlands from project construction. To ensure this, wetland mitigation shall be developed as a part of the permitting process. Mitigation shall be provided before construction-related impacts on the existing wetlands occur. Mitigation typically includes the purchase of mitigation credits within the watershed. The exact mitigation requirement and ratio will be determined in consultation with USACE and/or RWQCB, but the Project Proponent or its contractor(s) shall compensate for affected wetlands at a ratio of no less than 1:1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-3, BIO-14, and BIO-15 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. Mitigation Measure BIO-14 would require the project to avoid and minimize wetlands to the extent possible, and Mitigation Measure BIO-15 would require the Project Proponent to compensate for any losses of wetlands. As a result, impacts related to wetlands would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State

Mitigation Measure BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-3.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-3, BIO-14, and BIO-15 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. Mitigation Measure BIO-14 would require the project to avoid and minimize wetlands to the extent possible, and Mitigation Measure BIO-15 would require the Project Proponent to compensate for any losses of wetlands. As a result, impacts related to wetlands would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State

Mitigation Measure BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-3.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-3, BIO-14, and BIO-15 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. Mitigation Measure BIO-14 would require the project to avoid and minimize wetlands to the extent possible, and Mitigation Measure BIO-15 would require the Project Proponent to compensate for any losses of wetlands. As a result, impacts related to wetlands would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-3. Exclusion Fencing

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Mitigation Measure BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State

Mitigation Measure BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-3.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-3, BIO-14, and BIO-15 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1 and BIO-3 would minimize potential

impacts on a sensitive natural community by requiring training for construction personnel regarding vegetation protection, reporting, and ramifications for not following the measures; they would also require exclusion fencing to be installed under the guidance of a qualified biologist to protect vegetation from sidecastings or other indirect impacts. Mitigation Measure BIO-14 would require the project to avoid and minimize wetlands to the extent possible, and Mitigation Measure BIO-15 would require the Project Proponent to compensate for any losses of wetlands. As a result, impacts related to wetlands would be less than significant with mitigation.

Impact CEQA-BIO-4: Would the project interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-12. Nesting Birds BIO-13. Roosting Bats	Less than Significant with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Impacts on Terrestrial Wildlife Movement

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project would have a less-than-significant impact on terrestrial wildlife movement.

Impacts on Non-Special-Status Nesting Birds

As described in Appendix 3.4-1, construction under the CEQA Proposed Project would result in potentially significant impacts on non-special-status nesting birds before mitigation because of the potential for injury and mortality and the disruption of normal behaviors during nesting season.

Impacts on Roosting Bats

As described in Appendix 3.4-1, construction under the CEQA Proposed Project would result in potentially significant impacts on non-special-status roosting bats before mitigation because of the potential for injury and mortality and the disruption of normal behaviors.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-12, and BIO-13 require environmental awareness training for construction personnel, preconstruction surveys during the breeding season, avoidance measures if nesting birds are present during construction, and avoidance measures if roosting bats are present, which would avoid injury or mortality of non-special-status nesting birds and roosting bats. As a result, impacts on the use of native wildlife nursery sites would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-12, and BIO-13 require environmental awareness training for construction personnel, preconstruction surveys during the breeding season, avoidance measures if nesting birds are present during construction, and avoidance measures if roosting bats are present, which would avoid injury or mortality of non-special-status nesting birds

and roosting bats. As a result, impacts on non-special-status nesting birds and roosting bats would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-12, and BIO-13 require environmental awareness training for construction personnel, preconstruction surveys during the breeding season, avoidance measures if nesting birds are present during construction, and avoidance measures if roosting bats are present, which would avoid injury or mortality of non-special-status nesting birds and roosting bats. As a result, impacts on the use of native wildlife nursery sites would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-12. Nesting Birds

Mitigation Measure BIO-13. Roosting Bats

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-12, and BIO-13 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-12, and BIO-13 require environmental awareness training for construction personnel, preconstruction surveys during the breeding season, avoidance measures if nesting birds are present during construction, and avoidance measures if roosting bats are present, which would avoid injury or mortality of non-special-status nesting birds and roosting bats. As a result, impacts on the use of native wildlife nursery sites would be less than significant with mitigation.

Impact CEQA-BIO-5: Would the project conflict with the provisions of an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat	Less than Significant with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The Biological Resources Study Area is within the area covered by the PG&E Bay Area Operations and Maintenance Habitat Conservation Plan. The CEQA Proposed Project would not interfere with or affect any covered activities or conservation actions associated with operation and maintenance of

PG&E utility infrastructure. Therefore, the CEQA Proposed Project would not conflict with the provisions of this plan.

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project could conflict with the provisions of the Santa Clara Valley HCP/NCCP. Although the Project Proponent is not a permittee under the Santa Clara Valley HCP/NCCP, the CEQA Proposed Project would not interfere with or affect any of the plan's covered activities. There are known burrowing owl colonies adjacent to the Project Site at Moffett Federal Airfield, an area where nesting and foraging habitat for this species is managed by NASA; the species is included in the Santa Clara Valley HCP/NCCP. In addition, the northern extent of the Biological Resources Study Area overlaps a burrowing owl preserve. No other covered activities or conservation actions under the Santa Clara Valley HCP/NCCP occur within this area. Construction-related noise and vibration could conflict with conservation and management actions for burrowing owl under the HCP/NCCP and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10 and BIO-11 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl and burrowing owl–specific conservation actions of the Santa Clara Valley HCP/NCCP by providing environmental awareness training for construction personnel, requiring preconstruction surveys for burrowing owls, implemenitng avoidance measures if burrowing owls are present during construction, and requiring compensation for the loss of burrowing owl habitat. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are consistent with both the NASA Ames Research Center Burrowing Owl Habitat Management Plan[12] and the Santa Clara Valley HCP/NCCP Burrowing Owl Conservation Strategy.[13] As a result, impacts related to conflicts with an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant with mitigation.

[12] Leidos. 2022. *NASA Ames Research Center Moffett Field Burrowing Owl Habitat Management Plan.* February 2022. Prepared for NASA Ames Research Center. Mountain View, CA.

[13] Santa Clara Valley Habitat Agency. 2012. *Final Santa Clara Valley Habitat Plan*.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl and burrowing owl–specific conservation actions of the Santa Clara Valley HCP/NCCP by providing environmental awareness training for construction personnel, requiring preconstruction surveys for burrowing owls, implemenitng avoidance measures if burrowing owls are present during construction, and requiring compensation for the loss of burrowing owl habitat. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are consistent with both the NASA Ames Research Center Burrowing Owl Habitat Management Plan[14] and the Santa Clara Valley HCP/NCCP Burrowing Owl Conservation Strategy.[15] As a result, impacts related to conflicts with an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. The potential for the types of

14 Leidos. 2022. *NASA Ames Research Center Moffett Field Burrowing Owl Habitat Management Plan.*

15 Santa Clara Valley Habitat Agency. 2012. *Final Santa Clara Valley Habitat Plan*.

impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl and burrowing owl–specific conservation actions of the Santa Clara Valley HCP/NCCP by providing environmental awareness training for construction personnel, requiring preconstruction surveys for burrowing owls, implemenitng avoidance measures if burrowing owls are present during construction, and requiring compensation for the loss of burrowing owl habitat. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are consistent with both the NASA Ames Research Center Burrowing Owl Habitat Management Plan[16] and the Santa Clara Valley HCP/NCCP Burrowing Owl Conservation Strategy.[17] As a result, impacts related to conflicts with an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure BIO-1. Environmental Resources Worker Awareness Training

16 Leidos. 2022. *NASA Ames Research Center Moffett Field Burrowing Owl Habitat Management Plan.*

17 Santa Clara Valley Habitat Agency. 2012. *Final Santa Clara Valley Habitat Plan*.

Mitigation Measure BIO-8. Burrowing Owl Surveys

Mitigation Measure BIO-9. Burrowing Owl Avoidance

Mitigation Measure BIO-10. Burrowing Owl Relocation

Mitigation Measure BIO-11. Burrowing Owl Habitat

See discussion for the CEQA Proposed Project under Impact CEQA-BIO-1.

Significance after Mitigation

Implementation of Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 would reduce impacts to less than significant. Specifically, Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are identified to minimize potential impacts on burrowing owl and burrowing owl–specific conservation actions of the Santa Clara Valley HCP/NCCP by providing environmental awareness training for construction personnel, requiring preconstruction surveys for burrowing owls, implemenitng avoidance measures if burrowing owls are present during construction, and requiring compensation for the loss of burrowing owl habitat. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 are consistent with both the NASA Ames Research Center Burrowing Owl Habitat Management Plan[18] and the Santa Clara Valley HCP/NCCP Burrowing Owl Conservation Strategy.[19] As a result, impacts related to conflicts with an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant with mitigation.

3.4.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.4.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to conflicts with local policies or ordinances protecting biological resources, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.4.8, *Impacts and Mitigation Measures*, above.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for biological resources considers the degree to which significant vegetation and wildlife resources would be protected within the Limits of Work. It also considers NASA ARC, Mountain View, and Sunnyvale. This is considered appropriate because of the highly urbanized nature of the region surrounding the Limits of Work.

Impact CEQA-C-BIO-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to biological resources? (Less than Cumulatively Considerable with Mitigation)

Cumulative projects would result in habitat loss, injury and mortality, and the disruption of normal behaviors of special-status species. Cumulative projects could contribute to an incremental

[18] Leidos. 2022. *NASA Ames Research Center Moffett Field Burrowing Owl Habitat Management Plan.*

[19] Santa Clara Valley Habitat Agency. 2012. *Final Santa Clara Valley Habitat Plan*.

reduction in the amount of wildlife habitat, particularly for birds and larger mammals. Cumulative projects in NASA ARC and the region could result in further conversion of natural habitats to urban and suburban conditions, thereby limiting the existing habitat values of the surrounding area. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with other projects in the area, as well as other activities that would affect the species that would be affected by the proposed project, could contribute to cumulative effects on special-status species. Cumulative projects in NASA ARC include various types of land uses that could adversely affect these species. As discussed in Impacts CEQA-BIO-1 through CEQA-BIO-6, the CEQA Proposed Project and CEQA Reduced Density Alternative would result in potentially significant impacts on biological resources. Therefore, the impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact related to biological resources.

Implementation of Mitigation Measure BIO-1 through Mitigation Measure BIO-15 would avoid or minimize the effects of construction, operations, and maintenance on biological resources and provide offsetting compensation for permanent and, in some cases, temporary losses of habitat. The mitigation measures identified in this section would reduce the potential significant cumulative effects from the combined habitat losses and conversions due to project construction as well as operations and maintenance. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would not result in a cumulatively considerable contribution to significant environmental impacts on biological resources.

3.5 Cultural Resources

3.5.1 Introduction

This section evaluates the potential impacts on cultural resources that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Limits of Work as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the project.

- *Cultural Resource Inventory Report for the Berkeley Space Center at NASA Research Park Project* (Cultural Resource Inventory Report) prepared by Albion and Architectural Resources Group, April 2026 (Appendix 3.5-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to cultural resources include guidance from the National Trust for Historic Preservation to follow the Section 106 review process outlined in the National Historic Preservation Act (NHPA). Furthermore, the National Trust for Historic Preservation recommended that the National Environmental Policy Act (NEPA) process should consider potential impacts on historic properties, including cumulative impacts. The National Trust for Historic Preservation described that resources of concern could include archaeological resources and resources of significance to tribes and indigenous people. These issues are addressed under Impacts CEQA-CUL-1 and CEQA-CUL-2.

3.5.2 Affected Environment/Environmental Setting

Cultural resources refer to any tangible evidence of past human activity, regardless of significance, found in association with a geographic location. Cultural resources include tangible properties possessing intangible cultural values. Cultural resources included in or eligible for listing in the National Register of Historical Places (NRHP) qualify as historic properties for the purposes of NEPA and Section 106 review. Cultural resources included in or eligible for listing in the California Register of Historical Resources (CRHR), as well as those identified as significant in qualifying local historical surveys and resource inventories or determined by the lead agency based on substantial evidence, qualify as historical resources for the purposes of CEQA review. Five classes of cultural resources are generally recognized: buildings, structures, objects, sites, and districts. These classes encompass a range of resource types including precontact archaeological sites, historic archaeological sites, built-environment elements, cultural landscapes, and ethnographic resources, including Traditional Cultural Places and Tribal Cultural Resources (TCRs), as discussed in Section 3.17, *Tribal Cultural Resources*, of this joint EIR/EIS. Human remains are also addressed in this section. A detailed discussion of Native American consultation methodology is provided in Section 3.17, *Tribal Cultural Resources*.

Detailed information on the background of the Project Site related to cultural resources—including its environmental context, precontact historical context, ethnographic context, and post-contact

historical context—is available in Chapter 5 of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

3.5.2.1 Resource Identification Methodology

Area of Potential Effects

For the purposes of NEPA and CEQA analysis, project impacts on significant cultural resources are analyzed within a defined geographic area. The NHPA, which informs the NEPA process, uses the term Area of Potential Effects (APE) to refer to the geographic area in which a given undertaking may result in changes to the characteristics or uses of historic properties. (36 Code of Federal Regulations [CFR] Section 800.16(d).) Although CEQA and the CEQA Guidelines do not specifically reference the concept of an APE, the delineation of a geographic area in which potential impacts may occur is a similarly important step in assessing historical resource impacts under CEQA. Therefore, an APE may inform the cultural resource analysis required by the NHPA, NEPA, and CEQA.

Figure 3.5-1, APE and ADI Map with Depths of Impact, shows the APE for the proposed project. The APE includes all areas that may be directly or indirectly affected by the project resulting in changes to the character or use of historic properties. The APE was determined through review of project plans, review of maximum building heights, estimation of maximum potential for ground disturbance, identification of the locations of previously recorded cultural resources (e.g., built-environment resources, archaeological sites), and consideration of the geographic area within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties. The proposed APE for the proposed project is the largest geographic extent in which the undertaking may result in effects on historic properties, and it includes horizontal and vertical considerations.

The horizontal APE is located between U.S. 101 and the southwestern edge of the San Francisco Bay, and it encompasses an area approximately 1,280 acres. The horizontal APE encompasses the following:

- **Area of Direct Impact (ADI)**: The approximately 45-acre ADI (or, Limits of Work), which contains the Project Site and the proposed off-site utility improvements and demolition areas, includes the areas likely to involve ground disturbance (e.g., the demolition of existing improvements as well as the construction of new facilities, roadways, and landscape elements). Such ground disturbance could cause physical damage to or destruction of archaeological resources.
- **Built-Environment Study Area**: It is possible for a project to have visual, atmospheric, or audible effects on significant cultural resources located outside of the Project Site (typically built-environment resources). The built-environment study area corresponds to the geographic area in which such effects are most likely to occur. This area encompasses the Project Site as well as the surrounding area in which the new construction proposed by the project may be perceived. The built-environment study area extends south and west from the Project Site to the boundaries of the NASA Ames Research Center (NASA ARC) along the U.S. 101 corridor, as well as north and east to include the open spaces of Shenandoah Plaza and the runway complex of Moffett Federal Airfield. The built-environment study area also includes buildings along the eastern edge of the airfield, which have nearly uninterrupted sightlines toward the Project Site.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

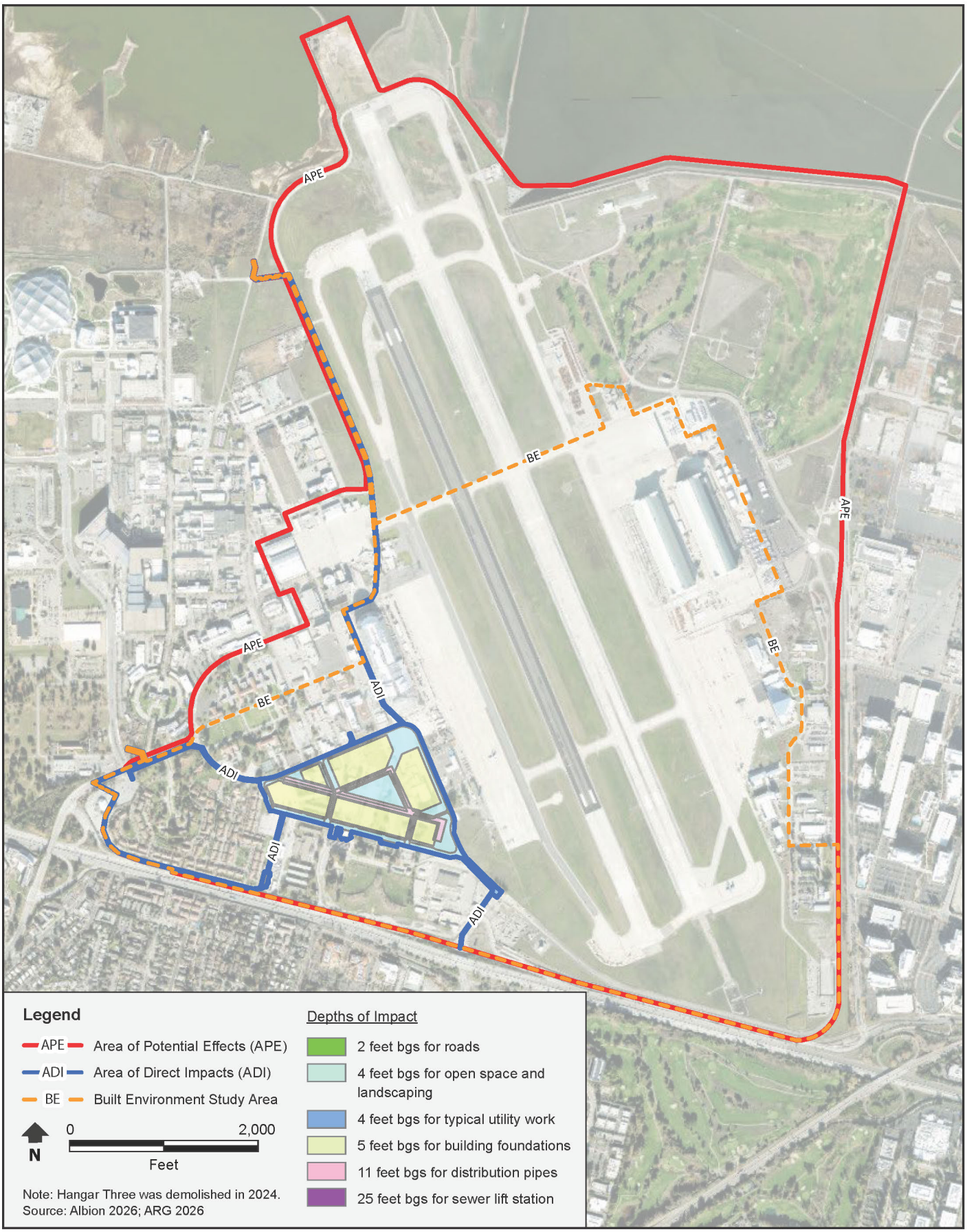


Figure 3.5-1
APE and ADI Map with Depths of Impact
Berkeley Space Center at NASA Research Park

- **U.S. Naval Air Station Sunnyvale, California Historic District (NAS Sunnyvale Historic District)**: The horizontal APE includes the entirety of the expanded NAS Sunnyvale Historic District, which is larger than the built-environment study area. The delineation of the APE in this manner recognizes the proposed project's potential to affect the visual, atmospheric, and audible conditions of the entire historic district. The vertical APE, which primarily applies to archaeological resources, is limited to the ADI and ranges between 1 and 25 feet, depending on the depth of disturbance that may be caused by different project elements.

Northwest Information Center Records Search

The identification of significant cultural resources within the APE was informed by previous investigations within and surrounding the Project Site, which were identified through records searches at the California Historical Resources Information System (CHRIS), Northwest Information Center (NWIC). Albion and ARG reviewed the results of prior records searches completed by AECOM in 2016 and 2023. In addition, Albion conducted an updated records search for the current APE in 2025.

According to the three NWIC records searches, 62 cultural resource studies have been conducted within a 0.5-mile radius of the APE. The records searches also identified 155 previously recorded cultural resources that are located in the APE. Of the 155 cultural resources located in the APE, ten are archaeological resources and 145 are built-environment resources. Forty additional cultural resources have been identified within a 0.5-mile radius of the APE. The studies and recorded resources identified in the records searches are listed in Chapter 4 of the Cultural Resource Inventory Report.

Investigators also examined additional documentation associated with several built-environment surveys and historical register designation efforts that have been undertaken in the built-environment study area, including the NRHP designation form for the NAS Sunnyvale Historic District and surveys conducted as part of the Section 106 review process for various undertakings at NASA ARC. This documentation was not included in the CHRIS records search results but was provided by NASA.

Outreach to Interested Parties

NASA, as the lead federal agency, contacted local governments, historical societies, and historic preservation organizations that were identified as having a potential interest in the project and in cultural resources that might be affected by the project. Letters sent to these interested parties included invitations to participate as consulting parties in the Section 106 review process. NASA subsequently conducted follow-up outreach to organizations that did not respond to the initial letter. Representatives of the Moffett Field Museum, City of Mountain View, Mountain View Historical Association, and Santa Clara County Historical Heritage Commission ultimately accepted the consultation invitation and attended a virtual consultation meeting on June 25, 2025. During the meeting, the University of California, Berkeley (UC Berkeley) presented details regarding the proposed project, and ARG summarized historical development of the Project Site as well as previous and current NRHP evaluation efforts at Moffett Federal Airfield. Attendees at the meeting were given the opportunity to share questions and comments regarding the proposed project, current efforts to identify historic properties, and the assessment of potential effects. Representatives of the City of Mountain View, County of Santa Clara, Moffett Field Museum, Mountain View Historical Association, and California Office of Historic Preservation attended a

second consultation meeting on January 30, 2026, during which NASA provided a summary of the Section 106 review process outlined in the NASA-wide Programmatic Agreement (NPA), and ARG summarized the results of the built-environment historic property identification and effects analysis. NASA and ARG then presented consulting parties with the draft mitigation plan and described the next steps for consulting-party input.

A communication log summarizing NASA's correspondence with the interested parties, as well as a sample outreach letter, are available in Appendix O of the Cultural Resource Inventory Report.

In addition, NASA and UC Berkeley conducted consultation with Native American representatives. Details of consultation with Native American representatives are described in Section 3.17, *Tribal Cultural Resources*.

Built-Environment Survey and Evaluation

Following the review of the NWIC records search results and additional documentation, professionally qualified architectural historians identified historic-aged built-environment resources within the built-environment study area that had not previously been evaluated for historic register eligibility through formal designation efforts or as part of the Section 106 process. "Historic-aged" refers to resources that were constructed at least 45 years prior to the date of the field survey (i.e., in 1980 or earlier). Although the NRHP typically recognizes a 50-year age threshold for potential eligibility, the current investigation employed a 45-year threshold to ensure the results would remain valid during the duration of the environmental studies and the proposed start of project construction. Furthermore, the CRHR does not include a 50-year threshold, although 45 years remains a useful benchmark to identify built-environment resources with the greatest likelihood of meeting the CRHR significance criteria.[1]

Investigators surveyed and recorded the historic-aged resources that had not previously been evaluated for historic register eligibility using California Department of Parks and Recreation (DPR) inventory forms. The inventory forms document evaluations for each resource using the NRHP and CRHR significance criteria to determine whether the resource qualifies as a historic property for Section 106 and NEPA, as a historical resource for CEQA, or both. Additionally, those previously unevaluated resources located within the identified boundary of the NAS Sunnyvale Historic District were evaluated to determine if they are contributors to the historic district.

Some properties in the built-environment study area were previously documented when they were less than 50 years old. In these instances, the resources were subject to evaluation using the "exceptional importance" threshold of NRHP Criteria Consideration G. During the current investigation, each resource that has subsequently reached historic age was surveyed and reevaluated for NRHP and CRHR eligibility without the application of Criteria Consideration G.

Furthermore, several previously evaluated built-environment resources in the study area have been demolished after their most recent documentation. As part of the current investigation, the

[1] Sherfy, M., and Luce, W.R. 1998. National Register Bulletin: Guidelines for Evaluating and Nominating Properties That Have Achieved Significance Within the Past Fifty Years, Washington, DC: Department of the Interior. California Office of Historic Preservation. 2011. "California Office of Historic Preservation Technical Assistance Series #6: California Register and National Register: A Comparison." Accessed August 28, 2025. Available: https://ohp.parks.ca.gov/pages/1069/files/technical%20assistance%20bulletin%206%202011%20update.pdf.

documentation for these resources was updated to substantiate that no physical elements of the resources remain extant.

The inventory forms prepared during the current investigation are compiled in Appendix Q of the Cultural Resource Inventory Report.

Archaeological Survey

On May 14, 2025, Albion Archaeologists conducted an intensive surface survey of the ADI. The survey area involved the 39-acre Project Site as well as approximately 2.4 miles of surrounding roads (see Figure 3.5-1, APE and ADI Map with Depths of Impact). The determination to conduct pedestrian survey in the ADI exclusively, rather than the entire APE, was based on the determination that the ADI represents the area of potential direct effects on archaeological resources.

The survey of the Project Site was accomplished by walking 10-meter-wide transects while closely inspecting the ground surface so that the entire accessible ADI was inspected for archaeological resources, including precontact and historic-era archaeological features and deposits. Areas within the ADI with exposed soils were intensely inspected during the pedestrian survey.

Because the ADI along the roadways was completely paved, Albion Archaeologists performed a dashboard survey consisting of driving on the roads and periodically stopping to observe surrounding soils to take photographs for documentation. The dashboard survey included a portion of Lindbergh Avenue, a gravel portion of De France Avenue, Zook Road, a small portion of Bushnell Road, Wescoat Road, Clark Road, Perimeter Road, and Ellis Street.

Approximately 0.12 mile of Zook Road and the entire 0.25 mile of Cummins Avenue were not subject to pedestrian survey due to restricted access. In addition, after Albion completed the pedestrian survey, a minor modification to the Limits of Work occurred along Cody Road. However, the survey conducted by AECOM between October 2023 and January 2024 encompassed all areas within the Limits of Work that Albion was not able to survey as part of the current study, as detailed in AECOM 2025:37–38. The methodologies employed by AECOM were comparable to those used in Albion's inventory, including inspection of all unpaved and undeveloped areas. Given the scope and rigor of the AECOM study, Albion regards it as a dependable reference for this inventory and assessment.

Once an artifact was encountered, surveyors inspected the area immediately adjacent to the find for additional materials. For the current study, isolated precontact finds were defined as those that contain fewer than 10 items per 10 square meters. Isolated historic finds were defined as consisting of fewer than three artifacts per 100 square meters (e.g., several fragments from a single glass bottle are one artifact). Generally, archaeological deposits with more than three items were considered a site. If a site was encountered, whether existing or previously unrecorded, its surface was carefully inspected and crew members pin-flagged all surface artifacts and features. After having established the site characteristics and boundaries, crews then collected all information needed to complete DPR primary site record forms (when applicable), took site overview photographs, and obtained Universal Transverse Mercator (UTM) coordinates using a Trimble GPS device. Isolated artifacts and sites were numbered consecutively within the survey area during the survey (e.g., Iso #1 or Albion BSC-Site-1). No artifacts were collected during the course of this survey.

Within the Project Site, three previously documented archaeological resources have been identified, comprising two precontact sites (CA-SCL-1145 and CA-SCL-1146) and one isolate (RP-Iso-03).

During the survey, Albion was responsible for their re-identification and assessment, employing the site recording methods previously outlined.

A Canine Forensic Survey was also conducted on the Project Site. The Institute for Canine Forensics provided five handlers and seven canines who conducted the survey throughout the entire Project Site. The Tamien Nation provided five tribal monitors to monitor each hander/canine team. See Appendix C of the Cultural Resource Inventory Report for a complete description of the methods of the Canine Forensic Survey.

3.5.2.2 Results of Built-Environment Resource Identification

Based upon the review of past evaluations and designations within the built-environment study area, as well as the new and updated evaluations conducted as part of the current investigation, the built-environment study area contains two individual built-environment resources that meet the eligibility requirements of the NRHP: Hangar One and Hangar Two. Furthermore, the built-environment study area contains a portion of the NAS Sunnyvale Historic District, which was originally listed in the NRHP and later expanded to include additional contributing buildings, structures, and landscape elements. These resources are described in greater detail in the following subsections. The results of the resource identification effort are also presented in Figures A-26 through A-28 in Appendix A of the Cultural Resource Inventory Report.

Hangar One

Hangar One (Building 1) was constructed between 1931 and 1933 at the east end of NAS Sunnyvale's original administrative campus. The Streamline Moderne-style structure measures approximately 1,100 feet long, 300 feet wide, and 200 feet tall. In 1988, the U.S. Navy engaged in consultation with the State Historic Preservation Officer (SHPO) through the Section 106 process and determined that Hangar One is eligible for NRHP listing under Criteria A (which recognizes sites of significant events) and C (which recognizes significant design, engineering, and construction qualities). Hangar One is listed in the California Office of Historic Preservation's Built-Environment Resource Directory with a CHRIS status code of 2S2 (determined eligible for listing with consensus determination).[2] Because Hangar One has been formally evaluated as eligible for NRHP listing with SHPO concurrence, the building meets the definition of a historic property for the purposes of Section 106 and NEPA review, as described in 36 CFR Section 800.16(l)(1). Because Hangar One has been determined eligible for NRHP listing, it is automatically listed in the CRHR (California Public Resources Code Section 5024.1(d)(1)) and qualifies as a CEQA historical resource pursuant to Section 15064.5 of the CEQA Guidelines.

Hangar Two

Hangar Two (Building 46) was constructed in 1942 and 1943 along the opposite (east) side of the airfield from Hangar One. The wood-framed Hangar Two was built parallel to the matching Hangar Three (subsequently demolished in 2024) following standardized U.S. Navy plans, and both structures originally housed blimps and other lighter-than-air aircraft that supported Moffett Federal Airfield's World War II missions. Hangar Two was evaluated as eligible for NRHP listing for the same U.S. Navy Section 106 undertaking as Hangar One, and it also meets the significance

[2] California Office of Historic Preservation. 2025. *Built-Environment Resource Directory, Santa Clara County.* Available: https://ohp.parks.ca.gov/?page_id=30338. Accessed: December 9, 2025.

requirements of NRHP Criteria A and C. Hangar Two is also listed in the California Office of Historic Preservation's Built-Environment Resources Directory with the assigned CHRIS status code of 2S2.[3] Like Hangar One, Hangar Two qualifies as a Section 106 historic property and as a CEQA historical resource.

U.S. Naval Air Station Sunnyvale, California Historic District

The NAS Sunnyvale Historic District was originally approved by the National Park Service and was listed in the NRHP in 1994. The historic district comprises the core 1930s-era campus of the NAS Sunnyvale, in addition to Hangar One and one remaining World War II-era aircraft hangar on the east side of the airfield. The original NRHP designation form concluded the district is eligible for NRHP listing under Criteria A and C and contained 43 contributing properties. Although most of the contributing properties are buildings and structures within the original NAS Sunnyvale administrative campus, the contributors also include small-scale features and landscape elements, including the memorial anchor, flagpole, and commons.[4]

In 2013, NASA oversaw a study of Moffett Federal Airfield's historical significance and NRHP eligibility. This study considered whether the airfield and associated facilities should contribute to the district. That study recommended that the historic district should be expanded to include the airfield and functionally related properties, such as ammunition storage structures within the safety buffer zone north of the airfield. The study also proposed a longer period of significance (1930–1961) that recognized Moffett Federal Airfield's historically significant jet operations during the early Cold War.[5] NASA provided the associated documentation of the proposed historic district expansion to the SHPO for review and concurrence. In its response, the SHPO concurred with NASA that the airfield and safety buffer zone contribute to the significance of the historic district and recommended that the study develop a list of properties that contribute to the expanded NAS Sunnyvale Historic District.[6] NASA subsequently compiled a list of contributing properties, which were included in the NASA ARC Integrated Cultural Resources Management Plan. The identified contributing properties included support facilities that line the edges of the airfield, paved runways, taxiways, parking aprons, and other features within the runway complex.[7]

Table 3.5-1 lists the identified extant contributors to the expanded NAS Sunnyvale Historic District that are located within the built-environment study area. These properties include 36 resources listed in the district's original NRHP designation form, 13 resources identified as historic district contributors through subsequent consultation between NASA and the SHPO, and three resources newly evaluated as historic district contributors during the current investigation. Consulting party review on the three newly evaluated district contributors is currently pending.

3 Ibid.

4 Urban Programmers. 1994. United States Naval Air Station Sunnyvale, California Historic District. National Register of Historic Places Registration Form, on file at the U.S. Department of the Interior, National Park Service, 7-15.

5 AECOM. 2013. Historic Property Survey Report for the Airfield at NASA Ames Research Center. Prepared for NASA Ames Research Center. Pages 5-1 through 5-8.

6 Roland-Nawi, C. 2013. Section 111 Outlease for Hangar One and Moffett Federal Airfield, NASA Ames Research Center, Moffett Field, CA. Letter to Keith Venter, June 6.

7 AECOM. 2014. NASA Ames Research Center Integrated Cultural Resources Management Plan. Prepared for NASA Ames Research Center. Pages D-1 through D-17.

Table 3.5-1. Contributors to the NAS Sunnyvale Historic District Located in the Built-Environment Study Area

Resource Number	Resource Name	Construction Year	Source of Evaluation
1	Hangar One	1933	NRHP Registration Form (1994)
5	Water and Storage Tank	1932	NRHP Registration Form (1994)
6	Mixed Use Warehouse	1933	U.S. Geological Survey M2M Lab Building Section 106 Technical Report (2021)
10	Heat Plant Building	1932	NRHP Registration Form (1994)
15	Fire Station/Laundry	1933	NRHP Registration Form (1994)
16	Locomotive Crane Shed	1933	NRHP Registration Form (1994)
17	Administrative Building	1933	NRHP Registration Form (1994)
17A	Memorial Anchor	1933	NRHP Registration Form (1994)
20	Bachelor Officers' Quarters	1933	NRHP Registration Form (1994)
21	Bachelor Officers' Garage	1933	NRHP Registration Form (1994)
22	Bachelor Officers' Garage	1933	NRHP Registration Form (1994)
23	Dispensary	1933	NRHP Registration Form (1994)
24	Ambulance Garage	1933	NRHP Registration Form (1994)
26	Gate House	1933	NRHP Registration Form (1994)
32	North Floodlight Tower	1934	NRHP Registration Form (1994)
33	South Floodlight Tower	1934	NRHP Registration Form (1994)
40	Flagstaff and Commons	1933	NRHP Registration Form (1994)
46	Hangar Two	1943	NRHP Registration Form (1994)
55	Hangars Two and Three Heat Plant	1943	NRHP Registration Form (1994)
86	Moffett Field Chapel	1945	Berkeley Space Center Cultural Resource Inventory Report (2026)
87	Moffett Field Chapel Boiler House	1946	Berkeley Space Center Cultural Resource Inventory Report (2026)
A, B, C, D, E, F, G, H, I	Officers' Residences (Berry Court)	1933	NRHP Registration Form (1994)
A1, B1, C1, D1, E1, F1, G1, H1, I1	Officers' Garages (Berry Court)	1933	NRHP Registration Form (1994)
105	Airfield Lighting Vault	1947	Historic Property Survey Report (2013)
106	Aircraft Compass Calibration Pad	1948	Historic Property Survey Report (2013)
126	Moffett Field Historical Society	1949	Historic Property Survey Report (2013)
158	Flight Operations Building and Tower	1954	Historic Property Survey Report (2013)
329	Ultra-High-Frequency/Very-High-Frequency Receiver Building	1958	Historic Property Survey Report (2013)

Resource Number	Resource Name	Construction Year	Source of Evaluation
454	Ultra-High-Frequency/Very-High-Frequency Transmission Building	1960	Historic Property Survey Report (2013)
MF1000	Runway 32L/14R	1938	Historic Property Survey Report (2013)
MF1001	Instrument Runway 32R/14L	1945	Historic Property Survey Report (2013)
MF1002	Aircraft Parking Apron	1945	Historic Property Survey Report (2013)
MF1016	West Parallel Aircraft Taxiway	c.1946	Historic Property Survey Report (2013)
MF1016	East Parallel Aircraft Taxiway	c.1946	Historic Property Survey Report (2013)
MF1016	Connecting Taxiways	c.1946	Historic Property Survey Report (2013)
	Shenandoah Plaza Streetlights	1933	Berkeley Space Center Cultural Resource Inventory Report (2026)

Sources: Urban Programmers. 1994. *United States Naval Air Station Sunnyvale, California Historic District*, National Register of Historic Places Registration Form, on file at the U.S. Department of the Interior, National Park Service, 7-15.

AECOM. 2013. Historic Property Survey Report for the Airfield at NASA Ames Research Center. Prepared for NASA Ames Research Center, Appendix C.

SmithGroup and Gray & Pape. 2021. U.S. Geological Survey M2M Lab Building Section 106 Technical Report. Prepared for NASA Ames Research Center.

Cultural Resource Inventory Report included in Appendix 3.5-1 of this joint EIR/EIS.

Furthermore, NASA has identified several cultural landscape characteristics that contribute to the historical visual and spatial character of the expanded historic district's airfield. These included the following: flat topography; open views across aviation areas; long views north to salt ponds and San Francisco Bay; linear system of runways, taxiways, and associated airfield facilities; the presence of buildings and structures defining the edges of the airfield; visual dominance of Hangar One; views to Hangar Two across the airfield; and ongoing aviation use.[8]

3.5.2.3 Results of Archaeological Resource Identification

Known Archaeological Resources

The NWIC records search identified 155 previously recorded cultural resources within the APE, with an additional 40 recorded within a 0.5-mile radius. As shown in Table 3.5-2, there are 16 archaeological resources within the APE, including:

- Nine precontact archaeological sites (CA-SCL-14, CA-SCL-15, CA-SCL-16, CA-SCL-17, CA-SCL-18, CA-SCL-19, CA-SCL-20, CA-SCL-21, CA-SCL-24)
- One multi-component site (CA-SCL-864/H)
- Two recently recorded precontact archaeological sites (CA-SCL-1145, CA-SCL-1146)
- Four precontact isolates (RP-ISO-01 through -04)

[8] AECOM. 2013. Historic Property Survey Report for the Airfield at NASA Ames Research Center. Prepared for NASA Ames Research Center. Pages 5-4 through 5-6.

Three of these (CA-SCL-1145, CA-SCL-1146, and RP-ISO-03) are located in the ADI (Appendix A: Figure A-11 in the Cultural Resource Inventory Report). Albion's pedestrian archaeological survey of the ADI on May 15, 2025, re-identified the two previously documented sites (CA-SCL-1145 and CA-SCL-1146); based on survey results, Albion expanded the site boundary for CA-SCL-1145 to include additional materials observed just outside the recorded boundary. RP-ISO-03 was not re-identified. The survey also identified one newly discovered isolated scatter of approximately 30 to 40 freshwater clam shells (*Corbicula* sp.) in the Project Site: Albion-BSC-ISO-01. In addition, during the Canine Forensic Study, another concentration of shell fragments along with one green Franciscan chert flake was identified (Albion-BSC-ISO-02). The archaeological resources are described in Table 3.5-2 and illustrated in Appendix A: Figures A-11 and A-30 in the Cultural Resource Inventory Report.

Table 3.5-2. Archaeological Resources within the APE[9]

Trinomial Number/Primary Number	Description
CA-SCL-14/P-43-000034	Precontact occupation site
CA-SCL-15/P-43-000035	Precontact occupation site
CA-SCL-16/P-43-000036	Precontact occupation site
CA-SCL-17/P-43-000037	Precontact occupation site presumably covered by Moffett Federal Airfield
CA-SCL-18/P-43-000038	Precontact campsite with midden
CA-SCL-19/P-43-000039	Precontact occupation site probably destroyed by Moffett Federal Airfield
CA-SCL-20/P-43-000040	Precontact occupation site on mound with midden, a burial, a pestle, and hammerstone. The site could not be relocated.
CA-SCL-21/P-43-000041	Precontact occupation site on a very compact oval midden mound with burials
CA-SCL-24/P-43-000044	Precontact occupation site on a midden mound
CA-SCL-864/H/P-43-001825	Mixed component site. Precontact attributes include at least one burial, midden, shell, fire-affected rock, faunal bone, lithics, and awl fragments. Historic attributes include square nails, brick, bottle glass, metal, and slag.
CA-SCL-1145/P-43-4487	Low-density scatter of faunal shell and bone
CA-SCL-1146/P-43-4488	Low-density scatter of faunal shell
RP-ISO-1	Long bone from a single mammal
RP-ISO-2	Flake tool
RP-ISO-3	Rib bone from a mammal
RP-ISO-4	Human remains fragment

Source: Cultural Resource Inventory Report included in Appendix 3.5-1 of this joint EIR/EIS.

CA-SCL-14, -15, -16, -17 (P-43-000034–000037)

This cluster of small sites was originally noted in 1909 by N. Nelson in his analysis of San Francisco Bay Area (Bay Area) shell mounds conducted during the previous decade. In 1912, they were

9 These data are derived from the Cultural Resources Inventory Report for this project.

recorded by L. Loud as precontact occupation sites (Nelson 348-51). According to AECOM,[10] associated site records were updated in 1984 by Basin Research Associates Inc., including updated location maps. To date, these sites have not been evaluated and have not been rediscovered since their original recording in the early 1900s.

CA-SCL-18 (P-43-000038)

This site was originally identified in the early 1900s by N. Nelson during his analysis of Bay Area shell mounds and was formally recorded by L. Loud in 1912. The site was identified as one of Ynigo's campsites and is included in the Santa Clara County Heritage Resource Inventory under the Moffett Federal Airfield Indian Mound designation. Loud observed that the site had been nearly entirely destroyed. In 1991, Basin Research Associates conducted a survey but did not find any evidence of the resource on the ground surface, leading to the conclusion that the site was likely obliterated due to area development.[11] They determined that the site lacked the integrity necessary for NRHP eligibility; however, no subsurface testing was performed to validate this recommendation, and to date there is no documentation of SHPO concurrence with this finding. The site is mapped within the APE, but it falls outside the ADI. Consequently, project activities are not expected to cause any physical or direct impact on the site, and therefore, a formal archaeological evaluation is not necessary. Given the highly urbanized and previously disturbed nature of the environment, the likelihood of indirect impacts on archaeological resources within the APE or ADI—such as alterations to the site's setting—is minimal. As a result, these potential impacts do not warrant further assessment.

CA-SCL-19 (P-43-000039)

The site was initially documented by N. Nelson in 1909 and subsequently recorded in 1912 by L. Loud. Based on Nelson's description (Nelson 353), Loud classified the site as an occupation midden, which contains an accumulation of marine shell and faunal remains, likely significantly disturbed by the construction and operation of Moffett Federal Airfield. Since its original documentation, the site has undergone several updates from 2017 to 2020. In 2017, William Self Associates (WSA) and PaleoWest identified midden soils on the surface resulting from rodent back dirt piles. WSA reported the presence of oyster shell, marine snail shell, and faunal bone fragments, prompting the extraction of 13 core samples in a grid pattern to gain a better understanding of the site's deposits. The cores revealed a layer of dark midden soils containing artifacts and shells at approximately 80 centimeters (cm) below the ground surface. WSA estimated that the lower half of the midden soils remained largely intact and based on previous findings, may contain human remains. Consequently, the resource was recommended as eligible for the NRHP under Criterion D due to its potential to provide significant insights into the precontact occupation of the region.[12]

In 2018, WSA developed an Archaeological Data Recovery Plan for the Navigational Aids, Airfield Lighting, and Signage Replacement Project. The archaeological work involved the excavation of eight

10 AECOM. 2025. Archaeological Resources Study: NASA Ames Research Center. Prepared for NASA by AECOM, NASA Ames Research Center, Moffett Field, California.

11 Garaventa, D., and R.L. Anastasio. 1991. Archeological Overview and Survey, Naval Air Station Moffett Field, Santa Clara County, California and Naval Auxiliary Landing Field Crows Landing, Stanislaus County. On file at the Basin Research Associates, Inc., Northwest Information Center, Sonoma State University, California.

12 Clark, T., E. Elliot, T. Young, and C Alonso. 2020. Archaeological Data Recovery Report, P-43-000039/CA-SCL-19, NAVAIDS Project, Moffett Federal Airfield Santa Clara County, California., Submitted to and on file with NASA.

control units and construction monitoring. During the construction monitoring, human remains were identified, necessitating a work stoppage and subsequent project redesign. The redesign involved transitioning from open trenching to horizontal directional boring beneath the intact archaeological deposit. Prior to the boring process, six control units were strategically placed along the bore path, along with two micro trenches at the entry and exit pits for the horizontal directional drill. Throughout this data recovery effort, one pit feature, nine intact burials, and isolated human remains were uncovered. A disturbed midden was documented to range from 15–40 cm below the surface (situated below a layer of sterile fill), with pit and burial features extending to about 90 cm below grade. Radiocarbon dating indicates that the site was most intensively occupied during an 800-year period between 2,300 and 1,500 years calibrated Before Present (cal BP), aligning with the Middle Period and Berkeley Pattern cultural manifestation. Additionally, two outlier radiocarbon dates were obtained from one charred bone sample (3,400 cal BP) and one obsidian hydration sample (900 +/- cal BP). Consequently, the boundary for CA-SCL-19 was expanded to the northeast and southeast. The north, west, and east boundaries remain poorly defined due to the presence of the existing runway and taxiway. This resource is eligible for the NRHP and is likely eligible for the CRHR. The site is mapped in the APE but is outside the ADI and is not likely to be physically affected by project activities. Additionally, the environment is highly urbanized and has been disturbed before. Because of this, the chance of affecting archaeological resources indirectly, such as changing the site's surroundings, is very low. Therefore, there is no need for further assessment of these impacts.

CA-SCL-20 (P-43-000040)

Originally identified by N. Nelson in 1909 and subsequently recorded in 1912 by L. Loud, the resource was documented as a significant occupation site featuring an earth mound designated as "Loud's Big Ynigo Mound." Loud described the mound as extending 0.6 mile in length and varying in depth from 2 to 5 feet, encircled by campsite deposits. Additionally, a single burial, a pestle, and a hammerstone were noted at the site. However, it was reported that the site had suffered considerable destruction.[13] In 1987, the California Department of Transportation (Caltrans) undertook a survey along with an Extended Phase I study but failed to relocate the site, a finding echoed by the Basin Research Associates' 1991 survey.[14] AECOM's 2025 Archaeological Resources Study documented several testing efforts that did not yield any subsurface deposits or evidence of

13 Kelly, M. 1987. Archaeological Survey Report for the Proposed Improvements to the Routes 85, 101, 237 Triangle and Route 85 from Stevens Creek Blvd. to Route 101 in Santa Clara County. On file at the Northwest Information Center, Sonoma State University, California.

14 Garaventa, D., and R.L. Anastasio. 1991. Archeological Overview and Survey, Naval Air Station Moffett Field, Santa Clara County, California and Naval Auxiliary Landing Field Crows Landing, Stanislaus County. On file at the Basin Research Associates, Inc., Northwest Information Center, Sonoma State University, California.

the resource.[15,16,17] To date, testing has been limited to the southern extent of the site boundary.. To date, this resource has not been formally evaluated for the NRHP or CRHR. Most of the site is mapped within the APE, but outside the ADI. As such, project activities would not physically affect the site and evaluation is not required. The environment is highly urbanized and has been disturbed before. Because of this, the chance of affecting archaeological resources indirectly, such as changing the site's surroundings, is very low. Therefore, there is no need for further assessment of these impacts.

CA-SCL-21 (P-43-000041)

Originally identified by N. Nelson in 1909 (known as the Third Ynigo Mound) and later recorded in 1912 by L. Loud, this resource was documented as an occupation site featuring a 4-foot-high, oval-shaped compact earthen mound. David Chavez & Associates[18] conducted an NRHP cultural resource evaluation of the site, noting a significant likelihood that CA-SCL-21 contained intact subsurface deposits. Consequently, augers and test units were excavated; however, no archaeological resources were found within or immediately adjacent to the site boundary. Given these negative results, it was concluded that CA-SCL-21 had either been destroyed or was not mapped correctly. The site record for this resource was updated by Basin Research Associates, Inc. in 1984. The site is mapped within the APE, but outside of the ADI. Project activities would not physically affect the site and therefore evaluation is not required. In addition, the environment in question is predominantly urbanized and has experienced prior disturbances. Consequently, the likelihood of indirect impacts on archaeological resources—such as alterations to the site's immediate surroundings—is minimal. As a result, additional assessments concerning potential impacts are deemed unnecessary.

CA-SCL-24 (P-43-000044)

Documented by N. Nelson and L. Loud in 1909 and 1922, respectively, this resource is characterized as an occupation mound. In 1981, David Chavez & Associates conducted an NRHP cultural resource evaluation, noting the presence of potential midden soils and artifacts on the surface (including a bone awl, a pestle fragment, and three chert tools) suggesting a high likelihood that CA-SCL-24 contained intact subsurface deposits. However, exploration of the site using augers and Standard Test Units (STUs) revealed a sparse accumulation of highly fragmented shell, indicating that the site has likely been destroyed. The site record for this resource was subsequently updated by Basin Research Associates, Inc. in 1984. The likely NRHP and CRHR eligible site is mapped within the APE, but outside of the ADI. Project activities would not physically affect the site and therefore further evaluation is not required. Additionally, the local environment is predominantly urbanized and has

15 Baker, S. 1991. Addendum to Archaeological Survey Report Tasman Corridor Project, Santa Clara County, California: Archaeological Testing at CA-SCL-20 and CA-SCL-38 (S-14070). On file at the Prepared for Santa Clara County Transportation Agency, On file at the Northwest Information Center, Sonoma State University, California.

16 Kelly, M. 1987b. Preliminary Report for Phase I Extended Archaeological Survey at Route 101/237 Interchange and Request for Determination of Eligibility for Archaeological Site Ca-SCL-12 for the Proposed Improvements to the Route 85, 101, 237 Triangle and Route 85 from Stevens Creek Blvd. to Route 101 in Santa Clara County. On file at the Northwest Information Center, Sonoma State University, California.

17 URS Corp. 2014. Historic Property Survey Report, US 101 Express Lanes Project, Santa Clara County, California. On file at the Prepared for State of California Department of Transportation District 4, On file at the Northwest Information Center, Sonoma State University, California.

18 Chavez, D. 1981. Cultural Resources Review for the AMES Research Center Environmental Resources Document, Santa Clara County, California. On file at the Prepared for Camp Dresser and McKee, Inc, On file at the Northwest Information Center, Sonoma State University, California.

experienced prior disturbances. As such, the likelihood of indirect impacts on archaeological resources—such as alterations to the site's immediate surroundings—is minimal. As a result, additional assessments concerning potential impacts are deemed unnecessary.

CA-SCL-864/H (P-43-001825)

Originally recorded in 2006 by Albion Environmental, Inc., this resource is a multicomponent archaeological site.[19] The precontact component features a human burial and a midden containing shell, bone, charcoal, fire-affected rock, lithic tools, and debitage. The historic component includes square nails, brick, glass, metal, and slag, likely linked to military housing constructed in the 1930s, which falls within the documented site boundary. Substantial subsurface deposits were documented during Albion's subsequent Extended Phase I study; however, the age of the deposit was not determined due to a lack of materials suitable for radiocarbon dating. AECOM suggested that the site may be associated with nearby CA-SCL-21 and CA-SCL-24, which were "part of the original Loud site recordings of the early 20th century, and which have ill-defined locations and have not been fully rediscovered or studied."[20] To date, the resource has not been evaluated for listing on local, state, or federal registers. The site is mapped within the APE, but outside of the ADI. As such, project activities would not physically affect the site and therefore evaluation is not required. The environment is highly urbanized and has been disturbed before. Because of this, the chance of affecting archaeological resources indirectly, such as changing the site's surroundings, is very low. Therefore, there is no need for further assessment of these impacts.

CA-SCL-1145 (P-43-004487)

This resource comprises a low-density scatter of faunal shell and bone fragments.[21] The shell assemblage includes fragments from three bent nose clams (*Macoma nasuta*), two oyster fragments (*Ostrea lurida*), and two horn snail shells (*Cerithideopsis* sp.). Additionally, a fragment of a calcined mammal long bone was observed. Given the species of faunal shell identified, this resource may represent precontact dietary remains from one of the many nearby recorded mound sites that have previously been disturbed, likely indicating redeposited soils and cultural materials. Despite this evidence for surficial disturbance, there is still a possibility that intact subsurface precontact deposits exist at this location. Most of the site is mapped within the Project Site portion of the ADI. Given the potential for physical (direct) impacts by the proposed project, this resource should be treated as eligible for inclusion in the CRHR and NRHP.

CA-SCL-1146 (P-43-004488)

This resource consists of a low-density, highly fragmented shell scatter within a 20-meter-diameter area.[22] The identifiable shells are predominantly from the oyster species (*Ostrea lurida*). The condition of the fragments indicates that the site may represent precontact dietary remains, potentially originating from one of the many nearby recorded mound sites that have been significantly disturbed and redeposited during prior development in the area. Although the surface

19 Garlinghouse, T., and M. Hylkema. 2006. Extended Phase I Study of the Berry Court Archaeological Site. On file at the Report prepared for Larry Moore, CTSC, Environmental Division, US Army Reserve Contracting Center, Fort Hunter Liggett, California.

20 AECOM. 2025. Archaeological Resources Study: NASA Ames Research Center. Prepared for NASA by AECOM, NASA Ames Research Center, Moffett Field, California.

21 Ibid.

22 Ibid.

materials likely do not constitute a primary (intact) cultural deposit, there remains the potential for intact subsurface deposits. The site is situated along the eastern border of the Project Site within the ADI. Given the potential for physical (direct) impacts, this resource should be treated as eligible for inclusion in the CRHR and NRHP.

RP-ISO-01

This resource consists of a fragment of a long bone from a single mammal; it is likely to be either historic or modern in age; however, this has not been confirmed.[23] The resource is located within the APE, just outside the boundary of the Project Site within the ADI. Given the absence of additional cultural materials (e.g., artifacts, midden soils), the resource is likely not eligible for state or federal registers, and no further evaluation is needed.

RP-ISO-02

This resource includes a single flake tool identified within a rodent spoil pile located adjacent to a building foundation.[24] The artifact is crafted from green chert, measuring 47.5 cm long and 13 mm thick. The resource is in the APE, outside the boundary of the ADI. Given the absence of additional cultural materials (e.g., artifacts, midden soils), the resource is likely not eligible for state or federal registers, and no further evaluation is needed.

RP-ISO-03

This isolate is a solitary rib bone fragment from a mammal. It is mapped within the Project Site in the ADI. The presence of potential saw-cut marks indicates that it likely originated from a historical or contemporary context, rather than from a precontact site; however, this has not been confirmed.[25] Given the absence of additional cultural materials (e.g., artifacts, midden soils), the resource is likely not eligible for state or federal registers, and no further evaluation is needed.

RP-ISO-04

Documented in 2023, this isolate includes a single fragment of human bone, likely redeposited from one of the numerous precontact mounds documented in the general vicinity.[26] The resource is located in the APE, just outside the eastern boundary of the Project Site within the ADI.

According to the DPR Primary Record, the bone was removed and NASA is consulting with Ohlone representatives to rebury the remains.

Survey Results

During Albion's pedestrian survey of the large 40-acre survey area, previously recorded P-43-004487 and P-43-004488 were identified; however, RP-Iso-03 was not found. Additionally, a new resource was recorded as Albion BSC-ISO-01. No precontact or historic-era artifacts were observed on the surface of the 2.4 miles of road within the ADI.

23 Ibid.

24 Ibid.

25 Ibid.

26 Ibid.

Surface visibility was poor across the entire ADI, with approximately 80 percent of the ground surface obscured by paved roadways, walkways, parking lots, buildings, and concrete pads from demolished buildings. Approximately 12 percent was covered by vegetation (grasses, shrubs, trees), leaving about 8 percent of the ADI visible for inspection. The areas devoid of any hardscaping consisted of barrier planters in parking lots, roadside embankments, empty building lots (previously razed), and landscaped areas associated with existing buildings. In the areas devoid of hardscaping, every effort was made to closely inspect areas free of heavy vegetation cover (e.g., spoils from ground burrowing animals/dens).

Survey Constraints

Due to restricted access, surveying was not possible for approximately 0.12 mile of Zook Road, located between Hall Road and the NASA Ames Fire Department. Additionally, the entire 0.25 mile of Cummins Avenue could not be surveyed. In addition, after Albion completed the pedestrian survey, a minor modification to the Limits of Work occurred along Cody Road. However, the survey conducted by AECOM between October 2023 and January 2024 encompassed all areas within the Limits of Work that Albion was not able to survey as part of the current study, as detailed in AECOM 2025:37–38. The methodologies employed by AECOM were comparable to those used in Albion's inventory, including inspection of all unpaved and undeveloped areas. Given the scope and rigor of the AECOM study, Albion regards it as a dependable reference for this inventory and assessment.

Resources Identified

During the survey, the team successfully located the two previously documented sites (P-43-004487 and P-43-004488); however, RP-ISO-03 was not found. During the survey, an isolated scatter of approximately 30 to 40 freshwater clam shells (*Corbicula* sp.) was observed (Albion-BSC-ISO-01). A detailed description of each resource and its current condition is provided below.

P-43-004487 (CA-SCL-1145)

Site conditions observed during the 2025 survey were generally consistent with previous observations. However, in addition to the shell observed in the "narrow planting strips," oyster shell fragments and horn snail shells were also observed in larger quantities west of the recorded site boundary (Appendix A: Figures A-30 and A-32, Photographs 7–9 in the Cultural Resource Inventory Report). Therefore, Albion has expanded the site boundary for CA-SCL-1145 to include these additional materials. Crews did not observe any mammal bone or bent nose clam fragments. The soils observed were a dark gray (Munsell 10YR 4/1) clay loam. The area has previously been affected by development activities and rodent burrowing.

P-43-004488 (CA-SCL-1146)

This resource was relocated during the 2025 survey effort; however, the oyster shell was observed solely within a substantial rodent back dirt pile (Appendix A: Figures A-29, A-30, A-32, and A-33 in the Cultural Resource Inventory Report). The soils observed were a dark gray (Munsell 10YR 4/1) clay loam. Areas immediately adjacent to the site boundary appear to have been significantly affected by modern disturbances, such as underground utilities and roads.

Albion BSC-ISO-01

During the survey, a scatter of approximately 30 to 40 freshwater clam shells (*Corbicula* sp.) (Albion-BSC-ISO-01) was observed within the ADI (Appendix A: Figures A-29, A-30, and A-33 in the

Cultural Resource Inventory Report). The surrounding soil is a dark grayish brown (Munsell 10YR 4/2) silty loam interspersed with imported gravels. The genus identified is non-indigenous and was likely introduced to the United States around 1945[27]; it is commonly associated with fluvial and slough environments characterized by silty loam substrates. Specimens observed during the survey range from 1 to 4 cm in maximum length and exhibit minimal weathering, including the presence of extant periostracum. Based on the taxa represented, depositional context, and condition of the specimens, Albion determined that the shell scatter does not constitute an archaeological deposit (precontact or historic) and was most likely introduced inadvertently through the placement of imported fill.

Canine Forensic Survey Results

A Canine Forensic Survey was also conducted on the Project Site, and the results were positive. The canine team alerted at several locations (including two high-density alert zones: ZK1 and BB9), suggesting that human remains are likely present in the Project Site. See Appendix C in the Cultural Resources Inventory Report for a complete description of the results of the Canine Forensic Survey.

Albion-BSC-ISO-02

During the Canine Forensic Survey, the field team identified an isolated artifact scatter (Albion-BSC-ISO-02) (Appendix A: Figures A-29, A-30, and A-33 in the Cultural Resource Inventory Report). The scatter consists of 17 artifacts—16 shell fragments and one green Franciscan chert flake—concentrated within an approximately 1 by 2-foot area. Surface soils are characterized as a brown (10YR 5/3) sandy clay loam. The shell assemblage comprises the following: four oyster (*Ostrea* spp.) fragments, four unidentifiable bivalve fragments, one horned snail (*Ceratostoma* spp.), one button shell (*Trimusculus* spp.), and six fragments of unidentifiable shell. All shell specimens exhibit heavy weathering. The degree of weathering, combined with the disturbed surface context of the deposit, suggests this scatter does not represent an in-situ archaeological deposit. Per the Tamien Nation's request, these artifacts were collected by Albion. They will be returned to NASA at the conclusion of the project.

Sensitivity Assessments

A study from 1991 concluded that post-1931 utility lines and other improvements appear to have destroyed the integrity of any precontact or historic-era archaeological resources within the Ames facility.[28] However, the methods and results of this study are brief, generalized, and based primarily on anecdotal evidence. The authors provide little concrete data that such improvements destroyed all intact archaeological deposits and none for the ADI. Further, subsequent studies have identified intact archaeological resources and human remains within the Ames facility, deemed eligible for the

[27] Cohen A., and J. Carlton 1945. *Nonindigenous Aquatic Species in a United States Estuary: A Case Study of the Biological Invasions of the San Francisco Bay and Delta.* Report for the United States Fish and Wildlife Service, Washington D.C. and the National Sea Grant College Program Connecticut Sea Grant.

[28] Garaventa, D., and R.L. Anastasio. 1991. Archeological Overview and Survey, Naval Air Station Moffett Field, Santa Clara County, California and Naval Auxiliary Landing Field Crows Landing, Stanislaus County. On file at the Basin Research Associates, Inc., Northwest Information Center, Sonoma State University, California.

NRHP, e.g., CA-SCL-19 and CA-SCL-864/H, disproving the hypotheses made in the 1991 study.[29,30] As such, the conclusions of this earlier study cannot be relied on in developing sensitivity assessments for the current proposed project. Instead, Albion concurs with a more recent sensitivity study conducted by AECOM.

Precontact Site Sensitivity

Near-Surface Site Sensitivity

The presence of 12 archaeological sites with precontact components in the APE indicates a significant sensitivity for additional precontact resources. These known sites reflect the long history of occupation in the San Francisco Bay region, dating back at least 11,000 years. Archaeological research has shown that the diverse ecological characteristics of the South Bay and northern Santa Clara Valley supported large populations who established their residential communities in productive environments, including tidal marshlands, grassland prairies, oak woodlands, and riparian corridors.

Many of these sites were initially documented during Nels Nelson's survey of shell mounds conducted from 1907 to 1908 in the Bay Area. Of the 425 mound sites that he recorded, many were already suffering from extensive erosion and destruction from urban development. The locations were subsequently recorded and mapped in greater detail in 1912 by archaeologist Lewellyn Loud from UC Berkeley.

Over the past four decades, numerous investigations have been conducted on these resources. A majority were conducted in coordination with various projects including cultural resource evaluations, highway and road improvements, and underground utility installments. Many of these studies attest to the highly disturbed nature of these resources, with a significant number of these reported as completely removed or buried due to grading and filling activities that occurred during the 20th century.

Within the current APE, intact deposits have been reported at three locations indicating heightened sensitivity for near-surface precontact archaeological resources. At CA-SCL-20 (about 360 meters east of the ADI), Loud documented intact midden deposits extending between 2 and 5 feet below grade, with the upper 22 inches exhibiting significant disturbance. While a number of subsequent studies failed to confirm Loud's findings, researchers surmise that there remains potential for intact portions of the site to exist beneath the current ground surface. Furthermore, there is a substantial likelihood that precontact features, such as hearths and burials, may extend below these seemingly disturbed deposits.

This assessment is bolstered by recent trenching and data recovery excavations at CA-SCL-19 (about 600 meters east of the ADI), which revealed consistent stratigraphy throughout the site. The findings demonstrate approximately 25 cm of sterile surficial fill overlaying about 15 cm of

[29] Garlinghouse, T., and M. Hylkema. 2006. Extended Phase I Study of the Berry Court Archaeological Site. On file at the Report prepared for Larry Moore, CTSC, Environmental Division, US Army Reserve Contracting Center, Fort Hunter Liggett, California.

[30] Clark, T., E. Elliot, T. Young, and C Alonso. 2020. Archaeological Data Recovery Report, P-43-000039/CA-SCL-19, NAVAIDS Project, Moffett Federal Airfield Santa Clara County, California., Submitted to and on file with NASA.

disturbed shell midden deposits, followed by 35 to 50 cm of dark sub-midden deposits containing pit features and burials.[31]

An intact precontact component was also identified at CA-SCL-844/H about 200 meters southwest of the ADI (Project Site). Investigations here revealed midden deposits and a human interment at about 40 cm, situated within an elevated area described as a grassy knoll. Archaeological deposits surrounding the knoll were highly mixed, containing precontact and historic age materials.[32] In their archival review of areas in NASA ARC, AECOM proposed that the site may be associated with nearby CA-SCL-21 and CA-SCL-24; however, both of these are mostly destroyed or at least highly obscured by historic and modern development.[33]

Based on these findings, AECOM assessed NASA ARC, including the areas within current the APE, as sensitive for surface and near-surface precontact archaeological resources. Specifically, they recommended high sensitivity be assigned to all known archaeological resources, each with a 300-foot buffer to account for potential imprecision in the original recording of these resources as well as the potential for associated subsurface deposits beyond the current recorded site boundaries (Appendix A: Figure A-34 in the Cultural Resource Inventory Report). Several portions of the ADI overlap with areas deemed highly sensitive for surface and near-surface deposits (i.e., areas involving P-43-004487 and P-43-004488) including areas within the Project Site, demolition along Bailey Road, and utility improvements along Perimeter Road (Appendix A: Figure A-35 in the Cultural Resource Inventory Report).

Several areas of the ADI fall outside areas deemed to have heightened sensitivity by AECOM; however, numerous studies within NASA ARC have shown that historic and modern-era urban development has significantly altered, removed, or buried archaeological deposits, signaling that surface expressions are unreliable indicators of near-surface deposits. Accordingly, Albion recommends considering the entire ADI as sensitive for surface and near-surface archaeological deposits. These types of resources are typically explored via manual or mechanical archaeological excavation or near-surface geophysical techniques such as ground-penetrating radar.

Buried Landform Sensitivity (Deeply Buried Archaeological Sites)

San Francisco Bay, formerly a stream valley during the Pleistocene, became a bay about 8,000 years ago when world temperatures rose and melting glaciers made sea levels rise accordingly.[34] With the rise of bay waters, sediment and debris from the Sacramento Valley catchment and the San Joaquin Valley catchment commenced to back up, forming what is known today as the Sacramento–San Joaquin Delta. By the mid-to-late Holocene, the Bay estuary expanded as a result of subsidence and compaction of intertidal deposits. High sea levels in southern San Francisco Bay enabled estuarine

31 Clark, T., E. Elliot, T. Young, and C Alonso. 2020. Archaeological Data Recovery Report, P-43-000039/CA-SCL-19, NAVAIDS Project, Moffett Federal Airfield Santa Clara County, California., Submitted to and on file with NASA.

32 Garlinghouse, T., and M. Hylkema. 2006. Extended Phase I Study of the Berry Court Archaeological Site. On file at the Report prepared for Larry Moore, CTSC, Environmental Division, US Army Reserve Contracting Center, Fort Hunter Liggett, California.

33 AECOM. 2025. Archaeological Resources Study: NASA Ames Research Center. Prepared for NASA by AECOM, NASA Ames Research Center, Moffett Field, California.

34 Atwater, B.F. 1979. Ancient Processes at the Site of Southern San Francisco Bay: Movement of the Crust and Changes in Sea Level. In San Francisco Bay: The Urbanized Estuary, pp. 31-45, T.J. Conomos, A.E. Leviton and M. Berson, general editor. Pacific Division of the American Association for the Advancement of Science, San Francisco.

environments to migrate southward. Consequently, precontact human populations may have had to move inland in response to the estuary expansion. Since the 1850s, tidal marshes along the Bay margins have shrunk by 50 percent, placing the current shoreline where it would have been 5,000 years ago.

Previous research on geology, soils, bay and estuary formation, and flood events have illustrated how precontact archaeological resources are often buried under recent alluvial deposits. Modern roadways and building construction have further obscured these resources, rendering traditional ground surface surveys inadequate for identifying these types of resources.

In recent years, geoarchaeological studies have made great strides in assessing potential for buried landforms, significantly increasing the ability to identify resources. One such investigation involved a comprehensive geoarchaeological study of the Santa Clara Valley conducted in conjunction with the Caltrans Route 87 Guadalupe Parkway Upgrade project.[35,36] The project included a review of archaeological sites in the South Bay to understand the relationship between site distribution and landform deposits.

The study compared the frequency of surface and buried sites with several contexts including alluvial flood plain deposits (Qhfp), flood basin deposits (Qhb), and natural levee deposits along major streams (Qhl). Precontact archaeological deposits have been found in each context with flood plain deposits (Qhfp) containing the highest concentration of sites, followed by basin (Qhb) and levee deposits (Qhl). The study found that buried sites occur in all contexts, accounting for between 55 and 70 percent of the total sites for each landform, a finding confirmed in later geoarchaeological studies of the Santa Clara Valley.[37] Analyses have shown that buried sites are not randomly distributed across this landscape; rather, they are influenced by specific environmental and geomorphic factors, including proximity to water, the slope of the landform (with flatter areas being more sensitive), and the relative age of the landform, where generally younger formations tend to be more sensitive.

Based on the regional studies conducted in the Santa Clara Valley, one might assume it is reasonable to conclude that all areas within the ADI (mapped entirely in Qhb) should be regarded as sensitive for precontact deposits, both near surface and buried. However, AECOM, in their geoarchaeological assessment of NASA ARC, suggests that the basin deposits in the vicinity differ from those in other parts of the valley and are not sensitive due to the absence of freshwater streams or rivers that would have created a highly favorable depositional environment.[38] Additionally, the characteristics of Hangar One soils, which comprise the basin deposits, are heavily saturated (with seeps and springs) and unsuitable for habitation, except for elevated topographic features such as knolls and natural levees adjacent to the basin soils.

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35 Allen, R., A. Medin, R.S. Baxter, B. Wickstrom, C. Young Yu, J.G. Costello, G. White, A. Huberland, H.M. Johnson, J. Meyer, and M. Hylkema. 1999. Upgrade of the Guadalupe Parkway, San Jose Historic Properties Treatment Plan. On file at the Prepared for California Department of Transportation, District 4, Oakland, by Past Forward, Richmond, California.

36 Meyer, J. 2000. A Geoarchaeological Study of the Guadalupe Parkway Corridor, State Route 87, San Jose, Santa Clara County, California. Anthropological Studies Center, Sonoma State University Academic Foundation, Inc., Rohnert Park, California.

37 Meyer, J., and J.S. Rosenthal. 2007. Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4. On file at the Far Western Anthropological Research Group, Davis, California.

38 AECOM. 2025. Archaeological Resources Study: NASA Ames Research Center. Prepared for NASA by AECOM, NASA Ames Research Center, Moffett Field, California.

AECOM's archaeological assessment included a review of data from geoprobe cores excavated for a Caltrans project along U.S. 101 near Moffett Boulevard.[39] The investigation identified several locations with evidence for paleosols (buried surfaces), though their depth varied widely (4 to 16.5 feet below surface) and most likely formed within freshwater marsh or pond environments, suggesting low potential for archaeological sensitivity. AECOM posits that the buried landform was covered by sediment and stopped receiving organic material during the early Holocene. This surface was covered by fine alluvial deposits, which may show the change from a freshwater marsh to a low-energy alluvial fan or floodplain, a change that may be linked to increased floodplain buildup from nearby Stevens Creek as sea levels rose quickly in San Francisco Bay between about 10,000 and 8,000 years ago.

This interpretation is reinforced by their analysis of a database containing hundreds of previous geotechnical investigations conducted at NASA ARC. These investigations indicate that the ARC vicinity was characterized by numerous "aggrading and anastomosing" stream channels during the late Pleistocene and early Holocene, prior to the inundation of the Bay and the formation of the basin landform. The variability in subsurface conditions, along with the presence of numerous high-energy features, further diminishes the likelihood of encountering preserved, deeply buried precontact archaeological resources.

In comparing the various lines of evidence from the local record with those from other areas of the Santa Clara Valley that feature younger alluvial landforms near major streams, AECOM suggested that NASA ARC likely has only a moderate potential for containing precontact archaeological sites that may be buried due to natural geomorphic processes. As a result, comprehensive subsurface geoarchaeological investigations, such as mechanical excavation or coring aimed at revealing buried landforms, were considered unnecessary for the assessment of deeply buried archaeological resources.

This recommendation applies to the entirety of the ADI (Appendix A: Figure A-35 in the Cultural Resource Inventory Report). Notably, heightened sensitivity for geoarchaeological resources was indicated at the northern boundary of NASA ARC (northern portion of the current APE, out of the ADI), where recent Bay muds and related estuary sediments may conceal older terrestrial landforms (Appendix A: Figure A-34 in the Cultural Resource Inventory Report).

Historic-Era Site Sensitivity

Sensitivity in the APE

AECOM prepared a recent sensitivity assessment of historic-era archaeological resources for NASA ARC within a study area very similar to the current APE (Appendix A: Figures A-34 and A-35 in the Cultural Resource Inventory Report).[40] For this assessment, they divided the facility's history into two distinct periods: the period prior to 1931 dominated by rural agriculture and the period after 1931 defined by military and research development. AECOM concluded that the potential for significant archaeological resources from the military period is very low because of strict waste management protocols preventing refuse accumulation and detailed record keeping documenting

39 URS Corp. 2014. Historic Property Survey Report, US 101 Express Lanes Project, Santa Clara County, California. On file at the Prepared for State of California Department of Transportation District 4, On file at the Northwest Information Center, Sonoma State University, California.

40 AECOM. 2025. Archaeological Resources Study: NASA Ames Research Center. Prepared for NASA by AECOM, NASA Ames Research Center, Moffett Field, California.

material life at the facility better than archaeology could. They, therefore, focused their sensitivity assessment on the pre-1931 agricultural period when the area was dominated by farms and coastal transportation and shipping, and Albion concurs with their methods and results.

AECOM based their mapping of elevated pre-1931 historic-era archaeological sensitivity primarily on farmsteads depicted on archival maps with an added 200-foot buffer around each one, as there is only one previously recorded archaeological site with a historic-era component within the boundaries of NASA ARC (or within the current APE), CA-SCL-864/H (P-43-001825) (Appendix A: Figures A-11 and A-34 in the Cultural Resource Inventory Report). In particular, they relied on the 1876 Thompson & West map, 1897 U.S. Coast and Geodetic Survey T-sheet, and 1899 U.S. Geological Survey topographic map, plus data from the 1859 Rancho Posolmi plat and 1873 Geological Survey of California map (Appendix A: Figures A-13, A-14, A-15, A-17, and A-18 in the Cultural Resource Inventory Report). The most detailed and accurate of these maps, they noted, is the 1897 T-sheet, with other documents like the 1876 Thompson & West map much less precise. When overlain on current project boundaries, results show that historic farmsteads were concentrated along the eastern side of the APE east of the runways and in the southwest portion of the APE in and adjacent to the ADI.

AECOM reported that there are few detailed records of cutting and filling within the Ames facility in the post-1931 era and it is not possible to determine whether buried archaeological deposits associated with any particular farm depicted on historic maps were preserved or destroyed by subsequent earthmoving activity. This includes areas of the APE where buildings and other improvements currently exist or once existed. AECOM therefore recommends assuming that all farmsteads depicted on historic maps have at least moderate archaeological potential. In contrast, AECOM concluded based on as-built drawings that Whisman's/Bernard's/Jagel's Landing in the northern part of the current APE was destroyed by over excavation during extension of the runways in the 1950s and is no longer sensitive.

The one previously recorded archaeological site in the APE with a historic-era component is CA-SCL-864/H (P-43-001825). The site is located approximately 250 meters southwest of the triangular Project Site portion of the ADI and comprises disturbed and mixed deposits of precontact and historic-era materials in the top 60 cm based on subsurface testing in 2006.[41] Historic artifacts identified during testing included ceramic brick and tile, mortar, ceramic tableware, bottle and window glass, slag, metal nails, and unidentified metal. Unfortunately, it was not possible to date these artifacts with any precision, and they could be from the pre-1931 agricultural period or post-1931 military period. However, the presence of machine-cut nails, which are relatively rare after the 19th century, suggests that at least some of this material dates to the agricultural period. For the purposes of the current study, the presence of historic-era artifacts in proximity to the ADI, albeit in a disturbed context, indicates that historic-era archaeological deposits may also survive within the ADI itself, some of which may remain intact.

Sensitivity in the ADI

Consistent with the APE more broadly, sensitivity for historic-era archaeological resources within the ADI is associated with historic farmsteads depicted on archival imagery, as there are no previously recorded historic-era archaeological sites in the ADI.

41 Garlinghouse, T., and M. Hylkema. 2006. Extended Phase I Study of the Berry Court Archaeological Site. On file at the Report prepared for Larry Moore, CTSC, Environmental Division, US Army Reserve Contracting Center, Fort Hunter Liggett, California.

In particular, there is moderate to high potential for historic-era archaeological resources associated with one farmstead that falls within the triangular Project Site portion of the ADI. The road later known as Whisman Road passed north through this part of the ADI on its way to Whisman's Landing starting in the 1850s or earlier and remained the main travel corridor to and from the waterfront through the 1920s. It is clearly shown on most historic maps of the area and aligns approximately with current Dailey Road. The 1876 Thompson & West Map shows a farmyard, including buildings and an orchard associated with Evan Jenkins abutting the east side of Wisman Road within the ADI and the 1897 T-Sheet shows this farm in greater detail. This farm was later owned by J.L. Azevido in the 1910s and A.M. Meteiros in the 1920s. As discussed by AECOM, the accuracy of the 1876 map is limited, and Albion will rely here on the far more accurate 1897 T-Sheet. Overlaying the T-Sheet on the modern landscape, any surviving archaeological deposits associated with this farmstead would probably be in the vicinity of the NASA Lodge, the parking lot to the north, and the parking lot and grassy field east of Gorsky Road, approximately the area bounded by Dailey Road, Edquiba Road, and Kaiser Road (Appendix A: Figures A-35 and A-36 in the Cultural Resource Inventory Report). Such archaeological deposits could include buried structural remains and household and agricultural refuse associated with the Jenkins and later occupations. Post-1931 historic aerial photos show that, while a series of temporary military dwellings were located here in the 1940s, they appear to have had only limited subsurface impacts, and by the 1960s most of these buildings were gone and the location of the historic farmstead in the ADI contained substantial open space (Appendix A: Figure A-36 in the Cultural Resource Inventory Report). This limited post-1931 development increases the potential for intact historic-era archaeological deposits within the Project Site.

The linear portions of the ADI intersect with other sections of historic Whisman Road and some agricultural fields and orchards depicted on historic maps (Appendix A: Figure A-20 in the Cultural Resource Inventory Report). However, they do not overlap with any dwellings or farmyards, places where archaeological deposits tend to be concentrated. Whisman Road itself has very low archaeological sensitivity because it is well documented on historic maps and has little data potential. As such, the sensitivity for intact historic-era archaeological deposits with research potential in these areas is low. One exception is Whisman's property and ditch shown on the 1859 map of Rancho Posolmi, which overlap with part of the linear ADI in the southwest corner of the APE (Appendix A: Figure A-13 in the Cultural Resource Inventory Report). However, this part of the ADI consists of utility upgrades within existing roads, and it is possible that prior construction has destroyed any archaeological deposits in these locations. Sensitivity here, then, is low to moderate.

3.5.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as

applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

Plans, policies, and regulations considered in the analysis of the proposed project's impacts related to cultural resources are identified in the Cultural Resource Inventory Report (Appendix 3.5-1 to this joint EIR/EIS). A list of plans, policies, and regulations considered in the analysis is provided below:

- National Historic Preservation Act
- NASA-Wide Programmatic Agreement under Section 106
- National Register of Historic Places
- NASA Procedural Requirement 8510.1A: Cultural Resource Management
- NASA Ames Research Center Historic Resources Protection Plan
- NASA ARC Integrated Cultural Resources Management Plan
- NASA ARC Design Review Program
- California Register of Historical Resources
- California Environmental Quality Act

3.5.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on cultural resources in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on cultural resources, in accordance with NEPA, is provided separately in Section 4.5.5, *Cultural Resources*, in Chapter 4, *Environmental Impact Statement*.

3.5.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on cultural resources if it would result in any of the conditions listed below.

Would the project:

- Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?
- Cause a substantial adverse change in the significance of an archaeological historical resource pursuant to Section 15064.5 or a unique archaeological resource (California Public Resources Code [PRC] Section 21083.2)?

- Disturb any human remains, including those interred outside of dedicated cemeteries?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to cultural resources?

3.5.6 Methods for Analysis

3.5.6.1 Built-Environment Resources

Under CEQA, assessment of project impacts on built-environment resources considers the project's potential to alter physical features and qualities that support a significant resource's historical integrity and ability to convey its significance. Any amount of change to a resource or its setting does not automatically equate to a significant impact. Instead, the State CEQA Guidelines explain that a significant impact would occur when the project proposes to materially impair the resource's significance—that is, alter the resource's character-defining features (including important aspects of its setting) that qualify it for historical register listing or that have supported its identification in a local historical resources survey.

Material impairment of a significant built-environment resource can be caused by construction activities that change the physical features of the resource itself, particularly through demolition, damage, relocation, or insensitive alteration. A project that would retain a significant built-environment resource but change its physical characteristics (for instance, a rehabilitation or construction of an addition) should be analyzed using the Secretary of the Interior's Standards. The State CEQA Guidelines specify that a project meeting the Secretary of the Interior's Standards is presumed not to result in a significant impact (Section 15064.5(b)(3)).

Even if a project does not propose changes to the physical elements of a significant built-environment resource, damage to the resource could still occur resulting from groundborne vibration produced from construction activities taking place in the vicinity. It is hypothetically possible that some construction methods could produce vibration reaching such intensities that it would damage a nearby historic property's character-defining features. Section 3.12, *Noise*, of this joint EIR/EIS presents analysis of the project's potential to cause vibration; the following analysis discusses how such vibration levels have the potential to result in impacts to historical resources. Furthermore, a built-environment resource may still sustain a significant impact if important features or qualities in its vicinity are perceptibly changed. Such an impact would occur if the resource's integrity of setting, feeling, or association were altered in a manner that reduces the resource's ability to convey its significance. The State CEQA Guidelines note that significant impacts can result from changes to a resource's "immediate surroundings." In these scenarios, the impacts analysis should consider whether the proposed project would remove, obstruct, or change elements in a resource's setting that allow it to express its historically or architecturally significant character. Permanent changes in atmospheric conditions, such as increased noise or vibration levels, may constitute an adverse effect if a quiet setting is closely tied to the resource's reasons for significance. Generally, noise or vibration occurring during construction are temporary and would have a limited impact on a significant resource's setting characteristics.

3.5.6.2 Archaeological Resources

The proposed project may cause a significant impact on archaeological resources in a number of ways, including complete or partial destruction during demolition and construction of new facilities,

utility work, road construction, and landscaping. A determination of a significant impact is based on a comparison of project plans (e.g., breadth and depth of grading or excavation) and the physical characteristics of the archaeological deposit. The determination also considers the integrity of the resource and the aspects of the resource that contribute to its significance. If, for example, an archaeological resource is found to lack integrity, and therefore has no potential to contribute meaningful data to address research questions, there will be a finding of no impact. Similarly, the project may affect a portion of a significant resource, but only the portion that does not have the potential to contribute meaningful data, resulting in a determination of no significant impact. A determination of a significant impact leads to consideration of mitigation measures to reduce project impacts.

3.5.7 Impacts and Mitigation Measures

Impact CEQA-CUL-1: Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	CUL-1. Protect Shenandoah Plaza Streetlights CUL-2. Review Project Design for Architectural Compatibility CUL-3. Develop and Implement an Interpretive Program NOI-5. Construction Vibration Control Plan for Vibratory Rollers	Significant and Unavoidable with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The following analysis discusses potential impacts on built-environment historical resources that could be caused by construction of the CEQA Proposed Project. The analysis first addresses the CEQA Proposed Project's potential to alter the physical characteristics of significant built-environment resources (including demolition), then discusses potential vibration-related damage to individual historical resources and historic district contributors, and finally assesses potential changes in the setting of historical resources.

Changes in Physical Characteristics

As described in the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS), none of the buildings in the Project Site that would be demolished to accommodate project construction

meets the definition of a CEQA historical resource individually or as contributors to the U.S. Naval Air Station (NAS) Sunnyvale Historic District. Therefore, construction of the CEQA Proposed Project would not involve the demolition of any significant built-environment historical resources.

Hangar One stands approximately 125 feet north of the Project Site's northeast corner, and Hangar Two is located on the east side of the airfield, more than 3,000 feet from the eastern edge of the Project Site. Construction of the project would not alter the physical characteristics of these NRHP-eligible resources. However, the Project Site extends a short distance into the expanded NAS Sunnyvale Historic District, and the project proposes alterations to a limited number of contributing properties. The project proposes to shift Cody Road from its current alignment to a new location approximately 80 feet to the east. South of Hangar One, the realigned roadway would encroach into the NAS Sunnyvale Historic District and would overlap with a portion of MF1002, an aircraft parking apron that has been identified as a historic district contributor. The realignment of Cody Road would extend approximately 50 feet east into the boundary of the NAS Sunnyvale Historic District and would disturb approximately 11,000 square feet (or 0.25 acre) of MF1002, which is currently characterized by a surface of level, paved concrete. The affected parking apron retains the gridded pattern of the concrete squares that characterized the resource during the historic district's period of significance. The portion of MF1002 that would be disturbed by the project constitutes a small portion of the entire parking apron, which measures approximately 1,700,000 square feet (almost 40 acres) to the south and east of Hangar One. Therefore, the size of the affected parking apron would be decreased by less than 1 percent of its total area, and following project construction MF1002 would still clearly convey its historical role supporting aircraft circulation between Hangar One and the adjacent airfield. In addition, the project proposes to alter the Wescoat Road roadway to accommodate a new traffic configuration, which would entail shifting the south curbline. Construction equipment in Wescoat Road would be used in proximity to five streetlights that currently stand north of the street's existing curbline. Another off-site utility corridor would be installed in the Cummins Avenue roadway, which leads past six streetlights. As detailed in the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS), the current investigation evaluated the 48 extant original streetlights within the NAS Sunnyvale Historic District, which includes those standing along Wescoat Road, and concluded they qualify as a contributing element of the historic district.

The project intends to retain the historic streetlights in their current locations during construction and protect them from inadvertent damage (e.g., resulting from construction equipment or construction-related vibration). Following the completion of construction, the widened roadway would not be anticipated to represent a perceptible change from ground level. Visual simulations of the proposed changes to the Wescoat Road streetscape shown in Figures 2 and 3 in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, of this joint EIR/EIS. The streetlights would continue to convey the symmetrical layout and regular spacing along Wescoat Road that reinforce the formal landscape character of the historic district. However, further details on the methods that would be used to protect the contributing streetlights have not yet been developed. Therefore, it remains possible that the streetlights would not be protected adequately during project construction. Were the streetlights to be damaged, the pattern of streetlights in the NAS Sunnyvale Historic District would no longer reinforce the formal landscape character of the historic district.

Vibration-Related Damage

Construction in the vicinity of individual historical resources and historic district contributors appears to have the potential to cause vibration at levels exceeding applicable damage criteria

outlined by the California Department of Transportation. As described in Section 3.12, *Noise*, of this joint EIR/EIS, groundborne vibration generated by construction activities would exceed the Caltrans damage threshold for "historic and some old buildings" (i.e., peak particle velocity [PPV] of 0.25 inch per second [in/sec]) where vibratory rollers would be used for soil compaction or in-street utility work within 22 feet of such resources.

Based on currently available information, the use of vibratory rollers is the most vibration-intensive construction activity that may be employed to construct the CEQA Proposed Project. This construction method within the Cummins Avenue roadway may take place less than 20 feet from Hangar One's southwest corner, and similar work occurring in Wescoat Road could be as close as 22 feet from Building 6 and Building 16, which are contributors to the NAS Sunnyvale Historic District. Using a conservative analysis, at the aforementioned distances, it is possible that Hangar One, Building 6, and Building 16 could experience construction-related vibration that would be above the damage threshold for "historic and some old buildings" (PPV of 0.25 in/sec).[42] Therefore, it is possible that the use of vibratory rollers for in-street utility work in Wescoat Road and Cummins Avenue could cause damage to character-defining physical characteristics of nearby historical resources.

Changes in Setting

In addition to the project's potential to remove or damage contributing elements of the NAS Sunnyvale Historic District, the project proposes to construct new buildings adjacent to the southern boundary of the NAS Sunnyvale Historic District and in the vicinity of Hangar One. The project would replace the buildings currently located in the Project Site—which are generally one to two stories tall and surrounded by surface parking lots—with approximately 2.3 million square feet of new academic and research facilities. The proposed facilities would be housed in buildings that would reach a maximum height of 105 feet (i.e., a maximum building height of 80 feet plus a 25-foot allowance for mechanical equipment and screens). The facilities have been designed at a conceptual level and include stepdown zones along Wescoat Road and Cody Road, across which the Project Site faces the expanded NAS Sunnyvale Historic District. The stepdown zones propose a 15-foot stepback for the portions of the new buildings above 35 feet tall.

During the period of significance for the expanded NAS Sunnyvale Historic District (1930–1961), the Project Site contained a collection of low-scaled, one- and two-story military support buildings, such as lodging and recreational facilities. Although some buildings in the Project Site date to the period of significance, the current conditions of the Project Site do not appear to be important elements in the setting of Hangar One, Hangar Two, or the larger NAS Sunnyvale Historic District. The demolition of the industrial and institutional buildings currently in the Project Site would not remove any features that allow the historic district to convey its historically significant military missions. However, the scale of the new buildings constructed by the project would represent a visible increase compared to the buildings now located in the Project Site, and the proposed scale

[42] The California Department of Transportation's *Transportation and Construction Vibration Guidance Manual* does not provide definitions for the property categories for which it establishes damage thresholds. The available categories include extremely fragile historic buildings, fragile buildings, historic and some old buildings, older residential structures, new residential structures, and modern industrial/commercial buildings. The noise and vibration analysis completed for this investigation has conservatively assigned the contributors to the NAS Sunnyvale Historic District to the category historic and some old buildings. (California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. April 2020. Page 38.)

and pattern of development would change the setting of historical resources (particularly Hangar One and the expanded NAS Sunnyvale Historic District).

If built up to the maximum development parameters, the new buildings constructed under the project would be visible from areas inside the historic district. Assessing whether views of the new development from the historic district would result in an impact to the historic district requires an understanding of the NAS Sunnyvale Historic District's most important visual relationships. Previous investigations have considered visual relationships within the NAS Sunnyvale Historic District and have identified the following views as character-defining qualities of the historic district:

- Broad, open views across aviation areas
- Long views to the salt ponds and San Francisco Bay
- Visual dominance of Hangar One from all areas, including from the main entrance gate at Moffett Boulevard, from Hangar Two, and from the airfield
- Views to aircraft maintenance Hangar Two[43]

Visual simulations indicate that the CEQA Proposed Project would not interrupt these visual relationships. New buildings would be visible from vantage points surrounding the airfield, including the view west from Hangar Two, but would remain subordinate volumes compared to Hangar One.

Visual simulations shown in Figures 10, 11, and 12 in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, of this joint EIR/EIS illustrate that the CEQA Proposed Project would not obstruct views across the airfield, including toward Hangar One. The hangar would be approximately twice as tall as the maximum height of the buildings with mechanical screens proposed by the project (105 feet), and Hangar One would be obscured only from vantage points south and southwest of Hangar One. Although these view corridors allow members of the public to see the hangar from areas outside of NASA ARC, such as along U.S. 101, they are not historically significant visual relationships.

The CEQA Proposed Project would also be visible from the Shenandoah Plaza open space, which follows the primary east–west axis from the entrance at Moffett Federal Airfield toward Hangar One. As depicted in Figure 6 in Appendix 3.2-1, the proposed buildings are anticipated to be obscured by intervening mature trees and existing buildings when viewed facing east toward Hangar One from the west end of Shenandoah Plaza. Figures 7, 8, and 9 in Appendix 3.2-1 indicate that the upper stories and mechanical screens of the proposed buildings would be more likely to be visible nearer Hangar One, such as in front of Building 17, because their 105-foot maximum height, including the 25-foot maximum height for the mechanical screens, surpassing the two-story buildings that line Shenandoah Plaza to the south.

The change in setting would also be apparent along Wescoat Road and Cody Road, which form the northern and western boundaries of the historic district, respectively. (Refer to Figures 2 through 5 in Appendix 3.2-1 for simulated views of the changed setting along Wescoat Road and Cody Road.) Along these corridors, new buildings proposed by the project would rise taller than the low-scaled buildings currently in the Project Site. The nearest district contributors along Wescoat Road stand

[43] AECOM. 2013. *Historic Property Survey Report for the Airfield at NASA Ames Research Center*. Prepared for NASA Ames Research Center. Pages 4-3, 5-4 through 5-6.

within 100 feet of the Project Site and are typically one or two stories tall, which is perceptibly lower than the maximum development parameter proposed by the project. The 15-foot stepback above a height of 35 feet would somewhat mediate the change in building scale across Wescoat Road between the Project Site and the NAS Sunnyvale Historic District, but the building masses would remain clearly visible from the historic district. Along Cody Road, Building 158 (the Flight Operations Building) is the primary district contributor that faces the Project Site, but it is separated from the Project Site by more distance (more than 300 feet). Furthermore, Building 158 maintains a close functional and visual relationship with the airfield, which is located adjacent to its east side; the CEQA Proposed Project would not interrupt that relationship.

Although the project would not obscure the most important views within the NAS Sunnyvale Historic District, it would still introduce large building masses into the historic district's setting where none existed previously. The project design remains at a conceptual stage, and the architectural character of new buildings in the Project Site has not yet been developed. However, as shown in Table 2-4 in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the following proposed Standards in the Development Guidelines are intended to promote architectural compatibility with the historic district:[44]

- The architectural character of Berkeley Space Center shall reflect its own time and the unique purposes of the research buildings, conveying a keen sense of place and identity, both for the immediate Berkeley Space Center area and within the broader NASA ARC, complementing the historic buildings and avoiding simulacrum.
- Architectural character shall both complement the historic character of Shenandoah Plaza and provide a contemporary response to the new development as an urban research district. Façades shall be articulated to convey a sense of human scale, denote building entries and reinforce the design of the streetwall.

The intention of the Standards is to support the architectural compatibility of new development in relation to the NAS Sunnyvale Historic District, consequently lessening the impact of the project's scale and visual bulk. However, the design of the CEQA Proposed Project has not been developed to the extent that it can be demonstrated whether project-specific interpretation of the Standards will successfully achieve architectural compatibility with the historic district. Even with an architecturally compatible design, the CEQA Proposed Project design would introduce visually distracting and out-of-scale facilities into the immediate setting of the historic district, where the setting has historically been characterized by rural or low-density institutional development. Therefore, construction of the proposed project would change aspects of the historic district's setting that help convey its historical development between the 1930s and 1960s.

In addition to new building masses, the proposed project envisions landscape treatments along Wescoat Road and Cody Road, which run along the boundaries of the historic district. Currently, the streetscape at these roadways is characterized by a graded, level ground surface with areas of grass turf interspersed with paved parking lots and automobile access drives. West of Dailey Road, both sides of Wescoat Road feature grass turf approaching the roadway curb. Segments of concrete strip sidewalks are also present in some areas. There are several mature trees in the vicinity of Wescoat Road, which establish an inconsistent canopy along the roadway. East of Dailey Road, the landscape character of Wescoat Road is more utilitarian and features fewer trees and intact sidewalks. The

[44] The proposed Development Guidelines refer to the Shenandoah Plaza Historic District and the NAS Sunnyvale Historic District interchangeably.

Cody Road corridor does not appear to have any formally designed landscape features and generally contributes to the utilitarian visual qualities of the adjacent airfield to the east.

The proposed Master Plan and Development Guidelines envision a landscape treatment for the south side of Wescoat Road (located within the Project Site) that comprises regularly spaced street trees within a 6-foot-wide amenity band, as well as an 8.5-foot-wide sidewalk. The treatment for the west side of Cody Road is similar although proposes a slightly wider (9-foot) sidewalk and an additional planting area containing trees and low plantings. As shown in Figure 2-5, *Conceptual Site Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative,* in Chapter 2, Proposed Project/Proposed Action and Alternatives, of this joint EIR/EIS, the conceptual site plan includes two open spaces, the Gateway Plaza and Hangar Commons, that would partially face Wescoat Road and/or Cody Road. Gateway Plaza would be located near the west end of the Project Site near the Girard Connector, and Hangar Commons would occupy the northeast corner of the Project Site at the intersection of Wescoat Road and Cody Road. Both open spaces would contain regional plantings belonging to woodlands and gardens and meadows planting typologies.

The introduction of rows of regularly spaced street trees along Wescoat Road and Cody Road would reinforce the existing green qualities of the NAS Sunnyvale Historic District and would help define the district's boundaries, in addition to somewhat mediating the change in building scale between the Project Site and the historic district. The presence of the street trees, however, would not screen the visual mass of new facilities to the extent necessary to lessen the proposed project's impact on the setting of the historic district. The proposed street trees and pedestrian circulation along Wescoat Road and Cody Road would be identifiable as contemporary treatments within the Project Site that are compatible with the existing, green landscape character of Shenandoah Plaza. More dense and variegated plantings in the two open spaces along Wescoat Road and Cody Road may be partially visible from vantage points along the edge of the historic district, but they would similarly support the overall natural qualities of the larger site while remaining identifiable as modern landscape elements.

For these reasons, the landscape treatments in the proposed Master Plan and Development Guidelines would not contribute to the significant impact on the historic setting of the NAS Sunnyvale Historic District.

Conclusion

As demonstrated in the preceding discussion, the CEQA Proposed Project may result in physical damage (associated with vibration) to contributors to the NAS Sunnyvale Historic District, and new development would introduce new facilities into the setting of the NAS Sunnyvale Historic District that materially impair the district's significance. Therefore, impacts on built-environment historical resources would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure CUL-1. Protect Shenandoah Plaza Streetlights

Prior to the issuance of permits for work occurring in the Clark Road, Wescoat Road, and Cummins Avenue roadways, the Project Proponent shall submit site plans for review and approval by the NASA ARC cultural resources manager to ensure that historic streetlights are retained in their current locations at the conclusion of project construction. This measure

applies to the 17 streetlights installed during the 1930s that line Clark Road, Wescoat Road, and Cummins Avenue. The Project Proponent shall also incorporate into contract specifications a requirement that the contractor(s) prepare a written protection plan that outlines the methods and equipment to be used so that equipment- and vibration-related damage to the streetlights is avoided during construction. Such methods may include staging equipment and materials so as to avoid direct damage, installing physical barriers, and temporarily stabilizing the area, as deemed appropriate by the contractor. Specifications shall also stipulate that any damage incurred to historic properties as a result of construction activities shall be reported to the NASA ARC cultural resources manager. The site plans and contract specifications shall be reviewed and deemed adequate by the NASA ARC cultural resources manager prior to the issuance of permits.

If damage to a streetlight occurs during construction, the Project Proponent shall engage a qualified professional who meets the standards for historical architecture, as set forth by the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations, Part 61), to assess the damage and provide treatment recommendations. Damage incurred to the resource shall be repaired according to the Secretary of the Interior's Standards in consultation with the qualified professional and NASA ARC cultural resources manager.

Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility

To ensure the designs of project buildings adjacent to the NAS Sunnyvale Historic District (i.e., along Wescoat Road and Cody Road) are informed by the Secretary of the Interior's Standards, the Project Proponent shall retain a qualified professional to consult on and evaluate project construction plans at conceptual design, schematic design, and permit submittal phases. The purpose of this mitigation measure is to promote architectural compatibility between project buildings and the historic district, on balance with appropriate differentiation. This mitigation measure establishes a review process that applies only to exterior building façades that are most immediately visible from the historic district (i.e., the northernmost 150 feet of Subareas 1, 2, and 6, as well as the easternmost 150 feet of Subarea 3). The qualified professional shall meet the Secretary of the Interior's Professional Qualifications Standards (36 CFR Part 61) for architectural history or historic architecture.

In coordination with the Schematic Design Review process required by the NASA Research Park (NRP) Design Review Board (pursuant to Ames Procedural Requirement 8822.1), the qualified professional shall provide input during the development of the conceptual design of exteriors of project buildings in Subareas along Wescoat Road and Cody Road (adjacent to the NAS Sunnyvale Historic District) using the Secretary of the Interior's Standards (particularly Standard 9). Input on the exteriors of project buildings may relate to massing, fenestration patterns, entry placement, exterior materials, and façade articulation. Following completion of conceptual design, the qualified professional shall prepare a memorandum that analyzes the compatibility of project building design elements that have been developed. If the design of project buildings does not comply with the Secretary of the Interior's Standards, the qualified professional shall provide recommendations for modifying the project building design to improve its compatibility with the historic district. The memorandum shall be included in the Conceptual Design Phase submittal, and the NASA ARC cultural resources manager shall review and provide comments on the analysis during the Conceptual Design Review process. The Project Proponent shall incorporate the recommended design changes that are feasible while also meeting the objectives of the project (i.e., do not conflict with code requirements or

remove programmatically necessary amenities). The Project Proponent shall provide a response documenting the reasons any recommendations are not feasible and cannot be incorporated into the project design.

The qualified professional shall prepare memoranda that document and analyze the schematic design and permit submittal documents to address any subsequent design changes with the potential to cause visual effects on the NAS Sunnyvale Historic District that occurred from previous review. Each analysis shall be submitted to the Project Proponent and NASA ARC cultural resources manager. Should NASA ARC disagree with any conclusions in the analysis, they shall notify the Project Proponent within 2 weeks of NASA's receipt of the memo of proposed design changes. The plans shall not be resubmitted, but those changes shall be incorporated into the next plan submission. Prior to the issuance of a building permit, NASA cultural resources staff must sign-off that the final permitted plans have been developed with the greatest possible adherence to the objectives defined in the design review process while also meeting project objectives. NASA shall notify ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate, of the approval of construction documents and shall distribute the approved memorandum to demonstrate compliance with this measure.

Mitigation Measure CUL-3. Develop and Implement an Interpretive Program

The Project Proponent shall develop and implement an interpretive program that documents and commemorates the historical development and setting of the NAS Sunnyvale Historic District. Interpretive materials shall address the general history of NAS Sunnyvale and incorporate visual representations of the installation's historical setting (including the Project Site) during the interwar, World War II, and early Cold War periods. Interpretive media may include on-site displays placed in visible and accessible locations and/or digital platforms (i.e., using a mobile device application).

An interpretive plan shall be prepared in coordination with an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards and an exhibit designer, graphic designer, and/or other professional with historical interpretation design experience. The interpretive plan shall describe, at a minimum, the proposed location(s), formats/media, and content themes of interpretive materials. The NASA ARC cultural resources manager shall advise on whether the interpretive plan shall be developed in coordination with separate interpretive requirements (i.e., public interpretation of archaeological materials required by the Cultural Resources Treatment and Monitoring Plan). Representatives from the Moffett Field Museum shall be invited to collaborate on the interpretive plan to ensure that proposed materials and themes are coordinated with existing or planned interpretive efforts at NASA ARC. The interpretive plan shall be reviewed and approved by the NASA ARC cultural resources manager.

Following approval of the interpretive plan, the qualified historian and designer shall then develop detailed interpretive content, including text and images, and applicable design specifications for the interpretive materials. The NASA ARC cultural resources manager shall review and approve the text, images, and applicable design specifications prior to production and installation or publication of the interpretive materials and prior to the completion of the first construction phase.

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

See discussion for the CEQA Proposed Project under Impact CEQA-NOI-2 in Section 3.12, *Noise*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure CUL-1 would ensure that contributing streetlights are protected during construction and able to continue to express the NAS Sunnyvale Historic District's original landscape qualities. Mitigation Measure NOI-5 would furthermore protect historical resources near vibration-producing construction activities. Mitigation Measure CUL-2 would establish a process through which the proposed project design is developed to be as architecturally compatible with the NAS Sunnyvale Historic District as feasible while also meeting project objectives. However, it cannot be guaranteed that Mitigation Measure CUL-2 would successfully prevent material impairment to the NAS Sunnyvale Historic District's setting. Mitigation Measure CUL-3 would require the development of interpretive materials that document the historic district's physical development and setting. However, there is no feasible mitigation beyond these measures to prevent material impairment of the historic district's setting. Therefore, the impact on built-environment resources would remain significant and unavoidable with the implementation of mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Proposed Project No Student/Faculty Housing Variant would include the same site plan, maximum building height, and roadway infrastructure as the CEQA Proposed Project, potential impacts related to historical resources would be the same as under the CEQA Proposed Project. Therefore, impacts on built-environment historical resources would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure CUL-1. Protect Shenandoah Plaza Streetlights

Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility

Mitigation Measure CUL-3. Develop and Implement an Interpretive Program

See discussion for CEQA Proposed Project under Impact CEQA-CUL-1.

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

See discussion for the CEQA Proposed Project under Impact CEQA-NOI-2 in Section 3.12, *Noise*, of this joint EIR/EIS.

Significance After Mitigation

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5 would reduce impacts to the extent feasible. Even with implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5, the impact on built-environment historical resources under the CEQA Proposed Project with the Variant would remain significant and unavoidable.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Because the CEQA Reduced Density Alternative would include the same site plan, maximum building height, and roadway infrastructure as the CEQA Proposed Project, potential impacts related to historical resources would be the same as under the CEQA Proposed Project. Therefore, impacts on built-environment historical resources would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure CUL-1. Protect Shenandoah Plaza Streetlights

Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility

Mitigation Measure CUL-3. Develop and Implement an Interpretive Program

See discussion for CEQA Proposed Project under Impact CEQA-CUL-1.

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

See discussion for the CEQA Proposed Project under Impact CEQA-NOI-2 in Section 3.12, *Noise*, of this joint EIR/EIS.

Significance After Mitigation

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5 would reduce impacts to the extent feasible. Even with implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5, the impact on built-environment historical resources under the CEQA Reduced Density Alternative would remain significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include the same site plan, maximum building height, and roadway infrastructure as the CEQA Proposed Project, potential impacts related to historical resources would be the same as under the CEQA Proposed Project. Therefore, impacts on built-environment historical resources would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure CUL-1. Protect Shenandoah Plaza Streetlights

Mitigation Measure CUL-2. Review Project Design for Architectural Compatibility

Mitigation Measure CUL-3. Develop and Implement an Interpretive Program

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-1.

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

See discussion for the CEQA Proposed Project under Impact CEQA-NOI-2 in Section 3.12, *Noise*, of this joint EIR/EIS.

Significance After Mitigation

Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5 would reduce impacts to the extent feasible. Even with implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5, the impact on built-environment historical resources under the CEQA Reduced Density Alternative with the Variant would remain significant and unavoidable.

Impact CEQA-CUL-2: Would the project cause a substantial adverse change in the significance of an archaeological historical resource pursuant to Section 15064.5 or a unique archaeological resource (PRC Section 21083.2)?

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	CUL-4. Cultural Resources Treatment and Monitoring Plan CUL-5. Cultural Resources Monitoring and Sensitivity Training CUL-6. Cultural Resources Inadvertent Discoveries Protocols	Significant and Unavoidable with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The CEQA Proposed Project would result in a significant impact if it were to disturb, damage, or degrade an archaeological resource or its setting in a manner that would materially impair the significance of the resource pursuant to Section 15064.5 of the State CEQA Guidelines. The APE and ADI have a history of intensive precontact and historic-period use and physical remnants from these former uses still exist within the APE and ADI. Therefore, the CEQA Proposed Project's grading and excavation may substantially disturb, damage, or degrade archaeological resources. As a result, construction may cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

Appendix A: Figure A-37 in the Cultural Resource Inventory Report identifies the CEQA Proposed Project elements affecting the two archaeological sites identified within the Project Site, treated here as eligible. Project elements affecting CA-SCL-1145 include excavations for building foundations

(depth of impact is 5 feet) and open space and landscaping (depth of impact is up to 4 feet). Resource CA-SCL-1146 is mapped in areas affected by open space and landscaping activities (depth of impact up to 4 feet). The archaeological sensitivity assessment shows that the CEQA Proposed Project also has a high sensitivity for previously unidentified precontact and historic-era archaeological sites within the ADI (Appendix A: Figures A-34 and A-35 in the Cultural Resource Inventory Report), and data from known sites indicate that deposits associated with any unidentified sites could exist at depths as shallow as the top 60 centimeters (2 feet) below surface.

The impacts of the CEQA Proposed Project within the Project Site extending up to 5 feet in depth would very likely result in partial or complete destruction of the subsurface deposits, which are treated here as eligible. Therefore, impacts on archaeological resources would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction (AHJ), NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Prior to any ground-disturbing activity, the Project Proponent shall retain a qualified Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards (qualified Archaeologist) to develop a Cultural Resources Treatment and Monitoring Plan (CRTMP) in consultation with the Project Proponent, NASA, and ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate. The CRTMP shall specify the procedures to be used to implement the mitigation measures or conditions of approval in the field, the standards of evaluation for unanticipated discoveries that shall be appropriate given the locations and kinds of cultural properties predicted, and treatment methods for resources determined eligible for the National Register of Historic Places (NRHP). The CRTMP shall meet the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (U.S. Department of the Interior, National Park Service, 1983, as amended and annotated). Within each construction phase, all actions mandated in the CRTMP shall be implemented after demolition, but before any other ground-disturbing activities (e.g., grading, trenching), except for the activities as noted below. The CRTMP shall include descriptions and/or summaries of:

- The proposed project and its subsurface impacts;
- The proposed project's regulatory requirements;
- Known cultural resources in the APE and ADI;
- Canine Forensic Survey Alert Results and Interpretations;

- Archaeological Site Sensitivity Assessments;
- A Monitoring Plan that includes:
    - A definition of the Cultural Resources Monitoring Area (CRMA)
    - Requirements for cultural resources sensitivity training
    - Requirements for tribal resources sensitivity training, monitoring schedules, consultation requirements, procedures for addressing tribal resource discoveries made during construction, documentation requirements
    - Monitoring schedules
    - Procedures for addressing archaeological discoveries made during construction
    - Documentation requirements, etc.
- A tribal ethnographic study for each consulting tribe developed in partnership with the tribes that incorporates tribal realities (to be completed prior to occupancy of Phase 4);
- Public interpretation, as determined through consultation with ARC Center Consulting Parties, as appropriate, and designed as part of the interpretive program (see above) (to be completed prior to occupancy of Phase 4);
- Protocols for the treatment of isolate artifacts;
- A plan for conducting subsurface archaeological assessment/evaluation of a sample of the archaeologically sensitive areas and Canine Forensic Survey Alert locations, with sample locations focused on areas of clustered Canine Forensic Survey Alerts and/or areas where the archaeological sensitivity overlaps with the Canine Forensic Survey Alert results. The sample testing locations shall be determined through continued consultation with ARC Center Consulting Parties, as appropriate. The plan shall include subsurface testing through a combination of non-invasive methods (e.g., ground-penetrating radar), mechanical trenching, and hand excavation to allow the qualified Archaeologist and tribal monitor to observe subsurface conditions and locate any buried cultural deposits, features, or artifacts. If the subsurface investigation identifies archaeological resources, the Archaeologist shall conduct hand excavation to evaluate the find to recommend its eligibility under the National Historic Preservation Act (NHPA) Section 106 (36 CFR Part 800). The plan shall include research themes and eligibility criteria to guide the evaluation of archaeological resources under the NRHP. The qualified Archaeologist shall document any findings and subsurface conditions in a report that shall be submitted to NASA. The draft technical report shall be shared with the SHPO and ARC Center Consulting Parties, as appropriate, for review and comment. This plan shall be developed and implemented after demolition, but prior to any other ground-disturbing activity (e.g., grading, trenching) for each construction phase.
- A plan for documenting the data potential and integrity of CA-SCL-1145 and CA-SCL-1146. The plan shall include subsurface testing through a combination of non-invasive methods (e.g., ground-penetrating radar), mechanical trenching, and hand excavation to allow the qualified Archaeologist and Native American monitor to observe subsurface conditions and locate any buried cultural deposits, features, or artifacts. The project shall develop and implement treatments commensurate with the data potential and integrity of archaeological resources CA-SCL-1145 and CA-SCL-1146, and any additional NRHP eligible resources

identified through the subsurface archaeological assessment/evaluation (see above), which shall include data recovery guided by a data recovery plan; the amount of data recovery may be scaled based on the integrity of the resources. The data recovery plan shall include controlled subsurface excavations at archaeological resources CA-SCL-1145 and CA-SCL-1146, archival research, and detailed analysis of artifacts and organic remains recovered during excavation, per protocols outlined in this CRTMP. The qualified Archaeologist shall document the findings and subsurface conditions in a data recovery report, which would be submitted to NASA. The draft data recovery report shall be shared with the SHPO and ARC Center Consulting Parties, as appropriate, for review and comment. The final data recovery report shall be submitted to Northwest Information Center (NWIC) and ARC Center Consulting Parties under the NASA-Wide Programmatic Agreement, as appropriate. This plan shall be developed and implemented after demolition, but prior to any other ground-disturbing activity (e.g., grading, trenching) that includes archaeological resources CA-SCL-1145 and CA-SCL-1146.

- If currently unknown NRHP eligible resources are present, treatment plans to reduce project impacts to eligible resources to less than significant/minimize or offset adverse effects, including:
    - Where feasible, protect sites or portions of sites identified during subsurface testing (e.g., incorporating sites within proposed project open space, re-routing proposed project underground infrastructure, covering the archaeological sites with a layer of chemically stable soil before building impervious surface improvements) (to be completed prior to the start of each construction phase); and/or
    - Archaeological Data Recovery (post-field activities to be completed prior to occupancy of Phase 4); and/or
    - Public Interpretation (to be completed prior to occupancy of Phase 4).
- Curation and/or reburial requirements for non-human remains and non-funerary objects (to be completed prior to occupancy of Phase 4);
- Reporting requirements (to be completed prior to occupancy of Phase 4); and
- Conflict resolution (to be completed prior to occupancy of Phase 4).

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

The qualified Archaeologist shall oversee an archaeological monitor who shall be present during ground disturbing activities (e.g., demolition activities that involve ground disturbance, clearing/grubbing, grading, trenching) within the Cultural Resources Monitoring Area (CRMA), as defined the CRTMP. Native American tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation shall also monitor ground disturbing activities in the CRMA on a rotating basis. Tribal monitoring shall also be required for all archaeological testing and data recovery. In addition, cultural resources sensitivity training shall be pre-recorded for presentation to all construction personnel. The training shall be prepared by the qualified Archaeologist and representatives from the Native American tribes, focusing on how to identify cultural resources that may be encountered during earthmoving activities and the procedures to be followed in such an event. The pre-recorded training materials and a sign-in sheet from the training shall be provided to the Project Proponent to ensure compliance with this mitigation measure. The qualified Archaeologist shall

prepare a monitoring report at the conclusion of archaeological monitoring. Tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation shall review and provide comments on the monitoring report. The final monitoring report shall be submitted to Northwest Information Center (NWIC) and participating Native American communities. The monitoring program and report shall be completed prior to occupancy of Phase 4.

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

In the event that unforeseen precontact (e.g., hearths, stone tools, shell and faunal bone remains, etc.) or historic-era (e.g., bottles, foundations, refuse dumps/privies, etc.) archaeological resources are unearthed, ground-disturbing activities within 100-foot radius of the discovery shall be halted or diverted. Work shall be allowed to continue outside of the 100-foot buffer area. All archaeological resources unearthed by project construction activities shall be evaluated by a qualified Archaeologist, in consultation with tribal representatives from the Costanoan Rumsen Carmel Tribe, Muwekma Ohlone of the San Francisco Bay Area, and Tamien Nation, using methods outlined in the CRTMP. If a resource is determined by NASA, in consultation with the qualified Archaeologist and the tribes, to constitute a "historic property" pursuant to Section 106 of the NHPA, the qualified Archaeologist, in consultation with the tribes, shall direct implementation of mitigation using methods outlined in the CRTMP. Proper treatment of all inadvertent discoveries, per the CRTMP, shall be completed before occupancy of Phase 4 of the proposed project.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources. Implementation of Mitigation Measures CUL-4, CUL-5, and CUL-6 would reduce impacts to known archaeological resources (CA-SCL-1145 and CA-SCL-1146) and currently unknown archaeological resources. As discussed above, there are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. Specifically, there are archaeological resources that could be eligible under CRHR but are not eligible under NRHP and NASA may not determine those resources to be significant. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on archaeological resources would remain significant and unavoidable with the implementation of mitigation. Any adverse effects to TCPs would be resolved through the Section 106 process, as discussed in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS. Potential impacts to archaeological resources treated as TCRs are evaluated in Section 3.17, *Tribal Cultural Resources*.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Proposed Project No Student/Faculty Housing Variant's construction would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to archaeological historical resources would be the same as under the CEQA Proposed Project. Therefore, impacts on archaeological resources would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources. Implementation of Mitigation Measures CUL-4, CUL-5, and CUL-6 would reduce impacts to known archaeological resources (CA-SCL-1145 and CA-SCL-1146) and currently unknown archaeological resources. As discussed above, there are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. Specifically, there are archaeological resources that could be eligible under CRHR but are not eligible under NRHP and NASA may not determine those resources to be significant. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on archaeological resources would remain significant and unavoidable with the implementation of mitigation. Any adverse effects to TCPs would be resolved through the Section 106 process, as discussed in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS. Potential impacts to archaeological resources treated as TCRs are evaluated in Section 3.17, *Tribal Cultural Resources*.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Because the CEQA Reduced Density Alternative proposes the same land uses, site plan, and roadway infrastructure as the CEQA Proposed Project, the construction activities caused by new development would be the same. Therefore, impacts on archaeological resources would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural

resources and archaeological resources. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources. Implementation of Mitigation Measures CUL-4, CUL-5, and CUL-6 would reduce impacts to known archaeological resources (CA-SCL-1145 and CA-SCL-1146) and currently unknown archaeological resources. As discussed above, there are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. Specifically, there are archaeological resources that could be eligible under CRHR but are not eligible under NRHP and NASA may not determine those resources to be significant. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on archaeological resources would remain significant and unavoidable with the implementation of mitigation. Any adverse effects to TCPs would be resolved through the Section 106 process, as discussed in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS. Potential impacts to archaeological resources treated as TCRs are evaluated in Section 3.17, *Tribal Cultural Resources*.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant proposes the same land uses, site plan, and roadway infrastructure as the CEQA Reduced Density Alternative without the variant, the construction activities caused by new development would be the same. Therefore, impacts on archaeological resources would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources. Implementation of Mitigation Measures CUL-4, CUL-5, and CUL-6 would reduce impacts to known archaeological resources (CA-SCL-1145 and CA-SCL-1146) and currently unknown archaeological resources. As discussed above, there are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and archaeological resources. Specifically, there are archaeological resources that could be eligible under CRHR but are not eligible under NRHP and NASA may not determine those resources to be significant. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on archaeological resources would remain significant and unavoidable with the implementation of mitigation. Any adverse effects to TCPs would be resolved through the Section 106 process, as discussed in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS. Potential impacts to archaeological resources treated as TCRs are evaluated in Section 3.17, *Tribal Cultural Resources*.

Impact CEQA-CUL-3: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	CUL-7. Human Remains Discovery Protocols	Significant and Unavoidable with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The CEQA Proposed Project would have a significant impact if it were to disturb human remains, including those interred outside of dedicated cemeteries. The results of the records search from the

Northwest Information Center indicated that human remains have been recorded within the APE and ADI and within a 0.5-mile radius. Moreover, it is possible that original construction of the former and existing uses at the Project Site has displaced human remains or other types of cultural resources. Project grading and excavation may encounter and disturb human remains. Therefore, impacts on human remains would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-7. Human Remains Discovery Protocols

If human remains are encountered unexpectedly during implementation of the proposed project at NASA ARC:

- NASA's Protective Services and ARC's Cultural Resources Manager shall be immediately notified.
- If it is determined that the human remains are recent, then the issue becomes a matter for law enforcement officials and there are no further cultural resource responsibilities.
- If it is determined that the human remains are archaeological in nature, NASA shall immediately notify the SHPO and ARC Center Consulting Parties under the NASA -Wide Programmatic Agreement, as appropriate, pursuant to approved inadvertent discovery mitigation.
- If it is determined that the human remains are of Native American origin, NASA shall initiate consultation with the appropriate Tribe(s) per the Native American Graves Protection and Repatriation Act, 43 CFR Part 10, which requires a draft plan of action. NASA and the Project Proponent shall assist the appropriate Tribe(s) to implement the plan of action, as necessary.

Significance After Mitigation

Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Proposed Project No Student/Faculty Housing Variant's construction would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to the disturbance of human remains would be the same as under the CEQA Proposed Project. Therefore, impacts on human remains would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3.

Significance After Mitigation

Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Because the CEQA Reduced Density Alternative's construction would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to the disturbance of human remains would be the same as under the CEQA Proposed Project. Therefore, impacts on human remains would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act)

compared to state regulations and associated mitigation protocols for human remains. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3.

Significance After Mitigation

Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant's construction would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to the disturbance of human remains would be the same as under the CEQA Proposed Project. Therefore, impacts on human remains would be potentially significant before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. The Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3.

Significance After Mitigation

Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the

treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.

3.5.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.5.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for cultural resources is NASA ARC.

Impact CEQA-C-CUL-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to historical resources? (Significant and Unavoidable with Mitigation)

Cumulative projects at NASA ARC include other projects within the vicinity of Hangar One, Hangar Two, and the expanded NAS Sunnyvale Historic District. Cumulative projects include alterations to previously identified historic district contributors, including the reskinning of Hangar One, which installed an architecturally compatible cladding on Hangar One to replace original cladding panels that were removed in 2011; the demolition of Hangar Three, which removed a large historic district contributor on the east side of the airfield due to its structural deficiencies; and the rehabilitation of Building 19, Building 20, and Building 25, which are historic district contributors surrounding Shenandoah Plaza. Other cumulative projects include the construction of a 50,000-square-foot laboratory facility along Akron Road, within the boundary of the NAS Sunnyvale Historic District, as well as improvements and expansion of the Google Bus Fleet Maintenance Facility northeast of Hangar Two. Finally, the cumulative projects include the remaining developable area programmed in the NADP for the NRP that has not been allocated towards any current projects (as of 2025), which include approximately 340,345 square feet for historic district space; 21,945 square feet for educational uses; 114,710 square feet for Hangar One uses; 1,843,000 square feet for housing; and 12,000 square feet for public uses. The boundary of the NRP encompasses Shenandoah Plaza (within the NAS Sunnyvale Historic District), the Project Site, and an area to the south of the Project Site and north of U.S. 101.

The construction of the remaining developable area programmed in the NADP within the NRP has the potential to introduce new buildings within or near the boundary of the historic district. Although the specific locations and designs for these cumulative projects have not been defined, it remains possible that the cumulative projects could replace historic district contributors or could be built in areas of the historic district that are currently undeveloped (e.g., along the southern edge of Bushnell Road). New construction within the historic district may result in new buildings that are obvious intrusions and are not compatible with the historic scale and design qualities of Shenandoah Plaza.

It is also possible that a portion of the remaining developable area programmed in the NADP within the NRP could be built south of the Project Site. New construction in this location would not involve the demolition and replacement of historic district contributors. However, the new cumulative projects would be expected to alter the historic district's current setting, which is defined by low-

scale, utilitarian-style support buildings. The scale of any new construction has not been determined, but it may introduce a pattern of continuous development between the NAS Sunnyvale Historic District and U.S. 101. Historically characterized by a collection of low-scale buildings, this area could be developed with new buildings that are clearly visible along the western edge of the airfield and that contribute to the densification of the NAS Sunnyvale Historic District's open historic setting.

The impact of these cumulative projects on the setting of the expanded NAS Sunnyvale Historic District would also amplify the effect of Hangar Three's demolition, which removed the easternmost of two large aircraft hangars constructed on the east side of the airfield during World War II. Prior to the demolition of Hangar Three, the two eastern hangars provided visual balance with Hangar One and Shenandoah Plaza on the west side of the airfield. With the loss of Hangar Three and the construction of the remaining developable area programmed in the NADP within the NRP, the significant visual and spatial qualities that historically defined the historic district would be further diminished.

The project's cumulative impact on historical resources would be the same under the CEQA Proposed Project and CEQA Reduced Density Alternative, regardless of whether the Variant is implemented. Considered in combination with the cumulative projects, the proposed project would contribute to an ongoing diminishment of the NAS Sunnyvale Historic District's integrity. In summary, the proposed project in combination with cumulative projects would result in substantial adverse change to the setting of the expanded NAS Sunnyvale Historic District. Therefore, the impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact related to historical resources.

As described under Impact CEQA-CUL-1, implementation of Mitigation Measure CUL-2 would improve the proposed project's architectural compatibility with the contributors to the NAS Sunnyvale Historic District. Mitigation Measure CUL-2 would be expected to somewhat reduce the proposed project's visual impact on the historic district's setting but would not reduce the setting impact to a less-than-significant level. Mitigation Measure CUL-3 has been identified to document and share information on the historical development and setting of the NAS Sunnyvale Historic District but would not be able to avoid the change in the district's setting. Therefore, even with implementation of all feasible mitigation measures, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on built-environment historical resources.

Impact CEQA C-CUL-2: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to archaeological resources and human remains? (Significant and Unavoidable with Mitigation)

Cumulative projects within the vicinity of the APE and ADI would include construction excavations at parcels that have been developed historically. Therefore, there is potential to affect significant archaeological resources that qualify as historical resources or unique archaeological resources, along with human remains. Moreover, other related projects performing similar construction excavations on parcels with a similar land use history could constitute a cumulatively considerable impact. As with the proposed project, all cumulative projects would be required to implement best management practices, policy/regulatory requirements, and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of an archaeological resource and

that discovery procedures pertaining to human remains would be implemented. Nonetheless, cumulative impacts on archaeological resources and human remains are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown archaeological resources and/or human remains, similar to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant). Therefore, the impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact on archaeological resources and human remains.

The cumulative projects would undergo separate environmental review and, depending on the depth of exavation and sensitivity of respective sites, mitigation measures could be identified for projects that have the potential to cause significant impacts on undiscovered resources. Implementation of Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources, thereby minimizing significant impacts on archaeological resources. However, because damage to archaeological resources is irrepaceable, past projects, the effects of other current projects, and the effects of probable future projects will have a significant unavoidable impact on known and potentially unknown archaeological resources. Implementation of Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction, thereby reducing significant impacts on human remains. There are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on archaeological resources and human remains.

3.6 Energy

3.6.1 Introduction

This section evaluates the potential impacts on energy that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the project:

- *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment*, and Greenhouse Gas Technical Report (Air Quality, Health Risk, and GHG Technical Report) prepared by ICF, April 2026 (Appendix 3.3-1 of this joint environmental impact report/environmental impact statement [EIR/EIS]).

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to energy include a recommendation to design the proposed project to maximize renewable energy use and minimize the use of fossil fuels. This issue is addressed under Impact CEQA-ENE-1.

3.6.2 Affected Environment/Environmental Setting

Energy resources in the state include natural gas, electricity, water, wind, oil, coal, solar, geothermal, and nuclear. Both energy production and use can deplete nonrenewable resources, such as oil, natural gas, and coal, and result in emissions of pollutants. This section discusses the existing conditions related to energy statewide, regionally, and at the Project Site.

Regional Setting

State Energy Resources and Use

California's diverse portfolio of energy resources produced approximately 1,641.6 trillion British thermal units (BTU) in 2023.[1] According to the California Energy Commission (CEC), total electric generation for California in 2023 (the most recent year for which data are available) was approximately 281,140 gigawatt-hours. California's renewable and non-greenhouse gas (GHG) resources (i.e., nuclear and large hydroelectric) accounted for approximately 58 percent of total generation, compared to 54 percent in 2022. California's in-state electric generation was approximately 215,623 gigawatt-hours.[2] Excluding offshore areas, the state ranked seventh in the nation in crude oil production in 2023 (the most recent year for which data are available), producing

[1] U.S. Energy Information Administration. 2024. *Table P5B: Primary Energy Production Estimates, Renewable and Total Energy, in Trillion BTU, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_prod/pdf/P5B.pdf. Accessed: August 21, 2025.

[2] California Energy Commission. 2025. *2023 Total System Electric Generation*. Available: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2023-total-system-electric-generation. Accessed: August 21, 2025.

the equivalent of approximately 673.2 trillion BTUs.[3] Other energy sources in the state include natural gas (148.9 trillion BTUs), nuclear (185.2 trillion BTUs), wood and waste (114.6 trillion BTUs), and biofuel (67.2 trillion BTUs).[4,5] No coal production occurs in California.

With a relatively mild Mediterranean climate and strict energy efficiency requirements, California has lower energy consumption rates than other parts of the United States. According to the U.S. Energy Information Administration, California consumed approximately 6,816.7 trillion BTUs of energy in 2023.[6,7] California's per-capita energy consumption of approximately 173.9 million BTUs was ranked second lowest in the nation as of 2023.[8]

In 2023, the transportation sector consumed the greatest amount of energy (3,035.7 trillion BTUs, or 45 percent), followed by the industrial (1,456.7 trillion BTUs, or 21 percent), residential (1,166.6 trillion BTUs, or 17 percent), and commercial (1,157.7 trillion BTUs, or 17 percent) sectors.[9] Natural gas accounted for the majority of energy consumption (2,154.5 trillion BTUs, or 30 percent), followed by gasoline (1,469.1 trillion BTUs, or 20 percent); renewable energy, including nuclear electric power, hydroelectric power, biomass, and other renewables (1,250.4 trillion BTUs, or 17 percent); distillates and jet fuel (1,069.3 trillion BTUs, or 15 percent); and interstate electricity (371.7 trillion BTUs, or 5 percent), with the remaining 13 percent coming from a variety of other sources.[10] Of the natural gas consumed, industrial uses consumed approximately 31 percent, followed by residential uses (22 percent) and commercial uses (12 percent), among many other uses.[11]

Per-capita energy consumption, in general, is declining because of improvements in energy efficiency and design. However, despite this reduction in per-capita energy use, the state's total

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3 U.S. Energy Information Administration. 2024. *Table P5A: Primary Energy Production Estimates, Fossil Fuels and Nuclear Energy, in Trillion BTU, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_prod/pdf/P5A.pdf. Accessed: August 21, 2025.

4 U.S. Energy Information Administration. 2024. *Table P5B: Primary Energy Production Estimates, Renewable and Total Energy, in Trillion BTU, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_prod/pdf/P5B.pdf. Accessed: August 21, 2025.

5 U.S. Energy Information Administration. 2024. *Table P5A: Primary Energy Production Estimates, Fossil Fuels and Nuclear Energy, in Trillion BTU, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_prod/pdf/P5A.pdf. Accessed: August 21, 2025.

6 U.S. Energy Information Administration. 2024. *Table C11: Total Energy Consumption Estimates by End-Use Sector, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_sum/html/rank_use.html. Accessed: August 21, 2025.

7 One BTU is the amount of energy required to heat 1 pound of water by 1°F at sea level. BTU is the standard unit of energy used in the United States and based on the English system of units (foot-pound-second system).

8 U.S. Energy Information Administration. 2024. *Table C14: Total Energy Consumption Estimates Per Capita by End-Use Sector, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/data.php?incfile=/state/seds/sep_sum/html/rank_use_capita.html&sid=US. Accessed: August 21, 2025.

9 U.S. Energy Information Administration. 2024. *Table C11: Total Energy Consumption Estimates by End-Use Sector, Ranked by State, 2023*. Available: https://www.eia.gov/state/seds/sep_sum/html/rank_use.html. Accessed: August 21, 2025.

10 U.S. Energy Information Administration. 2024. *California Energy Consumption Estimates, 2023*. Available: https://www.eia.gov/state/?sid=CA. Accessed: August 21, 2025.

11 U.S. Energy Information Administration. 2024. *California Natural Gas Consumption by End Use*. Available: https://www.eia.gov/dnav/ng/ng_cons_sum_dcu_sca_a.htm. Accessed: August 21, 2025.

overall energy consumption (i.e., non–per-capita energy consumption) is expected to increase over the next several decades as a result of electrification in both buildings and vehicle travel.[12]

Regional Energy Resources and Use

Electricity

Pacific Gas and Electric Company (PG&E) provides electricity to Santa Clara County through its distribution system.[13] Historically, PG&E has provided natural gas and electricity services to the vast majority of Northern California, including Santa Clara County and the Project Site. PG&E is a publicly traded utility company that, under contract with the California Public Utilities Commission (CPUC), generates, purchases, and distributes energy. PG&E's service area covers 70,000 square miles, roughly extending north to south from Eureka to Bakersfield and east to west from the Sierra Nevada to the Pacific Ocean. PG&E's electricity distribution system consists of 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines.[14]

PG&E's electricity is generated from a combination of traditional sources, such as coal-fired plants, nuclear power plants, and hydroelectric dams, as well as newer sources of energy, such as wind turbines and photovoltaic plants, or solar farms. The grid, or bulk electric grid, is a network of high-voltage transmission lines that link power plants to the PG&E distribution system. The distribution system, comprising lower-voltage secondary lines, is at the street and neighborhood level. It consists of overhead or underground distribution lines, transformers, and individual service lines that connect to individual customers.

PG&E provides electricity to the National Aeronautics and Space Administration Ames Research Center (NASA ARC), including the Project Site. PG&E's power comes from a mix of various sources, including solar, wind, geothermal, biomass and biowaste, nuclear, and hydroelectric generation resources. The company allows customers to choose between four different electricity product operations: Base Plan, which contains a variety of energy resources as electricity, 50% Solar Choice, which contains at least 50 percent of electricity provided by solar resources, 100% Solar Choice, which contains 100 percent of electricity provided by solar resources, and Green Saver, which contains 100 percent of electricity provided by solar resources to income-qualified residential customers. As outlined in the Integrated Resource Plan, PG&E intends to achieve net-zero GHG emissions by 2040 and be climate positive by 2050, or, in other words, they intend to remove and/or reduce more GHGs than they emit.[15] Table 3.6-1 outlines PG&E's power mix in 2023 compared to the power mix for the state and identifies the renewable and nonrenewable energy sources for PG&E and the state. Some GHG-free sources are not considered renewable (e.g., nuclear is GHG-free but not renewable).

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12 California Council on Science and Technology. 2025. *Key Challenges for California's Energy Future*. Available: https://ccst.us/wp-content/uploads/CCST-Key-Challenges-for-Californias-Energy-Future.pdf. Accessed: February 3, 2026.

13 Portions of Santa Clara County are served by other electricity providers such as Silicon Valley Power or Silicon Valley Clean Energy; however, their power is delivered through PG&E infrastructure.

14 Pacific Gas and Electric Company. 2025. *Company Profile—Fast Facts about PG&E*. Available: https://www.pge.com/en/about/company-information/company-profile.html. Accessed: August 21, 2025.

15 Pacific Gas and Electric Company. 2022. *PG&E Climate Strategy Report*. Available: https://www.pge.com/assets/pge/docs/about/corporate-responsibility-and-sustainability/pge-climate-strategy-report.pdf. Accessed: January 27, 2026.

Electricity usage for different land uses varies substantially by the type of uses in a building, the type of construction materials used, and the efficiency of the electricity-consuming devices used. In 2023, Santa Clara County consumed approximately 16,690 gigawatt-hours of electricity. In Santa Clara County, electricity was consumed primarily by the nonresidential sector (75 percent), followed by the residential sector (25 percent).[16]

Table 3.6-1. PG&E and the State of California Power Mix in 2023

Energy Resources	PG&E Option: Base Plan	PG&E Option: 50% Solar Choice	PG&E Option: 100% Solar Choice	PG&E Option: Green Saver	2023 California Power Mix
Eligible Renewable	32.8%	65.5%	100%	100%	36.9%
Biomass & Biowaste	*3.4%*	*1.8%*	*0%*	*0%*	*2.1%*
Geothermal	*0.3%*	*0.2%*	*0%*	*0%*	*4.8%*
Eligible Hydroelectric	*2.5%*	*1.3%*	*0%*	*0%*	*1.8%*
Solar	*20.2%*	*59.0%*	*100%*	*100%*	*17.0%*
Wind	*6.3%*	*3.2%*	*0%*	*0%*	*11.2%*
Coal	0%	0%	0%	0%	1.8%
Large Hydroelectric	13.8%	7.1%	0%	0%	11.7%
Natural Gas	0%	0%	0%	0%	36.6%
Nuclear	53.4%	27.4%	0%	0%	9.3%
Other	0%	0%	0%	0%	0.1%
Unspecified Power	0%	0%	0%	0%	3.7%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Pacific Gas and Electric Company. 2024. *2023 Power Content Label*. Available: https://www.pge.com/assets/pge/docs/account/billing-and-assistance/bill-inserts/1224-power-content-label.pdf. Accessed: August 21, 2025.

Natural Gas

PG&E's natural gas (i.e., methane) delivery system includes 42,141 miles of natural gas distribution pipelines and 6,438 miles of transmission pipelines.[17] PG&E's gas transmission system is operated under an inspection and monitoring program in real time on a 24-hour basis, with leak inspections, surveys, and patrols continuously taking place along the pipelines. Gas delivered by PG&E originates in gas fields in California, the Southwest, the Rocky Mountains, and Canada. Transmission pipelines send natural gas from the fields and storage facilities. The smaller distribution pipelines deliver gas to individual businesses or residences.[18]

In Santa Clara County, approximately 443.1 million therms of natural gas were consumed in 2023 (the most recent year for which data are available).[19] In 2023, natural gas in Santa Clara County was

16 California Energy Commission. 2025. *Electricity Consumption*. Available: https://www.energy.ca.gov/files/energy-consumption-data-files. Accessed: August 21, 2025.

17 Pacific Gas and Electric Company. 2025. *Company Profile—Fast Facts about PG&E*. Available: https://www.pge.com/en/about/company-information/company-profile.html. Accessed: August 21, 2025.

18 Pacific Gas and Electric Company. 2025. *Core Gas Supply*. Available: https://www.pge.com/en/about/doing-business-with-pge/core-gas-supply.html. Accessed: August 21, 2025.

19 A *therm* is a unit of heat equivalent to 100,000 British thermal units (BTUs).

consumed primarily by the residential sector (56 percent), followed by the nonresidential sector (44 percent).[20]

Limits of Work

The existing buildings within the Limits of Work are mostly vacant. As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work. Therefore, existing uses within the Limits of Work consume relatively small amounts of energy. Table 3.6-2 provides the existing energy usage within the Limits of Work.

As stated previously, PG&E provides natural gas and electricity to NASA ARC and thus to the Project Site via right-of-way electric and natural gas lines. There is an existing 2.4-kilovolt switchgear in Building 104 on the Project Site that currently serves infrastructure adjacent to the Project Site. In addition, an existing gas main runs south to north through the Project Site within Dailey Road, then continues from the east side of Building 104 to Shenandoah Plaza. There is also an existing gas main along the north side of Wescoat Road near Building 509, and an existing PG&E natural gas meter on the south side of the Project Site.

Table 3.6-2. Existing Operational Energy Resource Consumption within the Limits of Work (2024)

Source	Usage (Million BTU/year)
Mobile Sources [a]	1,741
Building Electricity	2,434
Stationary Sources [b]	0
Total	**4,175**

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU= British thermal units
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] There are no existing stationary sources, such as generators, on the Project Site that would consume diesel fuel.

3.6.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located

[20] California Energy Commission. 2025. *Natural Gas Consumption*. Available: https://www.energy.ca.gov/files/energy-consumption-data-files. Accessed: August 21, 2025.

on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

This section summarizes plans, policies, and regulations considered in the analysis.

3.6.3.1 Federal Regulations

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 (EPCA), enacted December 22, 1975, is a United States Act of Congress that responded to the 1973 oil crisis by creating a comprehensive approach to federal energy policy. The primary goals of EPCA are to increase energy production and supply, reduce energy demand, provide energy efficiency, and give the executive branch additional powers to respond to disruptions in energy supply. Most notably, EPCA established the Strategic Petroleum Reserve, the Energy Conservation Program for Consumer Products, and Corporate Average Fuel Economy regulations.

Energy Policy Act of 2005

Energy Policy Act of 2005 is a federal law signed by President George W. Bush on August 8, 2005, at Sandia National Laboratories in Albuquerque, New Mexico. The act, described by proponents as an attempt to combat growing energy problems, changed U.S. energy policy by providing tax incentives and loan guarantees for energy production of various types. The most consequential aspect of the law was to greatly increase ethanol production for blending with gasoline. The law also repealed the Public Utility Holding Company Act of 1935, effective February 2006.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act (EISA) of 2007 aims to improve vehicle fuel economy and reduce U.S. dependence on petroleum. EISA includes provisions to increase the supply of renewable alternative fuel sources by setting a mandatory Renewable Fuel Standard, which requires transportation fuel sold in the United States to contain a minimum of 36 billion gallons of renewable fuels annually by 2022. In addition, the law sets the Corporate Average Fuel Economy (CAFE) standard at 35 miles per gallon for passenger cars and light trucks by 2020. EISA also includes grant programs to encourage the development of cellulosic biofuels, plug-in hybrid electric vehicles, and other emerging electric vehicle technologies. The law is projected to reduce GHG emissions by 9 percent by 2030.

Executive Order 13834

Executive Order (EO) 13834 requires federal agencies to reduce water consumption and building energy use, implement cost-saving energy efficiency measures, meet statutory requirements for renewable energy and energy consumption, and to track and report on greenhouse gas emissions, energy and water savings, and energy management activities.

Executive Order 14154

EO 14154 rescinded several previous EOs pertaining to energy and focuses on improving energy and critical minerals identification, permitting, leasing, development, production, and distribution and increasing the generation capacity in the United States to provide reliable, diversified, and affordable energy resources.

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

The NADP includes planning principles that help guide the development throughout the entirety of NASA ARC. The planning principles include sustainability and resource conservation. The sustainability planning principle includes incorporating sustainable design concepts into development, such as constructing and operating new development in accordance with LEED guidelines. Additionally, the resource conservation planning principle includes energy conservation, which could be achieved through installing energy-efficient lighting, incorporating HVAC equipment and roof materials in accordance with Title 24 energy standards, and installing low-flow plumbing fixtures and passive solar design features.

3.6.3.2 State Regulations

Warren-Alquist Act

The Warren-Alquist Act, enacted in 1976, mandated that CEC create and periodically update Building Energy Efficiency Standards (Standards) for California. The Standards address newly constructed buildings and additions and alterations to existing buildings. The Standards have, in combination with appliance efficiency standards and utility-sponsored incentive programs, strongly contributed to California's per-capita electricity consumption remaining relatively constant since the mid-1970s. Since the first adoption in 1977, the Standards have been periodically updated. The most recent update, the 2025 Building Energy Efficiency Standards, went into effect on January 1, 2026, and are described in more detail under *Title 24, Part 6, Energy Efficiency Standards*.

Renewables Portfolio Standard

The Renewables Portfolio Standard (RPS) is one of California's key programs for advancing renewable energy. The program sets continuously escalating renewable energy procurement requirements for the state's load-serving entities. Generation must be procured from RPS-certified facilities. CEC verifies RPS claims.

Assembly Bill 32

The passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, marked a watershed moment in California's history. By requiring a sharp reduction of GHG emissions,

California set the stage for its transition to a sustainable, low-carbon future. AB 32 was the first program in the country to take a comprehensive, long-term approach to address climate change and does so in a way that aims to improve the environment and natural resources while maintaining a robust economy.

Assembly Bill 1493

In 2002, recognizing that global warming would impose compelling and extraordinary impacts on California, the legislature adopted and the governor signed AB 1493, Chapter 200, Statutes of 2002, authored by Assembly member Pavley. The bill recognized that global warming (climate change) is a public health concern, that motor vehicles are a major source of the state's GHG emissions, and that reducing these emissions will protect public health and the environment while stimulating the economy and enhancing job opportunities. Among other things, the bill directed the California Air Resources Board (CARB) to adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, beginning with the 2009 model year. CARB approved those regulations, sometimes called the Pavley regulations, at its September 2004 hearing, and they were adopted in their final form in August 2005. In December 2005, CARB submitted a request to the U.S. Environmental Protection Agency (EPA) for a waiver of preemption under the federal Clean Air Act to allow California to enforce its GHG emission standards. EPA granted the waiver in July 2009. However, on May 22, 2025, the U.S. Senate voted to rescind California's waiver under the Congressional Review Act (CRA). On June 12, 2025, California filed suit, arguing the decision is an inappropriate use of the CRA. As of the writing of this document, the legal process is still ongoing, and the face of California's vehicle emissions regulations remains uncertain.

Senate Bill 350

The Clean Energy and Pollution Reduction Act (Senate Bill [SB] 350) established clean energy, clean air, and GHG reduction goals, including reducing GHG to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050. CEC is working with other state agencies to implement the bill.

Senate Bill 100

SB 100 established a landmark policy requiring renewable energy and zero-carbon resources supply 100 percent of electric retail sales to end-use customers by 2045. It requires CEC, CPUC, and CARB to prepare a report. The bill would make the bill's provisions contingent upon an appropriation by the legislature for its purposes.

Senate Bill 1020

SB 1020 builds on the state's 2018 commitment to achieve 100 percent zero-carbon electricity by 2045 (a commitment that Environment California also spearheaded). On top of the state's existing requirement of 60 percent renewable electricity by 2030, SB 1020 sets new benchmarks of 90 percent clean energy by 2035 and 95 percent clean energy by 2040. Codified interim goals will ensure California hits its 100 percent clean energy goals in a timely and organized manner.

Senate Bill 1389

The CEC is responsible for, among other things, forecasting future energy needs of the state and developing renewable energy resources and alternative renewable energy technologies for buildings, industry, and transportation. SB 1389 (Chapter 568, Statutes of 2002) requires the CEC to prepare a biennial integrated energy policy that assesses major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The report is also intended to provide policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies. The CEC is currently preparing the 2025 Integrated Energy Policy Report.

Senate Bill 375

SB 375 (Chapter 728, Statutes of 2008) directs CARB to set regional targets for reducing GHG emissions. The new law establishes a "bottom up" approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets.

SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

Executive Order N-79-20

On August 25, 2022, CARB approved the Advanced Clean Cars II rule, requiring all new vehicles sold in California to be zero-emission vehicles (ZEV) by 2035. Governor Newsom laid the foundation for the rule with his September 23, 2020, EO N-79-20. The rule accelerates the increased sales percentages of passenger ZEVs and plug-in hybrid electric vehicle automakers are required to meet starting in 2026. This rule is an important component of the State's plan to achieve net-zero emissions by 2045.

Executive Order B-17-12

The governor, through EO B-17-12, calls for agencies statewide to reduce their leased space footprint and consolidate into available state-controlled space.

Executive Order B-16-12

EO B-16-12, signed by Governor Brown, orders state entities, under the direction of the governor, including CARB, CEC, and the California Public Utilities Commission (CPUC), to support rapid commercialization of zero-emissions vehicles. It also directs these entities to achieve various benchmarks related to zero-emissions vehicles.

California Code of Regulations, Title 20, Parts 1600–1608

California's Appliance Efficiency Regulations (California Code of Regulations Title 20, Parts 1600–1608) contain energy performance, energy design, water performance, and water design standards for appliances (including refrigerators, ice makers, vending machines, freezers, water heaters, fans, boilers, washing machines, dryers, air conditioners, pool equipment, and plumbing fittings) that are sold or offered for sale in California. These standards are updated regularly to allow consideration of new energy efficiency technologies and methods.

Title 24, Part 6, Energy Efficiency Standards

Title 24, Part 6, Building Energy Efficiency Standards (the Energy Code), are part of the California Code of Regulations and are included in California's overall Title 24 Building Standards Code. California's Energy Code promotes efficient building energy use to protect people and the environment. The standards are updated every 3 years. The current Energy Efficiency Standards were adopted in 2025 and took effect on January 1, 2026. The 2025 updates focus on making buildings more energy efficient through encouraging the use of energy efficient HVAC equipment and incorporating the use of clean energy through onsite solar panels and battery storage systems.

Title 24, Part 11, Green Building Standards

The California Green Building Standards Code—Part 11, Title 24, California Code of Regulations—known as CALGreen, is the first-in-the-nation mandatory green building standards code. In 2007, California Building Standards Code developed green building standards in an effort to meet the goals of California's landmark initiative AB 32, which established a comprehensive program of cost-effective reductions of GHG to 1990 levels by 2020. CALGreen, which applies to the planning, design, operation, construction, use and occupancy of buildings, requires energy- and water-efficient indoor infrastructure to be installed for all new projects (residential and non-residential) and projects with significant additions or alterations, beginning January 1, 2011. Additionally, CALGreen includes both mandatory and voluntary measures. The mandatory measures apply to all projects and set minimum sustainability goals, while the voluntary measures add additional sustainability requirements beyond the mandatory measures that could be adopted by local jurisdictions.

Advanced Clean Car Program

Advanced Clean Cars combines several regulations into one package including the low-emission vehicle criteria, GHG regulations, and the ZEV regulation. Advanced Clean Cars I was adopted in 2012, and Advanced Clean Cars II was adopted in 2022. These regulations rapidly scale down emissions of light-duty passenger cars, pickup trucks, and sport utility vehicles and require an increased number of ZEVs to meet air quality and climate change emissions goals. In October 2023, staff launched a new effort to consider potential amendments to the Advanced Clean Cars II regulations, including updates to the tailpipe GHG emission standard and limited revisions to the low-emission vehicle and ZEV regulations.

Many of California's vehicle emissions standards are enabled through its CAA waiver, which allows the state to set stricter standards than the federal government. On May 22, 2025, the U.S. Senate voted to rescind California's waiver under the CRA. On June 12, 2025, California filed suit, arguing the decision is an inappropriate use of the CRA. As of the writing of this document, the legal process is still ongoing, and the face of California's vehicle emissions regulations remains uncertain.

California Energy Efficiency Action Plan

The 2019 California Energy Efficiency Action Plan charts progress toward doubling energy efficiency by 2030, explains where current targets are falling short, and makes important recommendations for how the state can achieve its goals.

3.6.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on energy in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts for energy in accordance with NEPA is provided separately in Section 4.5.6, *Energy*, in Chapter 4, *Environmental Impact Statement.*

3.6.5 Thresholds of Significance

In accordance with Section 15126.2 and Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on land use and planning if it would result in any of the conditions listed below.

Would the project:

- Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to energy?

3.6.6 Methods for Analysis

Energy impacts associated with construction and operation of the proposed project were assessed and quantified using standard and accepted software tools and techniques, such as the California Emissions Estimator Model (CalEEMod) and the CARB EMFAC2021. The analysis also considered the list of energy impact possibilities and potential conservation measures included in Appendix F of the CEQA Guidelines for determining whether a project would result in the wasteful, inefficient, or unnecessary consumption of energy resources.

3.6.6.1 Construction

Construction activities for the proposed project would use energy, such as electricity for off-road construction equipment and fuel for off-road construction equipment, haul trucks, vendor trips, and workers' trips over the approximately 14-year construction period. Based on current information, it is anticipated that construction would begin, at the earliest, in 2027. However, based on information available at the time of the technical analysis, energy consumption was quantified assuming construction would begin in 2026. It is projected that the intensity of energy consumption of equipment and vehicle operation in 2027 would be the same or lower than under 2026 conditions because of improvements in engine technology and regulations to reduce combustion emissions, and thereby energy consumption. Accordingly, the construction analysis reflects a realistic to conservative representation of energy consumption.

The construction schedule, equipment operating details, trip numbers and lengths, and material quantities were based on project-specific information provided by the Project Proponent for the CEQA Proposed Project and CEQA Reduced Density Alternative. The intensity of construction for the

CEQA Proposed Project and the CEQA Reduced Density Alternative with or without the No Student/Faculty Housing Variant/Sub-Alternative (Variant) would therefore be the same because the Variant does not alter total square footage constructed in either instance. Thus, energy consumption quantified for the CEQA Proposed Project and the CEQA Reduced Density Alternative are representative of conditions with or without the Variant. Construction of the Water Reuse Facility (WRF) Option or Central Utility Plant (CUP) Option would require additional off-road equipment and on-road vehicles, beyond that required for construction of the CEQA Proposed Project.

Assumptions regarding typical construction activities and default values from the California Emissions Estimator Model (CalEEMod) Version 2022.1, which considers a project's location and land use type, were also used. The calculation of energy consumption from equipment and vehicles, in the form of gasoline and diesel fuel use, was converted from estimated carbon dioxide (CO_2) emissions based on the amount of CO_2 emitted per gallon of fuel combusted.[21] Electricity consumption data were provided by the Project Proponent.

Detailed model assumptions and inputs for the analysis of construction CO_2 emissions are provided in Appendix 3.3-1 of this joint EIR/EIS.

3.6.6.2 Operations

The proposed project would remove existing uses on the site that currently use energy. As such, the net effect of the proposed project would be the difference between existing uses and project uses. Energy consumption associated with operation of the existing uses and the proposed project includes building natural gas (existing uses only) and electricity use; diesel, electricity, gasoline, and natural gas use for mobile sources (i.e., vehicles); and fuel for diesel-fueled emergency generators (project uses only).

Based on current information, it is anticipated that the first full year of operations would be 2041. However, based on information available at the time of the technical analysis, energy consumption was quantified assuming project operations would begin in 2040. It is projected that the intensity of energy consumption of some operational sources, such as vehicle operation, in 2041 would be lower than under 2040 conditions because of improvements in engine technology and regulations to reduce combustion emissions, and thereby energy consumption. Accordingly, the operations analysis reflects a conservative representation of energy consumption.

Project energy usage would depend on the mix of land uses ultimately constructed (Section 2.3.2.2, *Buildout Assumptions*, discusses the uses under each alternative identified for EIR analysis purposes). For existing (2024) conditions, electricity and mobile source fuel consumption use was quantified using CalEEMod Version 2022.1 based on the existing land use types and buildings. For full buildout (2041) conditions, electricity consumption was provided by the Project Proponent. As discussed in Chapter 2, under Section 2.3.2.7, *Sustainability Features*, the proposed project would incorporate various sustainability strategies that will minimize potential impacts on energy resources. These sustainability features were included in the calculation of project electricity consumption, including an all-electric design (i.e., no building natural gas).

[21] U.S. Energy Information Administration. 2024. Carbon Dioxide Emissions Coefficients. Release date: September 18, 2024. Available: https://www.eia.gov/environment/emissions/co2_vol_mass.php. Accessed: December 17, 2025.

Fuel consumption associated with vehicle trips to and from the Project Site was quantified using vehicle miles traveled (VMT) data from Fehr & Peers. The VMT data account for benefits from project sustainable transportation features, such as the transportation demand management (TDM) plan, as quantified by the project transportation consultants. Project VMT was converted to diesel, gasoline, electricity, and natural gas consumption based on the countywide vehicle fleet mix and energy consumption factors from the California Air Resources Board's (CARB) EMFAC2021.[22]

Diesel consumption associated with the diesel-powered emergency generators was converted from the estimated CO_2 emissions based on the amount of CO_2 emitted per gallon of diesel fuel.

The Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS includes the CalEEMod output files and fuel use calculations related to the air quality analysis that were used to inform the energy analysis.

3.6.7 Impacts and Mitigation Measures

Impact CEQA-ENE-1: Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

[22] As discussed in the Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report (Appendix 3.3-1 of this joint EIR/EIS), the air quality analysis (which was used to inform the energy analysis) uses mobile source emission rates from EMFAC2021 with CARB's off-model adjustments. While CARB has released EMFAC2025 version 2.1.0, the tool was not available at the time the Notice of Preparation was issued for this environmental document. EMFAC2025 also has not yet been approved by the EPA. The off-model adjustment factors for EMFAC2021 address Congressional Resolutions that disapproved EPA's decisions to grant California waivers for several regulations, including Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle, Heavy-Duty Vehicle and Engine Emission Warrant and Maintenance Provisions (Warranty Phase I), and Heavy-Duty Omnibus (Omnibus). While the action is currently being litigated, no injunction has been issued to block the revocation, and California can no longer enforce the regulations.

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Construction of the CEQA Proposed Project would result in the temporary usage and consumption of energy resources on the Project Site. Construction energy use would include electricity used to power electric construction equipment, mobile offices, or water delivered to construction sites; gasoline and diesel fuel used for transportation of workers and haul trucks to and from construction sites; and fuel used for operation of off-road equipment. Additionally, as discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the CEQA Proposed Project would require the installation of new connections to the surrounding PG&E grid to provide service to future buildings throughout the Project Site. Construction of the proposed energy infrastructure improvements incorporated into the CEQA Proposed Project would result in ground-disturbing activities that would consume energy.

Construction-related energy usage and consumption would occur intermittently throughout the course of CEQA Proposed Project buildout and would vary substantially depending on the level of activity, length of construction period, specific construction operations, types of equipment, and number of personnel. Table 3.6-3 summarizes construction energy consumption for the CEQA Proposed Project. The CEQA Proposed Project would consume approximately 899,103 million British thermal units (BTU) or approximately 263,704 megawatt hours (MWh) over the 14-year construction period, whereas the CEQA Proposed Project with the CUP Option would consume 914,788 million BTUs or 268,305 MWh, and the CEQA Proposed Project with the WRF Option would consume 911,392 million BTUs or 267,309 MWh. Construction of the CUP in 2035 and 2036 and construction of the WRF in 2038 and 2039 would require additional off-road equipment and on-road vehicles that would consume additional energy beyond what is required for the CEQA Proposed Project. As such, the CEQA Proposed Project with the CUP Option or with the WRF Option would consume more energy than the CEQA Proposed Project.

The types of land uses envisioned for the CEQA Proposed Project would involve construction activities typical of development projects in the surrounding region, and no land uses are expected to require an extraordinary amount of energy consumption during construction, as may occur with large, industrial facilities like new power plants or dams, because no such land uses are proposed within the Project Site. Additionally, construction-related energy consumption would be temporary and would cease upon completion of all construction activities. Furthermore, during construction, waste would be separated by source and tracked to be diverted away from landfills, with the goal of recycling more than 50 percent of construction and demolition waste. This would reduce the amount of energy intensiveness associated with building materials, including discarded construction and demolition waste. Therefore, construction of the CEQA Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.

Additionally, while not required to reduce the significance of energy impacts during construction of the CEQA Proposed Project, implementation of Mitigation Measure AQ-1, Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction; Mitigation Measure AQ-2, Zero-Emission On-Road Vehicles during Construction; and Mitigation Measure GHG-1, Best Management Practices for Construction-Related GHG Emissions, which would be required to mitigate air quality and greenhouse impacts, respectively, would further reduce construction energy consumption. Specifically, as discussed in Section 3.3, *Air Quality*, of this joint EIR/EIS, Mitigation Measure AQ-1

would require project contractors to use electric-powered lifts, welders, air compressors, and mini-excavators, which would eliminate energy consumption from diesel or fossil-fueled powered lifts, welders, air compressors, and mini-excavators and improve energy efficiency during construction. Similarly, Mitigation Measure AQ-2 would require all on-road vehicles to achieve minimum zero-emission performance standards, such as requiring 25 percent zero-emission light-duty on-road vehicles during Phases 1 and 2 of construction, which would reduce energy consumption and promote energy efficiency. Mitigation Measure GHG-1 would require construction contractors to implement the Bay Area Air District's construction best management practices, which include, but are not limited to, using zero-emission and hybrid-powered equipment to the greatest extent possible; requiring all diesel-fueled off-road construction equipment to be equipped with Tier 4 Final compliant engines or better; requiring all on-road heavy-duty trucks to be zero emissions or meet the most stringent model year emissions standard where available; and using alternative fuels. Implementation of these measures, which would be required to reduce other construction-related impacts, would indirectly reduce the amount of energy consumed during the construction of the CEQA Proposed Project.

Table 3.6-3. Estimated Energy Consumption under Construction of the CEQA Proposed Project

Year	CEQA Proposed Project (Million BTU)	CEQA Proposed Project with CUP Option (Million BTU)	CEQA Proposed Project with WRF Option (Million BTU)
2027	20,628	20,628	20,628
2028	55,611	55,611	55,611
2029	79,071	79,071	79,071
2030	44,019	44,019	44,019
2031	25,223	25,223	25,223
2032	139,024	139,024	139,024
2033	109,079	109,079	109,079
2034	43,617	43,617	43,617
2035	71,401	81,703	71,401
2036	72,915	78,298	72,915
2037	31,686	31,686	31,686
2038	87,581	87,581	96,028
2039	98,773	98,773	102,616
2040	20,473	20,473	20,473
Total	**899,103**	**914,788**	**911,392**

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU= British thermal units; WRF = Water Reuse Facility; CUP = Central Utility Plant

Operation

Once operational, the CEQA Proposed Project would generate vehicle trips, which would consume gasoline, diesel, natural gas, and electricity. The CEQA Proposed Project would also result in the consumption of electricity and diesel for operational uses such emergency generators and landscaping activities.

As discussed in Section 3.6.6, *Methods for Analysis*, and consistent with the requirements of Appendix F of the CEQA Guidelines, the proposed project's operational energy consumption is evaluated under existing (2024) and full buildout year (2041) conditions. Table 3.6-4 presents the results of the operational energy analysis (expressed in terms of million BTU or MMBtu) for the CEQA Proposed Project with and without the CUP Option and WRF Option. The CEQA Proposed Project's net energy consumption is determined by taking the difference in operational energy consumption between "project buildout (2041)" conditions and "existing (2024)" conditions at the Project Site.

As shown in Table 3.6-4, except for stationary sources, energy consumption under the CEQA Proposed Project with the WRF Option would be the same as the CEQA Proposed Project. One additional diesel-powered emergency generator would be maintained to support the WRF. Operation of the CEQA Proposed Project with the WRF Option would consume approximately 492,881 million BTU or 144,561 MWh per year, which is a net increase of approximately 488,696 million BTU or 143,333 MWh per year relative to existing conditions. Similarly, as shown in Table 3.6-4, operation of the CUP Option would reduce electricity and overall energy consumption relative to the CEQA Proposed Project. The CEQA Proposed Project with the CUP Option would result in a net increase of approximately 462,205 million BTU or 135,563 MWh per year, which is approximately 25,809 million BTU or 7,570 MWh per year less than the CEQA Proposed Project.

Table 3.6-4. Estimated Operational Energy Consumption under the CEQA Proposed Project, CUP Option, and WRF Option in Million BTU/Year

Analysis Condition/Source	CEQA Proposed Project (Million BTU/Year)	CEQA Proposed Project with CUP Option (Million BTU/Year)	CEQA Proposed Project with WRF Option (Million BTU/Year)
Existing (2024)			
Mobile sources [a]	1,741	1,741	1,741
Landscaping equipment	10	10	10
Electricity	2,434	2,434	2,434
Stationary sources [b]	0	0	0
Total Existing	***4,185***	***4,185***	***4,185***
Project Buildout (2041)			
Mobile sources [a]	254,512	254,512	254,512
Landscaping equipment [c]	608	608	608
Electricity	230,757	204,427	230,757
Stationary sources [d]	6,255	6,776	6,776
Total Project Buildout	***492,199***	***466,391***	***492,881***
Net Change with Project			
Existing vs. proposed	+488,014	+462,205	+488,696

Analysis Condition/Source	CEQA Proposed Project (Million BTU/Year)	CEQA Proposed Project with CUP Option (Million BTU/Year)	CEQA Proposed Project with WRF Option (Million BTU/Year)
Energy per Square Foot (Million BTU/sf)			
Existing	0.02	0.02	0.02
Proposed	0.21	0.20	0.21

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU = British thermal unit
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] There are no existing stationary sources, such as diesel-fueled generators, on the Project Site.
[c] Landscaping equipment consumes fossil fuels under the unmitigated condition.
[d] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

The CEQA Proposed Project would be designed to incorporate environmentally sustainable features using the latest strategies while improving environmental conditions throughout the site, reducing energy consumption, and improving energy efficiency. Specifically, the CEQA Proposed Project would incorporate on-site renewable energy resources, such as photovoltaic systems and battery storage systems that would be distributed throughout building within each Subarea, which would meet or exceed minimum Energy Code compliance requirements and offset the energy use from each proposed building. In addition, the proposed building design would respond to the climate by optimizing thermal comfort through passive cooling and windbreaks and prioritizing daylight within floor plates, buildings, and outdoor spaces, which would increase use of renewable energy and promote energy efficiency and conservation. The CEQA Proposed Project would achieve, at a minimum, a LEED Silver rating, and have an all-electric design for new building systems (e.g., heating, ventilation, and air conditioning; mechanical), which would result in buildings that outperform the current 2022 California Building Energy Title 24 energy efficiency standards. The CEQA Proposed Project would also reduce water use through the use of low-flow and flush fixtures and on-site recycled water systems for drought-friendly landscaping. The CEQA Proposed Project would also include parking spaces designed to meet California Building Code accessible parking, carpool/vanpool, electric vehicle (EV) charging station, and EV-capable requirements.

The CEQA Proposed Project would include a project-specific TDM plan to reduce the vehicle trips and associated VMT generated by the proposed project through a range of design features (e.g., mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle infrastructure, preferential carpool and vanpool parking, limited automobile parking supply, and ample bicycle parking) and ongoing operational programs (e.g., transit pass/subsidy programs, shuttles, and participation in the NASA Research Park Transportation Management Association) to achieve TDM mode-shift targets and thereby reduce the number of trips made by project-generated employees, students/faculty and visitors. Appendix 2-4 of this joint EIR/EIS includes the project-specific TDM plan.[23] The project-specific TDM plan would reduce VMT and, consequently, the amount of energy consumed through mobile gasoline, diesel, and electricity use. Therefore, given the incorporation of the project sustainability features and project-specific TDM plan, operation of the CEQA Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. This impact would be less than significant.

[23] The project-specific TDM plan is tentative, as transportation-related studies may validate the approach in the TDM Plan or require adjustments to the TDM Plan.

Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT. Mitigation Measure AQ-6 requires the use of electric landscaping equipment during operations. Mitigation Measure TRAN-1 and Mitigation Measure AQ-6 would be required to mitigate transportation and air quality impacts, respectively. These mitigation measures are not required to reduce the significance of energy impacts during operation of the CEQA Proposed Project; however, implementation of these mitigation measures would reduce the amount of energy consumed during operation of the CEQA Proposed Project.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Construction

As discussed under *Construction* for the CEQA Proposed Project, the same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the Variant. The intensity of construction for the CEQA Proposed Project with or without the Variant would therefore be the same, and the energy consumption presented in Table 3.6-3 for the CEQA Proposed Project would also occur under the Variant. As shown in Table 3.6-3, construction activities would result in approximately 899,103 million BTUs or 263,704 MWh consumed over the proposed project's approximately 14-year construction period. This impact would be less than significant.

Operation

The same operational sources of energy consumption proposed and evaluated under the CEQA Proposed Project would occur under the Variant. Table 3.6-5 presents estimated operational energy consumption for the Variant under full-buildout conditions. While the Variant would result in an increase in net operational energy consumption of approximately 5,576 million BTU or 1,635 MWh per year due primarily to mobile sources compared to the CEQA Proposed Project, the Variant would use all-electric design and the same sustainability strategies, and project-specific TDM plan described for the CEQA Proposed Project. Therefore, like the CEQA Proposed Project, the Variant would result in a less-than-significant impact.

Table 3.6-5. Estimated Operational Energy Consumption under the CEQA Proposed Project with Variant

Analysis Condition/Source	Energy Consumption in Million BTU/Year
Existing (2024)	
Mobile sources [a]	1,741
Landscaping equipment	10
Electricity	2,434
Stationary sources [b]	0
Total Existing	***4,185***

Analysis Condition/Source	Energy Consumption in Million BTU/Year
Project Buildout (2041)	
Mobile sources [a]	259,567
Landscaping equipment [c]	608
Electricity	230,757
Stationary sources [d]	6,776
Total Project Buildout	***497,775***
Net Change with Project	
Existing vs. proposed	+493,590
Energy per Square Foot (Million BTU/sf)	
Existing	0.02
Proposed	0.21

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU = British thermal unit
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] There are no existing stationary sources, such as diesel-fueled generators, on the Project Site.
[c] Landscaping equipment consumes fossil fuels under the unmitigated condition.
[d] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Construction

As discussed under *Construction* for the CEQA Proposed Project, the same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative, although to a slightly lesser extent due to the reduced size of the alternative. The energy consumption for construction of the CEQA Reduced Density Alternative is provided in Table 3.6-6. As shown in Table 3.6-6, construction activities would result in approximately 862,241 million BTUs or 252,893 MWh consumed over the proposed project's approximately 14-year construction period, compared to approximately 899,103 million BTUs or 263,704 MWh consumed during the CEQA Proposed Project. This impact would be less than significant.

Table 3.6-6. Estimated Energy Consumption under Construction of the CEQA Reduced Density Alternative

Year	CEQA Reduced Density Alternative (Million BTU)
2027	20,630
2028	55,613
2029	75,447
2030	39,402
2031	24,198
2032	137,242
2033	111,440

Year	CEQA Reduced Density Alternative (Million BTU)
2034	32,058
2035	70,100
2036	68,883
2037	27,845
2038	85,012
2039	86,992
2040	27,380
Total	**862,241**

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU = British thermal unit

Operation

The same operational sources of energy consumption proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative. Table 3.6-7 presents estimated operational energy consumption for the CEQA Reduced Density Alternative under full-buildout conditions. Compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would result in reduced net operational increases in energy consumption due primarily to reduced mobile sources and building electricity by approximately 197,278 million BTU or 57,861 MWh per year. The CEQA Reduced Density Alternative would use all-electric design and the same sustainability strategies and project-specific TDM plan as described for the CEQA Proposed Project. Therefore, like the CEQA Proposed Project, the CEQA Reduced Density Alternative would result in a less-than-significant impact.

Table 3.6-7. Estimated Operational Energy Consumption under the CEQA Reduced Density Alternative

Analysis Condition/Source	Energy Consumption in Million BTU/Year
Existing (2024)	
Mobile sources [a]	1,741
Landscaping equipment	10
Electricity	2,434
Stationary sources [b]	0
Total Existing	***4,185***
Project Buildout (2041)	
Mobile sources [a]	173,287
Landscaping equipment [c]	608
Electricity	114,705
Stationary sources [d]	6,255
Total Project Buildout	***294,921***
Net Change with Project	
Existing vs. proposed	+290,736

Analysis Condition/Source	Energy Consumption in Million BTU/Year
Energy per Square Foot (Million BTU/sf)	
Existing	0.02
Proposed	0.21

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU = British thermal unit
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] There are no existing stationary sources, such as diesel-fueled generators, on the Project Site.
[c] Landscaping equipment consumes fossil fuels under the unmitigated condition.
[d] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Construction

As discussed under *Construction* for the CEQA Reduced Density Alternative, the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative would occur under the Variant. The intensity of construction for the CEQA Reduced Density Alternative with or without the Variant would therefore be the same, and the energy consumption presented in Table 3.6-6 for the CEQA Reduced Density Alternative would also occur under the Variant. As shown in Table 3.6-6, construction activities would result in approximately 862,241 million BTUs or 252,893 MWh consumed over the proposed project's approximately 14-year construction period. This impact would be less than significant.

Operation

The same operational sources of energy consumption proposed and evaluated under the CEQA Reduced Density Alternative would occur under the Variant. Table 3.6-8 presents estimated operational energy consumption for the Variant under full-buildout conditions. Compared to the CEQA Reduced Density Alternative, while the Variant would result in increased net operational energy consumption due primarily to mobile sources by approximately 5,808 million BTU or 1,703 MWh per year, the Variant would use all-electric design and the same sustainability strategies and project-specific TDM plan as described for the CEQA Proposed Project and CEQA Reduced Density Alternative. Therefore, like the CEQA Reduced Density Alternative, the Variant would result in a less-than-significant impact.

Table 3.6-8. Estimated Operational Energy Consumption under the CEQA Reduced Density Alternative with Variant

Analysis Condition/Source	Energy Consumption in Million BTU/Year
Existing (2024)	
Mobile sources [a]	1,741
Landscaping equipment	10
Electricity	2,434
Stationary sources [b]	0
Total Existing	***4,185***
Project Buildout (2041)	
Mobile sources [a]	178,574
Landscaping equipment [c]	608
Electricity	114,705
Stationary sources [d]	6,776
Total Project Buildout	***300,730***
Net Change with Project	
Existing vs. proposed	+296,544
Energy per Square Foot (Million BTU/sf)	
Existing	0.02
Proposed	0.21

Source: Air Quality, Health Risk, and GHG Technical Report included in Appendix 3.3-1 of this joint EIR/EIS.
Notes:
BTU = British thermal unit
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] There are no existing stationary sources, such as diesel-fueled generators, on the Project Site.
[c] Landscaping equipment consumes fossil fuels under the unmitigated condition.
[d] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-ENE-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Federal, state, and local renewable energy and energy efficiency plans applicable to the proposed project are discussed in Section 3.6.3, *Plans, Policies, and Regulations*. Federal and state plans include the Energy Policy and Conservation Act, EOs 13834 and 14154, Assembly Bill 1493 Pavley Rules, California Title 24 energy efficiency standards, EO B-16-12, SB 350, and SB 100. Each of these plans contain required standards related to energy efficiency and renewable energy development. Local plans that address energy efficiency and are designed to achieve the state's RPS mandates include PG&E's 2022 Integrated Resource Plan.

Throughout construction, waste would be source separated and tracked to divert it away from landfills, with a target of recycling more than 50 percent of construction and demolition waste. Diverting and recycling of these materials would reduce the amount of fossil fuel consumed during construction as well as the energy intensity associated with building materials, including discarded construction and demolition waste, consistent with CALGreen.

Operation of the CEQA Proposed Project with the WRF Option would result in the greatest net increase in energy consumption in comparison to existing conditions, and would consume approximately 492,199 million BTU or 144,561 MWh per year. Operation of the CEQA Proposed Project (including both the CEQA Proposed Project with CUP Option and the CEQA Proposed project with the WRF Option)would increase energy use per square foot with the approximately 13-fold increase in building area compared with existing conditions. Although energy use per square foot would increase under the CEQA Proposed Project, the proposed density at the Project Site would minimize the physical footprint where people would stay, work, and socialize, decreasing the amount of water and energy consumed per capita compared with the consumption that would otherwise occur if such uses were spread out over a larger area beyond the Project Site. In addition, by providing a mix of housing/lodging, research and office, conference, and active uses on the site, the CEQA Proposed Project would create a location where amenities would be available in one place, reducing the time needed to travel off-site to other locations, as well as the amount of energy consumed by vehicle trips.

As discussed under Impact CEQA-ENE-1, and consistent with the energy conservation measures recommended in Appendix F of the CEQA Guidelines, the CEQA Proposed Project would incorporate multiple sustainability, energy-saving, and TDM features. The CEQA Proposed Project would achieve, at a minimum, a LEED Silver rating, and have an all-electric design for new building systems (e.g., heating, ventilation, and air conditioning; mechanical), which would result in buildings that outperform the current 2022 California Building Energy Title 24 energy efficiency standards. The CEQA Proposed Project would also meet the applicable CALGreen Tier 2 nonresidential voluntary requirement for EV parking spaces (i.e., 45 percent of all spaces to be EV capable, and 33 percent of the EV spaces to have EV supply equipment). The CEQA Proposed Project would include a project-

specific TDM plan that would reduce energy consumption (e.g., gasoline, diesel, electricity, natural gas). In addition, the CEQA Proposed Project would incorporate on-site renewable energy resources, such as photovoltaic systems and battery storage systems, which would offset some of the CEQA Proposed Project's operational energy consumption. Furthermore, the CEQA Proposed Project would use recycled water for irrigation and non-potable water uses within the proposed buildings.

The CEQA Proposed Project would be required to comply with state and local renewable energy and energy efficiency plans and would benefit from the resulting increases in energy efficiency and renewable energy development. Vehicles and energy use from increased VMT and average daily trips within the area are expected to become increasingly more efficient as a result of the regulations included in Pavley and EO B-16-12, which address average fuel economy and commercialization of zero-emissions vehicles, respectively. Building energy efficiency is also expected to increase as a result of compliance with Title 24 Building Codes, which are expected to move toward zero net energy for newly constructed buildings, and the shift toward 100 percent renewable energy under SB 350 and SB 100 regulations. Additionally, through incorporation of the sustainability and energy-saving project features described previously, the CEQA Proposed Project would be consistent with the provisions of the Energy Policy and Conservation Act and EOs 13834 and 14154, which require implementing measures to reduce water consumption and building energy use and increasing and diversifying energy generating resources, all with the overall goal to reduce energy demand and increase energy efficiency. With the CEQA Proposed Project, PG&E would continue to pursue the procurement of renewable energy sources to meet their RPS portfolio goals and comply with state regulations. Therefore, the CEQA Proposed Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and the impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The impact details for the CEQA Proposed Project with the Variant would be the same as described for the CEQA Proposed Project. Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Proposed Project with the Variant. The same sustainability, energy-saving, and TDM features described for the CEQA Proposed Project would be implemented under the Variant. The CEQA Proposed Project with the Variant would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The impact details for the CEQA Reduced Density Alternative would be the same as described for the CEQA Proposed Project. Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Reduced Density Alternative. The same sustainability, energy-saving, and TDM features described for the CEQA Proposed Project

would be implemented under the CEQA Reduced Density Alternative. The CEQA Reduced Density Alternative would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The impact details for the CEQA Reduced Density Alternative with the Variant would be the same as described for the CEQA Proposed Project and the CEQA Reduced Density Alternative. Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project, CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant. The same sustainability, energy-saving, and TDM features described for the CEQA Proposed Project and CEQA Reduced Density Alterntive would be implemented under the CEQA Reduced Density Alternative with the Variant. The CEQA Reduced Density Alternative with the Variant would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.6.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.6.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for energy resources is the service area of PG&E (i.e., the electrical and natural gas service area), which comprises the larger Northern California area, including the Project Site.

Impact CEQA-C-ENE-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to energy due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? (No Significant Cumulative Impact)

Cumultive projects within PG&E's service area could contribute to ongoing increases in demand for electricity and natural gas. These anticipated increases would be countered, in part, by ongoing increases in state and local requirements related to renewable energy and increased energy efficiency. The extent to which cumulative development through 2041, the proposed project's full buildout year, could result in wasteful, inefficient, or unnecessary consumption of energy resources would depend on the specific characteristics of new development. SB 100 obligates utilities to supply 100 percent carbon-free electricity by 2045. PG&E reached California's 2020 renewable energy goal 3 years ahead of schedule and is currently projected to meet the new SB 100 goal, which calls for 100 percent clean energy by 2045. Similarly, the Pavley Standards are expected to lower the demand for fossil fuels by requiring 100 percent of new vehicles sold by 2035 to be zero-emissions

vehicles. It also is anticipated that the state will continue to require the construction of energy efficient buildings through implemention of the State Building Code. Therefore, it is anticipated that future energy users will become more efficient and less wasteful over time.

Furthermore, as discussed above, buildout of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would increase operational energy consumption on the Project Site when compared to existing conditions. Although energy intensity per square foot would increase, the proposed density at the Project Site would minimize the physical footprint where people would stay, work and socialize (under the CEQA Proposed Project and the CEQA Reduced Density Alternative); the proposed density would minimize the physical footprint where people would work and socialize under the Variant. As a result, the proposed density at the Project Site would decrease the amount of water and energy consumed per capita compared with the consumption that would otherwise occur if such uses were spread out over a larger area beyond the Project Site. Additionally, the sustainable and energy-saving design of the proposed buildings, as well as vehicles, would help to meet the increasingly robust regulations over time to achieve the state's renewable energy mandates. The proposed project would incorporate building design features that would reduce energy consumption, and increase renewable energy generation, which would partially offset some of the proposed project's operational energy demands. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to the wasteful, inefficient, or unnecessary consumption of energy.

Impact C-ENE-2: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to energy due to conflicts with or obstruction of a state or local plan for renewable energy or energy efficiency? (No Significant Cumulative Impact)

Cumulative projects within PG&E's service area would be required to comply with all adopted state and local renewable energy or energy efficiency regulations and plans. Cumulative projects through 2041 (the proposed project's full buildout year) would incorporate energy-saving features, similar to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), which would most likely result in compliance with adopted state and local renewable energy or energy efficiency regulations and plans. The proposed project would incorporate multiple sustainability, energy-saving, and TDM features. In addition, the proposed project would be required to comply with state and local renewable energy and energy efficiency plans and would benefit from the resulting increases in energy efficiency and renewable energy development. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to energy due to conflicts with or obstruction of plans for renewable energy or energy efficiency.

3.7 Geology, Soils, and Paleontological Resources

3.7.1 Introduction

This section evaluates the potential impacts on geology, soils, and paleontology that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Limits of Work and the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical report prepared for the project:

- *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park, Master Planning Phase, Mountain View, California* (Preliminary Geotechnical Evaluation) prepared by Langan, March 14, 2023 (Appendix 3.7-1 of this joint environmental impact report/environmental impact statement [EIR/EIS]).

The Preliminary Geotechnical Evaluation included a review of the numerous geotechnical investigations that apply to the Limits of Work and the region, as identified in Appendix 3.7-1 Some of the previous investigations included borings and cone penetrometer tests to evaluate subsurface conditions. The results of the testing are discussed in Section 3.7.2, *Affected Environment/Environmental Setting*, under *Site Topography and Subsurface Conditions*.

The Preliminary Geotechnical Evaluation developed preliminary conclusions and recommendations regarding appropriate foundation types, design parameters, and seismic coefficients for project development based on the previous investigations, some of which directly border the Limits of Work to the northeast (Hanger One) and southwest. The Preliminary Geotechnical Evaluation has been relied on due to site access constraints limiting physical investigations during the environmental review process. The evaluation indicates that a final geotechnical investigation should be performed at the Limits of Work to develop final geotechnical recommendations. Information and conclusions from the Preliminary Geotechnical Evaluation are incorporated into this section. Additional information was obtained from other reports and memoranda as well as government agency documents and websites.

No questions or concerns related to geology, soils, seismicity, and paleontological resources were raised in the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*).

3.7.2 Affected Environment/Environmental Setting

For the purposes of analyzing geology, soils, and seismicity, the study area is defined as the Limits of Work. The study area for paleontological resources is defined by a 150-foot buffer outside the Limits of Work plus underlying units to the maximum depth of excavation, 25 feet below ground surface (bgs) (Paleontological Resources Study Area).

3.7.2.1 Regional Setting

Geology

The Limits of Work are within the Coast Ranges geomorphic province, a relatively geologically young and seismically active region, characterized by northwest-trending mountains and valleys. The mountains and valleys associated with the Coast Ranges run approximately parallel to the San Andreas fault, stretching from the Oregon border to southern California.[1,2] Elevations range between 2,000 and 6,000 feet above sea level. The Limits of Work are located within the only major break in the Coast Ranges, the depression containing the San Francisco Bay Area (Bay Area) and the Santa Clara Valley.

The Limits of Work are principally underlain by alluvial deposits resulting from erosion of the Santa Cruz Mountains and deposition from San Francisco Bay. The alluvial deposits are estimated to be 1,000 feet deep or more before encountering bedrock.[3,4]

Regional Seismicity

The entire Bay Area is within the San Andreas Fault Zone, a complex of active faults. An active fault is one that has experienced displacement within the last 11,700 years and is expected to move again at some point in the future.[5] Numerous historic earthquakes have been generated in Northern California on faults within the San Andreas Fault Zone. This level of active seismicity results in a relatively high seismic risk in the Bay Area.

The Limits of Work are vulnerable to seismic activity, given its proximity to several active faults. The major active faults in the region that are closest to the Limits of Work are the Monte Vista-Shannon, San Andreas, Pilarcitos, and Hayward-Rodgers Creek faults. Table 3.7-1 lists active regional faults, the approximate distance from the Limits of Work, the direction from the Limits of Work, and the mean characteristic moment magnitude.[6]

1 California Geologic Survey. 2002. *California Geomorphic Provinces*. Note 36.

2 Norris, Robert M., and Robert W. Webb. 1976. Geology of California. Second edition. J. Wiley & Sons, Inc.

3 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

4 Cooper Clare & Association. 1973. *Subsidence*.

5 California Geological Survey. 2018. *Special Publication 42, Earthquake Fault Zones, A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California.* Available: https://www.conservation.ca.gov/cgs/Documents/Publications/Special-Publications/SP_042.pdf. Accessed: September 9, 2025.

6 *Moment magnitude* is an energy-based scale that provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and the fault rupture area.

Table 3.7-1. Active Regional Faults and Seismicity

Fault Segment	Distance from Limits of Work (kilometers)	Direction from Limits of Work	Mean Characteristic Moment Magnitude
Monte Vista-Shannon	9	Southwest	7.0
San Andreas 1906 event	14	Southwest	8.1
Pilarcitos	15	Southwest	6.7
Total Hayward-Rodgers Creek Healdsburg	15	East	7.6
Mission (connected)	19	Northeast	6.1
Total Calaveras	21	East	7.5
Butano	24	South	6.7
Sargent	32	Southeast	6.8
Total San Gregorio	32	West	7.6
Mount Diablo Thrust	41	Northeast	6.6
Greenville	45	Northeast	7.1
Franklin	49	North	6.7
Contra Costa (Lafayette)	50	North	6.1
Contra Costa (Larkey)	50	North	6.0

Source: Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

The Bay Area will very likely experience a large earthquake in the future. Table 3.7-2 shows the likelihood of a magnitude 6.7 or greater earthquake in the region between 2014 and 2043.

Table 3.7-2. Likelihood of Future Earthquake on Regional Faults

Fault	Probability (percent)
Hayward-Rodgers Creek	33
Calaveras	26
N. San Andreas	22
Hunting Creek/ Berryessa/ Green Valley/ Concord/ Mt. Diablo/ Greenville	16
San Gregorio	6

Source: Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

3.7.2.2 Limits of Work

Site Topography and Subsurface Conditions

The topography at the Limits of Work is relatively level, with site grades ranging from approximate elevations 20 and 30 feet with a general slope downward from the southern boundary to the northern boundary of the site.[7] The site is underlain by alluvial deposits that predominantly consist of medium stiff to hard clay and sandy clay with interbedded lenses and layers of medium dense to very dense sand and gravel with varying amounts and types of fines to the maximum depth explored of 100 feet below ground surface (bgs). The alluvial deposits are estimated to be 1,000 feet or more

[7] Elevations reference World Geodetic SystemDatum of 1984 (WGS84) as shown on Google Earth.

before encountering bedrock.[8] Near-surface clay is stiff to hard silty clay, sandy clay, and clay with silt and varies in thickness from about 5 to 15 feet.

Groundwater

The Limits of Work are within the Santa Clara Valley Groundwater Basin, Santa Clara Subbasin. Groundwater within the Santa Clara Subbasin is generally found in aquifers with high-permeability sand and gravel layers interbedded between low-permeability clay and silt layers. The low-permeability layers confine the aquifers and limit the migration of groundwater between aquifers. Recharge within the Santa Clara Subbasin generally occurs along the margins and southern portion of the subbasin where coarse-grained sediments predominate. The recharge area includes the alluvial fan and fluvial deposits along the edge of the subbasin where high rates of lateral and vertical permeability allow surface water to infiltrate the aquifers. The percolation of surface water in recharge areas replenishes unconfined groundwater within the recharge area and contributes to the recharge of principal aquifers in the confined area through subsurface flow. Previous investigations at or near the site have encountered groundwater at depths ranging from between 6 to 13 feet bgs. However, groundwater levels are expected to fluctuate depending on rainfall and other seasonal conditions. The historic high groundwater level, based on the California Geological Survey (CGS) Seismic Hazard Zone Report for the Mountain View Quadrangle, is approximately 5 feet. [9]

Surface Fault Rupture

Surface rupture occurs when the ground surface is broken by fault movement during an earthquake and can be assumed to occur along an active or potentially active major fault trace. Areas that are most susceptible to fault rupture are delineated by the CGS Alquist-Priolo Earthquake Fault Zones and require specific geological investigations prior to development to reduce the threat to public health and safety and minimize the loss of life and property posed by earthquake-induced ground failure. The Limits of Work are not within an Alquist-Priolo Earthquake Fault Zone, and no known active or potentially active faults exist on the site.10 Therefore, the risk of surface fault rupture at the Limits of Work is considered low.

Ground Shaking

Ground shaking is a general term that refers to all aspects of motion on the Earth's surface resulting from an earthquake and normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, the distance from the epicenter, and local geologic conditions. The Modified Mercalli Intensity (MMI) Scale is the most commonly used scale for measurement of the subjective effects of earthquake intensity. The MMI values range from I (earthquake not felt) to XII (damage nearly total); intensities ranging from VI to XII can cause slight to significant structural damage, as described in Table 3.7-3.[11]

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8 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

9 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

10 California Geological Survey. 2025. *Earthquake Zones of Required Investigation*. Available: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed: September 8, 2025.

11 California Geological Survey. 2002. *How Earthquakes and Their Effects Are Measured*. Note 32.

Table 3.7-3. Modified Mercalli Intensity (MMI) Scale

MMI Value	Effects of Earthquake Intensity
I	Not felt, except by a very few under especially favorable circumstances.
II	Felt by only a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
III	Felt quite noticeably indoors, especially on upper floors of buildings; many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration is like the passing of a truck. Duration estimated.
IV	During the day, felt indoors by many; outdoors, by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Felt by nearly everyone; many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster and unstable objects overturned. Disturbances to trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
VI	Felt by all; many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures and considerable in poorly built or badly designed structures. Some chimneys broken. Noticed by persons driving motor cars.
VIII	Damage slight in specially designed structures and considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
IX	Damage considerable in specially designed structures and well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations and ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps, and land slips in soft ground. Rails bent greatly.
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

Source: California Geological Survey. 2002. *How Earthquakes and Their Effects Are Measured*. Note 32.

Due to the proximity of active faults, the Limits of Work could experience strong to violent ground shaking in the event of an earthquake.[12] The mapping of earthquake shaking scenarios by the Association of Bay Area Governments indicates that a large earthquake would produce very strong shaking in the vicinity of the Limits of Work (MMI VII).[13]

12 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

13 Association of Bay Area Governments. 2025. *Hazard Viewer Map*. Available: https://mtc.maps.arcgis.com/apps/ webappviewer/index.html?id=4a6f3f1259df42eab29b35dfcd086fc8. Accessed: September 9, 2025.

Liquefaction

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes a transient loss of strength, which commonly causes ground displacement or ground failure to occur. Because saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the groundwater table is at greater depths. The potential for liquefaction-induced ground failure (e.g., loss of bearing strength, ground fissures, sand boils) depends on the thickness of the liquefiable soil layer relative to the thickness of the overlying non-liquefiable material. The Limits of Work are mapped within a liquefaction hazard zone as designated by the CGS seismic hazard zone map for the area titled State of California Seismic Hazard Zones, Mountain View Quadrangle, Official Map, released October 18, 2006.[14]

Site-specific analysis indicates that isolated layers of liquefiable soils varying in thickness from approximately 2 to 6 feet are present at the Limits of Work between depths of 5 and 49 feet bgs. The potentially liquefiable soil layers underlying the Limits of Work are not continuous. Liquefaction-induced settlement can occur during a seismic event, when the loose, granular soils can lose their strength and densify, leading to building tipping or ground failure. Modelling suggests that liquefaction-induced settlement of these layers could be on the order of 0.5 to 2 inches, with up to 1.5 inches of differential (i.e., unequal) settlement.

Lateral Spreading

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an embankment or excavation boundary. In a lateral spread failure, a layer of ground at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward the free face. The lateral spreading hazard tends to mirror the liquefaction hazard for an area, assuming a free face is nearby. As the Limits of Work are approximately 4,000 feet east of Stevens Creek (the nearest free face) and the potentially liquefiable soil layers underlying the Limits of Work are not continuous, the potential for lateral spreading at the Limits of Work is considered low.

Seismic Settlement

Seismic settlement (also referred to as *cyclic densification*) can occur when non-saturated, cohesionless sand or gravel soil is densified by earthquake vibrations. When the degree of cyclic densification varies, based on different soil types, differential (i.e., unequal) settlement may occur, which can result in greater damage to structures compared to relatively equal settlement. Site-specific analysis of subsurface conditions indicates that soil above the groundwater table is predominantly medium stiff to hard clay; therefore, the potential for seismic densification is considered low.

[14] Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

Static Settlement and Subsidence

Static settlement is the lowering of the land surface elevation as a result of loading (i.e., placement of heavy loads, typically fill material or structures), which often occurs with the development of a site. Static settlement occurs when buildings or other improvements are built on low-strength subsurface materials such as compressible soils. Differential settlement can occur when buildings or other improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and/or new engineered fill or a boundary between bedrock and soil). Although static settlement generally occurs slowly enough that its effects are not dangerous to inhabitants, it can cause significant damage to buildings and other improvements over time.

Subsidence is the lowering of the land-surface elevation. The mechanism for subsidence is generally related to groundwater pumping and subsequent consolidation of loose aquifer sediments. Subsidence may also be related to static settlement. The primary hazards associated with subsidence are increased flooding hazards and damage to underground utilities as well as aboveground structures. Other effects of subsidence include changes in the gradients of stormwater and sanitary sewer drainage systems for which the flow is gravity driven. Minor subsidence and recovery due to seasonal variation in groundwater levels is considered elastic subsidence. Historical groundwater pumping in the Santa Clara Plain resulted in a decline of groundwater levels by as much as 200 feet. Fluid pressure in the aquifers was reduced, resulting in the compression of fine-grained materials (e.g., clays) and a broad sagging of the land surface. Approximately 6 feet of inelastic (permanent) subsidence was observed in the vicinity of the Limits of Work between 1934 and 1967. Significant inelastic subsidence in the vicinity of the Limits of Work was essentially halted around 1970 through the Santa Clara Valley Water District's expanded conjunctive management programs, which allowed groundwater levels to recover substantially. Some amount of elastic (temporary) subsidence occurs annually in response to seasonal pumping.[15]

Expansive Soils

Expansion and contraction of soil volume can occur when expansive soils undergo alternating cycles of wet conditions (causing swelling) and dry conditions (causing shrinking). During these cycles, the volume of the soil changes markedly. Shrink-swell potential is influenced by the amount and type of clay minerals present and measured by the percent change of the soil volume. Shrink-swell potential is also influenced by the location of the soils; soils below the groundwater table maintain a steady moisture content and therefore would not be subject to shrink-swell effects. As a consequence of volume changes due to expansive soils, structural damage to buildings and infrastructure can occur if potentially expansive soils are not considered in the design and during construction. The near-surface clay at the Limits of Work have a high expansion potential.[16]

15 Santa Clara Valley Water District. 2021. *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*. November.

16 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

Landslide Hazards

The Limits of Work are relatively flat, with no significant slopes on or near the site. The Limits of Work are not located within a CGS-designated Landslide Hazard Zone. The nearest Landslide Hazard Zone is approximately 5 miles south of the Limits of Work.[17]

Paleontological Resources

The Paleontological Resources Study Area is located on Quaternary alluvium of the Santa Clara Valley (Q).[18] The alluvial deposits are estimated to extend to depths of a thousand feet or more.[19] As the maximum depth of construction is 25 feet bgs, construction would disturb only the Quaternary alluvium and would not disturb any geologic unit underlying this unit.[20]

Quaternary Alluvium of the Santa Clara Valley (Q)

Pleistocene vertebrate fossils have been found from multiple localities in Quaternary alluvium across the Santa Clara Valley, including Lawrence Expressway East, San José; Santa Clara Valley Water District lands of the Guadalupe River in San José; Sunnyvale Sewer, Sunnyvale; Calabaza Creek, Sunnyvale; and Milpitas, as well as multiple localities farther north. All of these fossil localities occur in units that have been mapped as surficial Holocene deposits.[21] Radiocarbon dating of the mapped Holocene sediments where the Pleistocene remains were found shows Pleistocene age for two of these finds (11 feet and 30 feet below ground surface); for the others, no dating was performed. Some of these finds may have washed down from the mountains and been deposited in Holocene waterways, but the two radiocarbon-dated finds very likely originated where they were found. These occurrences "demonstrate that older sediments and fossils (more than 10 thousand years before present) occur at or near the surface in these areas," particularly because the amount, association, and orientation of the fossils from these localities indicate that the sediments in which they occur had not been reworked through subsequent geologic or artificial processes.[22] Accordingly, Pleistocene alluvium may be more widespread and shallower in the Santa Clara Valley than was previously thought, and Pleistocene fossils resources are very likely present in the Santa Clara Valley below units mapped as Holocene alluvium. Vertebrate fossils documented include extinct species of mammoth, bear, horse, bison, and camel.

17 California Geological Survey. 2025. *Earthquake Zones of Required Investigation*. Available: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed: September 7, 2025.

18 Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000. Available: ftp://ftp.consrv.ca.gov/pub/dmg/pubs/rgm/RGM_005A/. Accessed: September 9, 2025.

19 Langan. 2023. *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California*. March 14.

20 Santa Clara Valley Water District. 2010. *Revised Final Groundwater Vulnerability Study, Santa Clara County, California.* Prepared by Todd Engineers, Alameda, CA, and Kennedy Jenks Consultants, San Francisco, CA. Available: https://www.valleywater.org/sites/default/files/2018-02/Groundwater%20Vulnerability%20Study.pdf. Accessed: August 23, 2025.

21 Maguire, K.C., and P.A. Holroyd. 2016. *Pleistocene Vertebrates of Silicon Valley (Santa Clara County, California).* Available: https://escholarship.org/uc/item/3k43832x. Accessed: September 12, 2025.

22 Ibid.

3.7.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley elected to use the Santa Clara Valley Urban Runoff Pollution Prevention Program for the analysis of geology, soils, and paleontological resources associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to apply the standards identified in the California Building Code, Seismic Hazards Mapping Act, California Geological Survey (CGS)-designated Liquefaction Hazard Zone, State Water Resources Control Board's Construction General Permit, and Santa Clara Valley Urban Runoff Pollution Prevention Program for the analysis of geology, soils, and paleontological resources associated with the project.

This section summarizes plans, policies, and regulations considered in the analysis.

3.7.3.1 Federal Regulations

National Earthquake Hazards Reduction Program

The National Earthquake Hazards Reduction Program (NEHRP) agencies pursue the goals of the program through collaboration with each other and numerous partners. In addition to other federal agencies, program partners include state and local governments, universities, research centers, professional societies, trade associations and businesses, as well as associated councils, commissions and consortia.

NEHRP's work encompasses research, development and implementation activities. Program research helps to advance our understanding of why and how earthquakes occur and impact the natural and built environments. The program develops strategies, tools, techniques, and other measures that can reduce the adverse effects of earthquakes and facilitates and promotes implementation of these measures, thereby strengthening earthquake resilience among at-risk communities.

3.7.3.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was signed into California law on December 22, 1972, to mitigate the hazard of surface faulting to structures for human occupancy.

The act in its current form has three main provisions:

1. It directs the state's California Geological Survey agency (then known as the California Division of Mines and Geology) to compile detailed maps of the surface traces of known active faults. These maps include both the best known location where faults cut the surface and a buffer zone around the known trace(s);
2. It requires property owners (or their real estate agents) to formally and legally disclose that their property lies within the zones defined on those maps before selling the property; and
3. It prohibits new construction of houses within these zones unless a comprehensive geologic investigation shows that the fault does not pose a hazard to the proposed structure.

The act was one of several that changed building codes and practices to improve earthquake safety. These changes are intended to reduce the damage from future earthquakes.

Seismic Hazard Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code [PRC] Chapter 7.8, Section 2690–2699.6) directs the Department of Conservation, California Geological Survey, to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking.

California Building Standards Code

The California Building Standards Code is the building code for California, and Title 24 of the California Code of Regulations (CCR). It is maintained by the California Building Standards Commission, which is granted the authority to oversee processes related to the California building codes by California Building Standards Law. The California building codes under Title 24 are established based on several criteria: standards adopted by states based on national model codes, national model codes adapted to meet California conditions, and standards passed by the California legislature that address concerns specific to California.

Government Codes for Specific Building Types

The California Building Standards Code (CBC) is the building code for California and Title 24 of the CCR. It is maintained by the California Building Standards Commission, which is granted the authority to oversee processes related to the California building codes by California Building Standards Law. The CBC is updated every 3 years and provides minimum standards to protect property and public safety by regulating the design and construction of excavations, foundations, building frames, retaining walls, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. The CBC also contains provisions for earthquake safety based on factors including occupancy type, the types of soil and rock on-site, and the strength of ground shaking with specified probability of occurring at a site.

California PRC Sections 5097.5 and 30244

PRC Section 5097.5 prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of state or local authorities.

PRC Section 30244 states that where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

California Division of Occupational Safety and Health

The Division of Occupational Safety and Health of California (DOSH, but more commonly known as Cal/OSHA) is an agency of the Government of California established by the California Occupational Safety and Health Act of 1973. Construction activities, such as excavation, shoring, and trenching, are subject to occupational safety standards as specified in California Division of Occupational Safety and Health regulations in the CCR, Title 8.

University of California Seismic Safety Policy

The purpose of the University of California Seismic Safety Policy is to provide an acceptable level of earthquake safety for students, employees, and the public who occupy University Facilities located in California. For structures located in other states or outside the United States, the Responsible Official must take reasonable steps to manage the seismic life safety risk, if any, and comply with the applicable building code.

3.7.3.3 Local Regulations

Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Urban Runoff Pollution Prevention Program is an association of 13 cities and towns in Santa Clara Valley, the County of Santa Clara, and the Santa Clara Valley Water District that share a common NPDES municipal stormwater permit to discharge stormwater to South San Francisco Bay. The program and member agencies implement pollution prevention, source control, monitoring, and outreach programs aimed at reducing pollution in stormwater runoff, protecting water quality, and protecting beneficial uses of San Francisco Bay and Santa Clara Valley creeks and rivers. The program also promotes valuing stormwater as an important resource. Since 1993, the program and member agencies have received a variety of national awards in recognition of their programs and efforts.

3.7.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on geology, soils, and paleontological resources in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on geology, soils, and paleontological resources in accordance with NEPA is discussed separately in Section 4.5.7, *Geology, Soils, and Paleontological Resources*, in Chapter 4, *Environmental Impact Statement.*

3.7.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on geology, soils, and paleontological resources if it would result in any of the conditions listed below.

Would the project:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault.
    - Strong seismic ground shaking.
    - Seismic-related ground failure, including liquefaction.
    - Landslides.
- Result in substantial soil erosion or the loss of topsoil?
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to geology and soils?

3.7.6 Methods for Analysis

3.7.6.1 Geology, Soils, and Seismicity

The Preliminary Geotechnical Evaluation (Appendix 3.7-1) was prepared to provide preliminary evaluation of the Limits of Work and identify potential geotechnical issues associated with the various proposed construction and building types and to develop preliminary conclusions and recommendations regarding appropriate foundation types, design parameters, and seismic coefficients for project development. The Preliminary Geotechnical Evaluation provides the information that supports the analysis and impact conclusions related to geology, soils, and paleontology.

3.7.6.2 Paleontological Resources

The fossil-yielding potential of geologic units in a particular area depends on the geologic age and origin of the units as well as on the processes they have undergone, both geologic and anthropogenic.[23] The methods used to analyze potential impacts on paleontological resources and develop mitigation for the identified impacts involved the following steps:

- Identify the geologic units in the Paleontological Resources Study Area.
- Evaluate the potential of the identified geologic units to contain significant fossils (their *paleontological sensitivity*).
- Identify the geologic units that would be affected by the project, based on proposed depth of excavation—either at the ground surface or below the ground surface, defined as at least 5 feet bgs.
- Assess the likelihood of the geologic units affected by the proposed project containing scientifically important, nonrenewable paleontological resources that could be directly affected.
- Identify and evaluate impacts on paleontologically sensitive geologic units as a result of construction and operation that involve ground disturbance.
- Evaluate impact significance.
- According to the identified degree of sensitivity, formulate and implement measures to mitigate potential impacts.

The potential of the proposed project to affect paleontological resources relates to ground disturbance. Ground disturbance caused by the proposed project would take place only during construction phases; therefore, this impact analysis addresses construction impacts.

To identify the geologic units in the Paleontological Resources Study Area, the *Geologic Map of the San Francisco-San José Quadrangle, California* was consulted.[24] The Paleontological Resources Study Area is located on Quaternary alluvium of the Santa Clara Valley (Q).[25] Pleistocene vertebrate fossils have been found from multiple localities in Quaternary alluvium across the Santa Clara Valley, indicating the potential for paleontological resources.

The Impact Mitigation Guidelines Revisions Committee of the Society of Vertebrate Paleontology (SVP) has published standard guidelines[26] for the investigation, collection, preservation, and cataloging of fossil-bearing sites (SVP Guidelines and defines the level of potential as one of four sensitivity categories for sedimentary rocks: High, Undetermined, Low, and No Potential.[27]

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23 *Anthropogenic* means caused by human activity.

24 Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000.

25 Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000.

26 Society of Vertebrate Paleontology. 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.* Available: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf. Accessed: September 11, 2025.

27 Ibid.

Based on the scientific literature,[28] each geologic unit in the Paleontological Resources Study Area was assigned a paleontological sensitivity according to the SVP Guidelines. To evaluate impacts on paleontologically sensitive geologic units as a result of the proposed project, geologic mapping was used to identify the geologic unit(s) that would be disturbed by construction-related ground-disturbing activities with respect to the location of geologic units with high potential and undetermined potential.

Paleontological Sensitivity of Geologic Units at the Paleontological Resources Study Area

The paleontological sensitivity of the geologic units exposed at ground surface in the Paleontological Resources Study Area is shown in Table 3.7-4.

Table 3.7-4. Geologic Units in the Paleontological Resources Study Area and Paleontological Sensitivity

Symbol	Geologic Unit	Epoch	Paleontological Sensitivity [a]	Notes
Q	Alluvium[29]	Holocene	High	Quaternary units are generally too young to contain fossils;[b] however, as recent research suggests that some Quaternary alluvium of the Santa Clara Valley may be more paleontologically sensitive than previously recognized,[30] this analysis takes a conservative approach and designates the unit as having high potential.

Notes:

a. Based on SVP Guidelines[31].

b. Geologic units younger than 5,000 years old are not generally considered old enough to contain fossils (Wagner et al. 1991).

3.7.7 Impacts Not Evaluated in Detail

Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Waste Water Disposal Systems

The proposed project would connect to the existing sewer and stormwater collection and treatment system. Only the CEQA Proposed Project includes the Water Reuse Facility Option; the facility would process all the CEQA Proposed Project's wastewater and divert water from wastewater disposal systems. The facility would produce recycled water to serve the proposed buildings and irrigated

28 Maguire, K.C., and P.A. Holroyd. 2016. *Pleistocene Vertebrates of Silicon Valley (Santa Clara County, California).* Available: https://escholarship.org/uc/item/3k43832x. Accessed: September 12, 2025.

29 Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000.

30 Maguire, K.C., and P.A. Holroyd. 2016. Pleistocene Vertebrates of Silicon Valley (Santa Clara County, California). Available: https://escholarship.org/uc/item/3k43832x. Accessed: September 12, 2025.

31 Society of Vertebrate Paleontology. 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.* Available: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf. Accessed: September 11, 2025.

areas; the facility is not considered an alternative wastewater system. The proposed project would not use a septic or alternative water disposal system, resulting in no impact. This topic is not evaluated further.

3.7.8 Impacts and Mitigation Measures

Impact CEQA-GEO-1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault.

b) Strong seismic ground shaking.

c) Seismic-related ground failure, including liquefaction.

d) Landslides.

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	GEO-1. Design-Level Geotechnical Investigation	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Rupture of a Known Earthquake Fault

As discussed under *Surface Fault Rupture* in Section 3.7.2.2, *Limits of Work*, the Limits of Work are not within a Alquist-Priolo Earthquake Fault Zone and no known active or potentially active faults exist on the Limits of Work. Therefore, fault rupture at the Limits of Work during construction or operation is highly unlikely. This impact would be less than significant.

Ground Shaking and Liquefaction

As discussed under *Ground Shaking* in Section 3.7.2.2, *Limits of Work*, the Limits of Work is located in a seismically active region and due to the proximity of active faults could experience strong to violent ground shaking in the event of an earthquake. Ground shaking during construction and operation of the proposed project could damage structures and increase the risk of loss, injury, or death for occupants of the structures.

As discussed under *Liquefaction* in Section 3.7.2.2, *Limits of Work*, the Project Site is located within a California Geological Survey (CGS)-designated Liquefaction Hazard Zone.[32] Liquefaction-induced settlement on the order of 0.5 to 2 inches (with up to 1.5 inches of differential settlement) could occur at the Limits of Work.[33] Settlement due to liquefaction could damage foundations and utilities, increasing the risk of loss, injury, or death for occupants of the Limits of Work.

The risk to structures and improvements from seismic ground shaking and liquefaction is reduced through adherence to the design and materials standards set forth in the California Building Code However, based on the above, the CEQA Proposed Project would have a potentially significant impact related to ground shaking and liquefaction before mitigation.

The Preliminary Geotechnical Evaluation provides preliminary recommendations to address seismic ground shaking and liquefaction, including preliminary recommendations for ground improvements and various foundation design options, and deep foundations.

Landslides

Construction and Operation

As discussed under *Landslide Hazards* in Section 3.7.2.2, *Limits of Work*, the Limits of Work are relatively flat and is not located within a CGS-designated Landslide Hazard Zone. The nearest area of landslide risk is approximately five miles south of the Limits of Work. Accordingly, the construction and operation of the CEQA Proposed Project would have no impact related to landsliding.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

Once site development plans are final, the Project Proponent or its contractor(s) shall coordinate the preparation of a design-level geotechnical investigation by a licensed geotechnical engineer. The design-level investigation findings shall be used to address all the geotechnical concerns described in the *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park, Master Planning Phase, Mountain View, California*. The recommendations of the *Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park, Master Planning Phase, Mountain View, California* and any recommendations included in the design-level geotechnical investigation for the project shall be incorporated into all applicable design and engineering plans including, but not limited to, site preparation, grading, fill placement, foundations, pavement design, seismic design, etc. Because the Limits of Work are in a California Geological Survey-designated Liquefaction Hazard Zone, the design-level geotechnical investigation must include recommendations to mitigate seismic hazards in accordance with the guidelines of California Geological Survey Special Publication 117A. Prior to the issuance of permits by NASA for the proposed project, a qualified geotechnical expert shall review the design and engineering plans to verify the recommendations have been addressed and incorporated. NASA ARC EMD will then review the expert's findings and confirm that input has been addressed

[32] Langan. 2023. Preliminary Geotechnical Evaluation, Moffett Field NASA Research Park Master Planning Phase Mountain View, California. March 14.

[33] Ibid.

Significance after Mitigation

Impacts related to seismic ground shaking and liquefaction would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not change the basic characteristic of the CEQA Proposed Project. The CEQA Proposed Project with the Variant would be constructed and operated within the same project footprint. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to seismic ground shaking and liquefaction would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristic of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be constructed and operated within the same project footprint. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to seismic ground shaking and liquefaction would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical

Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative with the Variant would not change the basic characteristic of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be constructed and operated within the same project footprint. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to seismic ground shaking and liquefaction would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

Impact CEQA-GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

The CEQA Proposed Project would include ground-disturbing activity, including excavation and grading, that could result in soil erosion or the loss of topsoil. The CEQA Proposed Project would include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP),

including, but not limited to, the following best management practices: employee training, erosion and sediment controls, good housekeeping, material handling and waste management, preventive maintenance, quality assurance and recordkeeping, and spill and leak prevention and response. Therefore, construction of the CEQA Proposed Project would result in less-than-significant impacts related to erosion or loss of topsoil.

Operation

The CEQA Proposed Project would increase impervious surface area to approximately 79 percent, a 9 percent increase over existing conditions. The Limits of Work would be built out with landscaped areas, trees, shrubs, and manicured lawn, along with the buildings and pavement. The built-out nature of the proposed project would minimize the potential for post-development erosion. In addition, as part of the proposed project, swale and riprap would be installed at the eastern diked marsh outfall and typical maintenance activities at the eastern diked marsh outfall would include removal of accumulated sediment, removal of trash and debris to maintain storage capacity, vegetation control, and inspection and repair of the embankments and dewatering devices. Therefore, operation and maintenance of the CEQA Proposed Project would result in less-than-significant impacts related to erosion or loss of topsoil.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not change the basic characteristic of the CEQA Proposed Project. The Variant would require similar ground-disturbing activities, including excavation and grading, which could result in soil erosion or the loss of topsoil. As described for the CEQA Proposed Project, the Variant would include the development and implementation of a SWPPP. Operation of the Variant would also include landscaped areas, buildings, and pavements, which would minimize the potential for post-development erosion. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristic of the CEQA Proposed Project. The CEQA Reduced Density Alternative would require similar ground-disturbing activities, including excavation and grading, which could result in soil erosion or the loss of topsoil. As described for the CEQA Proposed Project, the CEQA Reduced Density Alternative would include the development and implementation of a SWPPP. Operation of the CEQA Reduced Density Alternative would also include landscaped areas, buildings, and pavements, which would minimize the potential for post-development erosion. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative with the Variant would not change the basic characteristic of the CEQA Proposed Project. The Variant would require similar ground-disturbing activities, including excavation and grading, which could result in soil erosion or the loss of topsoil. As described for the CEQA Proposed Project, the CEQA Reduced Density Alternative with the Variant would include the development and implementation of a SWPPP. Operation of the CEQA Reduced Density Alternative with the Variant would also include landscaped areas, buildings, and pavements, which would minimize the potential for post-development erosion. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-GEO-3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	GEO-1. Design-Level Geotechnical Investigation HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Potential impacts related to liquefaction are discussed under Impact GEO-1. As discussed under *Lateral Spreading* in Section 3.7.2.2, *Limits of Work*, the nearest free face is approximately 4,000 feet from the Limits of Work, and the potentially liquefiable soil layers underlying the Project Site are not

continuous, the potential for lateral spreading would be less than significant. As discussed under *Landslide Hazards* in Section 3.7.2.2, *Limits of Work*, the Limits of Work are relatively flat and located approximately 5 miles from the nearest Landslide Hazard Zone. Therefore there would be no impact related to landslide hazards.

The Preliminary Geotechnical Evaluation indicates that static and seismic settlement could occur at the Limits of Work. The CEQA Proposed Project would have a potentially significant impact related to settlement before mitigation. Settlement amounts vary depending on foundation system type, final building loads, the presence of highly expansive near-surface soil, liquefaction-induced settlement, and the presence of compressible soil. The Preliminary Geotechnical Evaluation indicates that settlement would affect various aspects of the project, including the foundation design, utilities, streets, building entrances, and sidewalks; however, Preliminary Geotechnical Evaluation also provides preliminary recommendations to deal with and reduce risks associated with settlement at the Limits of Work, such as deep foundations and the use of precast, pre-stressed concrete piles, drilled displacement piles, or drilled displacement columns.

Construction of the proposed project would require excavation up to a maximum depth of 25 feet, which is below the historic groundwater level of 5 feet; therefore, shoring and dewatering may be required to restrain the sidewalls of the excavations laterally, ensuring that they would not collapse, and limit the movement of adjacent improvements. Appropriate shoring that meets applicable regulatory standards will be specified in the detailed construction documents prepared for the proposed project. The Preliminary Geotechnical Evaluation includes recommendations for temporary shoring.

Operation of the proposed project would not create new significant loads that could trigger additional settlement or unstable soil conditions.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Impacts related to settlement would be less than significant with implementation of Mitigation Measure GEO-1, which would require the preparation of a design-level geotechnical investigation, and implementation of Mitigation Measure HAZ-1, which would require ongoing monitoring and remediation during dewatering activities. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not change the basic characteristic of the CEQA Proposed Project. As the Variant share the same location with CEQA Proposed Project, it would have the same impacts related to potentially unstable geologic units and soils. As described for the CEQA Proposed Project, the risk of lateral spreading for the Variant would be less than significant. There would be no impact related to landsliding risk. Other risks related to unstable geologic units such as settlement would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Impacts related to settlement would be less than significant with implementation of Mitigation Measure GEO-1, which would require the preparation of a design-level geotechnical investigation, and implementation of Mitigation Measure HAZ-1, which would require ongoing monitoring and remediation during dewatering activities. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristic of the CEQA Proposed Project. As the CEQA Reduced Density Alternative would share the same location with CEQA Proposed Project, it would have the same impacts related to potentially unstable geologic units and soils. As described for the CEQA Proposed Project, the risk of lateral spreading for the CEQA Reduced Density Alternative would be less than significant. There would be no impact related to landsliding risk. Other risks related to unstable geologic units such as settlement would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Impacts related to settlement would be less than significant with implementation of Mitigation Measure GEO-1, which would require the preparation of a design-level geotechnical investigation, and implementation of Mitigation Measure HAZ-1, which would require ongoing monitoring and remediation during dewatering activities. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative with the Variant would not change the basic characteristic of the CEQA Proposed Project. As the Variant would share the same location with CEQA Proposed Project, it would have the same impacts related to potentially unstable geologic units and soils. As described for the CEQA Proposed Project, the risk of lateral spreading for the Variant would be less than significant. There would be no impact related to landsliding risk. Other risks related to unstable geologic units such as settlement would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Impacts related to settlement would be less than significant with implementation of Mitigation Measure GEO-1, which would require the preparation of a design-level geotechnical investigation, and implementation of Mitigation Measure HAZ-1, which would require ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

Impact CEQA-GEO-4: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	GEO-1. Design-Level Geotechnical Investigation	Less than Significant with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

As discussed under *Expansive Soils* in Section 3.7.2.2, *Limits of Work*, the near-surface clay underlying the Limits of Work have a high expansion potential. Expansive soils have the potential to damage proposed foundations/floor slabs, utilities, and pavement due to moisture fluctuations if appropriate engineering is not incorporated into the project design. Potential causes of moisture fluctuations in soil could include drying during construction as well as subsequent wetting from rain, capillary rise, landscape irrigation, poor drainage, and plant selection. Therefore, impacts related to expansive soils would be potentially significant before mitigation.

The Preliminary Geotechnical Evaluation provides preliminary recommendations including the design and construction of new foundations, exterior slabs, and concrete flatwork to resist the effects of the expansive soil. The effects of expansive soils can be mitigated by moisture conditioning the expansive soil, providing select, non-expansive fill below the flatwork and other at-grade improvements, and providing additional reinforcing steel.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to expansive soil would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the

recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not change the basic characteristic of the CEQA Proposed Project. The Variant would be constructed and operated within the same project footprint and would therefore be subject to the same risks related to underlying expansive soils. As described for the CEQA Proposed Project, impacts related to expansive soils would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to expansive soil would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristic of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be constructed and operated within the same project footprint and would therefore be subject to the same risks related to underlying expansive soils. As described for the CEQA Proposed Project, impacts related to expansive soils would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to expansive soil would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Construction and Operation

The CEQA Reduced Density Alternative with the Variant would not change the basic characteristic of the CEQA Proposed Project. The Variant would be constructed and operated within the same project footprint and would therefore be subject to the same risks related to underlying expansive soils. As described for the CEQA Proposed Project, impacts related to expansive soils would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-1. Design-Level Geotechnical Investigation

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-1.

Significance after Mitigation

Impacts related to expansive soil would be less than significant with implementation of Mitigation Measure GEO-1, which requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans.

Impact CEQA-GEO-5: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	GEO-2. Paleontological Resources Discovery Protocols	Less than Significant with Mitigation
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The CEQA Proposed Project would be located in an area underlain by Quaternary alluvium of the Santa Clara Valley (Q), which has yielded scientifically important fossil finds at depths greater than 9 feet below surface, including vertebrate remains and is considered highly sensitive to paleontological resources. Disturbance of, damage to, or loss of paleontological resources with high paleontological potential would constitute a significant impact. While most ground disturbing activities would not be deeper than 5 feet bgs and would therefore occur in younger, previously disturbed sediments with a low paleontological sensitivity, some project excavation could reach a maximum depth of 25 feet bgs; therefore, it is possible that this deeper excavation could encounter significant paleontological resources. The CEQA Proposed Project would have a potentially significant impact on significant paleontological resources before mitigation.

Mitigation Measures

Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols

For all ground-disturbing activities within the Limits of Work that extend more than 5 feet below ground surface, the Project Proponent or its contractor(s) shall implement the following protocols. "Ground-disturbing activities" include soil removal, parcel grading, utility trenching, and foundation-related excavation in those areas that extend into previously undisturbed soils:

- A paleontological resources awareness training program by a qualified paleontologist shall be provided to all construction personnel active within the Limits of Work during ground-disturbing activities. The first training shall be provided at the start of each construction phase, prior to the start of ground disturbing activities in a work area for the current construction phase. The training will include relevant information regarding fossils and fossil-bearing formations that may be encountered. The training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located within the Limits of Work.
- If any paleontological resources are encountered during ground-disturbing activities, the Project Proponent or its contractor(s) shall ensure that activities in the immediate area of the find are halted and inform NASA Ames Research Center Environmental Management Division (NASA ARC EMD). The Project Proponent or its contractor(s) shall retain a qualified paleontologist to evaluate the discovery and recommend appropriate treatment options pursuant to guidelines developed by the Society of Vertebrate Paleontology, including development and implementation of a paleontological resource impact mitigation program by a qualified paleontologist for treatment of the particular resource, if applicable. These measures may include, but not be limited to the following:
    - Salvage of unearthed fossil remains and/or traces (e.g., tracks, trails, burrows);
    - Screen washing to recover small specimens;
    - Preparation of salvaged fossils to a point of being ready for curation (e.g., removal of enclosing matrix, stabilization and repair of specimens, and construction of reinforced support cradles); and
    - Identification, cataloging, curation, and provision for repository storage of prepared fossil specimens.

Significance After Mitigation

Impacts related to paleontological resources would be less than significant with implementation of Mitigation Measure GEO-2, which requires a paleontological resources awareness training program and identifies protocols if any paleontological resources are encountered during ground-disturbing activities.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not change the basic characteristics of the CEQA Proposed Project and would have a potentially significant impact on significant paleontological resources before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-5.

Significance After Mitigation

Impacts related to paleontological resources would be less than significant with implementation of Mitigation Measure GEO-2, which requires a paleontological resources awareness training program and identifies protocols if any paleontological resources are encountered during ground-disturbing activities.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristic of the CEQA Proposed Project and would have a potentially significant impact on significant paleontological resources before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-5.

Significance After Mitigation

Impacts related to paleontological resources would be less than significant with implementation of Mitigation Measure GEO-2, which requires a paleontological resources awareness training program and identifies protocols if any paleontological resources are encountered during ground-disturbing activities.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative with the Variant would not change the basic characteristic of the CEQA Proposed Project and would have a potentially significant impact on significant paleontological resources before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GEO-2. Paleontological Resources Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-GEO-5.

Significance After Mitigation

Impacts related to paleontological resources would be less than significant with implementation of Mitigation Measure GEO-2, which requires a paleontological resources awareness training program and identifies protocols if any paleontological resources are encountered during ground-disturbing activities.

3.7.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.7.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to the use of septic tanks or alternative wastewater disposal systems, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.7.8, *Impacts and Mitigation Measures*.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for geology and soils is site-specific due to the fact that a project's potential impacts are individual and localized, depending on the Limits of Work, the underlying soils, and the different levels of excavation, cut-and-fill work, and grading. The geographic context for paleontological resources is the full extent of geologic unit, in this case the Quaternary alluvium, with high paleontological sensitivity that underlie the Limits of Work.

Impact CEQA-C-GEO-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to geology or soils? (No Significant Cumulative Impact)

Cumulative development would require various levels of excavation or cut-and-fill, which would affect local geologic conditions. As discussed above, impacts related to geology and soils are generally site-specific and are not cumulative; each cumulative project would be required to go through environmental and regulatory review and comply with local and state building codes. In addition, each cumulative project would also be required to have a site-specific geotechnical investigation performed, which would provide design recommendations to reduce each project's

impacts related to geologic and seismic safety. As discussed above, ground shaking during construction and operation of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could damage structures and increase the risk of loss, injury, or death for occupants of the structures. In addition, settlement due to liquefaction could damage foundations and utilities, increasing the risk of loss, injury, or death for occupants of the Project Site. Implementation of Mitigation Measure GEO-1 requires the preparation of a design-level geotechnical investigation. The geotechnical concerns described in the Preliminary Geotechnical Evaluation and the recommendations in the design-level geotechnical investigation would be incorporated into all applicable design and engineering plans. Furthermore, the proposed project would include the development and implementation of a SWPPP and operation would include landscaped areas, buildings, and pavements, which would minimize the potential for post-development erosion. Therefore, because impacts related to geology and soils are generally site-specific, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to geology and soils.

Impact CEQA-C-GEO-2: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to paleontological resources? (Less than Cumulatively Considerable with Mitigation)

The geologic unit underlying the Limits of Work is Quaternary alluvium of the Santa Clara Valley (Q), which has high paleontological potential; therefore, cumulative projects on this geologic unit that involve excavation into Quaternary alluvium could affect paleontological resources during ground-disturbing activities. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would be located in an area underlain by Quaternary alluvium of the Santa Clara Valley (Q), which has yielded scientifically important fossil finds, including vertebrate remains and is considered highly sensitive to paleontological resources. The project involves excavation to a maximum depth of 25 feet bgs; therefore, it is possible that project-related excavation could encounter significant paleontological resources. Therefore, the impacts of cumulative projects, combined with the proposed project, would result in a significant cumulative impact related to paleontological resources.

Implementation of Mitigation Measure GEO-2 requires a paleontological resources awareness training program and identifies protocols if any paleontological resources are encountered during ground-disturbing activities. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would not result in a cumulatively considerable contribution to significant environmental impacts on paleontological resources.

3.8 Greenhouse Gas Emissions

3.8.1 Introduction

This section evaluates the potential impacts on greenhouse gas (GHG) emissions that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project:

- *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report* (Air Quality, Health Risk, and GHG Technical Report) prepared by ICF, April 2026 (Appendix 3.3-1 of this joint environmental impact report/ environmental impact statement [EIR/EIS]).

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to GHG emissions include the following recommendations by the U.S. Environmental Protection Agency (EPA), Region 9:

- Identify project design features to reduce GHG emissions and increase energy efficiency and reliance on renewable energy. This issue is addressed in Section 3.8.7, *Impacts and Mitigation Measures*, under Impact CEQA-GHG-1, and Section 4.5.8.4, *Environmental Consequences*, under Impact NEPA-GHG-1.
- Identify and quantify sources of carbon dioxide (CO_2) emissions during project construction and operation. This issue is addressed in Section 3.8.7, *Impacts and Mitigation Measures*, under Impact CEQA-GHG-1, and Section 4.5.8.4, *Environmental Consequences*, under Impact NEPA-GHG-1.
- Implement actions to reduce GHG emissions, including Tier 4 Final construction engines, low carbon materials, and compliance with Leadership in Energy and Environmental Design (LEED). This issue is addressed in Section 3.8.7, *Impacts and Mitigation Measures*, under Impact CEQA-GHG-1, and Section 4.5.8.4, *Environmental Consequences*, under Impact NEPA-GHG-1.

Similar to EPA, an individual commenter recommended the project design maximize the use of renewable resources and minimize the use of fossil fuels. Carpenters Union Local 405 also requested analysis and mitigation (if necessary) of construction workers' vehicle trips to and from the Project Site. This issue is addressed under Impact CEQA-GHG-1 and under Impact NEPA-GHG-1 in Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS.

3.8.2 Affected Environment/Environmental Setting

3.8.2.1 Greenhouse Gases

The principal anthropogenic (human-made) GHGs contributing to global warming are CO_2, methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds, including sulfur hexafluoride,

hydrofluorocarbons (HFCs), and perfluorocarbons. Water vapor, the most abundant GHG, is not included in this list because its natural concentrations and fluctuations far outweigh its anthropogenic sources.

The primary GHGs of concern associated with the proposed project are CO_2, CH_4, N_2O, and HFCs. Additional information on these pollutants is provided in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Sulfur hexafluoride and perfluorocarbons are not discussed because these gases are primarily generated by industrial and manufacturing processes, which are not part of the proposed project.

Methods have been set forth to describe emissions of GHGs in terms of a single gas to simplify reporting and analysis. The most accepted method to compare GHG emissions is the global warming potential (GWP) methodology defined in Intergovernmental Panel on Climate Change (IPCC) reference documents. IPCC defines the GWP of various GHG emissions on a normalized scale that recasts all GHG emissions in terms of carbon dioxide equivalent (CO_2e), which compares the gas in question to that of the same mass of CO_2 (CO_2 has a GWP of 1 by definition).

Table 3.8-1 lists the GWP of CO_2, CH_4, N_2O, and HFCs and their lifetimes in the atmosphere. The GWPs are from the IPCC's fourth assessment report (AR4). Common metrics adopted at the 27th United Nations Framework Convention on Climate Change Conference of Parties (COP27) require Parties to use 100-year GWP values from IPCC's fifth assessment report (AR5) in their national GHG reporting by the end of 2024.[1] EPA's most recent national GHG inventory uses the AR5 GWPs.[2] Although national GHG reporting is moving toward use of the AR5 GWPs, this analysis uses the AR4 GWP consistent with statewide GHG reporting.[3]

Table 3.8-1. Lifetimes and Global Warming Potentials of Key Greenhouse Gases

Greenhouse Gas	Global Warming Potential (100 years)	Lifetime (years)
CO_2	1	–
CH_4	25	12
N_2O	298	114
HFCs	124–14,800	1–270

Source: California Air Resources Board. 2025. *GHG Global Warming Potentials*. Available: https://ww2.arb.ca.gov/ghg-gwps. Accessed: April 9, 2025.
CH_4 = methane; CO_2 = carbon dioxide; N_2O = nitrous oxide; HFCs = hydrofluorocarbons.

3.8.2.2 Emissions Inventories

A *GHG inventory* is a quantification of all GHG emissions and sinks in a selected physical and/or economic boundary. Table 3.8-2 outlines the most recent global, national, state, and county GHG inventories. The table also includes inventories for the cities of Mountain View and Sunnyvale, which border the NASA Ames Research Center (ARC) and Project Site, as well as the inventory for the UC Berkeley main campus and NASA ARC.

1 U.S. Environmental Protection Agency. 2025. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2023*. Unpublished. EPA 430-P-25-001.

2 Ibid.

3 California Air Resources Board. 2024. *Assembly Bill 32 Greenhouse Gas Emissions Inventory for 2000–2022 — by Gas.* Available: https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-ghg_inventory_gas_00-22.xlsx. Accessed: April 2, 2025.

Table 3.8-2. GHG Emissions Inventories

Year and Area	CO_2e (metric tons)
2010 Global	52,000,000,000
2023 United States [a, b]	5,256,700,000
2022 California	371,100,000
2017 Santa Clara County [b]	10,831,138
2021 City of Sunnyvale	688,739
2019 City of Mountainview	601,318
2022 UC Berkeley Main Campus [c]	161,331
2023 NASA ARC	13,296

Sources: Intergovernmental Panel on Climate Change. 2014. *Climate Change 2014: Synthesis Report.* Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing Team, R. K. Pachauri and L. A. Meyer (eds.). Geneva, Switzerland.

U.S. Environmental Protection Agency. 2025. *Draft Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2023*. Unpublished. EPA 430-P-25-001.

California Air Resources Board. 2024. *Assembly Bill 32 Greenhouse Gas Emissions Inventory for 2000–2022 — by Gas.* Available: https://ww2.arb.ca.gov/sites/default/files/2024-09/nc-ghg_inventory_gas_00-22.xlsx. Accessed: April 2, 2025.

Rincon Consultants. 2023. *County of Santa Clara 2017 Community Wide Greenhouse Gas Inventory and Forecast*. November.

City of Sunnyvale. 2024. *Climate Action Playbook: Update and Game Plan 2028*. June.

City of Mountain View. 2021. *Total Community Greenhouse Gas Emissions and Percent Change in Emissions, 2005-2019.* Available: https://mountainview.legistar.com/LegislationDetail.aspx?ID=4991172&GUID=8426F732-AE40-4B05-A1A9-DC8F701CD1CB&Options=&Search=. Accessed: May 20, 2025.

University of California, Berkeley. 2024. *Greenhouse Gas Emissions Inventory Overview*. Available: https://sustainability.berkeley.edu/carbon-solutions/greenhouse-gas-inventory. Accessed. May 22, 2024.

California Air Resources Board. 2025. *Annual Summary of Greenhouse Gas Emissions Data Reported to the California Air Resources Board*. Last Revised: July 4, 2025. Available: https://ww2.arb.ca.gov/mrr-data. Accessed: August 26, 2025.

[a] Total gross emission less emission reductions from the Agriculture, Land Use, Land-Use Change, and Forestry sector.

[b] Inventory uses the AR5 GWPs.

[c] This inventory is presented for context and does not include any emissions on the existing Project Site.

CO_2e = carbon dioxide equivalent; UC = University of California; NASA = National Aeronautics and Space Administration; ARC = Ames Research Center

3.8.2.3 Global Warming and Climate Change

The process known as the *greenhouse effect* keeps the atmosphere near Earth's surface warm enough for the successful habitation of humans and other life forms. The greenhouse effect is created by sunlight that passes through the atmosphere. Some of the sunlight striking Earth is absorbed and converted to heat, which warms the surface. The surface emits a portion of this heat as infrared radiation, some of which is re-emitted back toward the surface by GHGs in the atmosphere, and some of which results in warming of the atmosphere. Human activities that generate GHGs increase the amount of infrared radiation absorbed by the atmosphere, thus enhancing the greenhouse effect and amplifying the warming of Earth.

Increases in fossil fuel combustion and deforestation have exponentially increased concentrations of GHGs in the global atmosphere since the Industrial Revolution.[4] Rising atmospheric concentrations of GHGs in excess of natural levels result in increasing global surface temperatures—a process

[4] Intergovernmental Panel on Climate Change. 2018. *Global Warming of 1.5°C.* Chapter 1, Framing and Context. Summary for Policymakers. M.R. Allen, O.P. Dube, W. Solecki, F. Aragón-Durand, W. Cramer, S. Humphreys, M. Kainuma, J. Kala, N. Mahowald, Y. Mulugetta, R. Perez, M. Wairiu, and K. Zickfeld.

commonly referred to as *global warming*. Higher global surface temperatures, in turn, result in changes to Earth's climate system, including increased ocean temperature and acidity, reduced sea ice, variable precipitation, and increased frequency and intensity of extreme weather events.[5] Large-scale changes to Earth's system are collectively referred to as *climate change.*

The Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS summarizes anticipated changes to the global, statewide, and local climate systems based on the most recent scientific, technical, and socioeconomic information relevant to understanding climate change.

3.8.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use guidance from the Bay Area Air District (Air District) for the analysis of greenhouse gas emissions associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use guidance from the state and the Air District, supplemented with federal standards, for the analysis of greenhouse gas emissions associated with the proposed project.

Plans, policies, and regulations considered in the analysis of the proposed project's potential impacts related to GHG emissions are identified in the Air Quality, Health Risk, and GHG Technical Report (Appendix 3.3-1 of this joint EIR/EIS). A list of plans, policies, and regulations considered in the analysis is provided below.

- State Legislative Reduction Targets
- Vehicle Efficiency and Zero-Emissions Standards
- Low-Carbon Fuel Standard
- Sustainable Land Use Planning and Vehicle Miles Traveled
- Senate Bill (SB) 100 and 1020

[5] Ibid.

- Building Efficiency and Green Building Design
- Air District Regulations, CEQA Air Quality Guidelines
- Metropolitan Transportation Commission and Association of Bay Area Governments Sustainable Communities Strategy

3.8.4 CEQA Findings

This section describes the environmental impacts of the proposed project on GHG emissions in accordance with CEQA. It describes the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on GHG emissions in accordance with NEPA is provided separately in Section 4.5.8, *Greenhouse Gas Emissions*, in Chapter 4, *Environmental Impact Statement*.

3.8.5 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the proposed project would have the potential to have a significant effect on GHG emissions if it would result in any of the following conditions.

Would the project:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Both conditions are evaluated based on guidance outlined in the Air District's *CEQA Air Quality Guidelines*.[6] The Air District's guidelines do not identify a GHG emission threshold for construction-related emissions. Instead, they recommend that GHG emissions from construction be quantified and disclosed. The Air District further recommends incorporation of best management practices (BMP) to reduce GHG emissions during construction, as feasible and applicable.[7]

The Air District recommends that lead agencies evaluate operational GHG emissions from land use projects consistent with guidance from the California Supreme Court in *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) (62 Cal. 4th 204), which specifies that a project must evaluate its effect on California's efforts to meet the State's long-term climate goals. As the California Supreme Court held in that case, a project that meets the State's long-term climate goals can be found to have a less-than-significant impact on climate change under CEQA. Specifically, if a project contributes a "fair share"[8] toward what will be required to achieve long-term climate goals,

6 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

7 Ibid.

8 The Air District (2023:6-2) defines *fair share* as the design elements that need to be incorporated into a project to lay the foundation for achieving carbon neutrality by 2045. These design elements are elements that the project has influence or control over. For example, becoming carbon neutral by 2045 will require California's electrical power generators to shift to 100 percent carbon-free energy resources, which is not something that can be controlled through the design of new land use projects and would not be a part of a project's fair share.

then a reviewing agency can find that the impact will not be significant because the project will help to solve the problem of global climate change (62 Cal. 4th 220–223). Applying this approach, the Air District has found that a new land use development project being built today needs to incorporate the design elements shown in Table 3.8-3 to do its fair share toward meeting the Senate Bill (SB) 32 target for 2030 and the goal of carbon neutrality by 2045. If a project incorporates the design elements listed in Table 3.8-3 (Threshold Option A) or is consistent with a local GHG reduction strategy under Section 15183.5 of the State CEQA Guidelines (Threshold Option B), then it will contribute a portion to what will be necessary to achieve California's long-term climate goals (i.e., its fair share) and will not result in a cumulatively considerable contribution to global climate change. If a project does not incorporate the design elements or is not consistent with an applicable local GHG reduction strategy, then it should be found to be a project with a significant climate impact because it will hinder the State's efforts to address climate change.[9]

Table 3.8-3. Air District Operational GHG Thresholds for Land Use Projects

Thresholds for Land Use Projects (Must Include A or B)
A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage, as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve compliance with EV requirements in the most recently adopted version of CALGreen Tier 2. b. Achieve a reduction in project-generated VMT to a level below the regional average, consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent), or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below existing VMT per capita, ii. Office projects: 15 percent below existing VMT per employee, and iii. Retail projects: no net increase in existing VMT.
B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: Bay Area Air District. 2023. California Environmental Quality Act Air Quality Guidelines. April.
EV = electric vehicle; SB = Senate Bill; VMT = vehicle miles traveled

The Project Site is on federal land within NASA ARC. Neither NASA nor UC Berkeley has a qualified GHG reduction strategy that applies to the Project Site. The proposed project is also outside the planning boundaries of the local climate action plans (Cities of Mountain View and Sunnyvale), and, as such, Threshold Option B is not used. This analysis, therefore, evaluates consistency with the Air District operational threshold for land use projects by comparing this project to Threshold Option A,

Other sources that would not be part of the fair share are vehicle fleet mix and indirect off-site emissions (e.g., methane emissions from wastewater or solid waste).

9 Ibid.

as defined in Table 3.8-3. GHG emissions generated by the proposed project would not be considered significant under CEQA if the following criteria were met:

- Incorporates BMPs to reduce construction emissions
- Consistent with the Air District land use design elements (Threshold Option A in Table 3.8-3)

This analysis also discusses the proposed project's compliance with regulatory programs designed to reduce GHG emissions. Applicable plans adopted for the purpose of reducing GHG emissions are CARB's *2022 Scoping Plan*, MTC's *Plan Bay Area 2050*, and the Air District's *2017 Clean Air Plan*.

3.8.6 Methods for Analysis

This section summarizes the methods used to analyze potential GHG impacts. The Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS, provides additional detail on the analysis, including specific modeling assumptions and outputs.

The GHG analysis uses mobile source emission rates from EMFAC2021 with CARB's off-model adjustments. While CARB has released EMAFC2025 version 2.1.0, the tool was not available at the time the Notice of Preparation was issued for the environmental document. EMFAC2025 also has not yet been approved by EPA. As discussed in Section 3.3.6, *Methods for Analysis*, in Section 3.3, *Air Quality*, Congressional resolutions signed on June 12, 2025, disapproved EPA's decisions to grant California waivers for the ACT, Warranty Phase 1, and Omnibus regulations. Although CARB published factors for removing the effects of these regulations from the ROG, NO_X, and PM emissions rates produced by EMFAC2021, which are used by CalEEMod to estimate mobile-source emissions, equivalent adjustment factors for GHG emissions rates for EMFAC2021 were not developed by CARB. Potential implications of the Congressional resolutions on the GHG emissions analysis are discussed in Section 3.8.7, *Impacts and Mitigation Measures*.

3.8.6.1 Construction

The buildout of the CEQA Proposed Project or CEQA Reduced Density Alternative would occur over four phases, spanning a total of approximately 14 years. Based on current information, it is anticipated that construction would begin, at the earliest, in 2027. However, based on information available at the time of the technical analysis, emissions were quantified assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be the same or lower than under 2026 conditions because of improvements in engine technology and regulations to reduce combustion emissions. Accordingly, the construction analysis reflects a realistic to conservative representation of emissions.

Construction activities have the potential to create GHG emissions through the use of heavy-duty construction equipment, along with construction workers' vehicle trips, on-road truck trips, and consumption of electricity. GHG emissions from construction activities were estimated using the California Emissions Estimator Model (CalEEMod), version 2022, and project-specific construction data (e.g., schedule, equipment, on-site and off-site truck volumes) provided by the project engineering team. The intensity of construction for the CEQA Proposed Project and the CEQA Reduced Density Alternative with or without the Variant would therefore be the same, except for architectural coatings. However, the application of architectural coatings does not result in fugitive GHG emissions. Thus, GHG emissions quantified for the CEQA Proposed Project and the CEQA Reduced Density Alternative are representative of conditions with or without the Variant.

Construction of the Water Reuse Facility (WRF) Option or Central Utility Plant (CUP) Option would require additional off-road equipment and on-road vehicles beyond that required for construction of the CEQA Proposed Project.

3.8.6.2 Operations

Operations would generate GHG emissions from mobile sources, landscaping equipment (area source), electricity consumption (energy source/area source [residential electric fireplace]), water consumption, waste generation, refrigeration and air condition equipment (fugitive source), and emergency generators (stationary source). Emissions from these sources were modeled using CalEEMod, guidance from the Air District,[10] and project-specific operating data provided by the project engineering team, Fehr & Peers,[11] and EKI.[12] As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the proposed project would incorporate various sustainability strategies that will minimize potential impacts on air quality. The operational air quality analysis accounts for an all-electric design (i.e., no natural gas); water, energy, and waste conservation measures; and vehicle miles traveled (VMT) benefits from sustainable transportation, as quantified by the project transportation consultants.

Implementation of CEQA Proposed Project or CEQA Reduced Density Alternative would remove 227 existing trees during construction and plant 1,283 new trees. Tree removal results in carbon storage loss and results in long-term reductions in carbon sequestration. Conversely, tree planting would lead to emissions reductions from long-term annual carbon sequestration and storage. Because changes in vegetation (removal and planting) affect GHG emissions over the life of the tree, they are considered as part of the operational emissions analysis. Carbon storage and sequestration from tree removal and planting was modeled using U.S. Department of Agriculture Forest Service's i-Tree Planting Calculator (i-Tree), version 2.7.2.[13]

As described in Section 3.3.6.1, *Mass Emissions Modeling*, in Section 3.3, *Air Quality*, operational modeling was conducted for full buildout. Based on current information, it is anticipated that the first full year of operation would be 2041. However, based on information available at the time of the technical analysis, emissions were quantified assuming project operations would begin in 2040. It is projected that the emissions intensity of some operational sources, such as vehicle operation, in 2041 would be lower than under 2040 conditions because of improvements in engine technology and regulations to reduce combustion emissions. Accordingly, the operations analysis reflects a conservative representation of emissions.

Partial operational emissions were also quantified for the land uses constructed during the first three phases. Emissions were quantified for the first year following completion of construction for each phase and held constant for all future years through 2040. This approach is conservative because annual operational emissions for each phase are likely to decrease each year due to declining emissions rates from deployment of renewable energy and potential improvements in

[10] Bay Area Air District. 2021. *Permit Handbook*. August.

[11] Tan, Valerie. Senior transportation planner, Fehr & Peers. July 19, 2025—email message to ICF regarding BSC Moffett (AQ and noise coordination regarding transportation data).

[12] Gain, Jenny. Principal. EKI Environment & Water, Inc. Daly City, CA. October 14, 2025—email message to ICF regarding BSC Moffett (water demand estimates for all scenarios).

[13] Trees planted proximate to buildings may achieve GHG reductions from energy savings (e.g., kilowatt hours). The distances of specific trees to individual buildings are not currently known. Accordingly, this analysis only accounts for changes in carbon sequestration associated with tree plantings and removals.

vehicle technologies and emissions controls. As noted above, the emissions results likely are also conservative because the modeling was conducted assuming construction and operations would begin one year sooner than anticipated, based on current information.

3.8.7 Impacts and Mitigation Measures

Impact CEQA-GHG-1: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	GHG-1. Best Management Practices for Construction-Related GHG Emissions AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Construction of the CEQA Proposed Project (with or without the CUP Option or WRF Option) would generate GHG emissions through the use of heavy-duty construction equipment, construction workers' vehicle trips, on-road truck trips, and electricity consumption. Emissions from these sources were calculated using the methods described in Section 3.8.6.1, *Construction*, and in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. However, emissions are not compared to a numeric threshold because the Air District has not adopted construction-related GHG thresholds. As discussed in Section 3.8.5, *Thresholds of Significance*, the significance of construction-generated GHG emissions is qualitatively assessed

based on implementation of BMPs. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation, as discussed further under *Conclusion*.

Table 3.8-4 summarizes the results of the informational emissions modeling for the CEQA Proposed Project. The table presents emissions with and without implementation of Mitigation Measure AQ-1. The mitigation measure is considered because it is required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2. The construction air quality analysis also requires Mitigation Measures AQ-2 through AQ-4 and GHG-1. Mitigation Measure AQ-3 requires fugitive dust control, and Mitigation Measure AQ-4 requires low-VOC paints. Neither measure would reduce GHG emissions. Although Mitigation Measure AQ-2 would reduce GHG emissions from fossil fuel vehicles, reductions are not specifically quantified because the measure establishes fleetwide performance standards, as opposed to individual vehicle mandates. Thus, construction contractors have flexibility in meeting the standards and can select various combinations of zero-emission vehicles and fossil-fuel vehicles across their fleets, based on commercial availability and cost effectiveness. Mitigation Measure GHG-1 is discussed further in this section, although emissions benefits are not fully quantified in Table 3.8-4. This is because specific details required to quantify emissions reductions from most BMPs are not currently available or known. For example, the measure outlines standards for use of equipment, based on the availability of grid power at the time of construction, which cannot be currently known. Another BMP promotes carpooling, which is something the Project Proponent can encourage but not enforce, and thus, the exact penetration of the BMP is not known. The analysis of Mitigation Measure GHG-1 includes benefits from off-road engine electrification, use of Tier 4 Final engines, and use of renewable diesel. Emissions are presented for each year of construction to capture the sum of emissions from the multiple activity categories occurring within the same year.

Table 3.8-4. Estimated GHG Emissions from Construction of the CEQA Proposed Project (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Year	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
2027	1,477	< 1	< 1	1	1,515	1,415	< 1	< 1	1	1,453
2028	3,897	< 1	< 1	1	3,941	3,258	< 1	< 1	1	3,300
2029	4,113	< 1	< 1	1	4,154	2,986	< 1	< 1	1	3,023
2030	3,949	< 1	< 1	1	3,989	2,759	< 1	< 1	1	2,795
2031	2,507	< 1	< 1	1	2,543	1,806	< 1	< 1	1	1,840
2032	6,793	< 1	< 1	1	6,846	5,074	< 1	< 1	1	5,121
2033	9,377	< 1	< 1	1	9,438	6,527	< 1	< 1	1	6,579
2034	4,988	< 1	< 1	1	5,034	3,115	< 1	< 1	1	3,154
2035	5,044	< 1	< 1	1	5,120	3,990	< 1	< 1	1	4,063
2036	5,090	< 1	< 1	< 1	5,140	3,891	< 1	< 1	< 1	3,937
2037	2,525	< 1	< 1	< 1	2,562	1,698	< 1	< 1	< 1	1,731
2038	6,139	< 1	< 1	< 1	6,215	4,708	< 1	< 1	< 1	4,780
2039	6,423	< 1	< 1	< 1	6,478	4,564	< 1	< 1	< 1	4,612
2040	2,479	< 1	< 1	< 1	2,498	1,305	< 1	< 1	< 1	1,320
Total	**64,800**	**3**	**2**	**8**	**65,472**	**47,098**	**2**	**2**	**8**	**47,709**

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.
Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026.

It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the ROG, NO_X, and PM adjustment factors across all construction air quality analyses for the proposed project resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are generated primarily by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measure AQ-1 (Mitigation Measure AQ-2 is not quantified), which is required to address air quality impacts.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Construction of the WRF in 2038 and 2039 or construction of the CUP in 2035 and 2036 would require additional off-road equipment and on-road vehicles beyond what is required for construction of the CEQA Proposed Project, resulting in additional short-term emissions during these years. Tables 3.8-5 and 3.8-6 summarize estimated emissions for the CEQA Proposed Project with the WRF Option and CUP Option, respectively. Tables 3.8-5 and 3.8-6 present emissions with and without implementation of Mitigation Measure AQ-1, which is required to address air quality impacts. Only emissions for those years during which the WRF and CUP would be constructed (i.e., 2038 to 2039 for the WRF Option and 2035 to 2036 for the CUP Option) would differ from the CEQA Proposed Project. However, Tables 3.8-5 and 3.8-6 include emissions for all construction years to enable a total emissions summation.

Table 3.8-5. Estimated GHGs Emissions from Construction of the CEQA Proposed Project (metric tons) with the WRF Option [a]

	Unmitigated					With Air Quality Mitigation [c]				
Year [b]	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
2027	1,477	< 1	< 1	1	1,515	1,415	< 1	< 1	1	1,453
2028	3,897	< 1	< 1	1	3,941	3,258	< 1	< 1	1	3,300
2029	4,113	< 1	< 1	1	4,154	2,986	< 1	< 1	1	3,023
2030	3,949	< 1	< 1	1	3,989	2,759	< 1	< 1	1	2,795
2031	2,507	< 1	< 1	1	2,543	1,806	< 1	< 1	1	1,840
2032	6,793	< 1	< 1	1	6,846	5,074	< 1	< 1	1	5,121
2033	9,377	< 1	< 1	1	9,438	6,527	< 1	< 1	1	6,579
2034	4,988	< 1	< 1	1	5,034	3,115	< 1	< 1	1	3,154
2035	5,044	< 1	< 1	1	5,120	3,990	< 1	< 1	1	4,063
2036	5,090	< 1	< 1	< 1	5,140	3,891	< 1	< 1	< 1	3,937
2037	2,525	< 1	< 1	< 1	2,562	1,698	< 1	< 1	< 1	1,731
2038	6,760	< 1	< 1	< 1	6,838	4,935	< 1	< 1	< 1	5,007
2039	6,706	< 1	< 1	< 1	6,761	4,656	< 1	< 1	< 1	4,705
2040	2,479	< 1	< 1	< 1	2,498	1,305	< 1	< 1	< 1	1,320
Total	**65,702**	**3**	**2**	**8**	**66,378**	**47,416**	**2**	**2**	**8**	**48,029**

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the ROG, NO_X, and PM adjustment factors across all construction air quality

analyses for the proposed project resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are generated primarily by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] The WRF would be constructed in 2038 and 2039. Emissions during all other construction years would be the same as the CEQA Proposed Project; they are included in the table to enable a total emissions summation.

[c] Emissions results include implementation of Mitigation Measure AQ-1 (Mitigation Measure AQ-2 is not quantified), which is required to address air quality impacts.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Table 3.8-6. Estimated GHGs Emissions from Construction of the CEQA Proposed Project (metric tons) with the CUP Option [a]

	Unmitigated					With Air Quality Mitigation [c]				
Year [b]	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
2027	1,477	< 1	< 1	1	1,515	1,415	< 1	< 1	1	1,453
2028	3,897	< 1	< 1	1	3,941	3,258	< 1	< 1	1	3,300
2029	4,113	< 1	< 1	1	4,154	2,986	< 1	< 1	1	3,023
2030	3,949	< 1	< 1	1	3,989	2,759	< 1	< 1	1	2,795
2031	2,507	< 1	< 1	1	2,543	1,806	< 1	< 1	1	1,840
2032	6,793	< 1	< 1	1	6,846	5,074	< 1	< 1	1	5,121
2033	9,377	< 1	< 1	1	9,438	6,527	< 1	< 1	1	6,579
2034	4,988	< 1	< 1	1	5,034	3,115	< 1	< 1	1	3,154
2035	5,801	< 1	< 1	1	5,880	4,301	< 1	< 1	1	4,375
2036	5,485	< 1	< 1	< 1	5,537	4,020	< 1	< 1	< 1	4,067
2037	2,525	< 1	< 1	< 1	2,562	1,698	< 1	< 1	< 1	1,731
2038	6,139	< 1	< 1	< 1	6,215	4,708	< 1	< 1	< 1	4,780
2039	6,423	< 1	< 1	< 1	6,478	4,564	< 1	< 1	< 1	4,612
2040	2,479	< 1	< 1	< 1	2,498	1,305	< 1	< 1	< 1	1,320
Total	**65,952**	**3**	**2**	**8**	**66,628**	**47,537**	**2**	**2**	**8**	**48,150**

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the ROG, NO_X, and PM adjustment factors across all construction air quality analyses for the proposed project resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are generated primarily by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] The CUP would be constructed in 2035 and 2036. Emissions during all other construction years would be the same as the CEQA Proposed Project; they are included in the table to enable a total emissions summation.

[c] Emissions results include implementation of Mitigation Measure AQ-1 (Mitigation Measure AQ-2 is not quantified), which is required to address air quality impacts.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

As shown in Table 3.8-4, it is estimated that construction of the CEQA Proposed Project would generate approximately 65,472 metric tons CO_2e over the entire construction period (unmitigated). The emissions generated during construction would result primarily from the use of diesel-powered construction equipment (e.g., excavators) and on-road vehicles (e.g., haul trucks, workers' vehicles).

Construction emissions would cease once construction of the proposed project is complete and, therefore, are considered short term. Construction of the CUP Option or WRF Option would generate slightly more emissions (unmitigated) than the CEQA Proposed Project (66,628 metric tons and 66,378 metric tons (unmitigated), respectively) due to additional equipment and vehicles (see Tables 3.8-5 and 3.8-6).

Operations

Operation of the CEQA Proposed Project (with or without the CUP Option or WRF Option) would generate GHG emissions from mobile, energy, area, water, waste, stationary, and fugitive sources. Tree removal and planting would result in emissions changes from carbon sequestration and storage. Emissions from these sources were quantified according to the methods summarized in Section 3.8.6.2, *Operations*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. However, as discussed in Section 3.8.5, *Thresholds of Significance*, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements.

Table 3.8-7 summarizes the results of the informational emissions modeling for the CEQA Proposed Project. Emissions were modeled under full-build conditions, which assumes all buildings developed under the proposed project are fully occupied immediately following construction. Table 3.8-7 presents emissions with and without implementation of Mitigation Measures AQ-6 and TRAN-1. The mitigation measures are considered because they are required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2 (Mitigation Measure AQ-5 would not reduce operational GHG emissions).

Table 3.8-7 also presents total emissions under the CEQA No Project Alternative (existing conditions, 2024); refer to Table 5-6 in Chapter 5, *Other CEQA Information and Alternatives*, Section 5.5.5.1 CEQA *No-Project/Existing Conditions Alternative*, for additional detail. The net increase in operational emissions of the CEQA Proposed Project under CEQA is determined by subtracting existing (2024) operational emissions from the proposed project's estimated operational emissions at full buildout. Net emissions are not compared to a numeric threshold. As discussed in Section 3.8.5, *Thresholds of Significance*, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements.

Table 3.8-7. Estimated GHG Emissions from Operation of the CEQA Proposed Project (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
Project (2041)										
Mobile	16,813	1	1	4	17,023	15,552	1	1	4	15,747
Area	50	< 1	< 1	0	50	0	0	0	0	0
Energy	55	< 1	< 1	0	55	55	< 1	< 1	0	55
Water	20	2	< 1	0	85	20	2	< 1	0	85
Waste	657	66	0	0	2,298	657	66	0	0	2,298
Fugitive	0	< 1	0	179	179	0	< 1	0	179	179
Stationary	459	< 1	< 1	0	461	459	< 1	< 1	0	461
Vegetation [c]	-78	0	0	0	-78	-78	0	0	0	-78
Total	**17,975**	**68**	**1**	**183**	**20,072**	**16,665**	**68**	**1**	**182**	**18,746**

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
CEQA No Project (2024) [d]	154	1	< 1	1	180	154	1	< 1	1	180
Net Change [e]	17,821	67	1	182	19,892	16,511	67	1	182	18,566

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. *Methods for Analysis*, CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NO_X, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts.

[c] Sequestration benefits from the proposed planting of 1,283 trees. Emissions results are annualized over a 40-year tree lifetime.

[d] Refer to Table 5-6 for emissions by source.

[e] Net change is the total project (2041) emissions minus total existing (2024) emissions.

CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; CH_4 = methane; N_2O = nitrous oxide; HFCs = hydrofluorocarbons

Except for stationary and water sources, operational emissions under the CEQA Proposed Project with the WRF Option would be the same as presented in Table 3.8-7 for the CEQA Proposed Project. One additional emergency generator would be maintained to support the WRF. The WRF would also consume a small amount of water for system backwashing/flushing. The generator and additional water consumption would result in 38 metric tons CO_2e per year. When added to unmitigated emissions estimated for the CEQA Proposed Project (Table 3.8-7), operation of the CEQA Proposed Project with the WRF Option would result in 20,111 metric tons CO_2e per year, which is a net change of 19,931 metric tons CO_2e relative to existing conditions. When air quality mitigation is considered, the CEQA Proposed Project with the WRF Option would result in a net change of 18,604 metric tons CO_2e relative to existing conditions.

Operation of the CUP Option would reduce emissions from energy, water consumption, and fugitive sources relative to the CEQA Proposed Project but increase emissions from stationary (i.e., generators) sources. Table 3.8-8 presents estimated operational emissions for the CEQA Proposed Project with the CUP Option under full-build conditions. Table 3.8-8 presents emissions with and without implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts (Mitigation Measure AQ-5 would not reduce operational GHG emissions). Table 3.8-8 includes emissions from mobile, area, waste, and vegetation sources, which would be the same as estimated for the CEQA Proposed Project, to enable a total emissions summation. Table 3.8-8 also presents total emissions under existing (2024) conditions; refer to Table 5-8 for additional detail. Compared to the CEQA Proposed Project, the CUP Option would slightly increase net operational emissions due to operation of the additional standby generator.

Table 3.8-8. Estimated GHGs Emissions from Operation of the CEQA Proposed Project with the CUP Option (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
Project (2041)										
Mobile	16,813	1	1	4	17,023	15,552	1	1	4	15,747
Area	50	< 1	< 1	0	50	0	0	0	0	0
Energy	49	< 1	< 1	0	49	49	< 1	< 1	0	49
Water	20	2	< 1	0	85	20	2	< 1	0	85
Waste	657	66	0	0	2,298	657	66	0	0	2,298
Fugitive	0	< 1	0	162	162	0	< 1	0	162	162
Stationary	498	< 1	< 1	0	499	498	< 1	< 1	0	499
Vegetation [c]	-78	0	0	0	-78	-78	0	0	0	-78
Total	**18,007**	**68**	**1**	**166**	**20,088**	**16,697**	**68**	**1**	**166**	**18,762**
Existing (2024) [d]	154	1	< 1	1	180	154	1	< 1	1	180
Net Change [e]	17,853	67	1	166	19,908	16,543	67	1	165	18,582

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NO_X, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts.

[c] Sequestration benefits from the proposed planting of 1,283 trees. Emissions results are annualized over a 40-year tree lifetime.

[d] Refer to Table 5-6 for emissions by source.

[e] Net changes is the total project (2041) emissions minus total existing (2024) emissions.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

As noted above, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements. The Air District's land use design elements are established to ensure that projects meet their fair share contribution and help the State meet its long-term climate goals (SB 32 and AB 1279). These design elements and metrics include prohibiting natural gas infrastructure in the project design, avoiding wasteful use of electricity, promoting electric-vehicle use and charging consistent with CALGreen Tier 2 requirements, and reducing VMT in accordance with the 2022 Scoping Plan. Table 3.8-9 analyzes the consistency of the CEQA Proposed Project (with or without the CUP Option or WRF Option) with the Air District's land use design elements.

Table 3.8-9. CEQA Proposed Project Consistency with the Air District's Land Use Design Elements (Option A)

Sector	Air District Threshold Option A (refer to Table 3.8-3)	Project Consistency
Buildings	a) The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).	**Consistent.** The project would not install any natural gas appliances—rather, the proposed project would use an all-electric design for new building systems (e.g., HVAC, mechanical). Moreover, no new natural gas plumbing would be installed by the proposed project. Future tenants may use various gases to support research. It is not known what gases will be used as part of future research activities. If natural gas is used in future research, it would be combusted in small quantities in tabletop research burners. As such, the proposed project meets the Air District's design element in that it will not include natural gas appliances or natural gas plumbing.
	b) The project will not result in any wasteful, inefficient, or unnecessary electrical usage, as determined by the analysis required under CEQA Section 21100(b)(2) and Section 15126.2(b) of the State CEQA Guidelines.	**Consistent.** The CEQA Proposed Project would achieve, at a minimum, a LEED Silver rating. The project design promotes energy efficiency by optimizing thermal comfort through passive cooling, windbreaks, and prioritizing daylight within floor plates buildings and outdoor spaces. These passive design strategies take advantage of the proposed project's location and relatively mild climate to help naturally regulate building temperatures and ventilation. The project would also utilize all-electric design for new building systems (e.g., HVAC, mechanical). Finally, the proposed project would install photovoltaic systems to generate on-site renewable energy. Compared to the CEQA Proposed Project, the WRF Option would reuse water on site, which in turn reduces the need to transport water over long distances and associated energy consumption (although this benefit is not quantitatively modeled). The CUP Option would also optimize local energy generation and distribution, which in turn improves overall system generation and energy conservation. As such, the proposed project would not waste energy or use energy in an inefficient or unnecessary manner and would be consistent with this Air District design element.
Transportation	a) Achieve compliance with electric-vehicle requirements in the most recently adopted version of CALGreen Tier 2.	**Consistent.** The CEQA Proposed Project would meet the applicable CALGreen Tier 2 nonresidential voluntary requirement (i.e., 45 percent of all spaces to be EV capable and 33 percent of the EV spaces to have electric-vehicle supply equipment). As such, the proposed project would be consistent with this Air District design element.

Sector	Air District Threshold Option A (refer to Table 3.8-3)	Project Consistency
Transportation	b) Achieve a reduction in project-generated vehicle miles traveled (VMT) to a level below the regional average, consistent with the current version of the California Climate Change Scoping Plan, or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita, ii. Office projects: 15 percent below the existing VMT per employee, and iii. Retail projects: no net increase in existing VMT	**Inconsistent before Mitigation.** Consistent with the transportation impact analysis, this analysis uses "total VMT per service population" rather than separate per capita and per employee metrics to account for all the VMT generated by the CEQA Proposed project and better capture the interaction and trip internalization between the various project components. The estimated total VMT per service population for the San Francisco Bay Area region under existing (2024) conditions is estimated to be 22.3. Thus, the threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0.[14] The project would develop mixed-use, research, and education uses in a transit priority area with well-connected bicycle and pedestrian infrastructure, thereby reducing the demand for travel by single-occupancy vehicles. The project would include a project-specific TDM plan to reduce the vehicle trips and associated VMT generated by the proposed project through a range of design features. The 22 percent TDM reduction aligns with the TDM requirements in the 2002 PEIS. However, total VMT per service population is estimated to be 20.3, which is above the threshold of significance of 19.0. As such, the proposed project would be inconsistent with this Air District design element prior to mitigation.

EV = electric vehicle; HVAC = heating, ventilation, and air-conditioning; LEED = Leadership in Energy and Environmental Design; TDM = transportation demand management; VMT = vehicle miles traveled

Conclusion

As discussed in Section 3.8.5, *Thresholds of Significance*, the Air District recommends BMPs to minimize construction GHG emissions. Uncontrolled construction GHG emissions would be potentially significant before mitigation. Table 3.8-9 demonstrates that the CEQA Proposed Project (with or without the CUP Option or WRF Option) meets all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation. Accordingly, project operations would be potentially significant before mitigation.

[14] Tan, Valerie. Senior transportation planner, Fehr & Peers. July 19, 2025—email message to ICF regarding Berkeley Space Center Moffett (air quality and noise coordination regarding transportation data).

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

All project contractor(s) shall comply with the Air District's current best management practices (BMPs) for construction-related GHG emissions. The Air District's current BMPs are drawn from their 2023 CEQA Guidelines, Table 6-1, and are identified below, as applicable. Where relevant, air quality mitigation that requires actions equal to or greater than the recommended BMPs are referenced in place of the specific BMP language. The requirement to comply with the control measures included in this mitigation will be identified in construction bids.

- Per Mitigation Measure AQ-1, use zero-emission and hybrid-powered equipment. Require Tier 4 Final compliant engines and renewable diesel for remaining diesel off-road equipment. Prohibit off-road diesel-powered equipment from being in the "on" position for more than 10 hours per day.
- Minimize diesel equipment idling time either by shutting equipment off when not in use or reducing the time of idling to no more than 2 minutes (A 5-minute limit is required by the state airborne toxics control measure [Title 13, Sections 2449(d)(3) and 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site and develop an enforceable mechanism to monitor idling time to ensure compliance with this measure.
- Require all construction equipment is maintained and properly tuned in accordance with manufacturer's specifications. Equipment should be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Require compliance with Mitigation Measure AQ-2 regarding use of zero-emission on-road vehicles during construction, including vehicles used for deliveries and hauling.
- Implement the TDM Plan and comply with the expanded requirements per Mitigation Measure TRAN-1.
- Where grid power is available, provide electrical hook ups for electric construction tools, such as saws, drills and compressors, and using electric tools whenever feasible. Prioritize the use of use alternative fuels, such as propane or solar electrical power where feasible, for generators at construction sites.
- Reduce electricity use in the construction office by using efficient lighting technologies, including, but not limited, to LED technology, powering off computers every day, and utilizing efficient heating and cooling units.
- Minimize energy used during site preparation by deconstructing existing structures to the greatest extent feasible
- Use locally sourced or recycled materials for construction as commercially and financially available and feasible at the time of construction. Wood products used should be certified through a sustainable forestry program.

- Use low-carbon concrete, minimize the amount of concrete used and produce concrete on-site if it is more efficient and lower emitting than transporting ready-mix, as commercially and financially available and feasible at the time of construction.
- Develop a plan to efficiently use water for adequate dust control since substantial amounts of energy can be consumed during the pumping of water.
- Include all requirements in applicable bid documents, purchase orders, and contracts, with successful contractors demonstrating the ability to supply the compliant on- or off-road construction equipment for use prior to any ground-disturbing and construction activities.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure GHG-1 outlines the Air District BMPs that will be implemented to reduce construction GHG emissions. Mitigation Measures AQ-1 and AQ-2 support compliance with the Air District's BMPs for off-road equipment and on-road vehicles. As shown in Table 3.8-4, Mitigation Measure AQ-1 would reduce total construction GHG emissions from the CEQA Proposed Project to 47,709 metric tons CO_2e, or by about 27 percent from the unmitigated scenario. Additional GHG reductions that are not quantifiable would be achieved by Mitigation Measures AQ-2 and GHG-1. With implementation of Mitigation Measures GHG-1, AQ-1, and AQ-2, the CEQA Proposed Project (with or without the CUP Option or WRF Option) would be consistent with the Air District's recommendation to implement BMPs to minimize construction GHG emissions.

Mitigation Measure TRAN-1 would require implementation of additional transportation demand management (TDM) measures. This measure is required to address inconsistencies with State CEQA Guidelines 15064.3, subdivision (b), related to VMT, as described in Section 3.16, *Transportation and Traffic.* With Mitigation Measure TRAN-1, the CEQA Proposed Project would achieve the regional per service population threshold of 19.0 (refer to Impact CEQA-TRAN-2 in Section 3.16 for additional information).[15] The CEQA Proposed Project (with or without the CUP Option or WRF Option) would be consistent with Air District Threshold Option A with implementation of Mitigation Measure TRAN-1.

After implementation of Mitigation Measures GHG-1, AQ-1, AQ-2, and TRAN-1, the CEQA Proposed Project (with or without the CUP Option or WRF Option) will not result in a cumulatively considerable contribution to global climate change. This impact is less than significant with mitigation.

[15] Ibid.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and research and development (R&D) uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Construction

As discussed in Section 3.8.6.1, *Construction*, the same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the No Student/Faculty Housing Variant (Variant). The intensity of construction for the CEQA Proposed Project with or without the Variant would therefore be the same, and the emissions presented in Table 3.8-4 for the CEQA Proposed Project would also occur under the Variant. As shown in Table 3.8-4, construction activities would generate approximately 65,472 metric tons CO_2e over the entire construction period (unmitigated). Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs, as discussed further under *Conclusion.*

Operations

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the Variant. Table 3.8-10 presents estimated operational emissions for the Variant under full-build conditions. The table presents emissions with and without implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2 (Mitigation Measure AQ-5 would not reduce operational GHG emissions). Table 3.8-10 includes emissions from energy, area, waste, and vegetation sources, which would be the same as estimated for the CEQA Proposed Project, to enable a total emissions summation. Table 3.8-10 also presents total emissions under existing (2024) conditions; refer to Table 5-8 for additional detail.

Table 3.8-10. Estimated GHGs Emissions from Operation of the CEQA Proposed Project with the Variant (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
Project (2041)										
Mobile	17,147	1	1	4	17,361	15,861	1	1	4	16,059
Area	50	0	0	0	50	0	0	0	0	0
Energy	55	< 1	< 1	0	55	55	< 1	< 1	0	55
Water	17	2	< 1	0	72	17	2	< 1	0	72
Waste	657	66	0	0	2,298	657	66	0	0	2,298
Fugitive	0	< 1	0	179	179	0	< 1	0	179	179
Stationary	498	< 1	< 1	0	499	498	< 1	< 1	0	499
Vegetation [c]	-78	0	0	0	-78	-78	0	0	0	-78
Total	**18,344**	**68**	**1**	**183**	**20,436**	**17,009**	**68**	**1**	**183**	**19,084**

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
CEQA No Project (2024) [d]	154	1	< 1	1	180	154	1	< 1	1	180
Net Change [e]	18,190	67	1	182	20,255	16,855	67	1	182	18,904

Source: Appendix 3.3-1

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile-source emissions, depending on the analysis year and pollutant (i.e., ROG, NO_X, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts.

[c] Sequestration benefits from the proposed planting of 1,283 trees. Emissions results are annualized over a 40-year tree lifetime.

[d] Refer to Table 5-8 for emissions by source.

[e] Net change is the total project (2041) emissions minus total existing (2024) emissions.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Compared to the CEQA Proposed Project, the Variant would increase net operational emissions due primarily to greater VMT and trip generation. As discussed in Section 3.8.5, *Thresholds of Significance*, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements. Implementation of the Variant would not change the consistency findings of the CEQA Proposed Project with respect to the Air District's land use design elements (see Table 3.8-9). The Variant would utilize all-electric design and implement the same sustainability strategies as described above for the CEQA Proposed Project. The Variant would meet the CALGreen Tier 2 nonresidential EV voluntary requirement but total VMT per service population is estimated to be 20.3, which would exceed the Air Districts' threshold of significance of 19.0 (see Impact CEQA-TRAN-1 in Section 3.16, *Transportation and Traffic*).

Conclusion

Overall, there would be no difference in the impact conclusion between the CEQA Proposed Project and the CEQA Proposed Project with the Variant. Uncontrolled construction GHG emissions would be potentially significant before mitigation. The Variant would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation. Accordingly, project operations would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact GHG-1.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure GHG-1 outlines the Air Districts BMPs that will be implemented to reduce construction GHG emissions. Mitigation Measures AQ-1 and AQ-2 support compliance with the Air District's BMPs for off-road equipment and on-road vehicles. As shown in Table 3.8-2, Mitigation Measure AQ-1 would reduce total construction GHG emissions from the CEQA Proposed Project with the Variant to 47,709 metric tons CO_2e, or by about 27 percent from the unmitigated scenario. Additional GHG reductions that are not quantifiable would be achieved by Mitigation Measures AQ-2 and GHG-1. With implementation of Mitigation Measures GHG-1, AQ-1, and AQ-2, the CEQA Proposed Project with the Variant would be consistent with Air District's recommendation to implement BMPs to minimize construction GHG emissions.

Mitigation Measure TRAN-1 would require implementation of additional TDM measures. With Mitigation Measure TRAN-1, the CEQA Proposed Project with the Variant would achieve the regional per service population threshold of 19.0 (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[16] The Variant would therefore be consistent with Air District Threshold Option A with implementation of Mitigation Measure TRAN-1.

After implementation of Mitigation Measures GHG-1, AQ-1, AQ-2, and TRAN-1, the CEQA Proposed Project with the Variant would not result in a cumulatively considerable contribution to global climate change. This impact is less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Construction

The same construction activities proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative. The intensity of construction for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be the same except for a slight reduction in the duration of the "core and shell" and "architectural coating" sub-phases for research buildings under the CEQA Reduced Density Alternative. Table 3.8-11 presents estimated construction emissions for the CEQA Reduced Density Alternative. Specifically, Table 3.8-11 presents emissions with and without implementation of Mitigation Measure AQ-1, which is required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2.

[16] Ibid.

Table 3.8-11. Estimated GHG Emissions from Construction of the CEQA Reduced Density Alternative (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Year	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
2027	1,477	< 1	< 1	1	1,515	1,415	< 1	< 1	1	1,453
2028	3,897	< 1	< 1	1	3,941	3,258	< 1	< 1	1	3,300
2029	4,113	< 1	< 1	1	4,154	2,986	< 1	< 1	1	3,023
2030	3,643	< 1	< 1	1	3,680	2,547	< 1	< 1	1	2,580
2031	2,131	< 1	< 1	1	2,165	1,588	< 1	< 1	1	1,620
2032	6,793	< 1	< 1	1	6,846	5,074	< 1	< 1	1	5,121
2033	9,228	< 1	< 1	1	9,288	6,424	< 1	< 1	1	6,475
2034	4,454	< 1	< 1	< 1	4,497	2,790	< 1	< 1	< 1	2,827
2035	5,044	< 1	< 1	1	5,120	3,990	< 1	< 1	1	4,063
2036	4,947	< 1	< 1	< 1	4,996	3,793	< 1	< 1	< 1	3,839
2037	1,992	< 1	< 1	< 1	2,025	1,375	< 1	< 1	< 1	1,406
2038	6,139	< 1	< 1	< 1	6,215	4,708	< 1	< 1	< 1	4,780
2039	6,277	< 1	< 1	< 1	6,330	4,464	< 1	< 1	< 1	4,511
2040	1,952	< 1	< 1	< 1	1,968	988	< 1	< 1	< 1	1,001
Total	**62,086**	**3**	**2**	**7**	**62,740**	**45,402**	**2**	**2**	**7**	**45,998**

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the ROG, NO_X, and PM adjustment factors across all construction air quality analyses for the proposed project resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are generated primarily by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measure AQ-1 (Mitigation Measure AQ-2 is not quantified), which is required to address air quality impacts.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Table 3.8-11 indicates that construction of the CEQA Reduced Density Alternative would generate approximately 62,740 metric tons CO_2e over the entire construction period (unmitigated). Compared to the CEQA Proposed Project, construction emissions would be slightly less under the CEQA Reduced Density Alternative due to slightly shorter durations for some sub-phases. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs, as discussed further under *Conclusion*.

Operations

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Density Alternative. Table 3.8-12 presents estimated operational emissions for the CEQA Reduced Density Alternative under full-build conditions. Specifically, Table 3.8-12 presents emissions with and without implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2 (Mitigation Measure AQ-5 would not reduce operational

GHG emissions). Table 3.8-12 also presents total emissions under existing (2024) conditions; refer to Table 5-8 for additional detail.

Table 3.8-12. Estimated GHGs Emissions from Operation of the CEQA Reduced Density Alternative (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
Project (2041)										
Mobile	11,447	< 1	< 1	3	11,590	10,589	0	0	2	10,721
Area	50	< 1	< 1	0	50	0	0	0	0	0
Energy	27	0	0	0	27	27	< 1	< 1	0	27
Water	14	1	< 1	0	58	14	1	< 1	0	58
Waste	159	16	0	0	556	159	16	0	0	556
Fugitive	0	< 1	0	176	176	0	< 1	0	176	176
Stationary	459	< 1	< 1	0	461	459	< 1	< 1	0	461
Vegetation [c]	-78	0	0	0	-78	-78	0	0	0	-78
Total	**12,078**	**18**	**< 1**	**179**	**12,840**	**11,170**	**18**	**< 1**	**179**	**11,921**
CEQA No Project (2024) [d]	154	1	< 1	1	180	154	1	< 1	1	180
Net Change [e]	11,924	17	< 1	178	12,660	11,016	17	< 1	178	11,741

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile-source emissions, depending on the analysis year and pollutant (i.e., ROG, NO_X, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts.

[c] Sequestration benefits from the proposed planting of 1,283 trees. Emissions results are annualized over a 40-year tree lifetime.

[d] Refer to Table 5-8 for emissions by source.

[e] Net change is the total project (2041) emissions minus total existing (2024) emissions.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Compared to the CEQA Proposed Project, the CEQA Reduced Density Alternative would reduce net operational emissions due primarily to reduced VMT and trip and waste generation. As discussed in Section 3.8.5, *Thresholds of Significance*, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements. Implementation of the CEQA Reduced Density Alternative would not change the consistency findings of the CEQA Proposed Project with respect to the Air District's land use design elements (see Table 3.8-9). The CEQA Reduced Density Alternative would utilize all-electric design and implement the same sustainability strategies as described for the CEQA Proposed Project. The CEQA Reduced Density Alternative would meet the CALGreen Tier 2 nonresidential EV voluntary requirement but total VMT per service population would exceed the Air Districts' threshold of significance of 19.0 (see Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*).

Conclusion

Overall, there would be no difference in the impact conclusion before mitigation between the CEQA Proposed Project and the CEQA Reduced Density Alternative. Uncontrolled construction GHG emissions would be potentially significant before mitigation. The CEQA Reduced Density Alternative would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation. Accordingly, project operations would be potentially significant under before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure GHG-1 outlines the Air Districts BMPs that will be implemented to reduce construction GHG emissions. Mitigation Measures AQ-1 and AQ-2 support compliance with the Air District's BMPs for off-road equipment and on-road vehicles. As shown in Table 3.8-11, Mitigation Measure AQ-1 would reduce total construction GHG emissions from the CEQA Reduced Density Alternative to 45,998 metric tons CO_2e, or by about 27 percent from the unmitigated scenario. Additional GHG reductions that are not quantifiable would be achieved by Mitigation Measures AQ-2 and GHG-1. With implementation of Mitigation Measures GHG-1, AQ-1, and AQ-2, the CEQA Reduced Density Alternative would be consistent with Air District's recommendation to implement BMPs to minimize construction GHG emissions.

Mitigation Measure TRAN-1 would require implementation of additional TDM measures. To achieve the regional per service population VMT threshold of 19.0, VMT per service population would need to be reduced by an additional 17 percentage points beyond the 22 percent achieved by the TDM Plan (39 percent total). Mitigation Measure TRAN-1 would achieve a maximum of a 31 percent reduction and not meet the mitigation requirements of 39 percent under the CEQA Reduced Density Alternative (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[17] Additional VMT reductions would not be considered feasible for the CEQA Reduced Density Alternative, as achieving such a reduction would require fundamental changes to the project

[17] Ibid.

description to mitigate the impact. As such, the CEQA Reduced Density Alternative would not be consistent with Air District Threshold Option A, and after implementation of Mitigation Measures GHG-1, AQ-1, AQ-2, and TRAN-1, the CEQA Reduced Density Alternative will result in a cumulatively considerable contribution to global climate change from mobile sources. This impact is significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Construction

As discussed in Section 3.8.6.1, *Construction*, the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative would occur under the Variant. The intensity of construction for the CEQA Reduced Density Alternative with or without the Variant would therefore be the same, and the emissions presented in Table 3.8-11 for the CEQA Reduced Density Alternative would also occur under the Variant. As shown in Table 3.8-11, construction activities would generate approximately 62,740 metric tons of CO_2e over the entire construction period (unmitigated). Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs, as discussed further under *Conclusion*.

Operations

The same operational sources proposed and evaluated under the CEQA Reduced Density Alternative would occur under the Variant. Table 3.8-13 presents estimated operational emissions for the CEQA Reduced Density Alternative with the Variant under full-build conditions. Specifically, Table 3.8-13 presents emissions with and without implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts, as discussed in Section 3.3.7, *Impacts and Mitigation Measures*, under Impact AIR-2 (Mitigation Measure AQ-5 would not reduce operational GHG emissions). Emissions from energy, area, waste, and vegetation sources would be the same as estimated for the CEQA Reduced Density Alternative; such emissions are included in the table to enable a total emissions summation. Table 3.8-13 also presents total emissions under existing (2024) conditions; refer to Table 5-8 for additional detail.

Table 3.8-13. Estimated GHGs Emissions from Operation of the CEQA Reduced Density Alternative with the Variant (metric tons) [a]

	Unmitigated					With Air Quality Mitigation [b]				
Source	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
Project (2041)										
Mobile	11,796	< 1	< 1	3	11,944	10,912	< 1	< 1	3	11,048
Area	50	< 1	< 1	0	50	0	0	0	0	0
Energy	27	< 1	< 1	0	27	27	< 1	< 1	0	27
Water	10	1	< 1	0	44	10	1	< 1	0	44
Waste	159	16	0	0	556	159	16	0	0	556
Fugitive	0	< 1	0	176	176	0	< 1	0	176	176
Stationary	498	< 1	< 1	0	499	498	< 1	< 1	0	499
Vegetation [c]	-78	0	0	0	-78	-78	0	0	0	-78
Total	**12,462**	**17**	**< 1**	**179**	**13,219**	**11,528**	**17**	**< 1**	**179**	**12,273**
CEQA No Project (2024) [d]	154	1	< 1	1	180	154	1	< 1	1	180
Net Change [e]	12,308	17	< 1	179	13,039	11,374	16	< 1	178	12,093

Source: Air Quality, Health Risk, and GHG Technical Report in Appendix 3.3-1 of this joint EIR/EIS.

Note: As noted in Section 3.8.6, *Methods for Analysis*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. CARB has not published GHG adjustment factors for EMFAC2021 to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile-source emissions, depending on the analysis year and pollutant (i.e., ROG, NO_X, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

[a] Values are rounded to the nearest whole number.

[b] Emissions results include implementation of Mitigation Measures AQ-6 and TRAN-1, which are required to address air quality impacts.

[c] Sequestration benefits from the proposed planting of 1,283 trees. Emissions results are annualized over a 40-year tree lifetime.

[d] Refer to Table 5-8 for emissions by source.

[e] Net change is the total project (2041) emissions minus total existing (2024) emissions.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

Compared to the CEQA Reduced Density Alternative, the Variant would increase net operational emissions due primarily to greater VMT and trip generation. Implementation of the Variant would not change the consistency findings of the CEQA Proposed Project and the CEQA Reduced Density Alternative with respect to the Air District's land use design elements (see Table 3.8-9). The Variant would utilize all-electric design and implement the same sustainability strategies as described for CEQA Proposed Project and the CEQA Reduced Density Alternative. The Variant would meet the CALGreen Tier 2 nonresidential EV voluntary requirement but total VMT per service population would exceed the Air Districts' threshold of significance of 19.0 (see Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*).

Conclusion

Overall, there would be no difference in the impact conclusion before mitigation between the CEQA Proposed Project and CEQA Reduced Density Alternative with Variant. Uncontrolled construction

GHG emissions would be potentially significant before mitigation. The Variant would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation. Accordingly, project operations would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure GHG-1. Best Management Practices for Construction-Related GHG Emissions

See discussion for the CEQA Proposed Project under Impact CEQA-GHG-1.

Mitigation Measure AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction

Mitigation Measure AQ-2. Zero-Emission On-Road Vehicles during Construction

See discussion for the CEQA Proposed Project under Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure GHG-1 outlines the Air Districts BMPs that will be implemented to reduce construction GHG emissions. Mitigation Measures AQ-1 and AQ-2 support compliance with the Air District's BMPs for off-road equipment and on-road vehicles. As shown in Table 3.8-11, Mitigation Measure AQ-1 would reduce total construction GHG emissions from the CEQA Reduced Density Alternative with the Variant to 45,998 metric tons CO_2e, or by about 27 percent from the unmitigated scenario. Additional GHG reductions that are not quantifiable would be achieved by Mitigation Measures AQ-2 and GHG-1. With implementation of Mitigation Measures GHG-1, AQ-1, and AQ-2, the CEQA Reduced Density Alternative with the Variant would be consistent with Air District's recommendation to implement BMPs to minimize construction GHG emissions.

Mitigation Measure TRAN-1 would require implementation of a mitigated TDM plan that further reduces VMT. To achieve the regional per service population VMT threshold of 19.0, VMT per service population would need to be reduced by an additional 19 percentage points beyond the 22 percent achieved by the TDM Plan (41 percent total). Mitigation Measure TRAN-1 would achieve a maximum of a 31 percent reduction and not meet the mitigation requirements of 41 percent under the Variant (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[18] Additional VMT reductions would not be considered feasible for the Variant, as achieving such a reduction would require fundamental changes to the project description to mitigate the impact. As such, the Variant would not be consistent with Air District Threshold Option A, and after implementation of Mitigation Measures GHG-1, AQ-1, AQ-2, and TRAN-1, the Variant will result

[18] Ibid.

in a cumulatively considerable contribution to global climate change from mobile sources. This impact is significant and unavoidable.

Impact CEQA-GHG-2: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

2022 Scoping Plan (Senate Bill 32 and Assembly Bill 1279)

SB 32 outlines the State's GHG emissions reduction targets for 2030. AB 1279 sets a more ambitious State goal of net-zero GHG emissions by 2045 and an 80 percent reduction in anthropogenic emissions from 1990 levels by 2045.

CARB's *2022 Scoping Plan* assesses progress toward the statutory 2030 target while laying out a path to achieving carbon neutrality no later than 2045. It outlines the main strategies for achieving the SB 32 GHG reduction target (i.e., reduce GHG emissions to at least 40 percent below 1990 levels by 2030), achieving carbon neutrality by 2045, and reducing anthropogenic emissions to 85 percent below 1990 levels.[19] Appendix D to CARB's *2022 Scoping Plan*, Local Actions, identifies key project attributes that empirical evidence has shown to reduce operational GHG emissions while simultaneously advancing fair housing. CARB concludes that "[r]esidential and mixed-use projects that have all of the key project attributes in Table 3 [Key Residential and Mixed-Use Project Attributes that Reduce GHGs] should accommodate growth in a manner consistent with State GHG reduction and equity prioritization goals."[20] Table 3.8-14 evaluates consistency of the CEQA Proposed Project (with or without the CUP Option or WRF Option) with the scoping plan–identified key project attributes.

[19] California Air Resources Board. 2022. *2022 Scoping Plan for Achieving Carbon Neutrality*. November.

[20] Ibid.

Table 3.8-14. CEQA Proposed Project Consistency with CARB 2022 Scoping Plan Key Project Attributes

Sector	Scoping Plan Project Attribute	Project Consistency
Transportation Electrification	Provides EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standard in the California Green Building Standards Code at the time of project approval.	**Consistent.** See Table 3.8-9. The CEQA Proposed Project meets the CALGreen Tier 2 nonresidential voluntary requirement and would be consistent with this attribute.
VMT Reduction	Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).	**Consistent**. The CEQA Proposed Project includes mixed-use infill development in an existing urbanized area, thereby supporting local, regional, and state mobility and GHG reduction objectives to reduce VMT and infrastructure costs. As discussed in Section 3.16, *Transportation and Traffic*, most of the Project Site is within 0.5 mile of a light rail station. The project would not provide excessive parking or demolish affordable residential units. It would include a TDM plan and be consistent with Plan Bay Area. Accordingly, the proposed project meets OPR's Near Transit Stations criterion and has characteristics that indicate it may not generate significant levels of VMT. The project would be consistent with this and other VMT reduction attributes, as explained further in this table.
	Does not result in the loss or conversion of natural and working lands.	**Consistent**. The Project Site is in an existing urbanized area and currently occupied by buildings and parking lots. As such, the proposed project would not result in the loss or conversion of natural or working lands. The CEQA Proposed Project would remove approximately 227 existing trees during construction and plant approximately 1,283 new trees, resulting in a net addition of approximately 1,056 trees. As such, the proposed project would be consistent with this attribute.
	Consists of transit-supportive densities (minimum of 20 residential dwelling units per acre) or is in proximity to existing transit stops (within a half mile) or satisfies more detailed and stringent criteria specified in the region's SCS.	**Consistent**. As noted above, most of the Project Site is within 0.5 mile of the Bayshore/NASA VTA light rail station and therefore within walking and biking distance. As such, the CEQA Proposed Project would be consistent with this attribute because it is proximate to existing transit stops (within a half mile).
	Reduces parking requirements by eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet) or providing a residential parking supply at a ratio of	**Consistent**. Minimum parking requirements in the local zoning ordinance are not applicable to the CEQA Proposed Project. As noted above, The project would not provide excessive parking. Specifically, the proposed project would provide automobile parking at the maximum ratios established in the Berkeley Space Center Development Guidelines. The Development Guidelines establish a maximum of 1.5 spaces per 1,000 square feet for office and research uses. By comparison,

Sector	Scoping Plan Project Attribute	Project Consistency
	less than one parking space per dwelling unit or, for multi-family residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.	the ITE *Parking Generation* includes an average peak parking demand of 1.95 parking spaces per 1,000 square feet for office uses. The project maximum parking ratio is also lower than the typical parking demand for single-use sites in suburban settings where minimal non-automobile infrastructure is available. The project is a nonresidential project. The proposed Student/Faculty Housing would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). For these units, the Development Guidelines establish a maximum of 1.0 parking spaces per unit. In comparison, the ITE *Parking Generation* includes an average peak parking demand of 1.23 to 1.27 parking spaces per unit for suburban multifamily developments.
	At least 20 percent of units included are affordable to lower-income residents.	**N/A**. The CEQA Proposed Project is a nonresidential project. The proposed Student/Faculty Housing would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). Housing would prioritize the UC students and faculty affiliated with the CEQA Proposed Project or the CEQA Reduced Density Alternative as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Use Lease requirements. A minimum of 10 percent of the Student/Faculty Housing units would be affordable (i.e., affordable to households with 80 percent of Area Median Income, as adjusted for household size). These priorities serve to reduce VMT, consistent with Scoping Plan goals. The units would not be available on the public housing market. This attribute does not apply to the proposed project.
	Results in no net loss of existing affordable units.	**Consistent**. The Project Site is currently occupied by office, military, recreation, and industrial buildings and parking lots. The CEQA Proposed Project would therefore not result in a net loss in existing affordable units and would be consistent with this attribute.
Building Decarbonization	Uses all-electric appliances without natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking.	**Consistent.** See Table 3.8-9. The CEQA Proposed Project would build all-electric buildings; natural gas would not be used for space heating, water heating, or indoor cooking. As such, the proposed project would be consistent with this attribute.

EV = electric vehicle; HVAC = heating, ventilation, and air-conditioning; ITE = Institute of Transportation Engineers; LEED = Leadership in Energy and Environmental Design; TDM = transportation demand management; VMT = vehicle miles traveled; VTA = Santa Clara Valley Transportation Authority

Table 3.8-14 demonstrates that the CEQA Proposed Project would incorporate all applicable scoping plan–identified key project attributes. Compared to the CEQA Proposed Project, the WRF Option would further support the *2022 Scoping Plan* by reusing water on-site, which in turn reduces the need to transport water over long distances and associated energy consumption (although this

benefit is not quantitatively modeled). The CUP Option would also optimize local energy generation and distribution, which in turn improves overall system generation and energy conservation.

The CEQA Proposed Project's (with or without the CUP Option or WRF Option) consistency with the scoping plan–identified key project attributes provides evidence that the proposed project would not conflict with implementation of CARB's *2022 Scoping Plan* or attainment of the statewide GHG targets for 2030 and 2045 mandated by SB 32 and AB 1279, respectively. As such, the CEQA Proposed Project (with or without the CUP Option or WRF Option) aligns with the GHG emissions reduction strategies outlined in CARB's *2022 Scoping Plan*.

Plan Bay Area

Plan Bay Area is consistent with SB 375, which requires the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments to adopt a sustainable communities strategy that outlines policies to reduce per capita GHG emissions from automobiles and light trucks. Environment and transportation are two of four elements discussed in MTC's *Plan Bay Area*. Both elements comprise a set of strategies that aim to reduce both VMT and emissions. The strategies include a mix of measures that encourage compact growth patterns, alternative transportation, transit, mobility and access, network expansion, and transportation investment.

The CEQA Proposed Project (with or without the CUP Option or WRF Option) would improve conditions for walking and biking by providing on-street bicycle racks and long-term bicycle storage for students and workers, as well as orienting buildings to be sidewalk facing and have multiple pedestrian entrances. The project is an infill development that would involve redevelopment and densification of the site. The Project Site is identified by MTC as a Transit Priority Area because of its proximity to the Bayshore/NASA Santa Clara Valley Transportation Authority light rail station.[21] Investing in transit priority sites will help achieve the climate and equity goals of *Plan Bay Area 2050*.[22] Overall, the CEQA Proposed Project would incorporate TDM features, which would reduce trip generation by at least 22 percent.[23] However, total VMT per service population is estimated to be 20.3, which is above the per service population VMT target for the San Francisco Bay Area (Bay Area). As such, the CEQA Proposed Project (with or without the CUP Option or WRF Option) would not fully align with *Plan Bay Area* before mitigation.

2017 Clean Air Plan

The Air District's 2017 Clean Air Plan contains the following primary GHG goal:

- **Protect the Climate**. Reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

Attaining this goal will require aggressive and rapid decarbonization across the San Francisco Bay Area. The CEQA Proposed Project (with or without the CUP Option or WRF Option) is

[21] Metropolitan Transportation Commission. 2024. *Transit Priority Areas (2021).* Available: https://opendata.mtc.ca.gov/datasets/MTC::transit-priority-areas-2021-1/ explore?location=37.408035%2C-122.048308%2C15.97. Accessed: May 22, 2024.

[22] Metropolitan Transportation Commission and Association of Bay Area Governments. 2024. *What Is Transit Priority?* Last revised: March 26, 2024. Available: https://blog.bayareametro.gov/posts/ what-transit-priority. Accessed: May 22, 2024.

[23] Tan, Valerie. Senior transportation planner, Fehr & Peers. July 19, 2025—email message to ICF regarding Berkeley Space Center Moffett (air quality and noise coordination regarding transportation data).

designed around the concept of sustainability and will directly support long-term regional emission reductions by developing energy-efficiency and resilient buildings and infrastructure. As discussed above, all buildings will achieve a minimum LEED Silver rating, incorporate passive climate design features, and exclude any natural gas connections for buildings operations. The project also would install photovoltaic systems as a strategy for generating power on-site and offsetting the energy use from each proposed building. The project is strategically located near transit and includes numerous TDM elements that will support active and alternative transportation. Beyond energy and transportation, the CEQA Proposed Project incorporates features to conserve water, reduce waste, and increase urban tree planting. Collectively, the project design features align with larger regional and State strategies to reduce GHG emissions. However, the CEQA Proposed Project (with or without the CUP Option or WRF Option) is not fully consistent with BAAQMD Threshold Option A (see Table 3.8-3) and therefore would not fully align with the 2017 Clean Air Plan and regional attainment of long-term climate goals before mitigation.

Conclusion

The CEQA Proposed Project (with or without the CUP Option or WRF Option) would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project. However, while the proposed project's sustainable design features support emission reduction, VMT estimated for the CEQA Proposed Project (with or without the CUP Option or WRF Option) exceeds the per service population VMT target for the Bay Area. Accordingly, the proposed project would conflict with *Plan Bay Area*, the applicable regional plan for reducing mobile-source emissions in the San Francisco Bay Area, and the overall emission reduction goals of the *2017 Clean Air Plan*. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure TRAN-1 would require implementation of a mitigated TDM plan that further reduces VMT. With Mitigation Measure TRAN-1, the CEQA Proposed Project would achieve the per service population VMT target for the Bay Area, achieving consistency with *Plan Bay Area* and *2017 Clean Air Plan* (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[24] Therefore, the CEQA Proposed Project (with or without the CUP Option or WRF Option) would not conflict with State, regional, or local plans designed to achieve the GHG reduction goals mandated by SB 32 and AB 1279 for 2030 and 2045, respectively. This impact is less than significant with mitigation.

[24] Ibid.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Overall, there would be no difference in the impact mechanism or conclusion between the CEQA Proposed Project and the CEQA Proposed Project with Variant. The same sustainability strategies described above for the CEQA Proposed Project would be implemented under the Variant. The Variant would be consistent with CARB's 2022 Scoping Plan–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT. With Mitigation Measure TRAN-1, the CEQA Proposed Project with the Variant would achieve the per service population VMT target for the Bay Area, achieving consistency with *Plan Bay Area* and *2017 Clean Air Plan* (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[25] Therefore, the Variant would not conflict with State, regional, or local plans designed to achieve the GHG reduction goals mandated by SB 32 and AB 1279 for 2030 and 2045, respectively. This impact is less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Overall, there would be no difference in the impact conclusion before mitigation between the CEQA Proposed Project and the CEQA Reduced Density Alternative. The same sustainability strategies described above for the CEQA Proposed Project would be implemented under the CEQA Reduced Density Alternative. The CEQA Reduced Density Alternative would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

[25] Ibid.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT. With Mitigation Measure TRAN-1, the CEQA Reduced Density Alternative would not achieve the per service population VMT target for the Bay Area, and would not be consistent with *Plan Bay Area* or *2017 Clean Air Plan* (refer to Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[26] Therefore, the CEQA Reduced Density Alternative would conflict with State, regional, or local plans designed to achieve the GHG reduction goals mandated by SB 32 and AB 1279 for 2030 and 2045, respectively. This impact is significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Overall, there would be no difference in the impact mechanism or conclusion before mitigation between the CEQA Proposed Project and the CEQA Reduced Density Alternative compared to the CEQA Reduced Density Alternative with the Variant. The same sustainability strategies described above for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be implemented under the Variant. The Variant would be consistent with CARB's 2022 Scoping Plan–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*. This impact would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for the CEQA Proposed Project under Impact CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measure TRAN-1 would require implementation of a mitigated TDM plan that further reduces VMT. With Mitigation Measure TRAN-1, the CEQA Reduced Density Alternative with the Variant would not achieve the per service population VMT target for the Bay Area, and would not be consistent with *Plan Bay Area* or *2017 Clean Air Plan* (refer to Impact CEQA-TRAN-2 in Section 3.16,

[26] Ibid.

Transportation and Traffic, for additional information).[27] Therefore, the Variant would conflict with State, regional, or local plans designed to achieve the GHG reduction goals mandated by SB 32 and AB 1279 for 2030 and 2045, respectively. This impact is significant and unavoidable.

3.8.8 Cumulative Impacts

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. Climate change is a global problem, and GHG impacts are inherently cumulative. This is because GHGs contribute to global climate change, regardless of where they are emitted. Climate change is the result of the individual contributions of countless past, present, and future sources. Thus, the analysis and conclusions presented in Section 3.8.7, *Impacts and Mitigation Measures*, characterize the cumulative impacts of the proposed project.

Impact CEQA-C-GHG-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to greenhouse gas emissions or conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (Less than Cumulatively Considerable with Mitigation for CEQA Proposed Project; Cumulatively Considerable Contribution with Mitigation for CEQA Reduced Density Alternative)

Construction and operation of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would generate GHG emissions that could have short and long-term impacts on global GHG concentrations. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs to reduce construction generated emissions. The project meets all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*. Thus, cumulative construction emissions and mobile-source emissions from implementation of the proposed project would be potentially significant before mitigation.

Mitigation Measure GHG-1 outlines the Air Districts BMPs that will be implemented to reduce construction GHG emissions. Mitigation Measures AQ-1 and AQ-2 support compliance with the Air District's BMPs for off-road equipment and on-road vehicles. With implementation of Mitigation Measures GHG-1, AQ-1, and AQ-2, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would be consistent with Air District's recommendation to implement BMPs to minimize construction GHG emissions.

Mitigation Measure TRAN-1 would require implementation of a mitigated TDM plan that further reduces VMT. With Mitigation Measure TRAN-1, the CEQA Proposed Project with or without the Variant or WRF or CUP Options would achieve the regional per service population VMT threshold, achieving consistency with the District Threshold Option A, *Plan Bay Area*, and *2017 Clean Air Plan* (refer to Impacts CEQA-GHG-1 and CEQA-GHG-2 in Section 3.8.7, *Impacts and Mitigation Measures*, as well as CEQA-TRAN-2 in Section 3.16, *Transportation and Traffic*, for additional information).[28] After implementation of Mitigation Measures GHG-1, AQ-1, AQ-2, and TRAN-1, the CEQA Proposed Project with or without the Variant or WRF or CUP Options would not result in a cumulatively

[27] Ibid.

[28] Ibid.

considerable contribution to global climate change, or conflict with State, regional, or local GHG reduction plans. With respect to the CEQA Reduced Density Alternative, Mitigation Measure TRAN-1 would not achieve the required VMT reductions to achieve the regional VMT threshold or District Threshold Option A. Accordingly, the CEQA Reduced Density Alternative with or without the Variant would result in a cumulatively considerable contribution to global climate change, or conflict with State, regional, or local GHG reduction plans.

3.9 Hazards and Hazardous Materials

3.9.1 Introduction

This section evaluates the potential impacts related to hazards and hazardous materials that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical studies prepared for the project:

- *Environmental Issues Management Plan Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California* (Spring 2026 project-specific EIMP) prepared by EKI, Spring 2026[1] (Appendix 2-2 of this joint environmental impact report/environmental impact statement [EIR/EIS]).
- *Berkeley Space Center at NASA Research Park—Hazardous Material Conditions* (Hazardous Material Conditions Memorandum) prepared by EKI, January 2026 (Appendix 3.9-1 of this joint EIR/EIS).

In addition, this analysis uses the following technical studies and reports:

- *CY2023 Annual Progress Report NASA Ames Regional Groundwater Remediation Program NASA Area of Responsibility and Site 28 WATS Area* (Groundwater Monitoring and Remediation Report) prepared by BB&E Consulting Engineers and Professionals, April 2024.
- *2024 Annual Progress Report Middlefield-Ellis-Whisman Fairchild (MEW) and Regional Groundwater Remediation Programs Mountain View, California* (Groundwater Monitoring and Remediation Report) prepared by Geosyntec Consultants, April 2025.
- *2024 Annual Vapor Intrusion Progress Report Former Fairchild and Regional Groundwater Remediation Program Properties Middlefield-Ellis-Whisman Vapor Intrusion Study Area Mountain View, California* (Vapor Intrusion Progress Report) prepared by Geosyntec Consultants, April 2025.

In addition to a review of the technical documents listed above, ICF conducted a supplemental online review to search for site listings within the Limits of Work that may have been newly added between preparation/ publishing of the reports listed above and preparation of this section. Details are provided in Section 3.9.2, *Affected Environment/Environmental Setting*.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to hazards and hazardous materials include a recommendation by the U.S. Environmental Protection Agency (EPA) to incorporate analyses consistent with National Environmental Policy Act (NEPA) requirements, along with a discussion of project implementation in relation to ongoing cleanup activities, contamination to be encountered during the construction phase, and project

[1] The Spring 2026 project-specific EIMP is currently under review by the EPA and San Francisco Bay Regional Water Quality Control Board, the regulatory agencies that will approve of the EIMP. NASA has previously reviewed and provided comments on the Spring 2026 project-specific EIMP.

cleanup activities to occur during project implementation. These issues are addressed under Impact CEQA-HAZ-2.

The NOP/NOI comments pertaining to hazards and hazardous materials include a recommendation by the Department of Toxic Substances Control (DTSC) to incorporate a discussion regarding oversight and coordination with the San Francisco Bay Regional Water Quality Control Board Regional Water Board (Regional Water Board) and to also include the need for hazardous building materials surveys and the testing of imported fill. These issues are addressed under Impact CEQA-HAZ-2. Lastly, the Carpenters Union Local 405 includes a recommendation to evaluate direct impacts on construction workers (as well as the indirect costs) associated with the exposure to hazards and hazardous materials. The section does not include a cost analysis; however, the potential impacts to construction workers are discussed under Impact CEQA-HAZ-2.

3.9.2 Affected Environment/Environmental Setting

3.9.2.1 Project Site

The Project Site is located within the NRP portion of the Naval Air Station Moffett Field Superfund Site (NAS) Superfund Site and soil and groundwater within the Project Site have been impacted by historical use by the Navy, as well as by the migration of groundwater containing chlorinated volatile organic compounds (VOCs) originating south of the Project Site from the portion of the MEW Superfund Site located in the City of Mountain View.[2] The Project Proponent would not be responsible for remediation of NAS Superfund Site or MEW Superfund Site groundwater.

Numerous potential sources of contamination within the Project Site have been investigated and remediated. These contaminant sources are primarily associated with historical use of underground storage tanks (USTs) and sumps that contained petroleum hydrocarbon products and/or chlorinated VOCs. Additional details related to on-site contamination can be found in Section 3.9.2.2, *Historical Hazardous Materials Impacts and Prior Environmental Investigations*.

In addition, a large regional plume of chlorinated VOCs is present on-site and is associated with portions of the MEW Superfund Site located south of U.S. 101. The plume has commingled with groundwater contamination from Navy chlorinated solvent sources located within the NRP and NASA sources within National Aeronautics and Space Administration Ames Research Center (NASA ARC). In addition, petroleum hydrocarbons and fuel-related constituents, such as benzene, toluene, ethylbenzene and xylenes (BTEX), have affected on-site groundwater from sources at Moffett Field. To address groundwater impacts in the vicinity of the Project Site, two groundwater extraction and treatment facilities are currently operating near the Project Site, the NASA West-Side Aquifers Treatment System (WATS) and the MEW Groundwater Treatment System. The West Side Aquifers, which underlies the Project Site, was identified as one of the original Operable Units for NAS Moffett Field. In October 1992, EPA determined that the aquifers within this area were affected by regional groundwater contamination migrating from a group of companies located within an area south of Moffett Field and bounded by East Middlefield Road, Ellis Street, Whisman Road, and U.S. Highway 101; this area is commonly referred to as the MEW Superfund Site. In 1997, the Navy began

[2] The portion of the MEW Vapor Intrusion Area that is located in the vicinity of the Project Site is shown on Figures 3.9-2 and 3.9-4. The MEW Vapor Intrusion Study Area represents the boundary of the MEW Superfund Site VOC groundwater plume where trichloroethene concentrations are greater than 5 micrograms per liter. The project would not be responsible for MEW Superfund Site groundwater remediation.

construction of the WATS to extract and treat groundwater impacted by VOCs and petroleum hydrocarbons. The WATS is now owned and operated by NASA and associated with the NAS Superfund Site area. The WATS is approximately 1,000 feet north of the Project Site. None of the piping associated with the WATS nor the WATS itself are located within the Project Site. Some of the monitoring wells are located within the Project Site. Treated groundwater from the WATS is discharged into NASA's stormwater retention pond at the northernmost portion of NASA ARC. The Navy began operating the WATS in 1998, which currently treats groundwater pumped from six A1-aquifer zone extraction wells, three A2-aquifer zone wells, and the storm drain sumps. The MEW extraction and treatment system is directly adjacent to the Project Site, with some of its associated infrastructure located within the Project Site. Remediation system infrastructure (found on-site) associated with the MEW extraction and treatment system includes several recovery wells and underground piping. Treated water from the MEW facility is discharged into San Francisco Bay.

3.9.2.2 Historical Hazardous Materials Impacts and Prior Environmental Investigations[3]

As mentioned, Project Site soil and groundwater are affected by contamination associated with the MEW Companies past activities and U.S. Navy's past operations at Naval Air Station Moffett Field. The Project Site is within the footprints of both the MEW Superfund Site and former NAS Superfund Site. The MEW Superfund Site has undergone multiple environmental investigations along with soil and groundwater remediation for approximately three decades. Groundwater remediation associated with the site has been assigned to the MEW Regional Groundwater Remediation Program (RGRP), the Navy, and NASA. Remediation activities in the vicinity of the Project Site continue to be implemented under the jurisdictions of the EPA and the Regional Water Board. As the operator and property owner, NASA is also performing cleanup of the portions of the Naval Air Station Moffett Field where NASA was responsible for contamination. Also, NASA is responsible for implementing Land Use Controls at the site. Long-term remedies to address Naval Air Station Moffett Field contamination include sediment and soil excavation, treatment, and off-site disposal.

As a result of investigations and remedial actions that have been performed within the Project Site, the identified environmental conditions and primary chemicals of potential concern (COPCs) that need to be considered during redevelopment are:

- The presence of chlorinated VOCs in groundwater, soil gas, and soil within the Project Site, predominantly resulting from the migration of contaminated groundwater from the upgradient MEW Superfund Site as well as NASA sources within NASA ARC; the primary chlorinated VOC COPCs associated with the MEW Superfund Site are trichloroethene (TCE) and cis-1,2-dichloroethene, although several other VOCs are frequently detected; as of September/October 2024, the maximum concentration of TCE detected in groundwater within the Project Site was 570 micrograms per liter (ug/L) at location REG-4A;[4]

[3] Prior environmental investigation summaries were included in the EIR/EIS to provide the most current environmental condition information available when describing the Project Site's environmental setting. These annual vapor intrusion and groundwater remediation progress reports are routine and ongoing. Moreover, the information in these annual progress reports (up through the versions that were publicly available prior to the publication of the joint EIR/EIS) do not change the conclusions or recommendations in the Berkeley Space Center at NASA Research Park - Hazardous Material Conditions technical memorandum prepared by EKI in November of 2025.

[4] Geosyntec. 2025. *2024 Annual Progress Report – Middlefield-Ellis-Whisman Fairchild and Regional Groundwater Remediation Programs, Mountain View, California*. April 15.

- Fuel oil and solvent tanks associated with the former dry cleaning facility (Tanks 67 and 68, respectively) in 1990 and the mid-1990s, respectively; tetrachloroethene was detected in a confirmation soil sample at a maximum concentration of 0.13 milligram per kilogram (mg/kg); Tank 67 was closed with a No Further Action letter from the Regional Water Board in 2000; Tank 68 and associated Sump 91 have not received regulatory closure and are considered to be part of IR Site 28, an active Navy remediation site; and
- The presence of total petroleum hydrocarbons (TPH) and other fuel-related constituents, including BTEX compounds, in groundwater and in soil within the Project Site, including, but not limited to:
    - TPH associated with Tanks 86A and 86B, two USTs that were removed in 1993 and closed with a No Further Action letter from the Regional Water Board in 2000; TPH as gasoline was not present in groundwater above the reporting limit of 50 ug/L at the time of closure;
    - TPH and BTEX associated with Tank 110, a former diesel UST located north of Building 109, were reportedly not detected in soil and groundwater samples collected at this UST; Tank 110 was closed with a No Further Action letter from the Regional Water Board in 2000;
    - TPH associated with Tanks 33 through 40 (eight USTs) and Sump 42 at and near the NEX Service Station, which were removed from 1990 to 1993 and closed in a No Further Action letter with use restrictions from the Regional Water Board in 2011;
    - TPH associated with hydraulic lifts, a hydraulic oil reservoir tank, a waste oil line, and a subgrade clarifier at the NEX Service Station, which were closed in a No Further Action letter with use restrictions from the Regional Water Board in 2015; the confirmation soil samples collected in the vicinity of the hydraulic lifts contained up to 22,000 mg/kg TPH as hydraulic oil, but the extent of impact was limited based on follow-up soil samples collected in 2012; TPH as hydraulic oil and as motor oil in groundwater were 300 ug/L and 220 ug/L, respectively, at the time of closure in 2015;
    - TPH associated with Sump 25 at IR Site 15, which was closed in a No Further Action letter with use restrictions from the Regional Water Board in 2011; the confirmation soil sample contained purgeable TPH as jet fuel at a concentration of 5,800 mg/kg and TPH as diesel at 9,500 mg/kg and the grab groundwater sample from the excavation pit contained purgeable TPH as jet fuel at 100 ug/L and TPH as motor oil at 3,300 ug/L;
- The presence of per- and polyfluoroalkyl substances (PFAS) compounds in groundwater within the Project Site[5] resulting from multiple historical site uses, including:
    - Perfluorooctanoic acid at up to 7.3 nanograms per liter (ng/L);
    - Perfluorooctanesulfonic acid at up to 14 ng/L; and
    - Perfluorobutanesulfonic acid at up to 16 ng/L;
- The potential presence of elevated concentrations of polychlorinated biphenyls (PCBs) in soil surrounding buildings or transformers;
- The potential presence of elevated concentrations of lead in soil surrounding buildings;
- Existing subsurface structures (e.g., sumps or tanks) that may need to be removed; and

5 Tetra Tech. 2023. *Per- and Polyfluoroalkyl Substances, Site Inspection Report for NASA Ames Research Center.* April.

- Building materials containing hazardous materials (e.g., asbestos-containing materials, lead-based paint, and PCB-containing materials in existing buildings).

Responsible Parties and Oversight

The Navy began conducting a remedial investigation/feasibility study for Naval Air Station (NAS) Moffett Field, coordinating its actions through a Federal Facility Agreement (FFA) with EPA; the California Environmental Protection Agency (CalEPA), including DTSC; and the Regional Water Board. Nearly all of the area known as Moffett Field, with the exception of two housing areas, was transferred to NASA in 1994. In accordance with the transfer documents and a 1994 amendment to the Navy Moffett Field FFA, the Navy retained all Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response authority for Moffett Field, while NASA became responsible for ongoing environmental operations. In addition, as the land manager at Moffett Field after 1994, NASA is responsible for implementation of institutional controls for Navy response actions. In 2014, EPA, the Regional Water Board, and NASA entered into a NASA-specific Moffett Field FFA which includes NASA's responsibilities at Moffett Field for addressing contamination within areas of contamination where NASA itself is responsible and for implementing institutional controls for the areas where it has responsibility as the land manager of NRP.[6]

Remediation Activities Undertaken by Responsible Parties

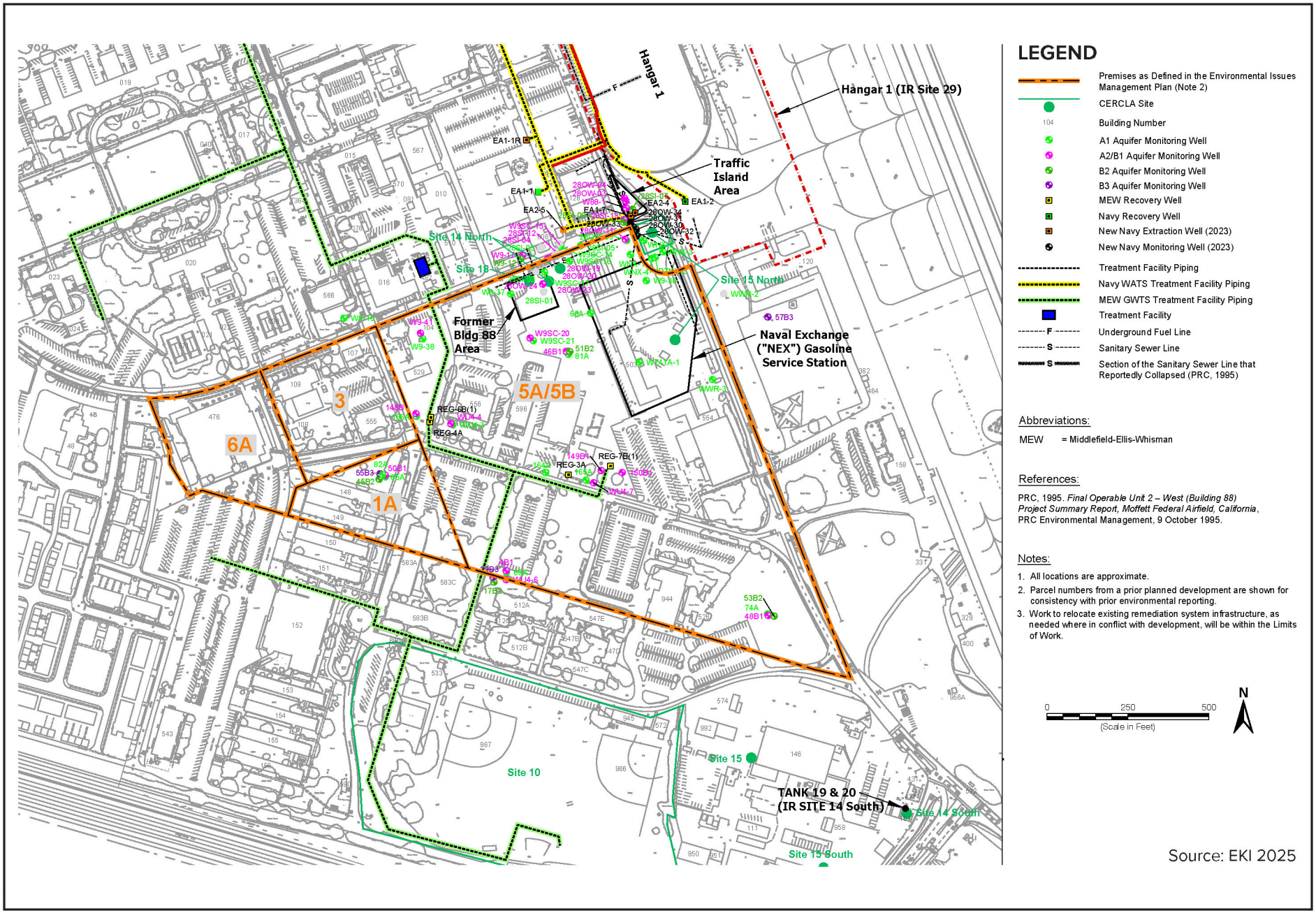
As indicated above, the MEW Companies have installed and are operating a groundwater remediation system on the Project Site that includes groundwater monitoring wells for groundwater remediation systems for both the MEW Companies and the Navy[7,8] as part of ongoing Remediation Activities (Project Site remediation is described in Section 3.9.2.2, *Historical Hazardous Materials Impacts and Prior Environmental Investigations*, and under *Existing Environmental Conditions* in the Spring 2026 project-specific EIMP). Figure 3.9-1, Locations of MEW and NAVY Monitoring Wells, Recovery Wells, and Treatment System Piping-Existing Layout, shows the locations of existing monitoring wells, recovery wells, and treatment system piping. The MEW Companies will continue operation of the groundwater remediation system; however, as discussed below, the Project Proponent is required to coordinate with the Responsible Parties if these systems need to be re-located to accommodate the development. Such relocations are required to be approved by EPA and the Regional Water Board to ensure that the impacts to the efficacy of the system are minimized. The cost of such equipment relocation is typically borne by the Project Proponent; the re-location activities will be performed either by the Responsible Parties or the Project Proponent depending on agreements between the parties.

6 The Project Proponent's ground lease with NASA requires "Tenant [receiving] from EPA a Bona Fide Prospective Lessee Agreement or Prospective Lessee Agreement in form and substance satisfactory to Tenant." Tenant/Project Proponent is currently engaged in negotiations with EPA for this agreement referred to as the Covenant Not to Sue for the Project Site.

7 U.S. Environmental Protection Agency. 2024. *Fifth Five-year Review Report for Middlefield-Ellis-Whisman (MEW) Superfund Study Area.* September 30.

8 National Aeronautics and Space Administration. 2025. *CY2024 Annual Progress Report, NASA Ames Regional Groundwater Remediation Program, NASA Area of Responsibility and Site 28 WATS Area.* BB&E, Inc. April.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (11-14-2025)

Figure 3.9-1

Locations of MEW and NAVY Monitoring Wells, Recovery Wells, and Treatment System Piping—Existing Layout

Berkeley Space Center at NASA Research Park

2024 Annual Vapor Intrusion Progress Report Former Fairchild and Regional Groundwater Remediation Program Properties Middlefield-Ellis-Whisman Vapor Intrusion Study Area Mountain View, California

An annual vapor intrusion progress report was prepared by Geosyntec Consultants in April 2025 to summarize activities performed in 2024 related to vapor intrusion (VI) investigation, VI control system remedial design and construction, and the operation, maintenance, and monitoring (OM&M) of VI control systems operating at buildings located on the former Fairchild properties and properties within the RGRP at the MEW Superfund study area. It should be noted that the study area covered in the 2024 progress report includes structures located within the Project Site, but it also includes areas both to the north and south. The 2024 progress report provided updates on several of the structures within the study area; however, none of the updates included buildings within the Project Site. Sites within the Project Site were identified in the progress report as Moffett Field buildings B503, B554, B556 and B596.

An update was provided for Moffett Field building 20, located approximately 500 feet to the west of the Project Site. From March 28 to May 13, a basement ventilation system was shut down to address potential safety issues related to the ventilation system fans. During the shutdown, one fan was replaced and NASA assessed and upgraded the electrical service to both fans. A subsequent annual inspection (July 10) confirmed the basement ventilation system was operating adequately. Ongoing OM&M of the VI control systems listed in the report, along with required reporting, would continue in 2025.

2024 Annual Progress Report Middlefield-Ellis-Whisman Fairchild and Regional Groundwater Remediation Programs Mountain View, California

An annual progress report was prepared by Geosyntec Consultants in April 2025 to summarize activities and progress associated with the ongoing groundwater remediation programs associated with the former Fairchild Semiconductor Corporation facilities within the MEW Superfund study area and the MEW RGRP.

Groundwater remedies currently employed in the study area include slurry wall containment (at some source sites) and/or groundwater extraction and treatment. The groundwater extraction and treatment systems are designed to protect local water supplies, remediate or control groundwater that contains elevated concentrations of constituents of concern, and control discharge of such groundwater to surface water. Groundwater extracted from the regional plume north of U.S. 101 (including groundwater from the Project Site) is conveyed to the North 101 Treatment System, located at the corner of Wescoat Road and McCord Avenue on Moffett Field, directly adjacent to the Project Site. As stated above under *Historical Hazardous Materials Impacts*, remediation system infrastructure (on the Project Site) associated with this extraction and treatment system includes several recovery wells and underground piping. Treated North 101 Treatment System water is monitored, sampled and discharged to Stevens Creek directly. Effectiveness of the treatment systems are evaluated using a network of monitoring and recovery wells.

According to the progress report:

- Remediation systems are functioning as intended.

- Groundwater capture is adequate. Groundwater elevations and gradients, graphical flow net analysis, capture zone width calculations, and VOC concentration trends provide evidence that groundwater remediation is achieving adequate horizontal and vertical capture of the MEW plume.
- VOC concentrations are decreasing over time.
- Horizontal and vertical gradients are generally consistent with historical observations.

In 2023, the North 101 Treatment System removed 225 pounds of VOCs from 44.8 million gallons of extracted groundwater. Extraction and treatment of groundwater, sampling and reporting would continue in 2025.

CY2024 Annual Progress Report NASA Ames Regional Groundwater Remediation Program NASA Area of Responsibility and Site 28 WATS Area

An annual progress report was prepared by BB&E Consulting in April 2025 to summarize activities and progress associated with the ongoing groundwater remediation programs associated with the NASA Ames Groundwater Area of Responsibility to the MEW Regional Plume and the Navy Site 28 WATS Area. NASA Ames operates the NASA groundwater treatment system within NASA Ames' Groundwater Area of Responsibility. As of 2016, NASA assumed operational, maintenance, monitoring and reporting responsibilities for the Navy Site 28 WATS Area from the Navy (who originally installed and operated the system). The WATS is located within the Navy Site 28 Area, west of Hangar 1 in Building 45A on Cummins Avenue (and is the closest system to the Project Site, located approximately 980 feet to the northwest).

Groundwater remedies currently employed in the study area include groundwater extraction and treatment with the objective of mass removal and hydraulic containment of VOC-contaminated groundwater. The remediation approach is designed to protect local water supplies by remediating and controlling groundwater that contains elevated concentrations of MEW contaminants of concern (COCs), including control of discharge of such groundwater to surface water. In the southern portion of the NASA RGRP area (the Project Site is part of this portion of the NASA RGRP area), 12 extraction wells located within Site 28 pump water to the WATS. It should be noted that in August 2024, the WATS was retrofitted with a larger ozone generator in preparation for the removal and bypass of the Navy Pretreatment System (which operated concurrently with the WATS since 2022). The effectiveness of the systems is monitored using a network of RGRP monitoring wells.

According to the progress report:

- Remediation systems are functioning as intended.
- Graphical flow net analysis, capture zone width calculations, spatial distribution analysis, chemical concentration trends and contour mapping provide evidence that groundwater remediation is achieving adequate capture and hydraulic control of targeted treatment zones.
- Total VOCs concentrations in the core of the plume have decreased significantly since 1999. In the A1 Aquifer, core concentrations in Site 28 have decreased by 81 percent. In the A2/B1 Aquifer, core concentrations in Site 28 have decreased by 83.5 percent.

In 2024, the WATS removed 160.6 pounds of VOCs from 28.5 million gallons of extracted groundwater. Extraction and treatment of groundwater, groundwater level measurements, sampling, and reporting would continue in 2025.

Supplemental Environmental Database Review

ICF conducted a supplemental environmental database review in August 2025 on the State Water Resources Control Board's (SWRCB's) GeoTracker[9] and the DTSC's EnviroStor[10] websites to search for site listings (with the potential to impact project implementation) within the Limits of Work that may have been newly added between the preparation/publishing of the reports discussed above and the preparation of this EIR/EIS. Several Military Cleanup Site and Military UST Site listings were identified within the Project Site; however, all were listed with a *Case Closed* status, indicating that they have been remediated to the satisfaction of the applicable oversight agency. Only one *active* Military Privatized Site was identified within the Project Site. It was listed as: "Berkeley Space Center Project Site – Edquiba Road Parcels 1A, 3, 5A, 5B, and 6A (SWRCB ID T10000013875)," with a status of *Open - Long Term Management as of 9/30/2020*. Potential contaminants of concern and potential media of concern were not disclosed. The Military Privatized Site listing was generated in 2019 when the case begin date was recorded in GeoTracker. As such, no newly listed sites not already considered in the previous investigations (presented above) were identified as a result of the supplemental environmental database review.

3.9.2.3 Spring 2026 Project-Specific Environmental Issues Management Plan

As mentioned, numerous soil and groundwater investigations have been conducted within the Project Site. The results of these investigations are summarized in various technical memoranda, remedial investigation and feasibility study reports and other documents. The Spring 2026 project-specific EIMP (summarized here) was prepared relying on the findings and conclusions of those documents. Implementation of the Spring 2026 project-specific EIMP is required for project implementation and is included in this EIR/EIS as a mitigation measure. The Spring 2026 project-specific EIMP was submitted to and reviewed by NASA, the EPA, and the Regional Water Board. Prior to commencement of construction of the proposed project, the EPA and the Regional Water Board will review and approve the Spring 2026 project-specific EIMP. The Spring 2026 project-specific EIMP will also be periodically reviewed and any necessary updates or addenda to the Spring 2026 project-specific EIMP will be reviewed by NASA and submitted to the EPA and Regional Water Board for approval.

The implementation of the Spring 2026 project-specific EIMP by the Project Proponent is not intended to relieve the Responsible Parties of their responsibilities and ongoing obligations. Rather, the Spring 2026 project-specific EIMP allocates as between NASA and the Project Proponent who will take actions to address environmental conditions in the event of non-performance or delayed performance by another Responsible Party, but such actions will not result in Project Proponent (including tenants and project developers) becoming a Responsible Party.

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9 State Water Resources Control Board. 2026. *GeoTracker*. Available: https://geotracker.waterboards.ca.gov/. Accessed: January 1, 2026.

10 Department of Toxic Substances Control. 2026. *EnviroStor.* Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed: January 6, 2026.

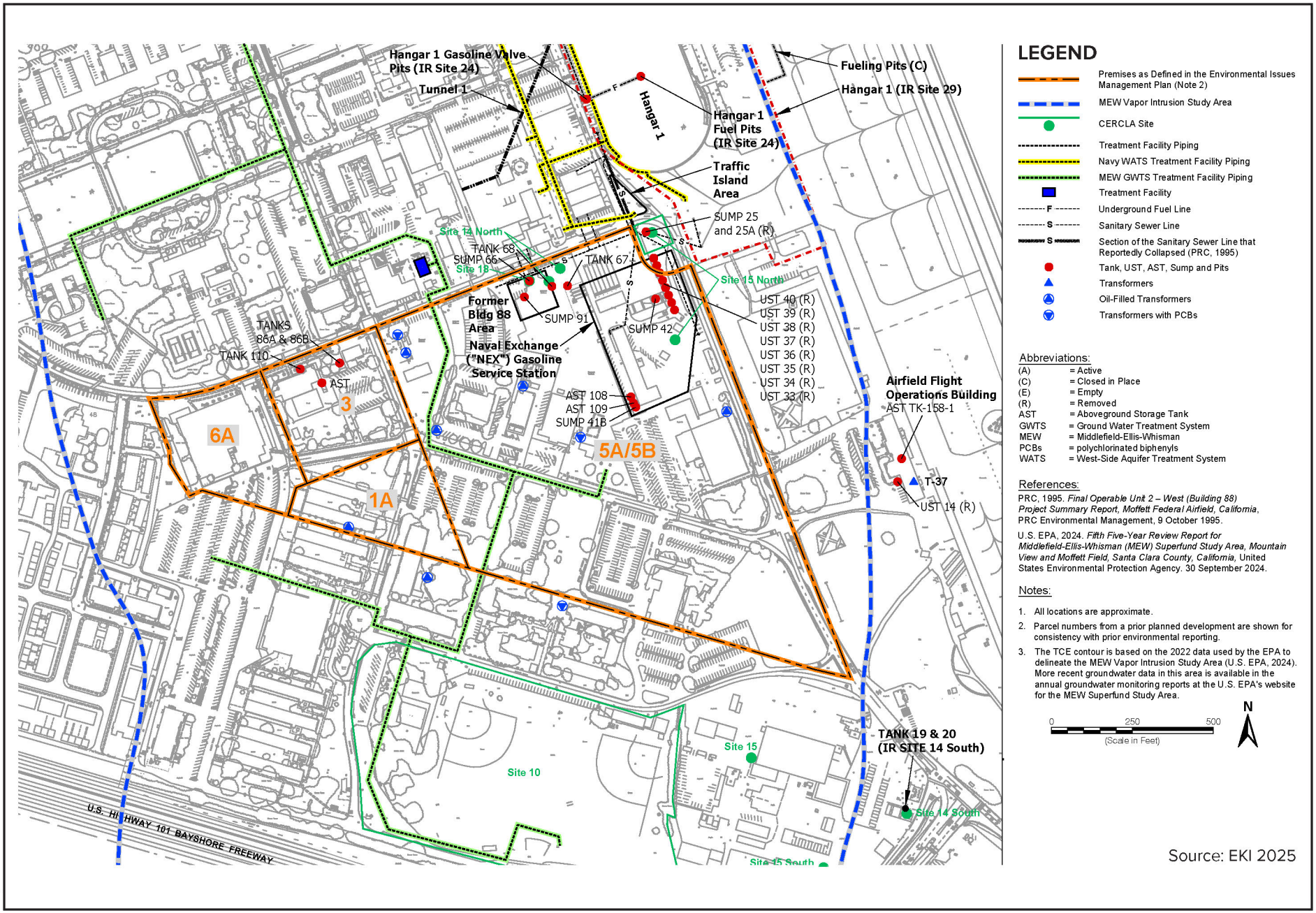
The Spring 2026 project-specific EIMP builds upon the prior 2005 NRP EIMP (and a subsequent 2007 Addendum). The Spring 2026 project-specific EIMP has been updated to reflect current regulatory requirements[11] and includes more detailed procedures specific to the Project Site. The Spring 2026 project-specific EIMP was prepared to provide requirements to be implemented before, during, and after development for the protection of human health and the environment during construction and occupancy. A Settlement Agreement and Covenant Not to Sue (currently in draft form) is being entered into between the Project Proponent, Moffett Partners, LLC, and the United States Department of Justice and United States Environmental Protection Agency Region 9 (Covenant Not to Sue), with respect to the Project Site. The Covenant Not to Sue provides the Project Proponent with certain liability relief in consideration of a monetary payment, a phytoremediation project, and implementation of the Spring 2026 project-specific EIMP within the Limits of Work.

The Spring 2026 project-specific EIMP was prepared with input from EPA and the Regional Water Board as lead regulatory agencies for the NAS Superfund Site as well as input from the EPA as the lead regulatory agency for the MEW Superfund Site to provide a decision framework for the management of residual chemicals in soil, groundwater, and existing and future structures within the Project Site during occupancy and development. The Spring 2026 project-specific EIMP includes required procedures that must be followed to address the known remaining environmental conditions within the Limits of Work and contingency actions to be taken in the event previously-unknown environmental conditions are encountered during development in the Limits of Work. The purpose of the Spring 2026 project-specific EIMP is to provide sufficient information to Project Stakeholders (NASA, Project Proponent, developers, and tenants) to comply with land use restrictions and land use controls (LUCs) and identify reasonable steps that help ensure project occupancy and development activities proceed in a manner that is protective of human health and the environment and is coordinated with the ongoing response actions of the Responsible Parties. Figure 3.9-2, Installation Restoration Program Site Locations and Current and Former UST, AST, and/or Sump Locations, shows the locations of the aforementioned features within the Project Site and Limits of Work. Figure 3.9-3, Navy and MEW Companies Allocation Areas, Soil and Groundwater, shows the Responsible Parties for soil and groundwater within the Project Site and the Limits of Work. Figure 3.9-4, NASA, Navy, and MEW Companies Areas of Responsibility, Vapor Intrusion, shows the Responsible Parties for vapor intrusion (VI) issues within the Project Site and the Limits of Work.

The Spring 2026 project-specific EIMP provides a baseline of minimum design considerations for new construction, risk management measures to be implemented during construction within the Limits of Work, post-construction risk management procedures for future subsurface activities within the Limits of Work, as well as procedures for long-term compliance with the Spring 2026 project-specific EIMP, CERCLA, and other environmental requirements. The Spring 2026 project-specific EIMP directs Project Stakeholders with responsibility for activities within the Limits of Work to: (1) review available information concerning environmental conditions within the Limits of Work; (2) determine the adequacy of the Spring 2026 project-specific EIMP with respect to expected environmental conditions as well as the conditions actually encountered during development and the intended land use; (3) evaluate the current understanding of the health and environmental effects of identified COPCs, to the extent the understanding of health and environmental effects

[11] The Spring 2026 project-specific EIMP: (a) provides an updated description of exposure pathways, (b) discusses soil and groundwater TCLs provided in the 2005 NRP EIMP, (c) provides updated TCLs for groundwater and soil, and (d) provides TCLs for indoor air, soil vapor, and sub-slab vapor.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



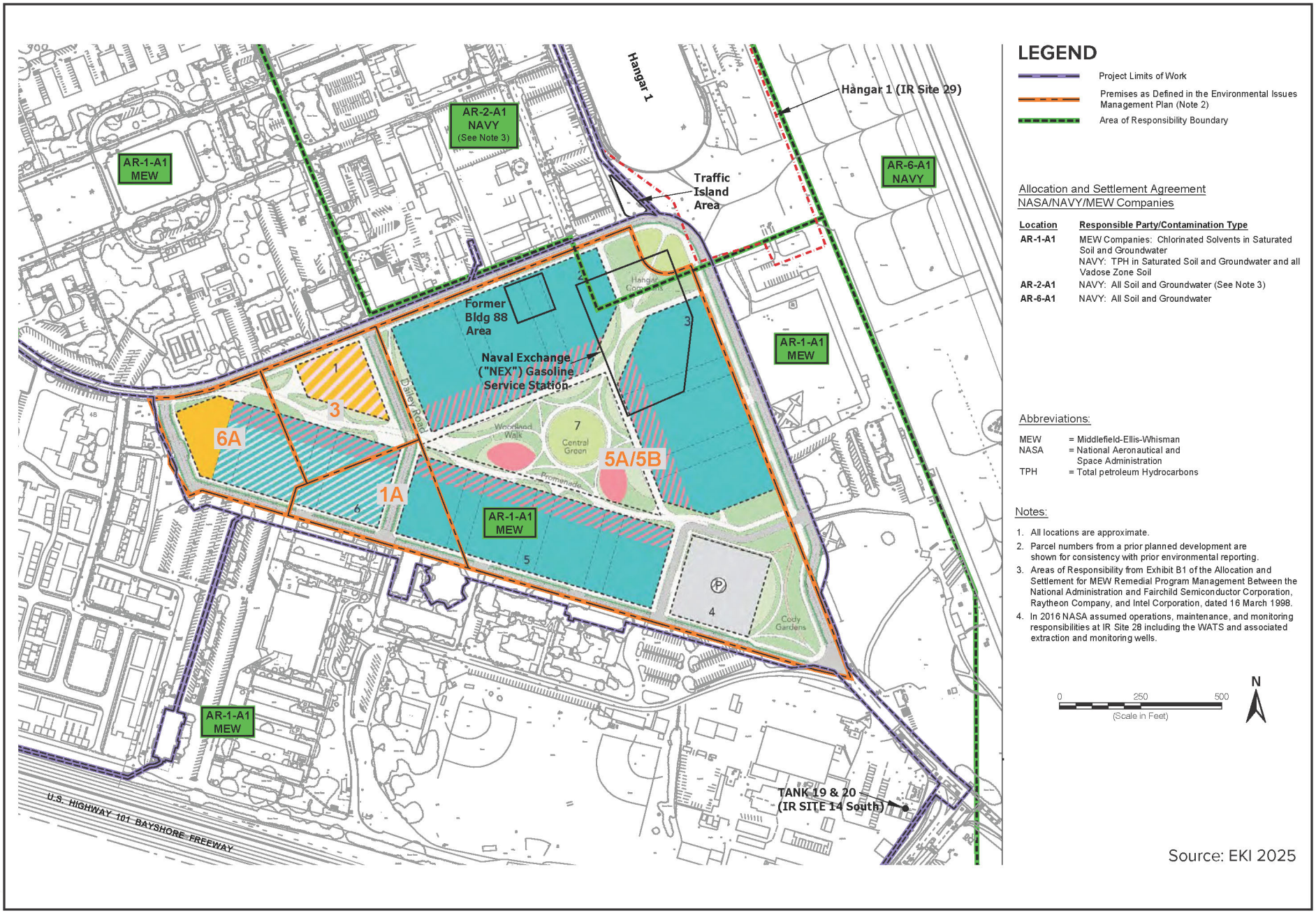
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Figure 3.9-2

Installation Restoration Program Site Locations and Current and Former UST, AST, and/or Sump Locations

Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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Figure 3.9-3

Navy and MEW Companies Allocation Areas, Soil and Groundwater

Berkeley Space Center at NASA Research Park

assumed in the Spring 2026 project-specific EIMP may change; (4) comply with applicable policies, laws and regulations; and (5) establish management procedures to ensure that risk management measures are properly implemented and maintained. NASA will monitor implementation of the Spring 2026 project-specific EIMP and the regulatory agencies will review and approve measures taken in accordance with the Spring 2026 project-specific EIMP. Table 3.9-1 summarizes the requirements in the Spring 2026 project-specific EIMP.

Table 3.9-1. Summary of Spring 2026 Project-Specific EIMP Requirements

EIMP Requirement [a,b]	Implementing Entity	Reviewing Entity	Approving Entity
Protect existing remedial and monitoring systems, or, otherwise, relocate groundwater remediation system features in conflict with development	Project Proponent and Responsible Parties	NASA	EPA, Regional Water Board, and/or Responsible Parties
Install vapor intrusion mitigation systems for buildings located within the MEW Site VI Study Area and conduct subsequent indoor air sampling	Project Proponent and Responsible Parties	N/A	NASA and EPA
Prevent potential pathways for COPC migration in groundwater and soil gas that could result from construction	Project Proponent	NASA, Santa Clara Valley Water District [c]	EPA and Regional Water Board [d]
Prepare a Project Information and Summary of Environmental Conditions (PISEC) in advance of development activities	Project Proponent	NASA, MEW Companies	EPA and Regional Water Board
Implement risk management measures during construction to mitigate potential risks to human health and the environment from COPCs	Project Proponent	NASA	EPA and Regional Water Board
Implement post-construction risk management measures for long-term risks to human health and the environment during non-construction activity	Project Stakeholders	NASA	EPA and Regional Water Board

Source: Hazardous Material Conditions Memorandum included in Appendix 3.9-1 of this joint EIR/EIS.

COPC = chemicals of potential concern; EPA = U.S. Environmental Protection Agency; MEW = Middlefield-Ellis-Whisman Fairchild; N/A = Same as Approving Entity; NASA = National Aeronautics and Space Administration; Regional Water Board = San Francisco Bay Regional Water Quality Control Board.

Notes:

[a] This table presents a summary of key Spring 2026 project-specific EIMP requirements, which are described in greater detail in *Risk Management During Project Design, Construction, and Operations* below; refer to the Spring 2026 project-specific EIMP for complete requirements.

[b] Additionally, all Project Stakeholders with responsibility for activities within the Limits of Work are required to: (1) review available information concerning environmental conditions within the Limits of Work; (2) determine the adequacy of the Spring 2026 project-specific EIMP with respect to expected environmental conditions as well as the conditions actually encountered during development and the intended land use; (3) evaluate the current understanding of the health and environmental effects of identified COPCs, to the extent the understanding of health and environmental effects assumed in the Spring 2026 project-specific EIMP may change; (4) comply with applicable policies, laws and regulations; and (5) establish management procedures to ensure that risk management measures are properly implemented and maintained.

[c] Driven piles are not included as part of the proposed project. The proposed project may include piles installed through other construction methods. The Spring 2026 project-specific EIMP provides for Santa Clara Valley Water District to review designs that include piles that extend to depths greater than 20 feet.

[d] Design reports for features that prevent potential pathways of COPC migration will be provided to the Regional Water Board and EPA for review and concurrence.

Risk Management During Project Design, Construction, and Operations

As discussed below, the measures described in the Spring 2026 project-specific EIMP address the potential risks from the inhalation of volatile chemicals from affected soil, groundwater, soil gas or sub-slab vapors, direct contact with affected soil, groundwater, or affected building materials, the inhalation of airborne particulates, and the ingestion of affected soil or groundwater such that human health is protected during and after development of the Project Site. All the measures described below are included in the Spring 2026 project-specific EIMP and are summarized herein. Unless otherwise indicated in the Spring 2026 project-specific EIMP, compliance with the Spring 2026 project-specific EIMP is overseen by EPA, the Regional Water Board, and/or NASA, depending on the specific activity being performed.

Redevelopment within the Project Site will be conducted in a manner that protects remedial and monitoring systems in place to the extent possible. Certain components of the existing remedial and monitoring systems, including wells and treatment system piping, will need to be relocated, modified, or replaced to accommodate the redevelopment; as described further below, these accommodations will be performed as necessary with minimal interference to the implementation of selected Site remedies. NASA will notify EPA and the Regional Water Board regarding relevant redevelopment and construction activities within the Project Site. Risk management activities described for development of the Project Site also apply to off-site improvements (i.e., within the Limits of Work) to support the development of the Project Site.

Risk Management Design Considerations for New Construction

Measures to Reduce Potential Exposure to VOCs in Indoor Air

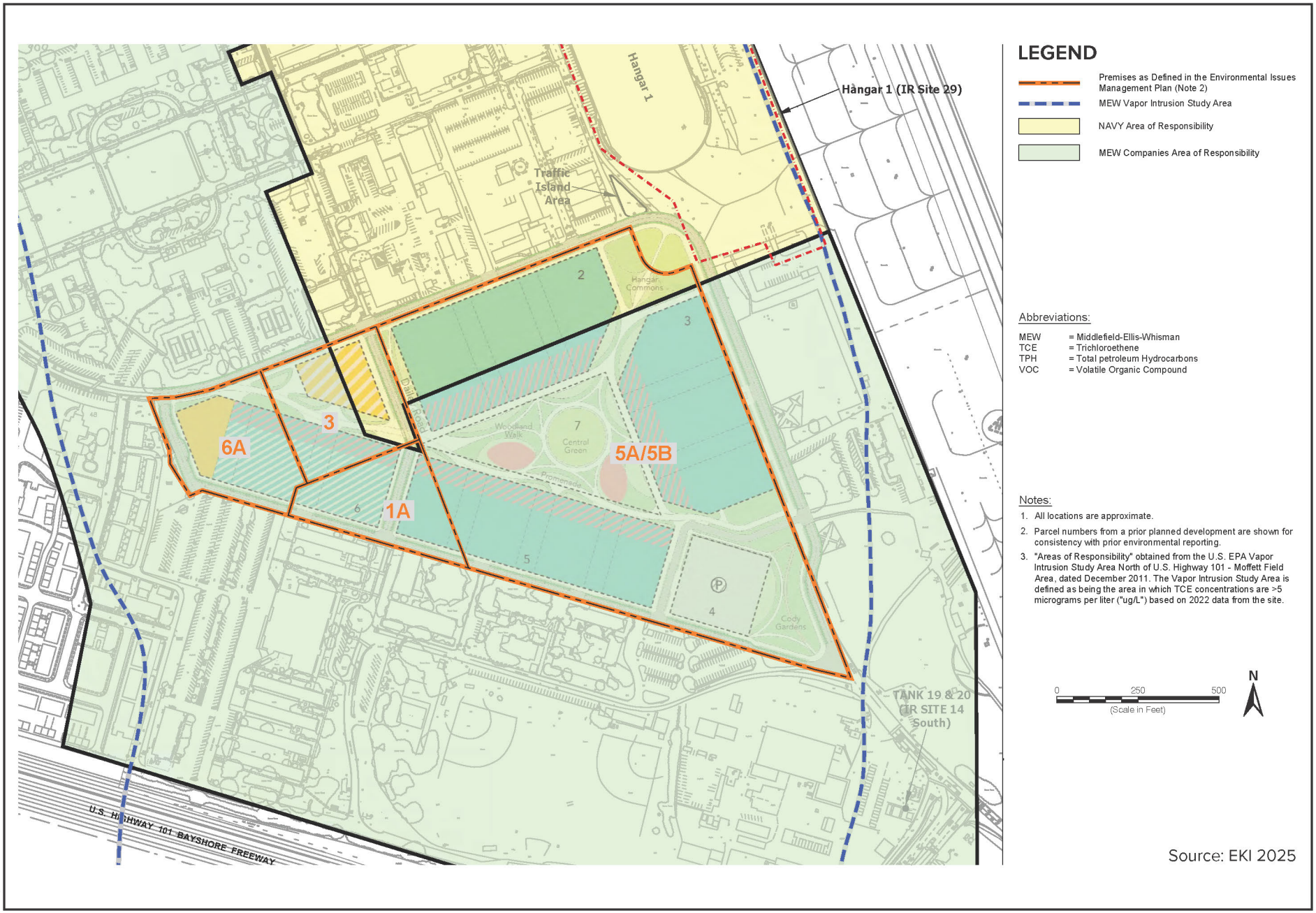
COPCs in groundwater in some areas within the Project Site could potentially result in indoor air concentrations (through vapor intrusion from shallow groundwater or soil gas) above applicable Target Concentration Levels (TCLs). In its *ROD Amendment for the Vapor Intrusion Pathway at the MEW Superfund Study Area* (2010 VI ROD Amendment),[12] EPA defined the MEW VI Study Area (Figure 3.9-4) based on the approximate extent of the 5 ug/L TCE in shallow groundwater and developed different response actions for existing and future residential and commercial buildings within this area.

These response actions range from collecting annual indoor sampling to the installation of engineering controls (SSD/SMD) in order to address vapor intrusion in buildings over the shallow groundwater TCE plume referenced above.

To address this potential risk and as specified in the 2010 VI ROD Amendment, the selected remedy for future buildings located within the MEW Site VI Study Area with TCE above 5 ug/L is the installation of a vapor intrusion mitigation system (VIMS) either a passive sub-slab ventilation system that can be made active or an active sub-slab depressurization system, and indoor air sampling to confirm that there is no vapor intrusion risk. The Project Site (and all future buildings) are located within MEW Site VI Study Area with TCE above 5 ug/L and as described in the Spring 2026 project-specific EIMP, installation of a VIMS is required for each proposed building within the Project Site. The Spring 2026 project-specific EIMP requires NASA and EPA review and approval of the design of the VIMS for each

[12] U.S. Environmental Protection Agency. 2010. *Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California.* August 16.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (11-14-2025)

Figure 3.9-4

NASA, Navy, and MEW Companies Areas of Responsibility, Vapor Intrusion

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building. The appropriate Responsible Party (Navy or MEW Companies) and EPA will require long-term access to conduct the appropriate building-specific monitoring to ensure the implemented VI remedy's effectiveness. On-going operation and management of the VIMS will be performed in accordance with a building-specific operations, monitoring, and maintenance plan to be prepared by the party operating the system once the VIMS has been constructed.

Long-term VI Monitoring Plans for the MEW Site VI Study Area will be developed by the Responsible Parties in accordance with the 2010 VI ROD Amendment and VI Statement of Work. The Long-Term VI Monitoring Plan for the MEW Companies was prepared in 2023 and submitted to EPA but has not yet been approved.[13] Until an approved VIMS program has been developed by the Responsible Parties for the larger MEW VI Study Area, the Master Lessee and the Project Proponent will work with EPA and the appropriate Responsible Party to develop a monitoring program to verify the long-term effectiveness of any implemented VI mitigation measures installed within the Project Site. The proposed project's VIMS must be approved by the EPA prior to occupancy of each building.

Measures to Mitigate Groundwater and Soil Gas Movement

Due to the groundwater contamination in the aquifer underlying the Project Site, the Spring 2026 project-specific EIMP describes required measures that will prevent new construction from creating potential pathways for migration of COPCs in groundwater or soil gas. For example, utility lines installed in trenches or horizontal boreholes in areas where contaminated groundwater or soil gas could potentially flow through utility line backfill material must include the use of low permeability backfill or cutoff walls to reduce potential contaminant migration. Driven piles are not included as part of the proposed project. The proposed project may include piles installed through other construction methods. The Spring 2026 project-specific EIMP requires Santa Clara Valley Water District to review and approved designs that include piles that extend to depths greater than 20 feet (i.e., potentially below the shallow aquifer affected by COPCs). The design will be evaluated for potential for driving affected soil deeper or creating conduits for downward contaminant migration, and measures to prevent migration of COPCs must be included in their design, if necessary. In both situations, the Project Proponent will prepare a design report for review and approval by NASA (and for Santa Clara Valley Water District review if piles are included in the proposed project) describing the measures that will be taken and demonstrating their effectiveness in preventing potential migration of COPCs. The Spring 2026 project-specific EIMP also requires the Project Proponent to submit the design report to EPA and the Regional Water Board for review and concurrence.

Protecting Existing Site Remedies

As presented in the Spring 2026 project-specific EIMP, procedures have been developed to allow for the modification of the existing remediation systems and their monitoring wells if potential conflicts occur between the planned development and the location of the existing systems; these procedures are presented in further detail in the Spring 2026 project-specific EIMP. Close coordination between the Project Proponent, NASA, the Navy, and/or the MEW Companies, as the case may be, and the applicable regulatory agencies, will occur during the design and construction phase of development

[13] Geosyntec. 2023. *Site-Wide Long-Term Vapor Intrusion Operation, Maintenance, Monitoring, and Management Plan, Middlefield-Ellis-Whisman Area and Moffett Field, California.* March 31. As of January 2026, the report has not been posted to the MEW Study Area Superfund Site webpage (https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0904966).

to ensure that measures are taken to protect implemented remediation systems[14] and monitoring wells (or remedies still being investigated or that are under development) for groundwater; any regulatory agency-approved modifications or disturbances[15] to the implemented remediation systems and monitoring wells will be appropriately repaired. Any such modifications will be within the Limits of Work, and are subject to approval by EPA, the Regional Water Board, NASA, and the Navy and/or the MEW Companies, as the case may be.

Preparation of Project Information and Summary of Environmental Conditions

For each phase of the proposed project, the Spring 2026 project-specific EIMP requires that a Project Information and Summary of Environmental Conditions (PISEC) to be prepared by the Project Proponent in advance of any development activities for the phase and provided to NASA, the MEW Companies, EPA, and the Regional Water Board. It is anticipated that project phasing will occur in clusters of two to four buildings per phase. The PISECs will include the following:

- Project description, including a description of the planned development activities for that phase of the Project and key health and safety information, as appropriate;
- Identification of project roles, including contact information for the Project Proponent, contractors, consultants, and oversight agency;
- Project schedule, including start date, phasing, and anticipated durations;
- Deviations from the Spring 2026 project-specific EIMP[16], if any;
- Summary of environmental conditions;
- Applicable land use restrictions and institutional controls; and
- References.

The PISEC for each area must be approved by the appropriate regulatory agencies (EPA and the Regional Water Board) prior to the start of construction activities.

Risk Management during Construction

The Spring 2026 project-specific EIMP summarizes risk management measures that must be implemented during construction to mitigate potential risks to human health and the environment from COPCs. These measures include:

- Review of available information to identify COPCs;
- Development and implementation of a Site-specific health and safety plan that describes health and safety training requirements for on-site workers, personal protective equipment to be used,

[14] Conveyance piping and extraction wells associated with the MEW Companies Ground Water Treatment System (GWTS) is located within the Project Site, and several of the monitoring wells associated with West-Side Aquifer Treatment System (WATS) are located within the Project Site (Figure 3.9-1). NASA has taken over responsibility of the operations, monitoring and maintenance of the WATS from the Navy. Navy monitoring wells are also located within the Project Site.

[15] Any disturbances to the implemented Site remedies must be timely reported to the Responsible Party, NASA, EPA, and Water Board.

[16] Any deviations from the Spring 2026 project-specific EIMP would require approvals from EPA and the Regional Water Board, and justification would be provided in the PISEC.

and other precautions to be undertaken to minimize direct contact with soil, groundwater, and soil vapors;

- Implementation of construction impact mitigation measures, such as implementing dust and odor control measures, decontaminating construction and transportation equipment, implementing storm water pollution controls, and sampling and analyzing groundwater extracted during construction to determine appropriate storage and disposal practices;
- Proper management of asbestos-containing material (ACM); debris and structures containing lead-based paint and/or PCB-containing paint; and PCB-containing equipment or building materials that are removed during development within the Project Site;
- Procedures for the management of abandoned USTs, sumps, pipes, and buried drums or containers that may be encountered during development activities within the Project Site;
- Procedures for the management of dewatering water generated during construction activities;
- Procedures for protecting implemented remedies and the existing groundwater remediation systems (including monitoring wells) during development activities within the Project Site and implementing any approved modifications to the remediation systems and/or remedies; and
- Procedures for the management of soil potentially affected by COPCs that is handled during construction activities. The soil management protocols include screening procedures to identify and manage COPC-affected soil that is excavated during development within the Project Site, as well as contingency procedures to be followed in the event that previously unknown soil contamination is encountered.

The Project Proponent will conduct the necessary environmental sampling and screening of soil and groundwater during development within the Project Site, as further required by the Spring 2026 project-specific EIMP. The Project Proponent will also be responsible for the necessary excavation and reconsolidation or removal of potentially affected soil or groundwater encountered within construction limits/boundaries during construction, as well as subsurface structures, such as unknown USTs that may be encountered within construction areas during construction excavation. The Project Proponent will dispose of potentially affected soils and subsurface structures at an appropriately permitted off-site facility in accordance with all applicable laws and regulations; NASA will be designated as generator of the wastes and will sign all waste manifests. Soil containing concentrations of heavy metals above TCLs may be reconsolidated under buildings or hardscape with EPA and Regional Water Board approval.

Depending on the area in which the excavation occurs and the COPCs detected in groundwater, the Spring 2026 project-specific EIMP provides three options for groundwater produced during dewatering of excavations: (a) used for dust control within the Project Site with NASA approval, (b) with permission of the Responsible Party for any existing or future groundwater treatment system, transported to such groundwater treatment system for treatment and ultimate disposal, or (c) discharged to the sanitary sewer (if a discharge permit can be obtained). Should the Project Proponent be unable to dispose of the dewatering water by one of the options listed above, the Spring 2026 project-specific EIMP requires that the Project Proponent arrange for the treatment and/or disposal of this water at a permitted off-site facility and NASA will be designated as generator of the wastes and will sign all waste manifests.

Post-Construction Risk Management

The Spring 2026 project-specific EIMP also describes precautions that must be implemented by Project Stakeholders to mitigate long-term risks to human health and the environment related to potential exposure to COPCs during periods of normal non-construction activity. These precautions include:

- Notification of future property managers and tenants of known environmental conditions within the Project Site, LUCs, and the requirements of the Spring 2026 project-specific EIMP via a statement of environmental conditions, which will include the key requirements specified in the Spring 2026 project-specific EIMP;
- Additional risk analysis and modification of the Spring 2026 project-specific EIMP, as appropriate, if any relevant change in land use is proposed for the Project Site, if there is a relevant change in any of the implemented remedies within the Project Site, or if any significant change in toxicity values or screening levels for COPCs occurs;
- Restriction of the use of groundwater within the Project Site for drinking water or any other purpose not allowed pursuant to the Spring 2026 project-specific EIMP unless its use is approved by NASA, EPA, the Regional Water Board, and the Santa Clara Valley Water District; exceptions include treated groundwater used for irrigation, industrial heating or cooling, or toilet water;
- Implementation of health and safety and other procedures similar to those described for construction activities at the Project Site for future activities that disturb subsurface soil (e.g., utility repairs) within the Project Site;
- Review of VI monitoring reports prepared by Responsible Parties who inspect, maintain, and monitor same, as they pertain to buildings located within the Project Site; any activity that disturbs the VIMS such as utility penetrations or slab disturbance is required to be repaired to restore the protectiveness of the VIMS (under oversight of applicable regulatory agencies);
- Compliance with LUCs within the Project Site;
- Cooperation with the Responsible Parties and regulatory agencies to provide reasonable access to areas of contamination or other areas upon which any environmental response action is or will be installed or implemented;
- Ongoing operation and maintenance as needed to verify the continued adequacy of implemented remedy, as required by environmental decision documents or the regulatory agencies; and
- Monitoring of changes in COPC toxicity parameters to assess if additional or lesser mitigation may be needed based on an updated understanding of chemical toxicity of reported COPCs within the Project Site.

Potential Exposure Pathways

The intended land uses for the Project Site include Research and Office Uses, Conference Center Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. As a result, the primary potential future receptors potentially include (a) construction workers and maintenance workers; (b) indoor workers, such as office personnel, students, and lab workers; (c) residents at the Student/Faculty Housing; and (d) visitors at the Short-Term Lodging. Potential future receptors may be exposed to COPCs by one or more of the following pathways:

- Inhalation of volatile chemicals from groundwater or soil;
- Dermal absorption due to direct soil and/or groundwater contact;
- Inhalation of airborne suspended soil particulates; and
- Incidental soil ingestion.

VOCs are the primary COPCs found within the Project Site. VOCs in groundwater and soil can volatilize into the pore spaces within unsaturated zone soils and migrate through the soil column and through cracks or penetrations in floors into enclosed indoor spaces, where they can be inhaled by potential receptors. The migration of COPCs from the subsurface into indoor air is called *vapor intrusion*. Vapor intrusion is the primary potentially complete exposure pathway[17] that could affect future indoor residents/visitors and workers within all portions of the Project Site, according to the Hazardous Material Conditions Memorandum.

Target Concentration Levels

Although cleanup standards have been developed for many areas at the Project Site, to simplify implementation of the Spring 2026 project-specific EIMP, TCLs were developed for soil, groundwater, sub-slab vapor, soil gas, and indoor air within the Project Site using (1) adopted cleanup levels in existing EPA decision documents, including the Record of Decision, Fairchild, Intel, and Raytheon Sites, MEW Study Area[18] and the ROD Amendment for the Vapor Intrusion Pathway at the MEW Superfund Study Area;[19] (2) the screening levels currently promulgated by applicable regulatory agencies, including the Regional Water Board's Environmental Screening Levels (ESLs)[20] for commercial/industrial or residential land use, EPA's Regional Screening Levels (RSLs)[21] for commercial/ industrial or residential land use, the California Maximum Contaminant Levels (MCLs),[22] the Federal MCLs,[23] and Toxic Substances Control Act (TSCA) regulations (40 Code of

[17] There are five elements of an exposure pathway:
- Source—how the stressor(s) enter the environment.
- Media—where a stressor moves from its source (air, soil, and/or water).
- Exposure—where receptors contact the media.
- Exposure Route—how the stressor(s) enter the receptor's body (ingestion, inhalation, dermal).
- Receptor—which plants and/or animals are exposed or potentially exposed.

These five elements must be present for an exposure pathway to be complete; otherwise, a pathway is incomplete and there is no exposure (https://www.epa.gov/ecobox/epa-ecobox-tools-exposure-pathways-exposure-pathways-era).

[18] U.S. Environmental Protection Agency. 1989. *Record of Decision, Fairchild, Intel, and Raytheon Sites, Middlefield/Ellis/Whisman (MEW) Study Area, Mountain View, California.* June.

[19] U.S. Environmental Protection Agency. 2010. *Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California.* August 16.

[20] San Francisco Bay Regional Water Quality Control Board. 2025. *Environmental Screening Levels.* July 18 (Rev. 3, September 2025).

[21] U.S. Environmental Protection Agency. 2024. *Regional Screening Levels.* November. Available: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables. Accessed: January 22, 2026.

[22] State Water Resources Control Board. 2025. *MCLs, DLRs, and PHGs for Regulated Drinking Water Contaminants.* September.

[23] U.S. Environmental Protection Agency. 2024a. *PFAS National Primary Drinking Water Regulation.* April.

Federal Regulations [CFR] Section 761) for high occupancy areas, as appropriate; and (3) background concentrations for metals.[24]

Based on historic soil and groundwater data collected within the Project Site, TCLs were identified for several chlorinated VOCs, petroleum hydrocarbons and BTEX compounds, polycyclic aromatic hydrocarbons, PCBs, and Title 22 metals. In addition, PFAS compounds were detected in groundwater in sampling performed in 2021.[25] The Spring 2026 project-specific EIMP describes how the TCLs will be used to determine (a) groundwater management or disposal options; (b) whether excavated soil can be reused as fill within the Project Site and whether additional soil removal should be considered at locations where potential soil contamination is observed during development; and (c) whether vapor intrusion mitigation measures may need to be installed in existing buildings. The identified TCLs are also protective of short-term construction workers, maintenance workers performing periodic subsurface activities, indoor workers, students, and people living in/visiting the Student/Faculty Housing and Short-Term Lodging within the Project Site.

Cleanup levels for sites that are being addressed as part of the NAS Superfund Site and the MEW Superfund Site are those determined by the CERCLA lead agency and presented in the applicable cleanup documents.[26, 27]

3.9.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley elected to use the Santa Clara Hazardous Materials Compliance Division, Santa Clara County Department of Environmental Health, Santa Clara County Airport Land Use Commission and Moffett Federal Airfield Comprehensive Land Use Plan, and Santa Clara County Operational Area Hazard Mitigation Plan, for the analysis of hazards and hazardous materials associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction;

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[24] Scott, C.M. 1995. Background Metal Concentrations in Soils in Northern Santa Clara County, California. In *Recent Geological Studies in the San Francisco Bay Area, Pacific Section of the Society of Economic Paleontologists and Mineralogists*, Volume 76.

[25] Tetra Tech. 2023. *Per- and Polyfluoroalkyl Substances, Site Inspection Report for NASA Ames Research Center.* April.

[26] U.S. Environmental Protection Agency. 1989. *Record of Decision, Fairchild, Intel, and Raytheon Sites, Middlefield/Ellis/Whisman (MEW) Study Area, Mountain View, California.* June.

[27] U.S. Environmental Protection Agency. 2010. *Record of Decision Amendment for the Vapor Intrusion Pathway, Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View and Moffett Field, California.* August 16.

such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use the standards identified in the Santa Clara Hazardous Materials Compliance Division, Santa Clara County Department of Environmental Health, Santa Clara County Airport Land Use Commission and Moffett Federal Airfield Comprehensive Land Use Plan, and Santa Clara County Operational Area Hazard Mitigation Plan, and California Building Standards Code and California Fire Code as part of the analysis of hazards and hazardous materials associated with the project.

This section summarizes plans, policies, and regulations considered in the analysis.

3.9.3.1 Federal Regulations

Federal Toxic Substances Control Act/ Resources Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The RCRA regulations are contained in title 40 of the Code of Federal Regulations (CFR) parts 239 through 282. Regulations include, hazardous materials storage requirements, emergency planning and training, identification and classification of wastes, permitting requirements, etc.

Comprehensive Environmental Response, Compensation, and Liability Act/Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act—otherwise known as CERCLA or Superfund—provides a federal "Superfund" to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, EPA was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup. The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definitions clarifications, and technical requirements have been added to the legislation, including additional enforcement authorities. Title III of SARA authorized the Emergency Planning and Community Right-to-Know Act (EPCRA) identified below.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) is a regulatory agency of the U.S. Department of Labor that originally had federal visitorial powers to inspect and examine workplaces. OSHA's Hazard Communication Standard (HCS) (29 CFR 1910.1200, 1915.1200, 1917.28, 1918.90, and 1926.59) is designed to ensure that information about chemical and toxic substance hazards in the workplace and associated protective measures is disseminated to workers. OSHA also establishes various Occupational Exposure Limits (OELs) as it relates to onsite respiratory hazards (associated with hazardous materials use).

Emergency Planning Community Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act of 1986 was authorized by Title III of the Superfund Amendments and Reauthorization Act to help communities plan for chemical emergencies. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. It requires industry to report on the storage, use, and releases of certain chemicals to federal, state, tribal, territorial, and/or local governments. It also requires these reports to be used to prepare for and protect their communities from potential risks.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) of 1976 provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from the Toxic Substances Control Act, including, among others, food, drugs, cosmetics and pesticides. The TSCA directs EPA to:

- Maintain the TSCA Chemical Substances Inventory,
- require testing of chemical substances where necessary to evaluate potential human health or environmental hazards,
- regulate the manufacture, importation, processing, distribution, use, and/or disposal of any chemical substance that presents an unreasonable risk of injury to human health or the environment, and,
- coordinate certain actions on chemical substances under TSCA with actions taken under other federal laws, including those administered by other federal agencies as well as other laws administered by EPA.

Department of Transportation Hazardous Material Regulations (49 CFR 100–185)

The Hazardous Materials Regulations (HMR) issued by the U.S. Department of Transportation (USDOT) govern the transport of hazardous materials in interstate, intrastate, and foreign commerce. The primary goal of the HMR is the safety of the public and those whose occupations involve preparing hazardous materials for transportation or transporting them. To minimize risks, USDOT has issued specific requirements for shipments of hazardous materials in transportation. The HMR are divided into four general areas:

- Hazardous materials identification and classification;
- Hazard communication (shipping papers, markings, labels, and placards used to communicate hazards of the materials to emergency responders as well as those who handle hazardous materials routinely);
- Packaging requirements; and
- Operational rules.

The USDOT issues most of the “transportation” regulations in 49 CFR. The HMR are in the volume containing Parts 100–185 and govern the transportation of hazardous materials in all modes of transportation—air, highway, rail, and water. The CFR has the force of the law. The regulations are issued by federal agencies to carry out the responsibilities imposed on those agencies by Congress.

CFR, Title 29, Sections 1926.62 and 1910.120

CFR, Title 29, Section 1926.62 Lead

Scope. This section applies to all construction work where an employee may be occupationally exposed to lead. All construction work excluded from coverage in the general industry standard for lead by 29 CFR 1910.1025(a)(2) is covered by this standard. Construction work is defined as work for construction, alteration and/or repair, including painting and decorating. It includes but is not limited to the following:

1. Demolition or salvage of structures where lead or materials containing lead are present;
2. Removal or encapsulation of materials containing lead;
3. New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead;
4. Installation of products containing lead;
5. Lead contamination/emergency cleanup;
6. Transportation, disposal, storage, or containment of lead or materials containing lead on the site or location at which construction activities are performed, and
7. Maintenance operations associated with the construction activities described in this paragraph.

CFR, Title 29, Section 1910.120 Hazardous Waste Operations and Emergency Response

Scope. This section covers the following operations, unless the employer can demonstrate that the operation does not involve employee exposure or the reasonable possibility for employee exposure to safety or health hazards:

i) Clean-up operations required by a governmental body, whether federal, state, local or other involving hazardous substances that are conducted at uncontrolled hazardous waste sites (including, but not limited to, the EPA's National Priority Site List (NPL), state priority site lists, sites recommended for the EPA NPL, and initial investigations of government identified sites which are conducted before the presence or absence of hazardous substances has been ascertained);

ii) Corrective actions involving clean-up operations at sites covered by the RCRA, as amended (42 United States Code [U.S.C.] 6901 et seq.);

iii) Voluntary cleanup operations at sites recognized by Federal, state, local or other governmental bodies as uncontrolled hazardous waste sites;

iv) Operations involving hazardous wastes that are conducted at treatment, storage, and disposal (TSD) facilities regulated by 40 CFR Parts 264 and 265 pursuant to RCRA; or by agencies under agreement with EPA to implement RCRA regulations; and

v) Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.

CFR, Title 40, Parts 761, and 273

Part 761 of 40 CFR, Polychlorinated Biphenyls Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions. This part establishes prohibitions of, and requirements for, the manufacture, processing, distribution in commerce, use, disposal, storage, and marking of PCBs and PCB Items. Substances that are regulated by this part include, but are not limited to: dielectric fluids; solvents; oils; waste oils; heat transfer fluids; hydraulic fluids; paints or coatings; sludges; slurries; sediments; dredge spoils; soils; materials containing PCBs as a result of spills; and other chemical substances or combinations of substances, including impurities and byproducts and any byproduct, intermediate, or impurity manufactured at any point in a process.

Part 273 of 40 CFR, Standards for Universal Waste Management. This part establishes requirements for managing the following:

1. Batteries as described in 40 CFR 273.2;
2. Pesticides as described in Section 273.3;
3. Mercury-containing equipment as described in Section 273.4;
4. Lamps as described in Section 273.5; and
5. Aerosol cans as described in Section 273.6.

Federal Aviation Administration Part 77

Federal Regulation Title 14, Part 77, establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the construction or alteration on operating procedures,
- Determining the potential hazardous effect of the proposed construction on air navigation,
- Identifying mitigating measures to enhance safe air navigation, and
- Charting of new objects.

Notification allows the Federal Aviation Administration (FAA) to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace.

Hazardous Materials Transportation Act

The Hazardous Materials Transportation Act (HMTA), enacted in 1975, is the principal federal law in the United States regulating the transportation of hazardous materials. Its purpose is to "protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce" under the authority of the U.S. Secretary of Transportation.

National Response Framework

The National Response Framework (NRF) is a guide to how the nation responds to all types of disasters and emergencies. It is built on scalable, flexible, and adaptable concepts identified in the National Incident Management System to align key roles and responsibilities.

The NRF is structured to help jurisdictions, citizens, nongovernmental organizations and businesses:

- Develop whole community plans
- Integrate continuity plans
- Build capabilities to respond to cascading failures among businesses, supply chains, and infrastructure sectors
- Collaborate to stabilize community lifelines and restore services

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

The NADP includes planning principles that help guide the development throughout the entirety of NASA ARC. The planning principles include environmental issues management. The environmental issues management planning principle indicates that all partners will be required to comply with the NASA NRP EIMP (discussed below) and NASA Ames' Environmental Compliance Program.

Ames Environmental Procedures and Guidelines

The Ames Environmental Procedures and Guidelines ensure that NASA ARC meets all federal, State, and local hazardous material and hazardous waste regulations.

Ames Hazardous Waste Minimization Plan

A number of protocols are in place throughout NASA ARC to control the hazards associated with hazardous substances and to minimize the risks of exposure or spills. NPR and NASA ARC environmental work instructions ensure that the center meets all federal, State, and local hazardous materials and hazardous waste regulations. The Hazardous Waste Minimization Plan prescribes actions that will reduce NASA ARC's hazardous waste output.

Ames Hazardous Waste Disposal Procedures

The Hazardous Waste Disposal Procedures at NASA ARC require that all hazardous wastes be transported to secure, ventilated packaging areas, from which they are packaged and transported to state and federally authorized treatment or disposal sites.

NASA Research Park Environmental Issues Management Plans

The NRP EIMPs provide detailed information on environmental conditions, including existing LUCs, and a decision framework for management of residual contaminants in structures and environmental media. The EIMPs are updated periodically and as needed to incorporate new conditions, including LUCs. It should be noted that these NRP EIMPs do not apply to the proposed project.

Conversely, the Spring 2026 project-specific EIMP does apply to the proposed project and is described in detail in Section 3.9.2.3, *Spring 2026 Project-Specific Environmental Issues Management Plan*. The Spring 2026 project-specific EIMP draws upon information from the prior 2005 NRP EIMP and subsequent addenda and includes updates to reflect current regulatory requirements and to specifically address the Project Site (Spring 2026 EIMP, p. 1-2).

NASA Spill Prevention Control and Countermeasures Plan

Federal oil pollution prevention regulations are located in the CFR Title 40 Part 112. These regulations require the preparation and implementation of Spill Prevention, Control and Countermeasure (SPCC) plans for all non-transportation related facilities that store oil in excess of the quantities below and that have either discharged or could reasonably be expected to discharge oil into navigable waters of the United States or its adjoining shorelines:

- Aggregate aboveground container capacity greater than 1,320 gallons (only containers greater than or equal to 55 gallons are counted)
- Aggregate completely buried storage capacity greater than 42,000 gallons

3.9.3.2 State Regulations

California Environmental Protection Agency/Department of Toxic Substances Control

The California Environmental Protection Agency is a cabinet-level agency within the government of the State of California (State). The agency's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality. CalEPA enforces provisions in Government Code Section 65962.5, commonly referred to as the "Cortese List."

DTSC takes enforcement action against violators; oversees cleanup of hazardous wastes on contaminated properties; makes decisions on permit applications from companies that want to store, treat, or dispose of hazardous waste; and protects consumers against toxic ingredients in everyday products. DTSC's hazardous waste regulations are in CCR Title 22, Division 4.5, *Environmental Health Standards for the Management of Hazardous Waste*.

California Division of Occupational Safety and Health

The Division of Occupational Safety and Health of California (DOSH, but more commonly known as Cal/OSHA) is an agency of the Government of California established by the California Occupational Safety and Health Act of 1973.

Administered by the California Department of Industrial Relations, Cal/OSHA's mission is to protect public health and safety through research and regulation related to hazards on the job in California workplaces as well as on elevators, amusement rides, and ski lifts, and related to the use of pressure vessels such as boilers and tanks. Cal/OSHA requires qualifying organizations to create illness and injury prevention programs to identify and eliminate dangers before accidents and illnesses occur. Cal OSHA CCR Title 8 includes regulations associated with asbestos related work (Sections 341.6–341.14) and hazardous substances training and information (Sections 337–339).

California Office of Emergency Services

The State is responsible for mitigating the effects of disasters and protecting Californians' lives and property. The California Office of Emergency Services (Cal OES) serves as the state's leadership hub during all major emergencies and disasters. Cal OES mandates associated with evacuations are included under CCR Title 19 Public Safety Division 2.

Government Code Section 65962.5

California Government Code Section 65962.5 requires the California Environmental Protection Agency to develop at least an annually updated Cortese List.

The following are the data resources that provide information regarding the facilities or sites identified as meeting the Cortese List requirements:

- List of Hazardous Waste and Substances sites from the DTSC Brownfields and Environmental Restoration Program (Cleanup Program) EnviroStor database.
- List of Leaking Underground Storage Tank Sites from the State Water Resources Control Board's GeoTracker database.
- List of solid waste disposal sites identified by State Water Board with waste constituents above hazardous waste levels outside the waste management unit.
- List of Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the State Water Board.
- List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code, identified by DTSC.

The EnviroStor database currently contains 575 sites, including the federal Superfund sites. It also maintains corrected and partially corrected sites, which are listed as certified with operation and maintenance sites.

Hazardous Waste Control Act (Section 25100 et seq.)

The Hazardous Waste Control Act (California Health and Safety Code Division 20, Chapter 6.5, Article 2, Section 25100, et seq.) authorizes DTSC and local certified unified program agencies to regulate facilities that generate or treat hazardous waste.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

California Environmental Protection Agency Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) was created in 1993 by SB 1082. The statutes and regulations are found in Health and Safety Code Division 20, Chapter 6.11, and CCR, Title 27, Division 1, Subdivision 4, Chapter 1, respectively. The Secretary of the California Environmental Protection Agency is responsible for coordinating and evaluating the administration of the Unified Program and certifying Unified Program Agencies (UPAs). UPAs are accountable for carrying out responsibilities previously handled by approximately 1,300 different State and local agencies.

State Water Resources Control Board Construction General Permit

The State Water Board adopted the statewide National Pollutant Discharge Elimination System (NPDES) Construction General Permit to regulate stormwater discharges associated with construction activities. The permit is applicable to construction projects that meet certain criteria. Generally, construction activities that disturb 1 acre of soil or more, or activities that disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 acre or more, are required to obtain coverage under the Construction General Permit. The permit does not apply to disturbances on land surfaces related solely to growing crops or performing agricultural operations, such as disking, harrowing, terracing, leveling, or preparing soil.

The NPDES Construction General Permit requires development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified qualified SWPPP developer. A SWPPP is a site-specific plan for achieving compliance with stormwater regulations through the use of best management practices (BMPs).

California Labor Code Division 5, Parts 1, 6, 7, and 7.5

Division 5 regulates the conditions for a safe workplace. The Division of Occupational Safety and Health (DOSH, also known as Cal/OSHA) obtains its legal authority from this Division. DOSH's many responsibilities include inspecting nearly all elevators in California.

- Part 1: Occupational Safety and Health
- Part 6: Tanks and Boilers
- Part 7: Volatile Flammable Liquids
- Part 7.5: Refinery and Chemical Plants

California Building Standards Code and California Fire Code

The California Building Standards Code is the building code for California and Title 24 of the CCR. It is maintained by the California Building Standards Commission, which is granted the authority to oversee processes related to the California building codes by California Building Standards Law. The California building codes under Title 24 are based on several criteria: standards adopted by states, based on national model codes; national model codes adapted to meet California conditions; and standards passed by the California legislature that address concerns specific to California.

California Fire Code

The California Fire Code (CFC) is a set of regulations under the California Building Standards Code (Part 9) addressing fire safety and fire prevention in buildings and structures throughout the state. The 2022 CFC is based on the 2021 International Fire Code, with amendments and additions. The CFC contains regulations safeguarding life and property from dangerous conditions arising from the storage, handling, and use of hazardous materials.

California Health and Safety Code

The California Health and Safety Code is the codification of general statutory law covering the subject areas of health and safety in the state of California. It is one of the 29 California Codes and was originally signed into law by the governor of California on April 7, 1939.

The health and safety code is the section of California statutory law that addresses health, safety, health care, environmental law, and narcotics. Health and Safety Code, Division 20, Chapter 6.95 applies to the preparation of hazardous materials release response plans and inventories.

California Code of Regulations CCR, Worker Safety Standards, Title 8, Section 5192

OSHA requires employers to provide the following training to employees who are designated to respond to a hazardous materials spill. Employees may NOT respond to spills if they have not been certified to do so. The following courses include student materials and certification.

- Hazardous Materials Awareness Level Training (8 hours)

  First Responders at the Awareness Level are individuals who are likely to witness or discover a hazardous substance release and who have been trained to initiate an emergency response sequence by notifying the proper authorities of the release. They would take no further action beyond notifying the authorities of the release. This course meets requirements of 29 CFR 1910.120 and Title 8 Section 5192.

- Hazardous Materials Operations Level Training (24 hours)

  First Responders at the Operations Level are individuals who respond to releases or potential releases of hazardous substances as part of the initial response to the site for the purpose of protecting nearby persons, property, or the environment from the effects of the release. They are trained to respond in a defensive fashion without actually trying to stop the release. Their function is to contain the release from a safe distance, keep it from spreading, and prevent exposures. This course meets requirements of 29 CFR 1910.120 and Title 8 Section 5192.

- Hazardous Materials Technician Level Training (32 hours)

  Hazardous materials technicians are individuals who respond to releases or potential releases for the purpose of stopping the release. They assume a more aggressive role than a First Responder at the Operations Level in that they will approach the point of release in order to plug, patch or otherwise stop the release of a hazardous substance. Also, technicians will decontaminate the release area and properly prepare materials for proper disposal. This course meets requirements of 29 CFR 1910.120 and Title 8 Section 5192.

- Hazardous Material Incident Commander (additional 8 hours beyond technician level)

  This course is designed to provide participants with an increased capability to assume the role of an incident commander during hazardous materials events; with specific emphasis on personnel safety and management of the hazardous-material scene. This course is targeted and helpful for anyone who may assume an incident command system commander general staff role on a hazardous-material incident. This is an excellent scene management class for any multi-agency emergency. Any public or private agency which has "scene management responsibility must have this level or training under federal/state OSHA regulations. This course meets requirements of Title 8 Section 5192. Must also complete the 32-hour technician course for this certification.

SB 1889, Accidental Release Prevention Law

Environmental Protection: Actions against a Public Agency. In October 1996, California passed Senate Bill 1889, now incorporated as Health and Safety Code Sections 25531 to 25534.3. This bill

established the merging of the federal and State programs for the prevention of accidental releases of regulated toxic and flammable substances. Cal OES has adopted regulations to eliminate the need for two separate and distinct risk management programs. The incorporation of the federal and State requirements has been designated as the California Accidental Release Prevention Program.

3.9.3.3 Local Regulations

Santa Clara County Hazardous Materials Compliance Division

The Hazardous Materials Compliance Division (HMCD), established in 1983 with adoption of the local Hazardous Materials Storage Ordinance (HMSO), regulates the storage of hazardous materials above and below ground. This ordinance, the first of its kind in the state, has several key provisions that, when implemented by businesses, provide protection for public health and the environment.

In addition to the HMSO, HMCD enforces the County's Toxic Gas Ordinance and Non-Point Source (Urban Runoff) Ordinance.

Passage of Senate Bill 1082 in 1993 required consolidation of state-mandated hazardous waste and hazardous materials management programs within a single Unified Program, to be administered by a Certified Unified Program Agency (CUPA). These programs are:

1. Hazardous Waste Generator Program
2. Tiered Permitting Program
3. Hazardous Materials Business Plan
4. Aboveground Storage Tank Program
5. Underground Storage Tank Program
6. California Accidental Release Program

HMCD has been certified by the state to be the CUPA to administer these six programs throughout Santa Clara County, except in the cities of Santa Clara, Gilroy, and Sunnyvale, which are themselves CUPAs. It is their responsibility to consolidate administration of the six programs by consolidating permits and billing of permit fees, and developing a single inspection and enforcement program. HMCD works closely with the city jurisdictions that serve as Participating Agencies within the County Unified Program to develop and implement all required Unified Program elements.

Santa Clara County Department of Environmental Health

The Department of Environmental Health (DEH) enhances the quality of life for those who live and work in Santa Clara County by protecting public health, protecting the environment, educating the public, and implementing and enforcing local, state, and federal environmental laws. DEH includes Consumer Protection, Solid Waste, and Hazardous Materials Divisions. DEH regulates retail food safety, swimming pools, small drinking water systems, on-site wastewater systems, above and underground storage tanks and cleanup, and medical and hazardous materials and waste. Also, DEH serves as the Solid Waste Local Enforcement Agency.

Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan

The Airport Land Use Commission was established to provide for appropriate development of areas surrounding public airports in Santa Clara County. It is intended to minimize the public's exposure to excessive noise and safety hazards, and to ensure that the approaches to airports are kept clear of structures that could pose an aviation safety hazard.

Due to the Project Site's proximity to Moffett Federal Airfield, the Project Site is within the area covered by the Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan (Moffett CLUP), adopted in 2012 by the Santa Clara County Airport Land Use Commission. The Moffett CLUP is intended to safeguard the general welfare of inhabitants within the vicinity of Moffett Federal Airfield and aircraft occupants. Although NASA has not elected to apply the Moffett CLUP to NASA ARC, compatibility criteria contained within the Moffett CLUP are applicable to development within the Project Site. The Moffett CLUP is also intended to ensure that surrounding new land uses will not affect Moffett Federal Airfield's continued operation. The Moffett CLUP provides a guide to NASA management, as custodian, for decisions that affect the future of Moffett Federal Airfield and provides a basis for additional assessments, if required. The Project Site is not within an Airport Safety Zone, as defined in the Moffett CLUP.

Santa Clara County Operational Area Hazard Mitigation Plan

Hazard mitigation is any sustainable action that reduces or eliminates long-term risk to people and property from future disasters. Mitigation planning breaks the cycle of disaster damage, reconstruction, and repeated damage. Hazard mitigation includes long-term solutions that reduce the impact of disasters in the future. The Santa Clara County Hazard Mitigation Program has four goals:

1. Reduce the vulnerability of communities to disasters and their effects
2. Promote individual and community safety and their ability to adapt to changing conditions to withstand and rapidly recover from disruptions due to emergencies
3. Promote community vitality after a disaster
4. Lesson response and recovery resource requirements after a disaster

The mitigation program uses a three-pronged approach to engage County departments and jurisdictions within the Operational Area and accomplish the mitigation program goals.

3.9.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project associated with hazardous materials in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on hazardous materials is discussed separately in Section 4.5.8, *Hazards and Hazardous Materials*, in Chapter 4, *Environmental Impact Statement*.

3.9.5 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, the project would have the potential to have a significant effect on hazards and hazardous materials if it would result in any of the conditions listed below:

Would the project:

- Create a significant hazard to the public of the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people living or working in the project area would the project result in a safety hazard or excessive noise for people residing or working in the project area?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to hazards and hazardous materials?

3.9.6 Methods for Analysis

As described in Section 3.9.3, *Plans, Policies, and Regulations*, the use of hazardous materials is subject to numerous laws and regulations. In most cases, the laws and regulations pertaining to hazardous materials management minimize risks to human health and the environment. The impact analysis identifies areas where impacts related to the use of hazardous materials during project construction and operation would be subject to applicable laws and regulations. To assess the proposed project's potential to create a significant hazard for the public or environment related to hazardous materials, the impact analysis considers the potential pathways through which exposure to hazards could occur.

3.9.7 Impacts Not Evaluated in Detail

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are currently no K–12 schools at NASA ARC; there are no schools within 0.25 mile of the Project Site. The closest schools are the Bay Area Arabic School at 310 Easy Street in the city of Mountain View and the Yew Chung International School of Silicon Valley at the same address; these schools are approximately 0.8 mile from the Project Site. Therefore, the proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school, resulting in no impact. This topic is not evaluated further.

Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped Very High Fire Hazard Severity Zones in Santa Clara County to help responsible local agencies identify measures to reduce the potential for loss of life, property, and resources from wildland fire. The Project Site is located on federal land within NASA ARC; thus, the Project Site is designated as a Federal Responsible Area and contains no State Responsibility Areas. In addition, according to CAL FIRE mapping, no land adjacent to the Project Site is designated as a Very High Fire Hazard Severity Zone.[28] The closest Fire Hazard Severity Zone to the Project Site is located approximately 5.4 miles to the southwest, near the western portion of Cupertino.[29] Therefore, the CEQA Proposed Project and the CEQA Reduced Density Alternative would not be located within or near a wildland area and would not be subject to significant risk involving wildland fires. Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, resulting in no impact. This topic is not evaluated further.

[28] California Department of Forestry and Fire Protection. 2026. *Fire Hazard Severity Zones*. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed: March 17, 2026.

[29] California Department of Forestry and Fire Protection. 2025. *Local Responsibility Area Fire Hazard Severity Zones Santa Clara County – Unincorporated LRA*. Available: https://calfire.app.box.com/s/wahuw9ny7cgn89xpxh7092ur50r1pwvj/file/1785860703681. Accessed: April 20, 2026.

3.9.8 Impacts and Mitigation Measures

Impact CEQA-HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Project construction under the CEQA Proposed Project would involve routine transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and caulking. Such transport, use, and disposal must comply with applicable regulations discussed under Section 3.9.3, *Plans, Policies, and Regulations* such as RCRA hazardous materials "cradle to grave" regulations (40 CFR), OSHA hazardous materials handling and training regulations, DOT regulations (49 CFR 100–185), etc. Although solvents, paints, oils, grease, and caulking would be transported, used, and disposed of during the construction phase, these materials are handled on a temporary basis and are typically used in construction projects and thus, would not represent the routine transport, use, and disposal of acutely hazardous materials. Any spills or releases involving these materials are expected to be small, localized, and cleaned as they occur. In addition, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented during project construction for coverage under the required Construction General Permit,[30] in accordance with the requirements of the SWRCB. A SWPPP requires implementation of best management practices for hazardous materials storage and soil stockpiles, inspections, maintenance, employee training, and the containment of releases to prevent runoff to stormwater collection systems or waterways.

The proposed project would demolish all existing buildings, building slabs, pavement sections, utility infrastructure, sidewalks, and other hardscape within the Limits of Work. As discussed under Section 3.9.2, *Affected Environment/Environmental Setting*, structures within the Project Site may contain hazardous building materials such as asbestos-containing material (ACM) and lead-based paint (LBP), and polychlorinated biphenyl (PCBs). As such, demolition of existing structures may expose

[30] State Water Resources Control Board. 2025. *Welcome to the Construction Stormwater Program*. Available: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed: September 16, 2025.

construction workers, the public, or the environment to hazardous building materials. The level of potential impact depends on the age, construction, and building materials of each building. Any activity that involves cutting, grinding, or drilling during building renovation or demolition, or relocation of underground utilities, could release friable asbestos fibers or lead dust, unless proper precautions are taken. Potential exposure to hazardous building materials would be reduced through appropriate identification, removal, and disposal according to applicable regulations, as described in the NASA ARC *Asbestos Management Plan* (part of the NASA ARC Health and Safety Manual).

According to the Spring 2026 project-specific EIMP, many of the existing buildings within Project Site are known to contain ACM as a result of base-wide asbestos surveys conducted in 1993 and 2001, and sampling of several individual buildings that was conducted as a result of historical building modifications. In addition to the buildings with confirmed or suspect ACM present, other buildings are assumed to likely contain ACM due to their age. Lead-based paint has been used in existing buildings and residues from lead-based paint occur in surface soil adjacent to buildings where lead-based paint has been used. Moreover, PCBs are known to be present in paint and building materials from buildings constructed between 1950 and 1979 and thus, PCBs are likely to be present on-site. Accordingly, the CEQA Proposed Project could create a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction, and this impact would be potentially significant before mitigation.

Operations

Under the CEQA Proposed Project, the proposed project would be developed with research and office uses (consisting of offices, laboratories, R&D, and related amenities), conference center uses, active uses, student/faculty housing, and short-term lodging. Due to the nature of R&D uses, the possibility exists for hazards related to the handling of hazardous materials and waste to occur. Laboratories constructed and operated as part of the CEQA Proposed Project and CEQA Reduced Density Alternative will comply with required federal, State, and local standards, in accordance with Ames Policy Directive (APD) 8829.1.[31] A small portion of the proposed laboratories associated with the Research and Office Uses would be categorized by biosafety levels (BSLs). Only BSL-1, BSL-2, and BSL-3 laboratories are included in the scope of the CEQA Proposed Project and CEQA Reduced Density Alternative; the proposed project would not include BSL-4 laboratories.[32] Because of the nature of laboratory uses, the possibility exists for hazards related to the handling of hazardous materials (e.g., chemicals and chemical mixtures).

[31] APD 8829.1 establishes the construction permit process and requirements for all construction activities at NASA ARC. The required standards include 29 Code of Federal Regulations (CFR) 1926, Safety and Health Regulations for Construction, and 29 CFR 1910, Occupational Safety and Health Standards, as well as the current adopted California Fire Code and California Building Code requirements addressing the prevention and control of dangerous conditions related to the storage, use, and handling of hazardous materials (California Code of Regulations [CCR] Title 24, Part 9).

[32] BSL-1 laboratories are used to study infectious agents or toxins not known to consistently cause disease in healthy adults. BSL-2 laboratories are used to study moderate-risk infectious agents or toxins that pose a risk if accidentally inhaled, swallowed, or exposed to the skin. BSL-3 laboratories are used to study infectious agents or toxins that may be transmitted through the air and cause potentially lethal infection through inhalation exposure. BSL-3 and BSL-4 laboratories are intended for the storage and study of acutely hazardous biomaterials (e.g., viruses, pathogens, microbes). More information about BSLs is available at https://www.cdc.gov/training/quicklearns/biosafety/#:~:text=The%20biosafety%20levels%20range%20from,level%20on%20the%20following%20screens.

In accordance with standard industry practices, the CEQA Proposed Project and any future tenant that handles qualifying hazardous materials, would be required to meet relevant Biosafety in Microbiological and Biomedical Laboratories (BMBL) and National Institute of Health (NIH) guidelines. In addition, any future tenant that handles qualifying hazardous materials would be required to adhere to all applicable federal, state and local regulations for qualifying hazardous materials, seek consultation with the County of Santa Clara, Department of Environmental Health[33][34] (DEH), and apply for applicable permits for any regulated substance that may pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive. Tenants must comply with the safety procedures mandated by applicable federal, state, and local laws and regulations (e.g., RCRA, California Hazardous Waste Control Law, Title 8 of the California Code of Regulations) to ensure that risks resulting from the routine use of hazardous materials and disposal of hazardous wastes remain less than significant. R&D laboratories would also meet relevant Biosafety in Microbiological and Biomedical Laboratories (BMBL) and National Institute of Health (NIH) guidelines applicable to BSL laboratories, ensuring safe operating conditions and minimizing any risk of upset. In addition, registration of hazardous materials through the SMCEHD Hazardous Material Business Plan Program[35] (under CA Health and Safety Code, Division 20, Chapter 6.95) would be required to ensure safe and responsible handling of those qualifying materials. Adherence to the Santa Clara County Hazardous Materials Storage Ordinance, Division B11-270 to 351would ensure proper storage of these materials. Moreover, compliance with the California Fire Code (CCR Title 24 Part 9) and National Fire Protection Association requirements would ensure that buildings are equipped with safety measures to minimize potential impacts of the presence of hazardous materials.

Conference Center uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging uses included in CEQA Proposed Project would involve the use of hazardous chemicals that are typical in retail, meeting space, and office settings (e.g., toners, paints, kitchen and restroom cleaners, other maintenance materials). Landscape maintenance on the Project Site would require the use of a wide variety of commercial products that are formulated with hazardous materials (e.g., fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides). Such materials are considered common and are unlikely to be stored or used in large quantities. Any spills involving these materials would be small and localized and would be cleaned up as they occur.

Finally, compliance with the California Department of Transportation (Caltrans) regulations would ensure that all necessary safety precautions would be taken during transport of hazardous materials during all phases of the project. Therefore, mandatory compliance with all applicable federal, state, and local regulations pertaining to the safe use, storage, transport and disposal of hazardous materials would ensure that the proposed project would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during operation, and this impact would be less than significant.

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33 County of Santa Clara. 2026. *Hazardous materials*. Available: https://deh.santaclaracounty.gov/hazardous-materials. Accessed: January 1, 2026.

34 The County of Santa Clara DEH has jurisdiction in the vicinity of the Project Site.

35 County of Santa Clara. 2025. *Hazardous Materials Business Plan*. Available: https://deh.santaclaracounty.gov/hazardous-materials/hazardous-materials-business-plan. Accessed: December 30, 2025.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

The Project Proponent and/or its contractor(s) shall implement the Spring 2026 project-specific Environmental Issues Management Plan (EIMP) prepared for the proposed project and approved by the EPA and Regional Water Board to (1) comply with land use restrictions and institutional controls (LUCs and (2) take reasonable steps with respect to environmental conditions within the Project Site to ensure that occupancy and development activities within the Project Site proceed in a manner that is protective of human health and the environment and is coordinated with the ongoing response actions being undertaken by the Responsible Parties. The project-specific EIMP shall include, but not be limited to, the following:

- A summary of environmental conditions;
- A summary of potential exposure pathways from COPCs in groundwater, soil vapor, and soil;
- Target cleanup levels;
- A baseline of minimum design considerations for new construction for vapor intrusion mitigation and utility construction;
- Risk management measures to be implemented during construction;
- Post-construction risk management procedures for future subsurface activities; and
- Procedures for long-term compliance with the project-specific EIMP, CERCLA (including vapor intrusion monitoring and associated operation and management of all engineering controls installed), and other environmental requirements.[36]
- The Project Information and Summary of Environmental Conditions (PISEC) for each area shall be approved by the appropriate regulatory agencies (EPA and the Regional Water Board) prior to the start of construction activities.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires a pre-demolition survey along with a building evaluation for PCBs and other chemicals to identify the presence of hazardous building materials in buildings to be demolished. In addition, the Spring 2026 project-specific EIMP provides protocols for proper handling and disposal of these materials. Based on the above, impacts related to creating a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction would be less than significant with mitigation.

[36] The Master Lessee and NASA will maintain documentation of notification of the known environmental conditions within the Project Site and of the requirements of the Spring 2026 project-specific EIMP to the property manager, and tenants and other entities leasing or otherwise exercising control over space within the Project Site. Property managers, tenants, or others exercising control over space within the Project Site will inform their construction contractors and maintenance workers about the Spring 2026 project-specific EIMP, as needed, to ensure compliance.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Because the Variant would have the same type of land uses, would disturb the same footprint, and would conduct the same construction activities proposed and evaluated under the CEQA Proposed, the analysis of the CEQA Proposed Project would apply here. Because the Variant proposes more Research and Office Uses, it is possible that the quantity of hazardous materials used and hazardous waste produced would be greater under the Variant; however, the potential types of impacts (associated with handling of hazardous materials) would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires a pre-demolition survey along with a building evaluation for PCBs and other chemicals to identify the presence of hazardous building materials in buildings to be demolished. In addition, the Spring 2026 project-specific EIMP provides protocols for proper handling and disposal of these materials. Based on the above, impacts related to creating a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristics of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be conducted in the same Limits of Work and would include the same land uses (albeit less space for Research and Office Uses) and as such, the analysis of the CEQA Proposed Project would apply here. Since the CEQA Reduced Density Alternative proposes less Research and Office Uses, it is possible that the quantity of hazardous materials used and hazardous waste produced would be less under this alternative; however, the potential types of impacts (associated with handling of hazardous materials) would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires a pre-demolition survey along with a building evaluation for PCBs and other chemicals to identify the presence of hazardous building materials in buildings to be demolished. In addition, the Spring 2026 project-specific EIMP provides protocols for proper handling and disposal of these materials. Based on the above, impacts related to creating a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Reduced Density Alternative. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Because the Variant would have the same type of land uses, the same general site plan, and the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative, the analysis of the CEQA Reduced Density Alternative would apply here. Because the Variant proposes more Research and Office Uses, it is possible that the quantity of hazardous materials used and hazardous waste produced would be greater under the Variant; however, the potential types of impacts (associated with handling of hazardous materials) would be the same as those analyzed under the CEQA Reduced Density Alternative and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires a pre-demolition survey along with a building evaluation for PCBs and other chemicals to identify the presence of hazardous building materials in buildings to be

demolished. In addition, the Spring 2026 project-specific EIMP provides protocols for proper handling and disposal of these materials. Based on the above, impacts related to creating a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction would be less than significant with mitigation.

Impact CEQA-HAZ-2: Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The Project Site is located within the footprints of both the MEW Superfund Site and former Naval Air Station Moffett Field Superfund site. As discussed in Section 3.9.2, *Affected Environment/ Environmental Setting*, on-site soil and groundwater have been affected historically by contamination associated with both the MEW Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field. To fully characterize and address on-site conditions, multiple site-specific investigations along with associated remediation activities have been conducted within the vicinity of the Project Site.

The technical reports described in Section 3.9.2, *Affected Environment/ Environmental Setting,* include the most recent environmental management plans and remediation progress reports and are used in support of the conclusions. In particular, the Spring 2026 project-specific EIMP considers (relevant) previous investigations conducted on-site and summarized the current environmental conditions on the Project Site. In addition, the Spring 2026 project-specific EIMP includes required procedures to address the known remaining environmental conditions within the Project Site, along with contingencies to be taken in the event that previously unknown environmental conditions are encountered during development. As a result of the historical information analyzed (additional details found under Section 3.9.2, *Affected Environment/ Environmental Setting*), the Spring 2026 project-specific EIMP concludes that the following environmental conditions must be considered during project implementation:

- The presence of chlorinated VOCs in groundwater, soil gas and soil within the site, predominantly resulting from the migration of contaminated groundwater from the upgradient MEW Superfund Site as well as NASA sources within NASA ARC. The Spring 2026 project-specific

EIMP identifies chlorinated VOCs as the primary chemical of potential concern (COPC), including trichloroethene (TCE) and cis 1,2 dichloroethene.

- Fuel oil and solvent tanks associated with a former dry-cleaning facility that operated in the 1990s. Tank 68 (and its associated Sump 91) have not received regulatory closure and are considered to be part of IR Site 14, an active Navy remediation site. Impacted media is listed as soil and COPCs include VOCs (undisclosed). According to the Spring 2026 project-specific EIMP, Tank 68 was a 2,000-gallon UST (used to store waste solvents) that was initially closed in place and later removed during remediation of Building 88 in the mid-1990s.
- The presence of total petroleum hydrocarbons (TPH) and other fuel-related constituents, including BTEX compounds, in on-site groundwater and soil. This is associated with previously decommissioned USTs, sumps, hydraulic lifts, a hydraulic oil reservoir tank, a waste oil line, and a subgrade clarifier.
- The presence of per- and polyfluoroalkyl substances (PFAS) compounds in on-site groundwater resulting from various historical site uses.
- The potential for elevated concentrations of polychlorinated biphenyls (PCBs) in soil surrounding buildings or transformers.
- The potential for elevated concentrations of lead in soil surrounding buildings.
- Existing subsurface structures (e.g., sumps or tanks) that may require removal.
- Hazardous building materials containing asbestos-containing materials, lead-based paint, along with PCB containing equipment in existing buildings.
- Protection of existing remediation infrastructure, including networks of groundwater monitoring wells and groundwater extraction and conveyance piping.

Primary potential future receptors and potential pathways of exposure are identified in the Spring 2026 project-specific EIMP and summarized in Section 3.9.2.3, *Spring 2026 Project-Specific Environmental Issues Management Plan*. Also, vapor intrusion was noted as the primary potentially complete exposure pathway that could affect future indoor residents and workers within all portions of the Project Site.

Affected Soil and Groundwater

Contaminated on-site soil or groundwater exists within the Project Site. Depending on the contaminant characteristics and extent of contamination in particular locations, ground disturbance and excavation activities conducted during construction are likely to encounter contaminated soil. In addition, dewatering within the Project Site could result in the withdrawal of contaminated groundwater. If groundwater contains contaminants above regulatory levels, a release could present a hazard to people or the environment unless it is effectively managed. Encountering contaminated soil or groundwater would create an exposure risk to construction personnel and the surrounding environment. Accordingly, impacts related to affected soil and groundwater would be potentially significant before mitigation.

Subsurface Infrastructure

As described in the Spring 2026 project-specific EIMP, numerous USTs and sumps were known to exist within the Project Site. However, all known USTs and sumps within the Project Site have been removed as well as confirmed and assigned *no further action* status by the Regional Water Board. IR

Site 15[37] within Parcels 5A/5B includes sumps located around the former Moffett Federal Airfield, two of which are located within or adjacent to the Project Site. According to the Spring 2026 project-specific EIMP, if residential use is planned within the IR Site 15 boundary, the Master Lessee will work with the Regional Water Board to evaluate if additional investigation and/or remediation is needed.

An unknown UST or sump, or other undocumented subsurface feature (such as buried drums and containers and abandoned pipes) could be discovered during construction activities. Accordingly, impacts related to subsurface infrastructure would be potentially significant before mitigation.

Hazardous Building Materials

As mentioned previously, many of the buildings within the Project Site contain hazardous materials, such as ACM and LBP, and electrical equipment containing PCBs. Accordingly, impacts related to hazardous building materials would be potentially significant before mitigation.

Active Remediation Infrastructure

The MEW Companies have constructed and are currently operating groundwater extraction wells and associated conveyance piping and monitoring wells within the Project Site. In addition, the Navy has constructed remediation infrastructure on-site, including the installation of groundwater monitoring wells. This infrastructure could be damaged during construction of the CEQA Proposed Project. In addition to requiring potentially costly repairs, the contaminants within the system(s) could be re-released into the environment (in the same location or in other locations of the Project Site). Accordingly, impacts related to active remediation infrastructure would be potentially significant before mitigation.

Vapor Intrusion

The Project Site is almost entirely within the MEW Vapor Intrusion (VI) Study Area (of the VI Pathway) for the MEW Superfund Site. Thus, implementation of the project in the area proposed could result in vapor intrusion exposure risks. Accordingly, the CEQA Proposed Project could have a significant impact related to vapor intrusion. Refer to Impact CEQA-HAZ-1 regarding the potential risk of upset of hazardous materials associated with the operation of R&D laboratories on-site.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1: Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

The Spring 2026 project-specific EIMP provides the minimum design considerations for new construction, risk management measures that must be implemented during construction within the Limits of Work, postconstruction risk management procedures for future subsurface activities within the Limits of Work, as well as procedures for long-term compliance with the Spring 2026

[37] Parcels 5A and 5B within the Project Site contain three CERCLA-related sites (IR Site 14-North, IR Site 15, and IR Site 18) and are adjacent to and affected by an additional CERCLA site (IR Site 28). The Spring 2026 project-specific EIMP contains additional information related to these sites.

project-specific EIMP and other environmental regulatory requirements. The Spring 2026 project-specific EIMP is currently under review by the EPA and Regional Water Board, the regulatory agencies that will approve of the EIMP. Prior to commencement of construction of the proposed project, the EPA and the Regional Water Board will review and approve the Spring 2026 project-specific EIMP. Compliance with the Spring 2026 project-specific EIMP will be monitored by those same expert agencies.

With respect to affected soil and groundwater, the Project Proponent would be required to implement recommendations found in the Spring 2026 project-specific EIMP related to the handling of affected media. These measures would minimize the potential exposure of construction personnel to contaminated media and would mitigate risks to human health and the environment from exposure to COPCs on the Project Site. Applicable measures include but are not limited to health and safety requirements for workers, dust and particulate control, decontamination, storm water pollution control, soil management protocols and dewatering protocols. With respect to subsurface infrastructure, management and disposal measures would be implemented to reduce potential exposure risks to construction personnel and the surrounding environment should they contain hazardous materials or affected media. With respect to hazardous building materials, the proposed project would adhere to the NASA ARC *Asbestos Management Plan* (part of the NASA ARC Health and Safety Manual) requiring a pre-demolition survey for the presence of ACM, and the removal and management of ACM in accordance with all applicable government regulations and with oversight by the NASA ARC Safety, Health & Medical Services Office. In addition, the Project Proponent would conduct a pre-demolition survey (and a building evaluation for PCBs and other chemicals) to identify the presence of hazardous building materials. Management and disposal of these materials would be conducted in a manner consistent with state laws and applicable requirements. With respect to active remediation infrastructure, the Project Proponent would be required to coordinate with the Responsible Party for the protection of the said infrastructure. In addition, the Project Proponent would implement measures during construction to further protect the integrity of the remediation infrastructure on-site, the MEW Companies groundwater remediation system, and the MEW, Navy, and NASA monitoring wells during development. With respect to vapor intrusion, design-specific measures include the implementation of engineering controls, the design of VI mitigation, and monitoring of VI mitigation effectiveness. Post construction mitigation includes long term monitoring and verification of vapor intrusion mitigation adequacy.

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. Based on the above, impacts related to creating a hazard to the public or the environment through reasonably forseeable upset and accident conditions involving the release of hazardous materials would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA

Proposed Project. Because the Variant would have the same type of land uses, would disturb the same footprint, and would conduct the same construction activities proposed and evaluated under the CEQA Proposed Project, the analysis of the CEQA Proposed Project would apply here. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. Based on the above, impacts related to creating a hazard to the public or the environment through reasonably forseeable upset and accident conditions involving the release of hazardous materials would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristics of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be conducted in the same Limits of Work and would include the same land uses (albeit less space for Research and Office Uses) and as such, the analysis of the CEQA Proposed Project would apply here. The potential types of impacts would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. Based on the above, impacts related to creating a hazard to the public or the environment through reasonably forseeable upset and accident conditions involving the release of hazardous materials would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Reduced Density Alternative. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of

Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Because the Variant would have the same type of land uses, would occur in the same footprint, and would include the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative, the analysis of the CEQA Reduced Density Alternative would apply here. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Reduced Density Alternative and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. Based on the above, impacts related to creating a hazard to the public or the environment through reasonably forseeable upset and accident conditions involving the release of hazardous materials would be less than significant with mitigation.

Impact CEQA-HAZ-3: Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, would it create a significant hazard to the public or the environment?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

As stated in Section 3.9.2 *Affected Environment/Environmental Setting,* on-site soil and groundwater have been affected by contamination associated with the MEW Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field. Also, the Project Site is located within the footprints of both the MEW Superfund Site and the former Naval Air Station Moffett Field Superfund site. In addition, numerous other potential sources of contamination (associated with underground storage tanks and sumps containing petroleum hydrocarbons) have been investigated and remediated within the Project Site, according to the Spring 2026 project-specific EIMP. Thus, the Project Site has a long history of environmental releases, investigations and remediation activities, which have resulted in multiple environmental listings including those meeting the requirements of a Cortese List site. As a result of the environmental history available for the site (and historical contamination associated with on-site features), the Spring 2026 project-specific EIMP concludes that several environmental conditions are to be considered during project implementation. Potential impacts to the project as a result of historical contamination (associated with affected sites within and near the Project Site) are analyzed under Impact CEQA-HAZ-2, and thus, the analysis identified under Impact CEQA-HAZ-2 would also apply to potential impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site. Accordingly, impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires that protocols be implemented that would address potential short-term and long-term exposure to affected soil, soil vapor (in the form of vapor intrusion), and groundwater as a result of project implementation on a contaminated site. Based on the above, impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Because the Variant would have the same type of land uses, would disturb the same footprint, and

would conduct the same construction activities proposed and evaluated under the CEQA Proposed Project, the analysis of the CEQA Proposed Project would apply here. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires that protocols be implemented that would address potential short-term and long-term exposure to affected soil, soil vapor (in the form of vapor intrusion), and groundwater as a result of project implementation on a contaminated site. Based on the above, impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristics of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be conducted in the same Limits of Work and would include the same land uses (albeit less space for Research and Office Uses) and as such, the analysis of the CEQA Proposed Project would apply here. The potential types of impacts would be the same as those analyzed under the CEQA Proposed Project and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires that protocols be implemented that would address potential short-term and long-term exposure to affected soil, soil vapor (in the form of vapor intrusion), and groundwater as a result of project implementation on a contaminated site. Based on the above, impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Reduced Density Alternative. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Because the Variant would have the same type of land uses, the same general site plan, and the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative, the analysis of the CEQA Reduced Density Alternative would apply here. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Reduced Density Alternative and impacts would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1.

Significance after Mitigation

With implementation of Mitigation Measure HAZ-1, which requires compliance with the Spring 2026 project-specific EIMP, human health and the environment would be protected. The Spring 2026 project-specific EIMP requires that protocols be implemented that would address potential short-term and long-term exposure to affected soil, soil vapor (in the form of vapor intrusion), and groundwater as a result of project implementation on a contaminated site. Based on the above, impacts associated with being exposed to contaminated media as a result of project implementation within a Cortese List site would be less than significant with mitigation.

Impact CEQA-HAZ-4: For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people living or working in the project area?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Due to the Project Site's proximity to Moffett Federal Airfield, the Project Site is within an FAA notification area and height restriction area with a contour range of 157 feet above mean sea level based in National Geodetic Vertical Datum (NGVD) of 1988 to 182 feet above mean sea level based in NVGD of 1988, per Federal Aviation Regulation Part 77, Surfaces Map, for Moffett Federal Airfield.[38] Federal Aviation Regulation Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, establishes imaginary surfaces for airports and runways as a means of identifying areas of airspace wherein objects would be obstructions to air navigation.

Development within the Project Site would be subject to certain height limitations pursuant to Federal Aviation Regulation Part 77.9 of the CFR notification requirements, which would require consultation with the FAA prior to construction of any structure or object within Federal Aviation Regulation Part 77 surfaces. Compatibility with Federal Aviation Regulation Part 77 would be contingent on issuance of a Determination of No Hazard from the FAA for any proposed structures. The proposed building heights under the CEQA Proposed Project would comply with FAA requirements. However, the use of construction equipment (such as cranes) or the construction of buildings with heights in excess of 55 feet above ground level could pose a safety hazard for construction workers and future residents. With the issuance of a Determination of No Hazard from the FAA, project construction and operation would comply with Moffett Federal Airfield's CLUP safety guidelines and would not pose a risk to aviation safety. In addition, and as discussed in Section 3.12, *Noise*, of this joint EIR/EIS, impacts related to aircraft noise would be considered less than significant.

As discussed in Section 2.3.2.6, *Open Space and Landscaping*, in Chapter 2, *Project Description*, of this joint EIR/EIS, the Project Site currently has approximately 245 trees. In total, implementation of the CEQA Proposed Project would include removing approximately 227 trees and planting approximately 1,283 new trees, resulting in a total of approximately 1,301 trees on the Project Site. The increased landscaping could potentially attract more birds to the Project Site, which could in turn increase the potential for aircraft-involved bird strike due to the Project Site's proximity to Moffett Federal Airfield. However, the Project Site and surrounding area are developed. Given that the area surrounding the Project Site is developed, large numbers of birds are not expected to be flying over the Project Site for substantial bird-strikes to occur. While more birds may be present at the Project Site compared to existing conditions, given the urbanized nature of the area, the introduction of more trees is unlikely to substantially change the existing bird population dynamics and flight patterns.

[38] Santa Clara County Airport Land Use Commission. 2012. Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan. Figure 6: Moffett Federal Airfield FAR Part 77 Surfaces. Adopted November 2, 2012; amended December 19, 2018.

Moffett CLUP Policy G-6 states that proposed uses that may cause a hazard to aircraft in flight are not permitted within the airport influence area (AIA) and includes uses that attract birds (such as certain agricultural uses, sanitary landfills). The CEQA Proposed Project does not propose these or any other type of use that would be expected to attract large flocks of birds. Moreover, the project would adhere to the Advisory Circular on Airport Construction Standards AC 150/5370-10, which include seeding guidelines (901-2.1) which require that consideration be given to eliminate the use of seeds that could attract birds or large animals. Therefore, the CEQA Proposed Project would be consistent with applicable safety- and noise-related policies under the Moffett Federal Airfield. As such, the project would not pose a safety hazard or generate excessive noise for people working in the project area. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Because the Variant would have the same type of land uses, would disturb the same Limits of Work, and would conduct the same construction activities proposed and evaluated under the CEQA Proposed Project, the analysis of the CEQA Proposed Project would apply. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Proposed Project. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristics of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be conducted in the same Limits of Work, would conduct the same construction activities, and would include the same land uses (albeit less less space for Research and Office Uses). The potential types of impacts under the CEQA Reduced Density Alternative would be the same as those analyzed under the CEQA Proposed Project. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Reduced Density Alternative. Under the Variant, the CEQA Proposed Project or the CEQA Reduced Density Alternative would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Because the Variant would have the same type of land uses, would disturb the same Limits of Work, and would conduct the same construction activities proposed and evaluated under the CEQA Reduced Density Alternative, the analysis of the CEQA Reduced Density Alternative would apply. The potential types of impacts under the Variant would be the same as those analyzed under the CEQA Reduced Density Alternative. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-HAZ-5: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Project development would not include any permanent changes to existing public roadways that provide emergency access to the Project Site or surrounding area. The project consists of redevelopment that includes academic and research facilities; a conference center; retail, food and beverage, collaborative workspaces; student/faculty housing; short-term lodging; transportation networks; and open spaces as well as landscaped spaces. It is possible that construction activity associated with the project could affect emergency response or evacuation plans due to temporary construction barricades or other roadway obstructions that could impede emergency access on-site. However, compliance with Part 6 of the Manual on Uniform

Traffic Control Devices, which outlines guidance and standards for accommodating emergency vehicles in construction areas (as described in Section 3.16, *Transportation and Traffic*) would minimize potential impacts associated with emergency response times and access; therefore, emergency response access or emergency evacuation plan routes would not be impeded significantly during the project's construction period.

As discussed under Impact CEQA-TRAN-4 in Section 3.16, *Transportation and Traffic*, project traffic would not cause a substantial adverse effect on emergency access. The project would not modify public streets outside the Project Site. All public streets outside the Project Site would continue to accommodate emergency vehicles, similar to existing conditions. As required by the California Vehicle Code, non-emergency vehicles would continue to yield the right-of-way to emergency vehicles on both internal NASA ARC and project roadway network and external public streets serving NASA ARC.

Also, the project would not involve any permanent features that would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. On the contrary, the project would include multi-modal transportation network and infrastructure improvements that would enhance vehicular access through the Project Site. This would allow for better vehicular circulation and would also improve police, fire, and emergency medical service vehicle access through the Project Site. Therefore, development of the project is not expected to interfere with any Cal OES mandates (under CCR Title 19 Public Safety Division 2) associated with evacuations in the vicinity of the Project Site nor emergency response requirements of the Ames Research Center Emergency Management Plan. Rather, access to the Project Site would be improved by incorporating the internal street improvements.

Furthermore, R&D tenants who handle hazardous materials would be required to adhere to all applicable regulations including the California Hazardous Materials Release Response Plans and Inventory Law (also known as the Hazardous Materials Business Plan program) and the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (the County of Santa Clara's Hazardous Materials Compliance Division under the Department of Environmental Health is the city's Certified Unified Program Agency or CUPA). Adherence to the aforementioned regulations and plans would ensure a proper response and evacuation in the event of an emergency associated with a hazardous material release.

Therefore, the project would not impair implementation of or interfere with an adopted emergency response plan or emergency evacuation plan and this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project, including the multi-modal transportation network and infrastructure.

Because the Variant has the same circulation improvements as the CEQA Proposed Project, the potential impacts related to adopted emergency response plans or emergency evacuation plans would not change from those for the CEQA Proposed Project. The impact is considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a similar mix of uses as under the CEQA Proposed Project. Therefore, the potential impacts to adopted emergency response plans or emergency evacuation plans under the CEQA Reduced Density Alternative would be the same as the CEQA Proposed Project and the impact is considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would not include residential land uses, however, would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative, including the multi-modal transportation network and infrastructure.

Since the Variant has the same circulation improvements as the CEQA Reduced Density Alternative, the potential impacts to adopted emergency response plans or emergency evacuation plans would not change from those for the CEQA Reduced Density Alternative and the impact is considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.9.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.9.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to emitting hazardous emissions or handle hazardous or acutely hazardous materials within 0.25 mile of an existing or proposed school, and no cumulative analysis is required. In addition, the proposed project would result in no impact related to exposing people or structures to a significant risk of loss, injury, or death involving

wildland fires, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.9.8, *Impacts and Mitigation Measures*, above.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for hazards and hazardous materials is site-specific due to the fact that a proposed project's potential impacts are individual and localized, depending on the Project Site, the historic uses, and the different levels of excavation, cut-and-fill work, and grading. However, as presented above, the Project Site is located within a large regional plume of chlorinated VOCs associated with the MEW Superfund Site. Thus, the cumulative geographic context consists of sites adjacent to the Project Site, sites within NASA ARC, and sites in the immediate vicinity of NASA ARC.

Impact CEQA-C-HAZ-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to hazards and hazardous materials? (Less than Cumulatively Considerable with Mitigation)

Hazardous waste generated during construction of any project would be collected, properly characterized for disposal, and transported in compliance with applicable regulations. In addition, affected sites under development would undergo remediation under the oversight of applicable State and local agencies, effectively reducing the number of contaminants found in the cumulative geographic context. Hazardous materials are strictly regulated by local, State, and federal laws. Specifically, these laws are designed to ensure that hazardous materials do not result in a gradual increase in toxins in the environment. For each of the cumulative projects, various project-specific measures are and would be implemented (similar to the measures being proposed in this section) as a condition of development approval to mitigate risks associated with exposure to hazardous materials. However, due to the Project Site's historical land use and current environmental conditions, cumulative projects in the vicinity of the Project Site and NASA ARC could result in construction impacts related to the routine transport, disposal, or handling of hazardous materials; intermittent use and transport of petroleum-based lubricants, solvents, and fuels; and transport of affected media to and from sites. As discussed above, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could create a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction. Therefore, the impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact related to hazards and hazardous materials.

Implementation of Mitigation Measure HAZ-1 requires compliance with the Spring 2026 project-specific EIMP, which would protect human health and the environment. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would not result in a cumulatively considerable contribution to significant environmental impacts on hazards and hazardous materials.

3.10 Hydrology and Water Quality

3.10.1 Introduction

This section evaluates the potential impacts on hydrology and water quality that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical studies prepared for the project:

- *Environmental Issues Management Plan Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California* (Spring 2026 project-specific EIMP) prepared by EKI, Spring 2026[1] (Appendix 2-2 of this joint environmental impact report/environmental impact statement [EIR/EIS]).
- *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.
- *Berkeley Space Center at NASA Research Park Aquatic Resources Delineation Report* (Aquatic Resources Delineation) prepared by ICF, April 2026 (Appendix 3.4-2 of this joint EIR/EIS)

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to hydrology and water quality include a recommendation by the U.S. Environmental Protection Agency (EPA) Region 9 to incorporate analysis of changes in stormwater volume and potential changes in contaminants or pollutants as well as impervious/pervious surfaces on the Project Site. The City of Sunnyvale also included a recommendation to consider the adequacy of stormwater service to the Project Site. These issues are addressed under Impacts CEQA-HYD-1 and CEQA-HYD-3.

3.10.2 Affected Environment/Environmental Setting

3.10.2.1 Regional Setting

Surface Hydrology

The Project Site is within the Saratoga Creek-Frontal San Francisco Bay Estuaries Watershed of the larger San Francisco Bay Basin Watershed. The Saratoga Creek-Frontal San Francisco Bay Estuaries Watershed encompasses approximately 195 square miles. Headwaters of Saratoga Creek are in the Santa Cruz Mountains. Other major creeks in the watershed include San Tomas Aquino Creek, Stevens Creek, Permanente Creek, Adobe Creek, and Barron Creek. Creeks in the watershed drain a highly urbanized watershed and flow into San Francisco Bay. Stevens Creek is a perennial stream

[1] The Spring 2026 project-specific EIMP is currently under review by the EPA and the San Francisco Bay Regional Water Quality Control Board, the regulatory agencies that will approve of the EIMP. NASA has previously reviewed and provided comments on the EIMP.

that discharges to the San Francisco Estuary north of Moffett Field Naval Air Station. Stevens Creek is less than 0.6 mile west of the Project Site and is separated by adjacent existing development.

Historically, the vicinity of the Limits of Work was composed of tidal marshes and marsh transition zones with a meandering system of tidal sloughs and intermittent and ephemeral creeks. However, levees, fill, and drainage ditches have modified the area; the natural drainage system and previous tidal effects have generally been removed. Currently, the Project Site is fully developed and covered with a substantial amount of impervious hardscape, including roofs, surface parking lots, streets, and paths, which cover approximately 70 percent of the Project Site.

Water Quality

Water quality in a typical surface water body is influenced by processes and activities that take place within the watershed. The quality of the stormwater runoff from the Project Site and surrounding development is typical of urban watersheds where water quality is affected primarily by discharges from both point and nonpoint sources. Point-source discharges are discharges that one can point to as known sources of pollutants, while nonpoint source discharges generally result from diffuse sources, such as land runoff, precipitation, or seepage. Point and nonpoint sources include outfalls, winter storms, overland flows, exposed soil, roofs, parking lots, and streets.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) requires the State Water Resources Control Board (State Water Board) or a Regional Water Quality Control Board (Regional Water Board) to adopt basin plans for the protection of water quality. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) specifies region-wide and water body–specific beneficial uses and sets numeric and narrative water quality objectives for surface waters. The Basin Plan specifies beneficial uses that apply to water bodies with potential to be affected by the proposed project, as shown in Table 3.10-1.[2]

Table 3.10-1. Beneficial Uses for Surface Waters with Potential to Be Affected by the Proposed Project

Water Body	Designated Beneficial Uses
Stevens Creek	FRSH; GWR; COLD, MIGR; RARE; SPWN; WARM; WILD; REC-1; REC-2

Source: San Francisco Bay Regional Water Quality Control Board. 2024. *Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).* Originally published January 18, 2007. Last updated in 2024. Available: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html. Accessed: August 12, 2025.

Acronyms:

COLD: Cold Freshwater Habitat	FRSH: Freshwater Replenishment
GWR: Groundwater Recharge	MIGR: Fish Migration
RARE: Preservation of Rare and Endangered Species	REC-1: Water Contact Recreation
REC-2: Noncontact Water Recreation	SWPN: Fish Spawning
WARM: Warm Freshwater Habitat	WILD: Wildlife Habitat

Section 303(d) of the federal Clean Water Act (CWA) requires states to make a list of waters that are not attaining water quality standards. The San Francisco Bay Regional Water Board has not listed Stevens Creek as an impaired water body. However, Stevens Creek drains into South San Francisco

[2] San Francisco Bay Regional Water Quality Control Board. 2024. *Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan).* Originally published January 18, 2007. Last updated in 2024. Available: https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html. Accessed: August 12, 2025.

Bay, which is listed as an impaired water body. The 303(d)-listed impairments for South San Francisco Bay shown in Table 3.10-2 are based on the 2024 California Integrated Report.

Table 3.10-2. Water Quality Impairments within the Vicinity of the Limits of Work

Water Body	Listed Impairment	Potential Sources	EPA TMDL Report Completion
South San Francisco Bay	Chlordane	Unknown	2037
	DDT	Unknown	2037
	Dieldrin	Unknown	2037
	Dioxin compounds (including 2,3,7,8-TCDD)	Unknown	2037
	Furan compounds	Unknown	2037
	Invasive species	Unknown	2037
	Selenium	Unknown	2037
	Mercury	Unknown	02/12/2008
	PCBs, including dioxin-like	Unknown	03/29/2010

Source: State Water Resources Control Board. 2024. *2024 California Integrated Report*. Partially approved by EPA on December 13, 2024. Accessed: August 12, 2025.
Acronyms: DDT: dichlorodiphenyltrichloroethane
EPA: U.S. Environmental Protection Agency
TMDL: total maximum daily load
PCBs: polychlorinated biphenyls
2,3,7,8-TCDD: 2,3,7,8-tetrachlorodibenzo-p-dioxin

South San Francisco Bay is designated as impaired for mercury. Fish tissue collected from San Francisco Bay often contains relatively high mercury concentrations. Sources of mercury include runoff from historic mines, urban runoff, wastewater discharges, atmospheric deposition, and resuspension of historic deposits of mercury-laden sediment already in San Francisco Bay. Most of the historic mercury deposits date back to the gold rush of the 1800s when mercury was mined throughout the Coastal Range and used in the Sierra Nevada to extract gold. The largest source of mercury is the Central Valley where rivers carry mercury from remote regions to San Francisco Bay. The U.S. Environmental Protection Agency (EPA) approved a Basin Plan amendment, incorporating a total maximum daily load (TMDL) for mercury in San Francisco Bay, and an implementation plan to achieve the TMDL, which became effective on November 7, 2007.

Groundwater

The Project Site is within the Santa Clara Valley Groundwater Basin, Santa Clara subbasin. The Santa Clara subbasin covers an area of approximately 153,600 acres. It is bound by the Diablo Range to the west and the Santa Cruz Mountains to the east. The subbasin extends from the northern border of Santa Clara County to the groundwater divide near the town of Morgan Hill. Groundwater in the subbasin generally follows ground surface topography, flowing northerly toward San Francisco Bay. A large inland valley is the dominant geohydrologic feature in the subbasin.[3]

Recharge in the Santa Clara subbasin occurs primarily through infiltration from streambeds and percolation resulting from precipitation. The Santa Clara Valley Water District conducts an artificial recharge program in the subbasin. From the early 1900s to the mid-1960s, groundwater levels have

[3] California Department of Water Resources. 2004. *Santa Clara Valley Groundwater Basin, Santa Clara Subbasin Bulletin 118.* February 27.

declined due to groundwater pumping, which induced subsidence and degraded groundwater quality through saltwater intrusion in the shallow aquifer adjacent to San Francisco Bay. Prolonged drought resulted in lower groundwater levels and storage in the Santa Clara subbasin, prompting water use reduction in 2014, 2015, and 2016 in accordance with Valley Water's Water Shortage Contingency Plan. Full recovery of groundwater levels and storage was observed by 2017 due to community water use reduction, retailer shifts to treated surface water, and increased managed recharge.[4] In 2024, countywide recharge (172,200 acre-feet [AF]) exceeded groundwater pumping (127,000 AF) due to below-average pumping, above-average rainfall, and the availability of surface water for managed recharge.[5] The Department of Water Resources (DWR) determined that the Santa Clara subbasin is a high-priority basin. Groundwater pumping exceeds natural replenishment, and managed recharge is needed to ensure a balanced water budget and avoid chronic overdraft. Due to managed recharge of local imported water and in-lieu recharge activities, the Santa Clara subbasin is not in a condition of chronic overdraft.[6] Groundwater management policies in the subbasin, including strategies and groundwater management programs, are provided in the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins.* More information regarding the Groundwater Management Plan are provided in Section 3.10.3.2 *State Regulations*. other Recent countywide monitoring has indicated that groundwater quality and seawater intrusion trends are generally stable or improving. California's groundwater standards are designed to protect state aquifers and maintain safe drinking water standards. Groundwater quality in the Santa Clara subbasin is generally good in principal aquifer zones, with median total dissolved solids (TDS) below the secondary drinking water standard of 500 milligrams per liter (mg/L) and the median nitrate level below the primary drinking water standard of 10 mg/L. Nitrate and TDS concentrations are generally stable or decreasing over time. Nitrates and per- and polyfluoroalkyl substances (PFAS) are the primary groundwater quality concerns in the subbasin. Samples from tested water supply wells indicated that water from 90 percent of the wells was below maximum contaminant levels (MCLs).[7]

Existing beneficial uses of the Santa Clara subbasin include municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply. There are several hazardous-material sites (i.e., Superfund sites) within or surrounding the Project Site, as well as hazardous-material release sites, that have affected localized groundwater quality. The Project Site is located within the NASA NRP portion of the Naval Air Station (NAS) Moffett Field Superfund Site, and soil and groundwater on the Project Site have been affected through historical use by the Navy, as well as by the migration of groundwater containing chlorinated volatile organic compounds (VOCs) from the upgradient Middlefield-Ellis-Whisman (MEW) Superfund Site located south of the Project Site in the city of Mountain View. Therefore, the untreated groundwater underlying the Project Site cannot be used for drinking water supplies or other beneficial uses. Additional information on hazardous-material sites within or surrounding the Project Site is provided in Section 3.9, *Hazards and Hazardous Materials*, of this EIR/EIS, as well as in Appendix 2-2, *Environmental Issues Management Plan*, and Appendix 3.9-1, *Hazardous Material Conditions Memorandum*.

4 Valley Water. 2021. *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*.

5 Santa Clara Valley Water District. 2025. *Water Year 2024 Groundwater Report for the Santa Clara and Llagas Subbasins.* March.

6 Valley Water. 2021. *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*.

7 Ibid.

Flood Hazards

Regional flooding is caused by freshwater flows in major streams that outfall to the San Francisco Bay, along with saltwater flooding along the bayfront and the effects of high tides. Some areas are designated as special flood hazard areas. These areas can be flooded during large storms, including a 1 percent annual storm event, also known as a 100-year flood. Prior to construction of National Aeronautics and Space Administration Ames Research Center (NASA ARC), surface drainage at the Project Site flowed toward Stevens Creek and ultimately north toward San Francisco Bay. Low lying areas, especially areas adjacent to the San Francisco Bay are susceptible to flooding. Historically, tidal marsh covered a large area including a portion of the northern area of what is now ARC.[8] Earthen levees were originally constructed to enclose salt ponds, but did not provide adequate protection against extreme freshwater and saltwater flooding events.[9] Protective levees were also constructed to prevent flooding but were inadequate during high tides, including the 2-year and 100-year tide. The area was subject to the 100-year Stevens Creek flood until 1982 when the Santa Clara Valley Water District made substantial channel and levee improvements. Flood improvements include major modifications to the Stevens Creek dam in 1985–1986 to address seismic stability and spillway capacity issues. In 1985, an additional 231,000 cubic yards of material was also added to the Stevens Creek dam, raising it 10 feet.[10]

A flood insurance rate map (FIRM) is an official Federal Emergency Management Agency (FEMA) map of a community. It is used to delineate both the special flood hazard areas and the flood-risk premium zones that are applicable to a community. Areas of the city of Santa Clara have FIRM maps that were completed in 2009, although a small area of the city has updated flood zone delineations from 2024. The area outside of Moffett Field is within FEMA Flood Zone X (shaded), an area with a reduced flood risk because of levees, as shown in Figure 3.10-1, FEMA Flood Zones. North of Moffett Field is FEMA flood Zone AE, the 100-year floodplain where base flood elevations are known. However, the majority of Moffett Field, including the entire Project Site, is within FEMA Zone D, an area with possible but undetermined flood hazards. Zone D corresponds to areas landward of levee systems that do not meet FEMA's accreditation standards and indicates that while flood risk remains, the probability of that flood risk has not been quantified.[11]

A tsunami is a series of ocean waves caused by the displacement of a large volume of water, typically resulting from an undersea earthquake or landslide. As depicted on the Tsunami Inundation Map for Emergency Planning prepared by the California Emergency Management Agency and California Geological Survey, some areas in the city immediately adjacent to the San Francisco Bay are within a tsunami inundation area. However, the Project Site is not within a tsunami inundation area.[12]

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8 NASA Ames Research Center. 2015. *Environmental Resources Document*. National Aeronautics and Space Administration Ames Research Center. Prepared by Earth Resources Technology, Inc. March.

9 Santa Clara County Flood Control and Water District. 1973. *Summary of the Baylands Salt Water Flood Control Planning Study*. January.

10 Santa Clara Valley Water District. 2025. *Stevens Creek Dam and Reservoir*. Available: https://www.valleywater.org/accordion/stevens-creek-dam-and-reservoir. Accessed: November 14, 2025.

11 Federal Emergency Management Agency. 2020. *Understanding Zone D for Levees: "Areas of Undetermined Flood Hazards"*. Available: https://www.fema.gov/sites/default/files/2020-08/fema_understanding-zone-D-levees.pdf. Accessed: November 14, 2025.

12 State of California. 2021. *Tsunami Hazard Area Map, Santa Clara County.* Produced by the California Geological Survey and the California Governor's Office of Emergency Services. Accessed: August 14, 2025. Displayed at multiple scales.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

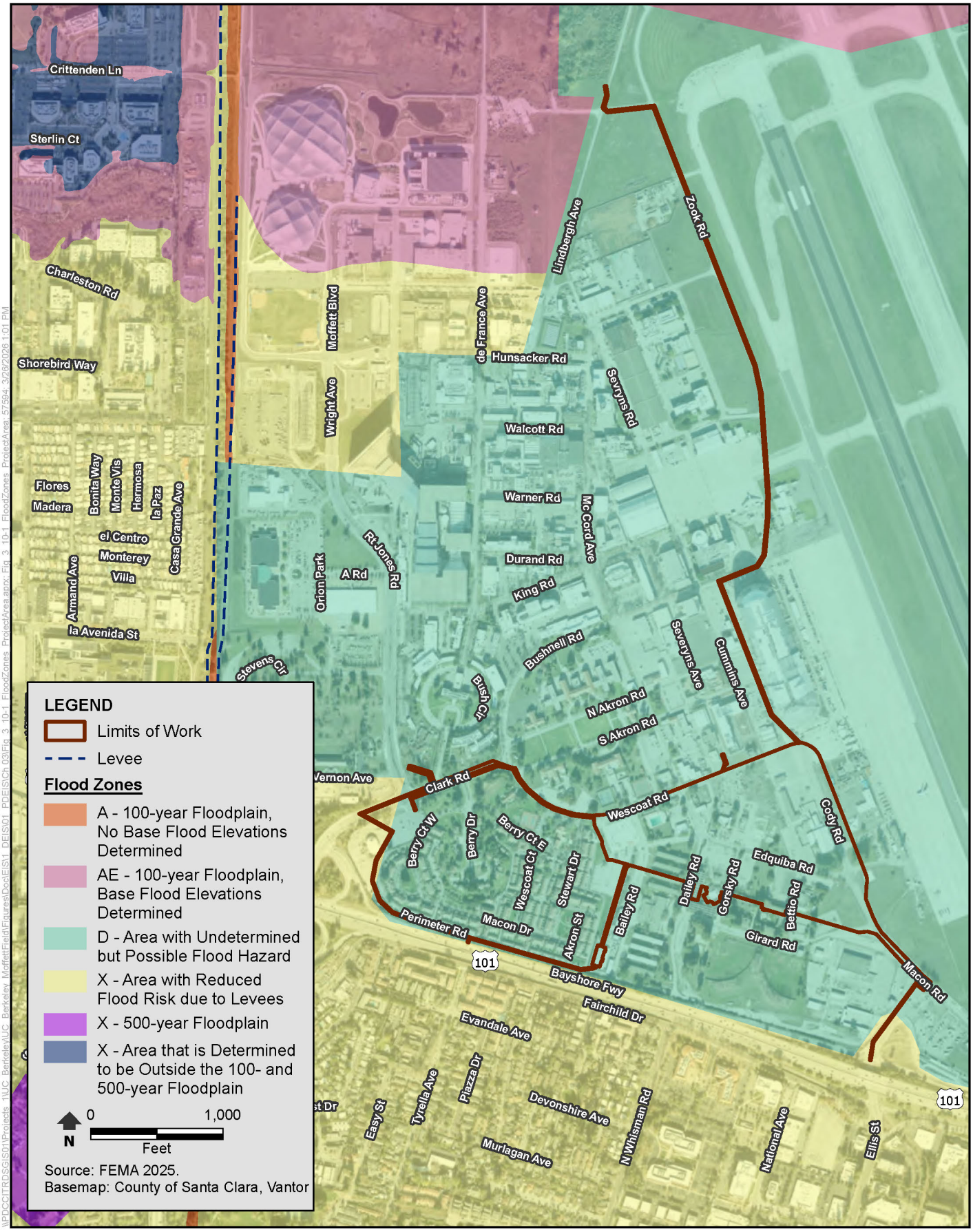


Figure 3.10-1
FEMA Flood Zones
Berkeley Space Center at NASA Research Park

Seiche occurs in an enclosed or partially enclosed body of water, such as a lake or reservoir. San Francisco Bay is a large, open body of water with no immediate risk of seiche. No larger bodies of water are near the Project Site. There would be minimal to no risk of inundation from a seiche event in the vicinity of the Project Site.

Sea Level Rise

Projected sea level rise (SLR), an effect of climate change, is expected to increase the number of areas that experience coastal flooding along the San Francisco Bay in the future. Increases in sea level are already being observed along Santa Clara County's coast. Coastal and low-lying areas, such as the Project Site, are particularly vulnerable to SLR. More specifically, SLR is a concern for the future, particularly in combination with storm events and coastal flooding. A scenario with 100-year high tides, taking into account SLR over a 50- or 100-year horizon, would substantially increase the risk of flooding in the vicinity of the Project Site.[13]

Projections regarding the extent of SLR go from low-risk scenarios up to high-risk scenarios. According to the mid-century (2050) high-risk scenario, 1.3 feet of SLR would not inundate the Project Site or the Limits of Work. With the end-of-century (2100) high-risk scenario (i.e., 6.5 feet of SLR), the Project Site would not be inundated. However, the Limits of Work, immediately south of the eastern diked marsh and western diked marsh (adjacent to Zook Road), would be inundated.[14]

3.10.2.2 Project Site

Surface Hydrology

NASA ARC contains two stormwater drainage systems – the Western Drainage System and the Eastern Drainage System, as shown in Figure 3.10-2, NASA Overall Existing Storm Drain System. The majority of the Project Site is in the Western Drainage System, which encompasses five subsystems that drain north to the western diked marsh or the eastern diked marsh, both of which are approximately 1 mile north of the Project Site. The diked marshes ultimately discharge farther north and into NASA ARC's stormwater retention pond (SWRP). Stormwater passes through a stormwater settling basin prior to discharging to the SWRP north of the Project Site. The SWRP does not have an outfall. During most of the year, water leaves the pond through evapotranspiration. Only a portion on the southeastern edge of the Project Site is in the Eastern Drainage System. Stormwater within the Eastern Drainage System flows to the Northern Channel. According to the Aquatic Resources Delineation, approximately 0.014 acre of palustrine emergent wetland is 33 feet outside of the Limits of Work. The palustrine emergent wetland is part of a larger SWRP. No surface water bodies are within the Limits of Work, and there are no major stormwater facilities in the Limits of Work. The existing NASA Ames storm drain system north of the Project Site is at capacity; the stormwater infrastructure has not been upgraded since 2001.[15]

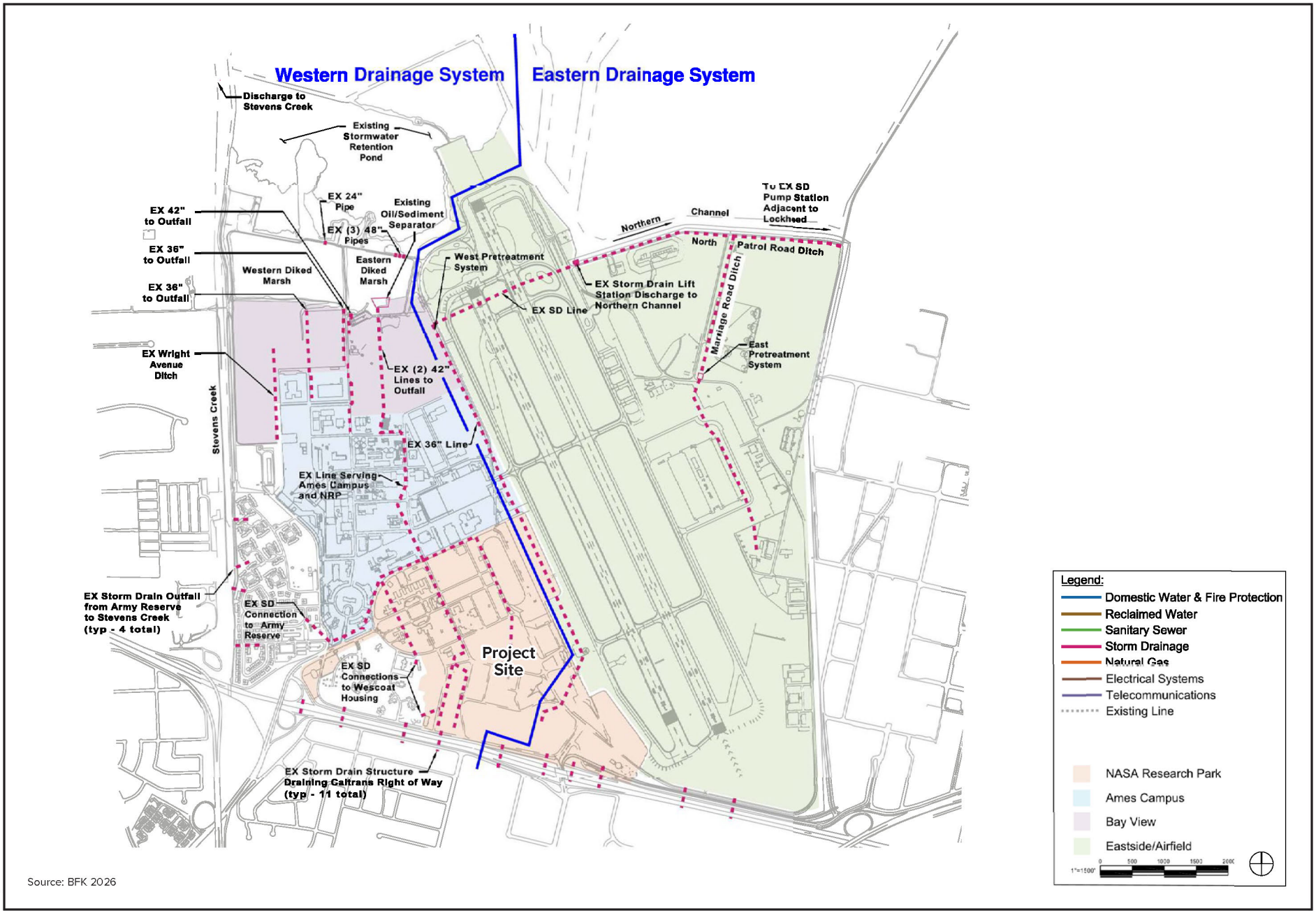
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13 California Sea Level Rise Science Task Force, California Ocean Protection Council, California Ocean Science Trust. 2024. *State of California Sea-Level Rise Guidance 2024 Science and Policy Update*. Available: https://opc.ca.gov/wp-content/uploads/2024/05/California-Sea-Level-Rise-Guidance-2024-508.pdf. Accessed: November 17, 2025.

14 Our Coast Our Future. 2021. Our Coast Our Future Hazard Map. Available: https://ourcoastourfuture.org/hazard-map/. Accessed: November 17, 2025.

15 AECOM. 2019. *Environmental Baseline Survey, NRP South Housing Area, Final.* Prepared for NASA Ames Research Center. August 19.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Source: BFK 2026

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Figure 3.10-2
NASA Overall Existing Storm Drain System
Berkeley Space Center at NASA Research Park

Water Quality

Water quality in the vicinity of the Project Site is directly affected by stormwater runoff from adjacent streets and properties, which deliver fertilizers, pesticides, automobile and traffic-related pollutants (e.g., oil, grease, metals), sediment with associated pollutants from soil erosion, trash, and other pollutants. Because NASA ARC is at the bottom of the watershed and the majority of the watershed supports urban land uses, surface runoff reflects water quality typical of urban or developed streams where various types of point- and nonpoint source pollutants affect water quality. Low levels of organic compounds have been detected in effluent stormwater; however, levels were not considered substantial. A 930-square meter (10,000-square foot) concrete Stormwater Settling Basin was built at ARC. The basin removes oil, grease, and particulate matter before runoff is discharged to the diked SWRPs south of the U.S. Fish and Wildlife Service (USFWS) salt ponds. NASA removes sediment from the settling basin annually and tests for VOCs and metals to ensure appropriate disposal.[16] Water quality impairments that apply to water bodies with the potential to be affected by the Project Site are discussed above in the *Regional Setting* subsection. Current or formerly contaminated sites encompass the whole Project Site, as discussed above and in Section 3.9, *Hazards and Hazardous Materials*, and could affect water quality.

The Project Site is located within the NRP portion of the NAS Superfund Site, and soil and groundwater on the Project Site have been affected through historical use by the Navy, as well as by the migration of groundwater containing chlorinated VOCs originating south of the Project Site from the portion of the MEW Superfund Site located in the city of Mountain View.[17] The Project Site was formerly part of the NASA Moffett Field military site (Parcels 1A, 3, 5A, 5B, and 6A) operated by the U.S. Military between 1933 and 1994 and subsequently transferred to NASA in 1994. Contaminant sources are primarily associated with historical use of underground storage tanks (USTs) and sumps that contained petroleum hydrocarbon products and/or chlorinated VOCs. Closed military-related USTs on the Project Site resulted in releases from USTs of potential contaminants of concern, including an oil/water mix; motor, hydraulic, and lubricating fluids in designated drinking water aquifers[18] and soils; boiler fuel in groundwater (not used for drinking water) and soils; and diesel, gasoline, and waste oil.[19] Groundwater quality concerns in the vicinity of the Project Site related to former land uses are detailed below.

Groundwater

The depth to groundwater on the Project Site ranges from 5 to 12 feet below ground surface, although groundwater levels may fluctuate due to variations in rainfall, seasonal variations, underground drainage patterns, and other factors, according to the Spring 2026 project-specific

16 NASA Ames. 2015. *Environmental Resources Document,* Chapter 12, *Hydrology and Water Quality*.

17 The portion of the MEW Vapor Intrusion Area that is located in the vicinity of the Project Site is shown on Figures 3.9-2 and 3.9-4. The MEW Vapor Intrusion Study Area represents the boundary of the MEW Superfund Site VOC groundwater plume where trichloroethene concentrations are greater than 5 micrograms per liter. No remediation activities are included as part of the CEQA Proposed Project or CEQA Reduced Density Alternative.

18 Groundwater beneath the Project Site is not used for drinking water, however the aquifers in the groundwater subbasin underlying the Project Site are defined as drinking water aquifers by the State Water Resources Control Board.

19 State Water Resources Control Board. 2025. *GeoTracker*. Accessed: https://geotracker.waterboards.ca.gov/. Accessed: August 14, 2025.

EIMP. Soils in the vicinity of the Project Site have low permeability due to high clay content, resulting in little to no groundwater recharge.[20]

A large regional plume of chlorinated VOCs is present on-site and is associated with portions of the MEW Superfund Site located south of U.S. 101, as shown in Figure 3.10-3, Groundwater Plume and Groundwater Wells. The plume has commingled with groundwater contamination from Navy chlorinated solvent sources located in the NRP and NASA sources in NASA ARC. VOCs are the primary chemicals of potential concern found on the Project Site. The primary VOC constituents of concern within the plume are trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE). Tetrachloroethene (PCE) was also detected during groundwater monitoring; therefore, it is monitored as a VOC within the plume. Other VOCs within the plume have generally been reported below actionable levels. The contamination originated south of U.S. 101 at the MEW Superfund Site. VOCs transported in groundwater originating from the MEW site moving northerly and toward the San Francisco Bay continue to contaminate groundwater under the Project Site. Other groundwater quality concerns include total petroleum hydrocarbons as hydraulic oil (TPH-HO) above the NASA risk-based screening level of 100 micrograms per liter [µg/L]).[21] Petroleum hydrocarbons and fuel-related constituents, such as benzene, toluene, ethylbenzene and xylenes (BTEX) have also affected groundwater beneath the Project Site, according to the Spring 2026 project-specific EIMP. Metals and per- and polyfluoroalkyl substances (PFAS) compounds were also detected in groundwater.[22] Groundwater throughout the NRP is regularly monitored for groundwater quality. Groundwater wells were previously monitored up to semi-annually; however, in 2018, the groundwater monitoring frequency was revised to occur every 2 years.[23]

To address groundwater impacts in the vicinity of the Project Site, two groundwater extraction and treatment facilities are currently operating near the Project Site, the MEW Superfund Site Groundwater Treatment System (GWTS) and the NASA West-Side Aquifers Treatment System (WATS). The MEW extraction and GWTS is directly adjacent to the Project Site. Piping for the system is partially within the Project Site while the GWTS is outside of the Project Site. Remediation system infrastructure (found on-site) associated with the MEW extraction and GWTS includes several recovery wells and underground piping. Treated water from the MEW GWTS facility is discharged into Stevens Creek, which connects to San Francisco Bay. Treated groundwater from the WATS is discharged into NASA's stormwater system which discharges into the eastern diked marsh in the northernmost portion of NASA ARC. The WATS is owned and operated by NASA The WATS discharges to NASA's stormwater system by a bypass which allows treated groundwater to be reused by NASA.

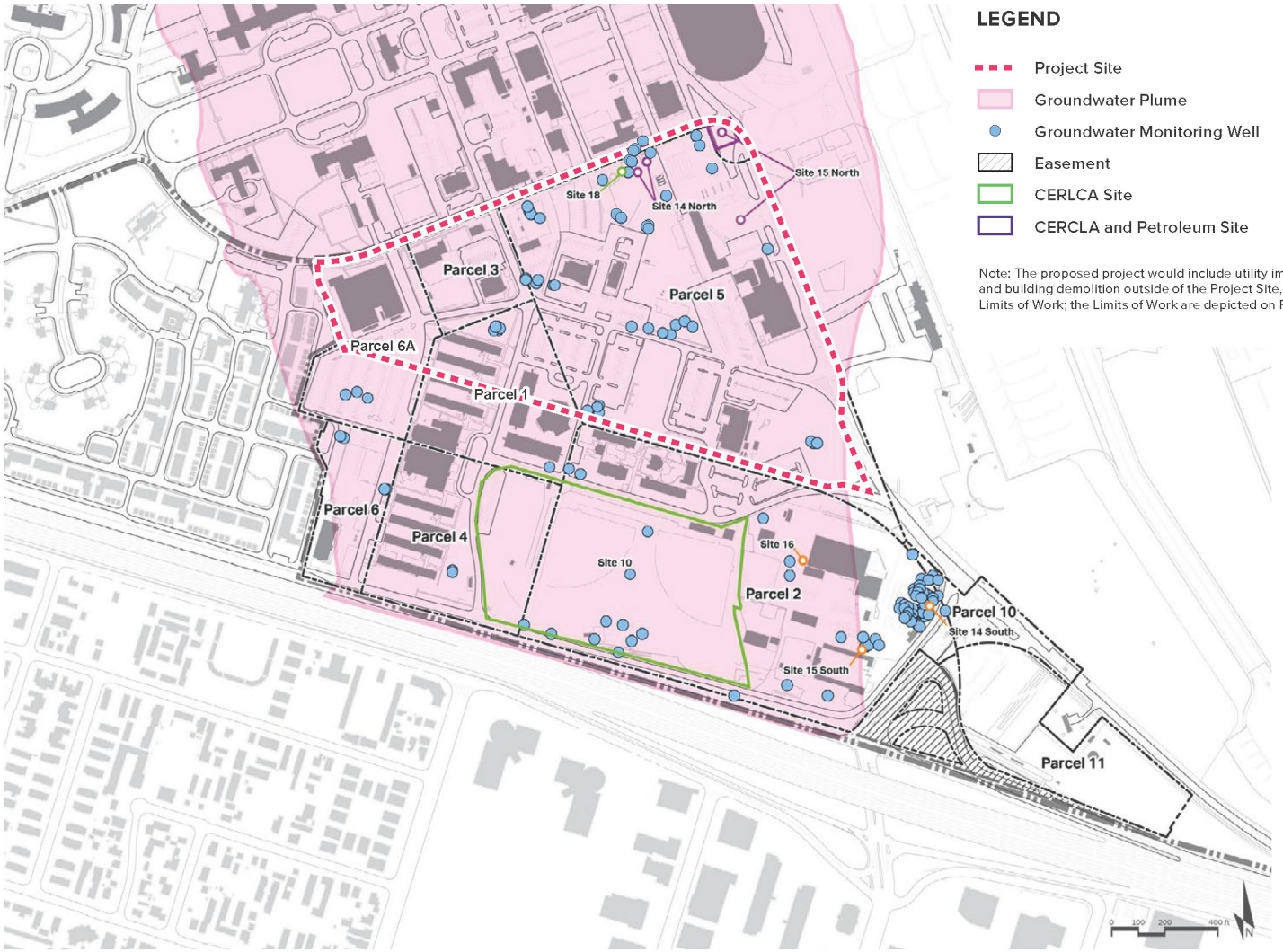
[20] Jones & Stokes. 1999. *Ecological Analysis of NASA Ames Phase II Flood Mitigation Project.* December 10. Prepared for Daniel, Mann, Johnson, & Mendenhall, Moffett Federal Airfield, CA.

[21] AECOM. 2019. *Environmental Baseline Survey, NRP South Housing Area, Final.* Prepared for NASA Ames Research Center. August 19.

[22] EKI. 2026. *Environmental Issues Management Plan (EIMP) Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California*. Spring.

[23] AECOM. 2019. *Environmental Baseline Survey, NRP South Housing Area, Final.* Prepared for NASA Ames Research Center. August 19.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Source: AECOM. 2019. *Final Environmental Baseline Study NRP South Housing Area*. August.

Graphics ... 104894 (2-10-2026)

Figure 3.10-3
Groundwater Plume and Groundwater Wells
Berkeley Space Center at NASA Research Park

Environmental investigations, removal actions, and remedial actions have been implemented at the former NAS Moffett Field since 1984, as detailed in Appendix 2-2, *Environmental Issues Management Plan*. Remediation includes installation and operation of groundwater remediation systems and groundwater monitoring wells.[24,25] Remediation activities include groundwater extraction and treatment to control and remove VOCs that would otherwise migrate beyond the recovery wells. The current VOC and Fuel General Permit (Order No. R2-2017-0048, National Pollutant Discharge Elimination System [NPDES] permit No. CAG912002, as amended by Order No. R2-2018-0050), was adopted on December 13, 2017.

Remediation activities include groundwater extraction and treatment designed to control and remove VOCs that are migrating beyond the source control recovery wells. Groundwater extracted from the Regional plume in the vicinity of the Project Site is conveyed to the North 101 Treatment System, which is outside of the Project Site. A pipeline with double containment that transports extracted groundwater to the North 101 Treatment System runs through the Project Site. Double containment provides protection from contaminated water, which, without such protection, could leak into surrounding soils as it is transported to the treatment system facility.[26]

Flood Hazards

The Project Site is within FEMA Flood Zone D, an area with possible but undetermined flood hazards. FEMA floodplain mapping has not been conducted for the Limits of Work. The NRP has protection from Bay flooding via levees, although localized flooding has occurred due to precipitation. This localized flooding occurred outside of the Limits of Work (approximately 800 feet north of the Project Site) and was not considered a 100-year storm event. No known or reported flooding issues exist within the Limits of Work.[27] The Project Site is approximately 2.5 miles inland from the shoreline of San Francisco Bay. The Limits of Work is approximately 1.5 miles inland from the shoreline of San Francisco Bay. Therefore, the potential for inundation due to tsunami or seiche is considered low. The area adjacent to the San Francisco Bay, also outside the Limits of Work, is on low-elevation lands that have been identified as tidal floodplains and areas that are subject to flooding. The expected 2-, 100-, and 500-year flood limits are less than 1 mile north of the Limits of Work.

3.10.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use the Statewide NPDES Construction General

[24] EKI. 2026. *Environmental Issues Management Plan (EIMP) Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California*. Spring.

[25] The MEW Regional Groundwater Remediation Program owns and is responsible for nine source control recovery wells in the study area. Fairchild (a MEW group) and the Navy own additional monitoring wells throughout the study area.

[26] AECOM. 2019. *Environmental Baseline Survey, NRP South Housing Area, Final.* Prepared for NASA Ames Research Center. August 19.

[27] Ibid.

Permit, Santa Clara Valley Urban Runoff Pollution Prevention Program, San Francisco Bay Municipal Regional Stormwater Permit, and Groundwater Management Plan for the Santa Clara and Llagas Subbasins for the analysis of hydrology and water quality associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to apply the standards identified in the Santa Clara Valley Urban Runoff Pollution Prevention Program, San Francisco Bay Municipal Regional Stormwater Permit, Construction General Permit, and Groundwater Management Plan for the Santa Clara and Llagas Subbasins for the analysis of hydrology and water quality with the project.

This section summarizes plans, policies, and regulations considered in the analysis.

3.10.3.1 Federal Regulations

Clean Water Act

The CWA is the primary federal law in the United States that governs water pollution. Its objectives are to restore and maintain the chemical, physical, and biological integrity of the nation's waters; recognize the responsibilities of the states in addressing pollution and provide assistance to do so, including funding for publicly owned treatment works to improve wastewater treatment; and maintain the integrity of wetlands.

Section 303 – Impaired Waters

The term “303(d) list” refers to a state’s list of impaired and threatened waters (e.g., stream/river segments, lakes). States are required to submit their list for EPA approval every 2 years. For each water body on the list, the state identifies the pollutant causing the impairment, when known. In addition, the state assigns a priority for development of TMDLs, based on the severity of the pollution and the sensitivity of the uses within the waters, among other factors.

In general, once a water body has been added to a state’s list of impaired waters, it stays there until the state develops a TMDL and EPA approves it. EPA reporting guidance provides a way to keep track of a state’s water bodies, from listing as impaired to meeting water quality standards. This tracking system provides a running account of all water bodies in a state and categorizes each according to the attainment status. For example, once a TMDL is developed, a water body is no longer on the 303(d) list, but it is still tracked until the water body is fully restored.

Section 401 – Water Quality Certification

This program is responsible for regulating discharges of dredged or fill material to waters of the state. The State Water Board and the Regional Water Boards (collectively, Water Boards) have the authority to regulate these discharges under Section 401 of the CWA and Porter-Cologne Act.

CWA Section 401 water quality certifications are issued to applicants for a federal license or permit to cover activities that may result in a discharge into waters of the United States, including the discharge or dredged or fill material. Waste discharge requirements under Porter-Cologne Act are issued for discharges of dredged or fill material to waters of the state.

Section 402 – National Pollutant Discharge Elimination System

Section 402 of the CWA requires a discharge of any pollutant or combination of pollutants to surface waters that are deemed waters of the United States to be regulated by an NPDES permit. To provide coverage to water purveyors for discharges to waters of the United States made in compliance with CWA Section 402, the State Water Board adopted the Statewide General NPDES Permit for Drinking Water System Discharges to Waters of the United States on November 18, 2014. To obtain coverage under the permit, a water purveyor (e.g., community drinking water system or wholesaler) must submit an application to the State Water Board no later than September 1, 2015. Alternatively, if a water purveyor does not need coverage under the permit, it must submit a notice of non-applicability to the State Water Board, also by September 1, 2015.

Section 404 – Dredge/Fill Permitting

Section 404 of the CWA prohibits the discharge of excavated or fill material into waters of the United States (jurisdictional waters) without a permit from the U.S. Army Corps of Engineers (USACE).

National Flood Insurance Program

The National Flood Insurance Program (NFIP) provides flood insurance to property owners, renters, and businesses. Having this coverage helps them recover faster after a flood. The NFIP works with communities, which are required to adopt and enforce floodplain management regulations to mitigate the effects of flooding.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act directs the USFWS to investigate and report on proposed federal actions that affect any stream or other body of water and provide recommendations to minimize impacts on fish and wildlife resources.

Executive Order 11988

Issued in May 1977, this executive order directs federal agencies to:

1. Assert leadership in reducing flood losses and losses to environmental values served by floodplains;
2. Avoid actions located in or adversely affecting floodplains, unless there is no practicable alternative;
3. Take action to mitigate losses if avoidance is not practicable; and

4. Establish a process for flood hazard evaluation, based on the 100-year base-flood standard of the NFIP. It also directed federal agencies to issue implementing procedures, provided a consultation mechanism for developing the implementing procedures, and provided oversight mechanisms.

Ames Research Center Directives

The Ames Research Center Directives and Ames Procedural Requirement (APR)[28] are a public listing of NASA ARC policies and procedures. These policies ensure compliance with NASA's standards and authorize review, assessment, and approval of projects at NASA ARC. The policies also address NASA ARC's conformance with federal, state, and local land use plans and regulations. The following Ames Policy Directives (APDs) and APRs would be applicable to the Project Site:

- **APD 8500.1: Ames Environmental Policy.** Demonstrates pollution prevention practices and continual improvement of NASA ARC's environmental program. The Environmental Management Division is responsible for establishing and overseeing the following programs to ensure compliance with applicable laws and NASA's policy: drinking water, industrial wastewater, spill prevention control and countermeasures, air quality, stormwater, hazardous materials, hazardous waste, restoration, NEPA, natural resources, and sustainability.
- **APD 8829.1: Construction Permits.** Establishes Ames-specific policies and responsibilities for construction activities. The policy of NASA ARC is that all construction work is to be reviewed in adherence to all appropriate and applicable building and construction codes and standards. This review shall be performed according to a construction permit process established for the request, review, and approval of all construction permits at NASA ARC.
- **APD 8835.1: Landscaping Planting and Grooming.** Establishes policies for NASA ARC grounds and landscaping.
- **APR 8553.1: NASA Environmental Management System.** Sets forth requirements for the NASA Environmental Management System (EMS), which functions primarily to (1) incorporate people, procedures, and work practices into a formal structure to ensure that the important environmental impacts of the organization are identified and addressed; (2) promote continual improvement, including periodically evaluating environmental performance; (3) involve all members of the organization, as appropriate; and (4) actively involve senior management in support of the agency. The EMS employs a standardized approach to managing environmental activities that allows an efficient, prioritized system execution while at the same time helping to improve environmental performance and maintain compliance with applicable environmental regulations and requirements. NASA's EMS approach involves identifying all activities, products, and services under each NASA center's control and the environmental aspects associated with each center's continued engagement in those activities, products, and services. Once identified, priority environmental aspects are assigned a risk ranking (from 1 to 4, based on severity and frequency of occurrence) and evaluated on a continual basis as means of highlighting associated positive or negative impacts and setting objectives and targets to reduce environmental risk. Each center's EMS also identifies methods for ensuring compliance by keeping abreast of environmental requirements. This includes requirements by law (executive orders, federal regulations, state and local laws) and voluntary commitments made by the center or NASA.

[28] National Aeronautics and Space Administration. 2024. *Ames Research Center Directives*. Available: https://www.nasa.gov/ames-research-center-directives/. Accessed: November 18, 2025.

- **APR 8829.1: Construction Permit Process.** Establishes the construction permit process and the requirements imposed on all construction activities at NASA ARC. ARP 8829.1 establishes minimum requirements to provide a reasonable level of safety, public health, and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire, explosion, and other hazards and provide a reasonable level of safety to fire and emergency responders during emergency operations. For NRP projects, the Project Proponent must first engage in the NRP design review process (described above) and obtain approval from the NRP design review board before approval of a construction permit. These planning review and approval procedures ensure consistency with Ames master planning and compatibility with other planned work as well as the project definition and readiness.

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

The NADP includes planning principles that help guide the development throughout the entirety of NASA ARC. The planning principles include environmental issues management and wetland preservation. The environmental issues management planning principle indicates that all partners will be required to comply with the NASA NRP EIMP and NASA Ames' Environmental Compliance Program. The wetland preservation planning principle indicates that NASA Ames will avoid construction in non-tidal wetlands to reduce potential impacts to sensitive habitats. Development plans will ensure no net loss of wetland functions, values or acreage

3.10.3.2 State Regulations

Porter-Cologne Water Quality Control Act

The State Water Board coordinates with the nine Regional Water Boards to preserve, protect, enhance, and restore water quality. Each Regional Water Board makes decisions related to water quality for its region and may approve, with or without conditions, or deny projects that could affect waters of the state. The Regional Water Board's authority comes from the CWA and the Porter-Cologne Act, which broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because the Porter-Cologne Act applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach may overlap and exceed the boundaries of waters of the United States, pursuant to the CWA. Under the Porter-Cologne Act, the State Water Board and the nine Regional Water Boards are responsible for granting CWA NPDES permits and establishing waste discharge requirements for certain point-source and nonpoint-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

McAteer-Petris Act

Under the McAteer-Petris Act, the Bay Conservation and Development Commission (BCDC) has jurisdiction over all tidal areas of the San Francisco Bay, marshlands between mean high tide and 5 feet above mean sea level, a band extending 100 feet landward of the San Francisco Bay shoreline, salt ponds, managed wetlands that have been diked off from the San Francisco Bay, and certain waterways. BCDC has authority to permit projects, including those to construct a structure, within its jurisdiction. The proposed storm drain outfall may encroach on the BCDC jurisdictional boundary. However, the coastal zone would not be affected by the proposed project, and the Project Site's status as an Airport Priority Use Area in the Bay Plan would not be affected by the proposed project. Thus, the proposed project would not require a consistency determination or other approval from BCDC. The area west of Lindbergh Avenue where the proposed off-site storm drain main and the outfall at the eastern diked marsh would be constructed is federally owned but within the boundary of the city of Mountain View. This falls under proprietary jurisdiction and is thus subject to certain State regulations.

Water Quality Control Plan for the San Francisco Basin

The Water Quality Control Plan for the San Francisco Basin (Basin Plan) is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the San Francisco Bay region. The Basin Plan establishes beneficial water uses for surface waters and groundwater basins within the region, the water quality objectives needed to protect the designated beneficial water uses, and the implementation plans for achieving the water quality objectives through its regulatory programs.

State Water Resources Control Board Construction General Permit

The State Water Board adopted the statewide NPDES Construction General Permit to regulate stormwater discharges associated with construction activities. The permit is applicable to construction projects that meet certain criteria. Generally, construction activities that disturb 1 acre of soil or more, or activities that disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 acre or more, are required to obtain coverage under the Construction General Permit. The permit does not apply to disturbances on land surfaces related solely to growing crops or performing agricultural operations, such as disking, harrowing, terracing, leveling, or preparing soil.

The NPDES Construction General Permit requires development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified qualified SWPPP developer. A SWPPP is a site-specific plan for achieving compliance with stormwater regulations through the use of best management practices (BMPs).

State Water Resources Control Board Industrial General Permit

Businesses conducting industrial-related activities must comply with federal, state, and regional requirements that protect the health of our communities by preventing water pollution. The State of California regulates these activities through the Industrial General Permit (IGP). Industrial activities at NRP are covered under the statewide General Permit for Storm Water Discharges Associated with Industrial Activities (Order 2014-0057-DWQ, NPDES Order No. CAS000001). NASA samples effluent from a settling basin four times per year as part of the IGP SWPPP.

State Water Resources Control Board Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries

The Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Plan) was adopted by the State Water Board under authority provided by Water Code Sections 13140 and 13170. Except as otherwise indicated, the Plan establishes provisions for water quality and sediment quality that apply to all inland surface waters, enclosed bays, and estuaries and coastal lagoons of the state, including both waters of the United States and surface waters of the state. These provisions do not apply to ocean waters, including Monterey Bay and Santa Monica Bay. In accordance with Water Code Section 13170, except where otherwise noted, the provisions contained within the Plan supersede any Basin Plans for the same waters with respect to conflict.

State Water Resources Control Board Trash Amendments

On April 7, 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) to Control Trash and Part 1 Trash Provision of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries. Together, they are collectively referred to as 'the Trash Amendments'. The objective for the Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

The trash amendments apply to all municipal separate storm sewer system (MS4), industrial, and construction NPDES permittees. The State Water Board executive director sent separate Water Code 13383 orders to traditional and non-traditional small MS4 permittees, as well as the California Department of Transportation. Regional Water Boards, as the permitting authorities, issued Water Code 13383 orders to their Phase I permittees that contained region-specific requirements; in some cases, these differed from State Water Board orders.

Upon reissuance or amendment, State Water Board and Regional Water Board MS4 permits will contain trash control implementation requirements and compliance milestones to demonstrate progress toward 100 percent compliance with the trash provisions. On September 8, 2022, the State Water Board reissued the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. These reissued permits implement the trash provisions for the California Department of Transportation and construction dischargers. The General Permits for Stormwater Discharges Associated with Industrial Activities and the Small MS4 General Permit will implement the trash provisions when reissued.

Sustainable Groundwater Management Act

The historic passage of the Sustainable Groundwater Management Act (SGMA) in 2014 set forth a statewide framework to protect groundwater resources over the long term. SGMA is part of a three-bill legislative package, including Assembly Bill 1739 (Dickinson), Senate Bill 1168 (Pavley), and Senate Bill 1319 (Pavley), and subsequent statewide regulations. In signing SGMA, then-Governor Jerry Brown emphasized that “groundwater management in California is best accomplished locally.”

SGMA requires local agencies to form groundwater sustainability agencies (GSAs) for the high- and medium-priority basins. GSAs develop and implement groundwater sustainability plans (GSPs) or

Groundwater Management Plans (GWMP) to avoid undesirable results and mitigate overdraft within 20 years. The Project Site is within the Santa Clara Valley Groundwater Basin, Santa Clara subbasin, which is considered a high-priority basin. DWR approved the 2016 GWMP as an Alternative Plan on July 17, 2019, finding it satisfies the objectives of SGMA. The 2021 GWMP is the first required 5-year update to the approved Alternative Plan.[29]

3.10.3.3 Local Regulations

Santa Clara Valley Urban Runoff Pollution Prevention Program

The SCVURPPP represents an association of 13 cities and towns in the Santa Clara Valley, Santa Clara County, and the Santa Clara Valley Water District that share a common NPDES municipal stormwater permit to discharge stormwater to South San Francisco Bay. The SCVURPPP, through its member agencies, implements pollution prevention, source-control, monitoring, and outreach programs to reduce pollution in stormwater runoff and protect water quality and beneficial uses within San Francisco Bay and Santa Clara Valley creeks and rivers. The SCVURPPP values stormwater and promotes it as an important resource.

San Francisco Bay Municipal Regional Stormwater Permit

The San Francisco Bay Regional Water Board reissued the MS4 Municipal Regional Stormwater NPDES Permit (MRP), which went into effect July 1, 2022 (Order No. R2-2022-0018 NPDES Permit No. CAS612008). Like past stormwater permits, the MRP mandates stormwater control measures for specified development projects. It includes several significant changes, including changes to the types and sizes of regulated projects. The MRP was issued by the Regional Water Board.

Groundwater Management Plan for the Santa Clara and Llagas Subbasins

In 2019, DWR approved the Santa Clara Valley Water District's 2016 Groundwater Management Plan for the Santa Clara and Llagas Subbasins as an alternative, determining it satisfies the objectives of the SGMA. Periodic evaluations of approved plans are required at least every 5 years; therefore, Santa Clara Valley Water District submitted the board-adopted 2021 Groundwater Management Plan to DWR in December 2021. Annual reports must be submitted to DWR by April 1 of each year for the previous water year (October 1 to September 30).

County of Santa Clara Office of Sustainability and Resilience

The County of Santa Clara Office of Sustainability aims to maintain a healthy and safe county and enhance natural resources and the environment. Along with the County, the office is managing a regional effort to minimize impacts of climate change, including sea level rise, storm surge, and increased riverine flooding. The office also analyzes the county's vulnerability to SLR and flood hazards and develops strategies to minimize potential flood hazards in the county.

3.10.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on hydrology and water quality in accordance with CEQA. The sections describe the thresholds used to determine

[29] Valley Water. 2021. *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*.

whether an impact would be significant as well as the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on hydrology and water quality in accordance with NEPA is provided separately in Section 4.5.9, *Hydrology and Water Quality*, in Chapter 4, *Environmental Impact Statement*.

3.10.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on hydrology and water quality if it would result in any of the conditions listed below.

Would the project:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or groundwater quality?
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project could impede sustainable groundwater management of the basin?
- Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river or the addition of impervious surfaces, in a manner that would:
    - Result in substantial erosion or siltation on- or off-site,
    - Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site,
    - Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or
    - Impede or redirect flood flows?
- In flood hazard, tsunami, or seiche zones, risk a release of pollutants due to project inundation?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to hydrology and water quality?

3.10.6 Methods for Analysis

All project elements were analyzed by comparing baseline conditions to conditions during construction and/or operation of the proposed project. The analysis focuses on issues related to surface hydrology, groundwater supply, surface water and groundwater quality, and flood hazards. The key construction and operational impacts are identified and evaluated according to the physical characteristics of the proposed project and the magnitude, intensity, location, and duration of

activities. Compliance with existing laws, regulations, and policies is assumed to be part of the baseline setting against which the proposed project's incremental impacts are assessed.

- Surface Water Hydrology. The surface water hydrology impact analysis considers changes in impervious surfaces and drainage patterns as well as information on the change in impervious surfaces, runoff, and drainage patterns.
- Groundwater Hydrology. Potential impacts on groundwater supply and recharge are analyzed using information from publicly available publications and site-specific technical reports, including the *Preliminary Geotechnical Assessment, Proposed Commercial Development, NASA Research Park*.[30] Potential impacts associated with construction dewatering are also evaluated.
- Surface Water and Groundwater Quality. Impacts on surface water and groundwater quality are analyzed using information on potential existing sources of pollution, such as vehicle use and parking, building maintenance, pesticide use, trash, and material storage, and site-specific technical reports, including the NASA Ames *2024 Annual Progress Report, Regional Groundwater Remediation Program,* and the NASA NRP South Housing Area *Environmental Baseline Survey*, *NRP South Housing Area, Final*.[31,32] As summarized in Section 3.10.2, there several hazardous-material sites (i.e., Superfund sites) within or surrounding the Project Site as well as hazardous-material release sites, which have impacted localized groundwater quality. Additional information on hazardous materials with potential to affect the proposed project is provided in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS and the Spring 2026 project-specific EIMP in Appendix 2-2. The associated impacts are compared to the potential impacts from project-related sources of pollution during construction, such as sediments and construction materials, and during project operation, such as vehicle use, building maintenance, pesticide use, trash, and the storage of hazardous materials.
- Flood Hazards. The impact analysis for flood risk uses floodplain mapping completed in vicinity of the Project Site to determine the existing flood zone. Included is information from the Floodplain and Wetlands Management – Preliminary Maps and the *Storm Drain & Stormwater Management Master Plan*[33] prepared for the proposed project regarding changes in drainage patterns and layout that may affect flooding risks.

3.10.7 Impacts Not Evaluated in Detail

Risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones?

The Project Site is not within a planned tsunami inundation area. Therefore, the Project Site is not subject to inundation by tsunami. Furthermore, there would be minimal to no risk of inundation from a seiche event in the vicinity of the Project Site. The portions of Santa Clara within designated

30 Geomatrix Consultants, Inc. 2000. *Preliminary Geotechnical Assessment, Proposed Commercial Development, NASA Research Park.* August 4.

31 BB&E Consulting Engineers and Professionals. 2025. *2024 Annual Progress Report, NASA Ames Regional Groundwater Remediation Program*. Prepared for NASA Ames Research Center, NASA Area of Responsibility, and Site 28 WATS Area. April 14.

32 AECOM. 2019. *Environmental Baseline Survey, NRP South Housing Area, Final*. Prepared for NASA Ames Research Center. August 19.

33 BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan*. Spring.

Federal Emergency Management Agency (FEMA) 100-year floodplains include the area north of Moffett Field. The Project Site is within FEMA Zone D, an area with possible but undetermined flood hazards because the area has not been mapped by FEMA. There are known flooding issues north of the Limits of Work. This includes localized flooding, particularity on the northwest boundary of the Project Site and outside of the Project Site, that was not considered a 100-year storm event. The expected 2-, 100-, and 500-year flood limits are less than 1 mile north of the Project Site. Although flood hazard risks in FEMA Zone D are not well understood and the probability of a flood risk has not been quantified, no known or documented flooding issues exist within the Project Site. The proposed project would ultimately discharge a volume equivalent to the existing volume leaving the Project Site and would decrease the volume discharged to the NASA Ames storm drain system as it redirects stormwater directly to the marsh via the new trunk main, alleviating any potential flooding issues in the NASA Ames storm drain system.

Projected mid-century (2050) high-risk SLR scenario would not inundate the Project Site or the Limits of Work. Although end-of-century (2100) high-risk SLR scenario would not inundate the Project Site, the Limits of Work, including the eastern diked marsh and western diked marsh, would be inundated. However, inundation would not risk release of pollutants due to project inundation because no pollutants would be stored near the eastern diked marsh and western diked marsh. The proposed storm drain system would incorporate butt-fusion welded high-density polyethylene pipe to prevent the infiltration of contaminants into the drainage system where it could migrate farther downstream and potentially discharge into sensitive surface waters. Therefore, the proposed project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones, resulting in no impact. This topic is not evaluated further.

3.10.8 Impacts and Mitigation Measures

***Impact CEQA-HYD-1*: *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water or ground water quality*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Surface Water Quality

Project construction activities, including grading, soil stockpiling, and other earth-disturbing activities, under all buildout options, could result in short-term water quality impacts from soil erosion and subsequent sediment transport to adjacent properties, roadways, or watercourses through storm drains. Sediment transport to local drainage facilities, such as drainage inlets and storm drains, could result in reduced storm flow capacity, resulting in localized ponding or flooding during storm events. According to the Aquatic Resources Delineation, approximately 0.014 acre of palustrine emergent wetland is 33 feet outside of the Limits of Work. No construction activities, including dredge-and-fill activities, would occur within 50 feet of the palustrine emergent wetland. There are no surface water features within the Limits of Work.

Project construction would also involve the use of motorized heavy equipment, including trucks and dozers, that require fuel, other fluids, and lubricating grease. An accidental chemical release or spill involving a vehicle or equipment could affect the quality of stormwater runoff and surface water. These construction activities could also generate dust, sediment, litter, oil, and other pollutants that could temporarily contaminate runoff from the Project Site. The CEQA Proposed Project and the CEQA Reduced Density Alternative would include the development and implementation of a SWPPP, including, but not limited to, the following BMPs: employee training, erosion and sediment controls, good housekeeping, material handling and waste management, preventive maintenance, quality assurance and recordkeeping, and spill and leak prevention and response. Construction activities must comply with the NPDES Construction General Permit and the MRP, which includes filing an NOI for permit coverage under the NPDES Construction General Permit. As part of the NPDES Construction General Permit, standard erosion control measures and BMPs would be identified in a SWPPP and implemented during construction to reduce sedimentation in waterways and loss of topsoil.

Spoils generated from grading activities would total approximately 105,500 cubic yards (cy); approximately 104,100 cy of net soil export would be required. Permits from Mountain View would be required for grading within the Limits of Work in the city of Mountain View. Otherwise, incorporation of construction BMPs and implementation of the SWPPP would sufficiently ensure no adverse impacts on surface water quality. An excavation permit would be obtained from the applicable authority having jurisdiction prior to any on-site grading. Compliance with the requirements of NASA's APR 88500.1 and APR 8829.1, along with the State Water Board's NPDES Construction General Permit, would require the use of BMPs to reduce soil erosion and sedimentation, restrict non-stormwater discharges from the construction site, and avoid a release of hazardous materials. Erosion control measures include silt fences, hay bales, fabric and sand filters, swales, and/or sumps. As a performance standard, the BMPs to be selected would represent the best available technology that is economically achievable and the best conventional pollutant control technology to reduce erosion and pollution.

Other water quality impacts could result from chemical spills into storm drains or groundwater aquifers if proper minimization measures are not implemented. However, required BMPs would be used to reduce pollutants in stormwater and other nonpoint-source runoff. Measures would range from source control to treatment of polluted runoff. BMPs could include watering active

construction areas to control dust generation during earthmoving activities; using water sweepers to sweep streets and haul routes; and installing erosion control measures, such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, and sandbag dikes, to prevent silt runoff to roadways, storm drains, or waterways. As appropriate, disturbed soil would be revegetated as soon as possible with an appropriate selection and schedule of plants. No disturbed or graded surfaces would be left without erosion control measures in place during the rainy season, which generally is between October 15 and April 15.

In addition to compliance with the NPDES Construction General Permit, UC and NASA elected to apply the standards identified in the SCVURPPP, which involve development and implementation of an erosion and sediment control plan specific to the construction site to minimize water quality impacts. The plan would be developed according to the guidance provided in documents such as the California Stormwater Quality Association (CASQA) construction BMP handbook. Adherence with CASQA guidance would ensure that construction activities would not result in a violation of water quality standards or waste discharges requirements or otherwise result in water quality degradation.

Based on this analysis, project impacts on surface water quality during construction would be less than significant.

Groundwater

The depth to groundwater on the Project Site ranges from 5 to 12 feet below ground surface (bgs), according to the Spring 2026 project-specific EIMP. Maximum excavation depths would extend to 25 feet bgs. The Central Utility Plant Option would require excavation to 11 feet bgs for the distribution pipes, which is more than the excavation needed for the typical utility improvements that would otherwise be required for the CEQA Proposed Project. Temporary construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. Dewatering could result in an exposure to pollutants from spills or other activities and may contaminate groundwater. Groundwater dewatering may also mobilize existing groundwater contaminant plumes. These existing plumes and neighboring contaminant plumes are described in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS. Untreated water from construction site dewatering could contain pollutants that, if discharged to a storm drain system or natural watercourse, could cause the receiving water to exceed water quality standards. Typical pollutants that may be encountered include sediment (the most common pollutant associated with dewatering operations), high levels of pH, and contaminant pollutants associated with current or past use of the Project Site or adjacent land, such as TCE. A release of these pollutants into receiving waters could harm wildlife in San Francisco Bay. Discharging contaminated or sediment-laden water from a dewatering site into any water of the state without treatment is prohibited. The Project would implement Spring 2026 project-specific EIMP (Appendix 2-2) for dewatering activities to prevent the potential for pollutant release.

Groundwater extraction wells, associated conveyance piping, and groundwater monitoring wells are currently operating within the Project Site. This infrastructure could be damaged during construction of the CEQA Proposed Project. Contaminants within the system(s) could be re-released into the environment (in the same location or in other locations of the Project Site).

If groundwater produced during dewatering is discharged to the storm drain system, it would be conveyed to an area contained within berms and dikes and would not flow to San Francisco Bay The NPDES Construction General Permit provides coverage for dewatering activities, provided that

dischargers prove the quality of water to be adequate and not likely to affect beneficial uses. The CEQA Proposed Project would not impact beneficial uses as defined in the Basin Plan.

Other construction activities could result in short-term groundwater quality impacts associated with the input of sediment loads or chemical spills into storm drains or groundwater aquifers that exceed water quality objectives if proper minimization measures are not implemented. However, the proposed project would be required to comply with the MRP, and stormwater and construction site runoff requirements. Requirements include development and implementation of a NPDES Construction General Permit SWPPP, an erosion and sediment control plan, and a stormwater management plan specific to the Project Site to minimize water quality impacts related to spills or other activities that could contaminate groundwater. SWPPPs are approved by the San Francisco Bay Regional Water Board as part of compliance with the NPDES Construction General Permit and permit coverage. BMPs would be required and incorporated into SWPPPs and other permits prior to approval of grading permits, providing an acceptable level of water quality protection. Shallow soils and groundwater would be managed through the Spring 2026 project-specific EIMP. More information on hazardous material requirements is provided in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS. In addition, compliance with the Spring 2026 project-specific EIMP and dewatering regulations would ensure that dewatering activities would be monitored. Water would be treated as required so that violations of water quality standards or waste discharge requirements would not occur. If it is found that the groundwater does not meet water quality standards and applicable water quality objectives (as designated in the Basin Plan) acceptable for discharge, groundwater would be hauled off-site and disposed of at an appropriate waste treatment facility that is permitted to receive such water.

Based on this analysis, construction dewatering activity would have the potential to mobilize existing groundwater contaminant plumes in the area, resulting in a potentially significant impact on groundwater quality before mitigation.

Operation

The Limits of Work are currently covered with a substantial amount of impervious hardscape, including roofs, surface parking lots, streets, and paths. The Project Site is covered with impervious hardscape on approximately 70 percent of the Project Site. The proposed on-site drainage system would consist of two subsystems, Subsystem 1 and Subsystem 2. Implementation of the CEQA Proposed Project would increase the impervious surface area on the Project Site to approximately 79 percent, or a 9 percent increase from existing conditions in Subsystem 1 and 77 percent in System 2. Increases in impervious surface area have the potential to increase runoff rates and associated pollutants. Stormwater runoff may carry pollutants to storm drains and receiving waters, including the San Francisco Bay. Runoff from impervious surfaces can generate nonpoint-source pollutants such as organic materials, solids, pathogens, sediment from erosion, chemical fertilizers, grease, and other pollutants. However, all project-related development would comply with applicable federal, state, and local requirements discussed in Section 3.10.3, *Plans, Policies, and Regulations*, including Provision C.3 and NPDES regulations.

Consistent with Provision C.3 requirements in the MRP, stormwater runoff from the CEQA Proposed Project would be treated prior to discharging to San Francisco Bay. Stormwater treatment areas would be spread throughout the open space. Additional treatment that cannot be accommodated in the open space design would take place within the building parcels using BMP measures, such as green roofs, flow through planters, or pervious material for hardscape within the open space design.

Other potential treatment and low-impact development (LID) options include bioretention areas, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. Retention would be achieved through one or a combination of methods including retention ponds sized for evapotranspiration and infiltration, on-site water re-use, increasing site permeability (green roofs, additional vegetation, permeable pavement, etc.), or other methods determined during the detailed design phase and based on feasibility and site soil conditions.

Stormwater treatment on the Project Site would include approximately 4 percent of the total proposed impervious area of the Project Site, per SCVURPPP requirements, totaling approximately 53,934 square feet of treatment area. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Treatment areas would be spread throughout the proposed open space. These would include bioretention areas along the Promenade and within the Center Point as well as a self-treating lawn area. Treatment areas that cannot be accommodated in the open space design would be placed within building parcels using BMP measures, such as green roofs, flow-through planters, or pervious materials. Street treatment would be provided using flow-through-planters. The Project Site is split into three drainage management areas (DMAs) which are treated via raised and at-grade flow through planters, bioretention areas, and self-treating lawns. Total treatment area for each DMA is shown in Table 3.10-3. Treatment structures would be equipped with high-flow bypasses and used to treat stormwater before it exits the Project Site.[34]

Table 3.10-3. Total Required Treatment Area

Drainage Management Area	Catchment Area (SF)	Impervious Area (SF)	Treatment Area (SF) Required (4% of Impervious Area)
DMA 1	1,016,365	820,663	32,827
DMA 2	504,790	399,633	15,985
DMA 3	152,996	128,048	5,122
Total	**1,674,145**	**1,368,343**	**53,934**

Source: BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan*. Spring.

Stormwater infrastructure is integrated into the landscape framework through a distributed, decentralized network. Each building plot would have an adjacent treatment area, although a percentage of treatment would also be required within the buildable area as well to meet stormwater requirements. Required stormwater treatment areas would total 53,934 square feet.

The Water Reuse Facility Option would produce recycled water for proposed buildings and irrigated areas. The Water Reuse facility would process all of the CEQA Proposed Project's wastewater to supplement recycled water needs within the Project Site.

Industrial uses adjacent to and within project boundaries have left residual chemicals in the soil and groundwater. However, infiltration on-site, including the potential for on-site landscape irrigation or precipitation to infiltrate to the underlying aquifer or the groundwater plume, is limited due to the low permeability of underlying soils.

[34] BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan.* Spring.

The integration of landscaping includes phytoremediation strategies, which aid in remediation efforts on-site. Of the 893 new trees, a portion would be used for phytoremediation; the minimum number of phytoremediation trees will be determined by agreements with the EPA. Phytoremediation removes contaminants from soil and groundwater and provides more soil and water enrichment than traditional plantings. By planting a phytoremediation band along Girard Road, the flow of the existing contaminated groundwater plume would be intersected, thereby supporting existing groundwater remediation efforts.

The proposed project would be designed and maintained in accordance with local and San Francisco Bay Regional Water Board requirements, such as the MRP, SCVURPPP, Santa Clara water quality requirements, and the proposed Development Guidelines. The proposed project would comply with the NPDES Construction General Permit; MRP, Provision C.3; and SCVURPPP C.3 stormwater technical guidance, and the Spring 2026 project-specific EIMP (Appendix 2-2). It would also implement a SWPPP and other erosion control measures that incorporate stormwater treatment areas, such as bioretention and stormwater treatment areas. The proposed project would not violate any water quality standards or otherwise result in water quality degradation during operation. Therefore, project impacts on water quality during operation would be less than significant.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce groundwater quality impacts of the CEQA Proposed Project to less than significant. The Spring 2026 project-specific EIMP requires the protection of existing remediation infrastructure, including networks of groundwater monitoring wells and groundwater extraction and conveyance piping. In the event the proposed project needs to move existing groundwater monitoring wells during construction, the Project Proponent would implement the Spring 2026 project-specific EIMP and obtain the appropriate approvals of regulatory agencies. Mitigation Measure HAZ-1 would require the Project Proponent to comply with the Spring 2026 project-specific EIMP. Consistent with the requirements of the Spring 2026 project-specific EIMP, groundwater produced during dewatering from construction activities would be sampled for laboratory analysis to determine appropriate management (on-site dust control, discharge to storm drains, discharge to the sanitary sewer, treatment at the WATS, or offsite disposal), as required by applicable approvals and permitting requirements. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and treatment during dewatering activities, and protocols would be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. The Variant would occur within the same footprint as the CEQA Proposed Project, resulting in a 9 percent increase in impervious cover (same as the CEQA Proposed Project) compared to existing conditions. Consistent with Provision C.3 requirements in the MRP, stormwater runoff from the Variant would be treated prior to discharging to the San Francisco Bay. Potential treatment and LID options would include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Operational impacts would be the same as under the CEQA Proposed Project.

Construction activities under the Variant, including the area of ground-disturbing activities and depth of excavation, would be expected to be the same as under the CEQA Proposed Project. Temporary construction dewatering may be required. Dewatering could result in an exposure to pollutants from spills or the mobilization of existing groundwater contaminant plumes. Construction would comply with dewatering regulations, ensuring that dewatering activities would be monitored and treatment would take place as required so that violations of water quality standards or waste discharge requirements would not occur. However, due to the presence of groundwater contaminant plumes in the area, construction dewatering activities may result in a potentially significant impact on groundwater quality before mitigation. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to affected groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. Approximately 70 percent of the Project Site is currently covered by impervious surfaces. The CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site to approximately 79 percent, or a 9 percent increase compared with existing conditions (same as the CEQA Proposed Project).

Consistent with Provision C.3 requirements in the MRP, stormwater runoff would be treated prior to discharging to the San Francisco Bay. Potential treatment and LID options would include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Operational impacts would be the same as under the CEQA Proposed Project.

Construction activities under the CEQA Reduced Density Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project. Temporary construction dewatering may be required. Dewatering could result in an exposure to pollutants from spills or the mobilization of existing groundwater contaminant plumes. Construction would comply with dewatering regulations, ensuring that dewatering activities would be monitored and treatment would take place as required. However, due to the presence of groundwater contaminant plumes in the area, construction dewatering activities may result in a potentially significant impact on groundwater quality before mitigation. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project and the CEQA Reduced Density Alternative, resulting in a 9 percent increase in impervious cover compared to existing conditions (same as the CEQA Proposed Project). Consistent with Provision C.3 requirements in the MRP, stormwater runoff from the Variant would be treated prior to discharging to the San Francisco Bay. Potential treatment and LID options would include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. The flexibility in the proposed project's design and proposed land use would include additional Research and Office uses instead of Student/Faculty

Housing and additional laboratory and Research & Development uses. However, the proposed land use under the Variant would not affect water quality. Operational impacts would be the same as under the CEQA Proposed Project and CEQA Reduced Density Alternative.

Construction activities under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project and CEQA Reduced Density Alternative. Temporary construction dewatering may be required. Dewatering could result in an exposure to pollutants from spills or the mobilization of existing groundwater contaminant plumes. Construction would comply with dewatering regulations, ensuring that dewatering activities would be monitored and treatment would take place as required. However, due to the presence of groundwater contaminant plumes in the area, construction dewatering activities may result in a potentially significant impact on groundwater quality before mitigation. The potential for the types of impacts would be the same as those analyzed under the CEQA Proposed Project.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance After Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

Impact CEQA-HYD-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project could impede sustainable groundwater management of the basin?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

The depth to groundwater on the Project Site ranges from 5 to 12 feet bgs.[35] Maximum excavation depths would extend to 25 feet bgs. The Central Utility Plant Option would require excavation to 11 feet bgs for the distribution pipes, which is more than the excavation needed for the typical utility improvements that would otherwise be required for the CEQA Proposed Project. Temporary construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. Removal of groundwater resulting from dewatering would not result in a substantial decrease in groundwater supplies. The amount of groundwater potentially requiring dewatering during construction would be minimal relative to the size and volume of groundwater of the Santa Clara subbasin. Groundwater underlying the Project Site is not a source of drinking water. Consistent with the requirements of Mitigation Measure HAZ-1, groundwater produced during dewatering from construction activities would be sampled for laboratory analysis to determine appropriate management (on-site dust control, discharge to storm drains, discharge to the sanitary sewer, treatment at the WATS, or offsite disposal). Determining the groundwater control method during dewatering activities would depend on factors such as the geometry of the excavation, aquifer properties, depth of excavation, and aquifer thickness below the base of the excavation (subgrade). Therefore, construction of the proposed project would not substantially decrease groundwater supplies or impede sustainable groundwater management of the basin. This impact would be less than significant.

Operation

The Project Site is within the Santa Clara Valley Groundwater Basin, Santa Clara subbasin, which is a high-priority basin. Groundwater on the Project Site has been affected through historical use and the migration of contaminated groundwater. Therefore, the untreated groundwater underlying the Project Site cannot be used for drinking water supplies or other beneficial uses. The CEQA Proposed Project would not impact beneficial uses in the subbasin as defined in the Basin Plan. As described in Section 3.18, *Utility and Service Systems*, NASA ARC is served by SFPUC via the Hetch Hetchy Aqueduct, which is generally drawn from surface water supply. Some retail customers are supplied with local groundwater and recycled water supplies. The split between these resources varies from year to year depending on the water year hydrology and operational circumstance. This analysis assumes water supply is predominantly derived from surface water sources. Due to restrictions of groundwater use from aquifer(s) under the Project Site, no direct groundwater pumping for operational water supply is expected.

Implementation of the CEQA Proposed Project would increase the impervious surface area on the Project Site by approximately 9 percent. Increases in impervious surface area could reduce the potential for groundwater recharge. Soils on the Project Site have low permeability due to high clay content, resulting in little to no groundwater recharge. The proposed project would include new landscape buffers, a mix of native and adaptive landscaping, bioretention areas, and stormwater treatment areas throughout the Project Site, in accordance with the Berkeley Space Center Development Guidelines for the NRP. Other potential stormwater treatment and LID options would include flow-through planters, green roofs, rainwater cisterns, media filters, permeable

[35] EKI. 2026. *Environmental Issues Management Plan (EIMP) Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California*. Spring.

pavement/pavers, self-treating landscaped areas, and Silva Cells. These features would treat runoff and capture and naturally filter contaminants from the Project Site's stormwater runoff.

The integration of landscaping also includes phytoremediation strategies, which would aid in existing groundwater remediation efforts on-site. The addition of treatment and LID options would allow groundwater infiltration and groundwater recharge. New landscaped areas would slow surface water runoff, allowing it to percolate into the ground, thereby providing increased benefits from groundwater recharge.

No permanent dewatering systems or groundwater pumping for project operations would be required. Thus, the proposed project would not substantially decrease groundwater supplies and would not impede sustainable groundwater management of the basin. Therefore, this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Construction activities would be expected to be the same as under the CEQA Proposed Project, including temporary construction dewatering in some isolated areas of the Project Site with shallow groundwater. Groundwater produced during dewatering from construction activities may be used for dust control within the Project Site, consistent with the requirements of the Spring 2026 project-specific EIMP. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur in the same footprint as the CEQA Proposed Project. Implementation of the Variant would increase the impervious surface area on the Project Site by approximately 9 percent (same as the CEQA Proposed Project). Increases in impervious surface area could reduce the potential for groundwater recharge. The proposed project would include new landscape buffers, a mix of native and adaptive landscaping, and stormwater treatment areas throughout the Project Site. Stormwater treatment and LID options would naturally filter contaminants from the Project Site's stormwater runoff and allow groundwater infiltration and groundwater recharge. New landscaped areas would slow surface runoff, allowing it to percolate into the ground, thereby providing increased benefits from groundwater recharge. Impacts would be the same as under the CEQA Proposed Project. Construction and operation of the Variant would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that implementation of the sustainable groundwater management of the basin would be impeded. Impacts associated with the proposed project would be less than significant.

Mitigation Measures

No mitigation is required for this impact

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor

heights would be higher than those under the CEQA Proposed Project. As a result, the CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site by approximately 9 percent compared with existing conditions, the same as the CEQA Proposed Project. Temporary construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. Groundwater produced during dewatering may be used for dust control within the Project Site, consistent with the requirements of the Spring 2026 project-specific EIMP. The CEQA Reduced Density Alternative would occur within the same footprint as the CEQA Proposed Project. Implementation of the CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site by approximately 9 percent (same as the CEQA Proposed Project). Increases in impervious surface area could reduce the potential for groundwater recharge. The CEQA Reduced Density Alternative would include new landscape buffers, a mix of native and adaptive landscaping, and stormwater treatment areas throughout the Project Site. Stormwater treatment and LID options would naturally filter contaminants from the Project Site's stormwater runoff and allow groundwater infiltration and groundwater recharge. New landscaped areas would slow surface water runoff, allowing it to percolate into the ground, thereby providing increased benefits from groundwater recharge. Impacts would be the same as under the CEQA Proposed Project. Construction and operation of the CEQA Reduced Density Alternative would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the implementation of the sustainable groundwater management of the basin would be impeded. Impacts associated with the proposed project would be less than significant.

Mitigation Measures

No mitigation is required for this impact

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. The same construction activities, including temporary construction dewatering in some isolated areas of the Project Site with shallow groundwater, could be required. Groundwater produced during dewatering may be used for dust control within the Project Site, consistent with the requirements of the Spring 2026 project-specific EIMP. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project. Implementation of the Variant would increase the impervious surface area on the Project Site by approximately 9 percent. Increases in impervious surface area could reduce the potential for groundwater recharge. The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include new landscape buffers, a mix of native and adaptive landscaping, and stormwater treatment areas throughout the Project Site. Stormwater treatment and LID options would naturally filter contaminants from the Project Site's stormwater runoff and allow groundwater infiltration and groundwater recharge. New landscaped areas would slow surface water runoff, allowing it to percolate into the ground, thereby providing increased benefits from groundwater recharge. Impacts would be the same as under the CEQA Proposed Project and the CEQA Reduced Density Alternative. Construction and operation of the Variant would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that implementation of the sustainable groundwater management of the basin would be impeded. Impacts associated with the proposed project would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-HYD-3: Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

a) ***Result in substantial erosion or siltation on- or off-site,***

b) ***Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site,***

c) ***Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional source of polluted runoff, or***

d) ***Impede or redirect floodflows?***

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

During construction, stormwater drainage patterns could be temporarily altered due to site grading, preparation, and excavation. The proposed grading would follow the existing drainage pattern, which flows from south to north. The south-to-north slope pattern would be maintained with a general 0.8 percent slope across the Project Site. The CEQA Proposed Project would result in approximately 45 acres of ground disturbance during construction, inclusive of Project-Site and off-site utility improvements within the Limits of Work. Under the NPDES Construction General Permit, project construction would implement BMPs required in the proposed project SWPPP to minimize the potential for erosion or siltation in nearby storm drains and temporary changes in drainage patterns during construction. During construction, implementation of an erosion and sediment control plan would also be required. Construction BMPs would capture and infiltrate small amounts of sheet flow into the ground so that off-site runoff from the construction site would not increase, ensuring that drainage patterns would not be altered significantly. Measures required by

the NPDES Construction General Permit would also limit site runoff during construction and would not alter stormwater drainage patterns. BMPs would be implemented to control construction site runoff, ensure proper stormwater control and treatment, and reduce the discharge of pollutants to the storm drain system. The proposed project would comply with SCVURPPP requirements, including implementation of construction site control measures and BMPs to prevent sediment from migrating offsite and erosion control measures to stabilize soils, as well as appropriate site design, pollutant source control, and treatment measures to improve and treat runoff. Thus, construction of the proposed project would not substantially alter the existing drainage pattern of the area in a manner that would result in substantial erosion or siltation or increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site. Project construction would not result in an exceedance of drainage system capacities. The associated impact would be less than significant.

Operation

The existing 10-year design peak storm discharge and volume leaving the Project Site is 17.98 cubic feet per second (cfs) and 198,182 cubic feet (cf), respectively. The CEQA Proposed Project would increase the area of impervious cover from 70 percent to approximately 79 percent, or a 9 percent increase from existing conditions. The proposed 10-year design peak storm discharge would be 18.0 cfs, and the peak volume would be 263,338 cf. Stormwater runoff would be treated on-site, and any increase in stormwater volume (estimated to be 65,156 cf) would be retained on-site. Potential treatment and LID options include green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells.[36] In addition, the proposed open space would incorporate bioretention areas along the Promenade within the Central Green and a self-treating lawn area within the center point of the Project Site. Street stormwater runoff would be treated with flow-through planters. LID methods and site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Untreated stormwater from the center of the Project Site would flow through an overland conveyance to either centralized BMPs or on-site treatment BMPs. Treated stormwater would then be piped underground to the centralized retention facility north of the Project Site. The volume of stormwater retained from the center of the Project Site would meet retention requirements (the equivalent volume of stormwater of the pre-development 10-year storm event) for the remainder of the Project Site. The CEQA Proposed Project would be required to maintain total stormwater flows and not exceed the existing flows and volumes that leave the Project Site, consistent with NPDES stormwater runoff requirements in the MRP. The Project Site would meter flows leaving the site so that the peak discharge would not exceed the existing discharge rate of 17.98 cfs. The proposed stormwater system would contain the 10-year storm discharge in pipes. However, the proposed system would contain the 25-year storm discharge in pipes with surcharging[37] and contain the 100-year storm discharge in curbs without flooding buildings. Because the existing storm drain system north of Project Site is at capacity, the CEQA Proposed Project cannot add additional stormwater flows to this system during peak rainfall events. Therefore, the CEQA Proposed Project would not add any additional stormwater to the existing storm drain system north of the Project Site.

[36] *Silva Cells* are suspended pavement systems that prevent soil compaction around tree roots, allowing trees to grow freely without buckling sidewalks; stormwater is treated on-site.

[37] Surcharging occurs when the flow discharging through a pipe exceeds the maximum capacity of the pipe, thereby backing up in the system. When surcharging occurs, it seeks to relieve itself at the lowest relief point on the system.

The proposed on-site drainage system would consist of two subsystems conveying runoff and discharging into a new trunk main to eastern diked marsh. Subsystem 1 would cover approximately 23.3 acres and drain via pipes on the interior of the Project Site to the on-site retention system. The proposed storm drain line for Subsystem 1 would connect to the proposed storm drain retention system located in the northeast corner of the Project Site to retain the entire increase in volume from the existing site. The retention pond would slow the flow of stormwater into the eastern diked marsh in the event of a large storm event. The remainder of stormwater flows would discharge to the proposed dedicated trunk main to Eastern Dike Marsh in Cody Road. The proposed stormwater system is shown in Figure 2-19a, Conceptual Utilities Plan (Stormwater), and Figure 2-19b, Conceptual Utilities Plan (Stormwater – Eastern Diked Marsh Trunk Main), in Chapter 2, *Proposed Project/Proposed Action and Alternatives*. Flows would be metered upstream of the connection to the trunk main so that flows would be released at a controlled flow rate and not exceed the flow rate of the existing site. Subsystem 2 would cover approximately 11.6 acres that drain via pipes in Girard Road, Wescoat Road, and Cody Road. Subsystem 2 would convey runoff to the proposed trunk main in Cody Road and discharge to the eastern diked marsh. Subsystem 2 would not have any flow and volume reduction as all flow and volume for the entire site would be handled in Subsystem 1. New drainage systems would also be installed in both Wescoat Road and Cody Road and connect to the existing NASA storm drain system, similar to existing conditions. Stormwater treatment BMPs would be implemented to manage the flow rate and volume from both roads, which would be equivalent to existing conditions, and no additional detention or retention would be required.[38]

The off-site storm drain system would consist of a 48-inch trunk main. The trunk main would be sized to convey flows from the Project Site and ultimately connect directly to the eastern diked marsh. As part of the proposed project, swale and rap would be installed at the eastern diked marsh outfall, which would prevent erosion.

During the 10-year design storm, storm flows would be reduced to the pre-project peak flow via an orifice at the outlet of subsystem 1, which would account for flow reduction of the entire site. Flows in the 10-year design storm would be contained completely below the ground surface. Impacts to the eastern diked marsh would be reduced by retaining storm flows on-site and discharging a volume equivalent to the existing 10-year volume from the Project Site. Given the known flooding issues north of the Project Site, as described in Section 3.10.2.2, *Project Site*, the CEQA Proposed Project would detain and retain flows and volumes to match existing flows and volumes leaving the Project Site, as required by the MRP. Flow and volume would be verified during the detailed project design phase. The proposed project would ultimately discharge a volume equivalent to the existing volume leaving the Project Site and would decrease the volume discharged to the NASA Ames storm drain system as it redirects stormwater directly to the marsh via the new trunk main, alleviating any potential flooding issues in the NASA Ames storm drain system.

Detention would be provided to reduce the peak discharge rate. Runoff would be detained onsite in oversized pipes upstream of the connection to the eastern diked marsh trunk main. Flows would ultimately flow into the off-site trunk main on Cody Road at a controlled flow rate via an outfall. An orifice and weir would meter flows leaving the Project Site to match the existing flow rate. Other potential options for detention include a detention vault, an array of pipes reserved for detention, or oversized pipes.

[38] BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan.* Spring.

To manage the excess volume of runoff discharged from the Project Site (i.e., 65,156 cf), the proposed project would also include retention. Stormwater retention strategies would improve downstream conditions by slowing runoff flows during peak storm events. The project proposes to retain the equivalent volume of water of the pre-development 10-year storm event. Retention would be achieved through one or a combination of methods including a retention pond, on-site water re-use, increasing site permeability (e.g., green roofs, additional vegetation, permeable pavement), or other methods. Retention areas are proposed at the northern portion of the Project Site. The retention ponds are designed to hold the difference between the 10-year existing volume and the 10-year proposed volume.[39]

New drainage systems would be installed in both Wescoat Road and Cody Road and would connect to the existing NASA storm drain system in Cummins Avenue, similar to existing conditions. Both Wescoat Road and Cody Road sections would be replaced essentially in kind, and the existing drainage patterns of each road would be maintained. Stormwater flows would be managed via stormwater treatment BMPs. Drainage patterns on Wescoat Road and Cody Road are not expected to change. Therefore, the flow rate and volume from both roads are assumed to be equivalent to existing and no additional detention or retention will be required. The CEQA Proposed Project may temporarily connect to the existing NASA storm drain system north of the Project Site, which is at capacity. For any duration of time that the CEQA Proposed Project temporarily connects to the existing NASA system, the 10-year post-project peak discharge would not exceed the pre-project 10-year peak discharge for the entire Project Site because runoff would be managed with stormwater BMPs.[40]

Storm runoff would be captured and treated on-site using LID methods such as bioretention areas, flow-through planters, permeable pavement/pavers, and self-treating landscaped areas, per current NPDES Provision C.3 requirements. Consistent with Provision C.3 requirements, stormwater runoff from the CEQA Proposed Project would be treated prior to discharging to the storm drain, which ultimately flows to San Francisco Bay. Off-site utility improvements would also comply with Provision C.3 requirements in the MRP and local stormwater requirements. All project-related development would comply with applicable federal, state, and select local requirements, as discussed in Section 3.10.3, *Plans, Policies, and Regulations*, including requirements regarding water quality, flood control, and stormwater management. Given the analysis above, the CEQA Proposed Project would not add any additional stormwater to the existing storm drain system north of the Project Site. The CEQA Proposed Project would not alter existing drainage patterns or change stormwater runoff rates or volumes at the Project Site in a manner that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Furthermore, floodflows would not be impeded or redirected. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

[39] BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan.* Spring.

[40] Ibid.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. The construction activities expected, including grading and temporary ground disturbance, would be the same as under the CEQA Proposed Project. As required by the NPDES Construction General Permit, standard erosion control measures and BMPs identified in the proposed project SWPPP would be implemented during construction to reduce erosion or siltation on- or off-site.

The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project. Implementation of the Variant would increase the impervious surface area on the Project Site by approximately 9 percent (same as the CEQA Proposed Project). Increases in impervious surface area could result in increases in stormwater runoff and associated pollutants. Stormwater runoff would be treated on-site, and any increases in stormwater volumes would be retained on-site. Potential treatment and LID options include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. Treated stormwater would then be piped underground to the centralized retention facility north of the Project Site.

The existing 10-year design peak storm discharge leaving the Project Site is 17.98 cfs. The proposed 10-year design peak storm discharge for the Project Site would not exceed 18.0 cfs according to the proposed Master Plan. The Project Site is required to maintain stormwater flows by not exceeding existing flows and volumes, consistent with NPDES stormwater runoff requirements in the MRP. Runoff leaving the Project Site would be metered so that the peak discharge would not exceed the existing discharge rate. The proposed stormwater system for the Variant would be the same as under the CEQA Proposed Project. Given the known flooding issues north of the Project Site, the Variant would be required to detain and retain flows and volumes to match existing flows and volumes leaving the Project Site. In addition, a retention pond would be incorporated into the site design to manage the increase in runoff volumes. The Variant would comply with Provision C.3 requirements in the MRP and local stormwater requirements. Impacts would be the same as under the CEQA Proposed Project. Construction and operation of the Variant would not alter existing drainage patterns or change stormwater runoff rates or volumes at the Project Site in a manner that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Furthermore, floodflows would not be impeded or redirected. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. The same construction activities would be expected, including grading and temporary ground disturbance. As required by the NPDES Construction General Permit, standard erosion control measures and BMPs identified in

the SWPPP would be implemented to reduce erosion or siltation. Approximately 70 percent of the Project Site is currently covered by impervious surfaces. The CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site from approximately 70 percent to approximately 79 percent, or a 9 percent increase compared with existing conditions (same as the CEQA Proposed Project). Consistent with Provision C.3 requirements in the MRP, stormwater runoff would be treated prior to discharging to the San Francisco Bay. Potential treatment and LID options include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Treated stormwater would then be piped underground to the centralized retention facility north of the Project Site. Any increases in stormwater volumes would be retained on-site.

The proposed stormwater system for the CEQA Reduced Density Alternative would be same as under the CEQA Proposed Project. The proposed on-site drainage system would consist of two subsystems: Subsystem 1 and Subsystem 2. Subsystem 1, on the interior of the Project Site, would connect to the proposed storm drain retention system located in the northeast corner of the Project Site and discharge to the retention pond. The retention pond would slow the flow of stormwater into the eastern diked marsh in the event of a large storm event. Subsystem 2 would convey runoff to the proposed trunk main in Cody Road and discharge to the eastern diked marsh. Subsystem 2 would not have any flow and volume reduction as all flow and volume for the entire site would be handled in Subsystem 1. The Project Site is required to maintain total stormwater flows and not exceed existing flows and volumes that leave the Project Site. The proposed 10-year design peak storm discharge would not exceed 18.0 cfs according to the proposed Master Plan. The Project Site would meter flows leaving the site so that the peak discharge would not exceed the existing discharge rate of 17.98 cfs. Runoff volumes would match existing flow rates and volumes leaving the Project Site. In addition, a retention pond would be incorporated into the site design to manage the increase in runoff volumes. The CEQA Reduced Density Alternative would comply with Provision C.3 requirements in the MRP and local stormwater requirements. Impacts would be the same as under the CEQA Proposed Project. Construction and operation of the CEQA Reduced Density Alternative would not alter existing drainage patterns or change stormwater runoff rates or volumes at the Project Site in a manner that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Furthermore, floodflows would not be impeded or redirected. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project and the CEQA Reduced Density Alternative, resulting in a 9 percent increase in impervious cover compared to existing conditions (same as the CEQA Proposed Project). Construction of the CEQA Reduced Density Alternative No Student/Faculty Housing Variant is expected to include the same construction activities, including grading and temporary ground

disturbance. Standard erosion control measures and BMPs identified in the SWPPP would be implemented to reduce erosion or siltation, as required by the NPDES Construction General Permit.

Consistent with Provision C.3 requirements in the MRP, stormwater runoff would be treated prior to discharging to the San Francisco Bay. Potential treatment and LID options include bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the Project Site. Treated stormwater would then be piped underground to the centralized retention facility north of the Project Site.

The proposed stormwater system for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would be same as under the CEQA Proposed Project and the CEQA Reduced Density Alternative. The Project Site is required to maintain total stormwater flows by not exceeding existing flows and volumes that leave the Project Site. The proposed 10-year design peak storm discharge would not exceed 18.0 cfs according to the proposed Master Plan. The Project Site would meter flows leaving the site so that the peak discharge would not exceed the existing discharge rate of 17.98 cfs. A retention pond would also be incorporated into the site design to manage the increase in runoff volumes. The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would comply with Provision C.3 requirements in the MRP and local stormwater requirements. Impacts would be the same as under the CEQA Proposed Project and the CEQA Reduced Density Alternative. Construction and operation of the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not alter existing drainage patterns or change stormwater runoff rates or volumes at the Project Site in a manner that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Furthermore, floodflows would not be impeded or redirected. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-HYD-4: *Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan*?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Commonly practiced BMPs would be implemented to control construction site runoff and reduce the discharge of pollutants to storm drain systems from stormwater and other nonpoint-source runoff. As part of compliance with permit requirements during ground-disturbing or other construction activities, water quality control measures and BMPs would be implemented, ensuring that water quality standards would be achieved, including water quality objectives that protect designated beneficial uses of surface water and groundwater, as defined in the Basin Plan. Construction runoff would also have to be in compliance with the appropriate water quality objectives for the region. The NPDES Construction General Permit requires stormwater discharges to not contain pollutants that cause or contribute to an exceedance of applicable water quality objectives or water quality standards, including designated beneficial uses. As stated in Impact CEQA-HYD-1, incorporation of a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, a retention pond, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells, would reduce stormwater runoff flows and associated pollutants. The Water Reuse Facility Option would produce recycled water to serve the proposed buildings, including irrigated areas. Irrigated areas would also reduce stormwater runoff flows and associated pollutants through infiltration.

Dewatering would be conducted on a temporary basis during the construction phase. Groundwater would not be used during operation. Although the amount of impervious surface area within the Project Site would increase upon project completion, stormwater treatment areas and gardens, bioretention planters, and landscape designs with integrated stormwater management, including phytoremediation, would be used to treat runoff and allow groundwater infiltration and groundwater recharge. Implementation of stormwater management and treatment features would provide areas for infiltration, allow groundwater recharge, and protect groundwater resources, as required by the sustainable groundwater management plan.

The Project Site overlies the Santa Clara Valley Groundwater Basin, Santa Clara subbasin, which is designated as a high-priority basin and subject to the Sustainable Groundwater Management Act (SGMA). The groundwater management plan for the for the Santa Clara and Llagas subbasins is the applicable sustainable groundwater management plan for the Project Site. Thus, construction and operation of the proposed project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

Regarding groundwater quality, construction dewatering could be conducted on a temporary basis. The proposed project could result in water quality impacts due to the discharge of potentially contaminated dewatered groundwater into surface waters or migration of the regional contaminated groundwater plume, as described under Impact CEQA-HYD-1. Water quality standards and water quality objectives that protect designated beneficial uses of surface and groundwater, as defined in the Basin Plan, may be adversely impacted. Construction dewatering would have the potential to mobilize existing groundwater contaminant plumes in the area, and could conflict with or obstruct implementation of a water quality control plan, resulting in a potentially significant impact before mitigation

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance After Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on water quality would be reduced by requiring ongoing monitoring and remediation during groundwater dewatering activities and that protocols be implemented that would address potential exposure or migration of impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Construction activities, including ground-disturbing activities, would be expected to be the same as under the CEQA Proposed Project. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project. Potential impacts would be the same as under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the same types of land uses at the same locations. The maximum building height would also be the same, but the internal floor-to-floor heights would be higher than those under the CEQA Proposed Project. As a result, the CEQA Reduced Density Alternative would increase the impervious surface area on the Project Site by approximately 9 percent compared with existing conditions, the same as the CEQA Proposed Project. Implementation of BMPs, as required by the Construction General Permit, would control construction site runoff and ensure that water quality standards would be achieved, including water quality objectives that protect designated beneficial uses of surface water and groundwater, as

defined in the Basin Plan. As stated in Impact CEQA-HYD-1, incorporation of a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, a retention pond, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells, would also reduce stormwater runoff flows and associated pollutants.

Dewatering would be conducted on a temporary basis during the construction phase. Implementation of stormwater management and treatment features would provide areas for infiltration, allow groundwater recharge, and protect groundwater resources, as required by the sustainable groundwater management plan. Potential impacts would be the same as under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Construction activities, including ground-disturbing activities, would be expected to be the same as those under the CEQA Proposed Project and CEQA Reduced Density Alternative. The Variant would provide flexibility in the proposed project's design and proposed land use and would occur within the same footprint as the CEQA Proposed Project and the CEQA Reduced Density Alternative. Potential impacts would be the same as those under the CEQA Proposed Project and would be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure HAZ-1. Implement the Environmental Issues Management Plan

See discussion for the CEQA Proposed Project under Impact CEQA-HAZ-1 in Section 3.9, Haz*ards and Hazardous Materials*, of this joint EIR/EIS.

Significance after Mitigation

Implementation of Mitigation Measure HAZ-1 would reduce impacts to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities and that protocols be implemented that would address potential exposure to impacted groundwater resulting from project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation.

3.10.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.10.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to the release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.10.8, *Impacts and Mitigation Measures*, above.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for surface water hydrology and water quality is the Saratoga Creek-Frontal San Francisco Bay Estuaries Watershed (195 square miles) of the larger San Francisco Bay Basin Watershed. The cumulative geographic context for groundwater hydrology and water quality is the Santa Clara Valley Groundwater Basin, Santa Clara subbasin (240 square miles). Given the size of each cumulative geographic context, it is beyond the scope of this joint EIR/EIS to identify every cumulative project within its boundaries.

Impact CEQA-C-HYD-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to hydrology and water quality? (Less than Cumulatively Considerable with Mitigation)

Water Quality

Generally, cumulative projects would occur in developed areas with existing impervious surfaces and would not be expected to substantially increase the amount of new impervious surface area. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in a net increase in impervious surface area. In addition, temporary construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. Dewatering could result in an exposure to pollutants from spills or other activities and may contaminate groundwater. Untreated water from construction site dewatering could contain pollutants that, if discharged to a storm drain system or natural watercourse, could cause the receiving water to exceed water quality standards. Therefore, the impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact related to water quality without mitigation.

Cumulative projects would be required to adhere to applicable City of Santa Clara General Plan goals, policies, and action statements; the City's Municipal Zoning Code; and the City's stormwater management guidelines regarding stormwater runoff and infrastructure. In addition, cumulative projects would be required to implement stormwater pollution BMPs during construction and incorporate LID design measures to reduce water quality impacts and comply with the NPDES MRP.

The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) proposes bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells to treat and manage stormwater runoff before it enters the stormwater system. The proposed project would comply with NPDES stormwater runoff and Provision C.3 requirements in the MRP. The stormwater management measures proposed for the proposed project would reduce pollutant discharges from stormwater through filtration and infiltration.

Implementation of Mitigation Measure HAZ-1 requires compliance with the Spring 2026 project-specific EIMP, which would protect human health and the environment. Consistent with the requirements of the Spring 2026 project-specific EIMP, groundwater produced during dewatering from construction activities would be sampled for laboratory analysis to determine appropriate management (on-site dust control, discharge to storm drains, discharge to the sanitary sewer, treatment at the WATS, or offsite disposal). Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would not result in a cumulatively considerable contribution to significant environmental impacts on water quality after mitigation.

Groundwater Recharge and Supplies

During construction of cumulative projects within the Santa Clara Valley Groundwater Basin, Santa Clara subbasin, dewatering could be conducted on a one-time or temporary basis during the construction phase, but would not likely result in a loss of water that would deplete groundwater supplies. In addition, buildout of the cumulative projects would generally involve redevelopment of existing developed sites that contain substantial areas with impervious surfaces, which would not substantially change the size of groundwater recharge areas. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) may require temporary construction dewatering in some isolated areas of the Project Site to address the effects of shallow groundwater. In addition, the proposed project would result in a net increase in impervious surface area. However, no permanent dewatering systems or groundwater pumping for project operations would be required. The proposed project would not substantially decrease groundwater supplies and would not impede sustainable groundwater management of the basin. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to groundwater recharge and supplies.

Storm Drain Capacity

Cumulative projects in the vicinity of the Project Site could increase the volume and rate of stormwater runoff. Such increases could cause localized flooding if storm drainage capacity is exceeded or excess flows overtop banks in areas where floodwater storage may not be available. Generally, cumulative projects would occur in developed areas with existing impervious surfaces and would not be expected to substantially increase the amount of new impervious surface area. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in a net increase in impervious surface area. However, the project proposes bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells to treat and manage stormwater runoff before it enters the stormwater system. In addition, a retention pond would be incorporated into the site design to manage any increase in

runoff volumes. The Project Site would meter flows leaving the site so that the peak discharge would not exceed the existing discharge rate. Runoff flows are required to be detained and retained. Volumes would match the existing flow rates and volumes leaving the Project Site; the proposed project would comply with Provision C.3 requirements in the MRP. Therefore, because cumulative projects would generally occur in developed areas, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to storm drain capacity.

3.11 Land Use and Planning

3.11.1 Introduction

This section evaluates the potential impacts on land use and planning that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to land use and planning include a request by the County of Santa Clara to describe local land use jurisdictional issues and identify which federal, state and/or local plans would apply to the proposed project. This issue is addressed below in Section 3.11.3, *Plans, Policies, and Regulations.*

3.11.2 Affected Environment/Environmental Setting

3.11.2.1 Regional Setting

The Project Site is on federal land within the National Aeronautics and Space Administration Ames Research Center (NASA ARC), an approximately 2,000-acre facility located between U.S. 101 and the southwestern edge of San Francisco Bay, as shown in Figure 2-1, Project Location, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*. NASA ARC is composed of the original NASA ARC campus, Moffett Federal Airfield, airfield support facilities, barracks, support facilities for current and former military personnel, and open space. The city of Mountain View borders NASA ARC to the north and southwest; the city of Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of the city of San Francisco and 8 miles north of the city of San José.

3.11.2.2 Adjacent Uses

The immediate vicinity of the Project Site comprises a mix of uses. Northwest of the Project Site, across Wescoat Road, is Shenandoah Plaza, a linear open space surrounded by two-story, Mission-style buildings clustered in a formal campus-like layout defined by a west-facing gated entrance and landscape that includes mature trees, shrubs, and manicured lawns. Northeast of the Project Site, across from the intersection of Wescoat Road and Cody Road, is Hangar One, one of the largest freestanding structures in the world. Hangar One and many of the buildings, landscapes, and objects north of the Project Site are within the boundaries of the Shenandoah Plaza. Also north of the Project Site is the Moffett Field Museum, which includes aviation, space flight, and national defense exhibits. East of the Project Site, across Cody Road, is Moffett Federal Airfield. An area designed as a preserve providing burrowing owl habitat is located between Moffett Federal Airfield and lands east of Cody Road; a small portion of the burrowing owl preserve overlaps the southeastern portion of the Project Site.

Moffett Federal Airfield is owned by NASA and currently used by NASA, with some limited use by other resident agencies and tenants. East of Moffett Federal Airfield is the city of Sunnyvale and large office/research-and-development (R&D) campuses that are occupied by Google, Amazon,

Lockheed Martin, and Meta. Beyond the southern border of the Project Site, along Girard Road and within the NRP, is a recreational field and facilities previously used to support Naval operations; farther south is U.S. 101 and the city of Mountain View. West of the Project Site is Wescoat Village at Moffett Field, an area managed by the U.S. Army that comprises multi-family and single-family residences. North the Project Site, beyond Shenandoah Plaza, is NASA ARC, which includes the world's largest wind tunnels, among other highly specialized R&D facilities. Farther northwest of the Project Site are additional large office/R&D Google facilities, both on NASA land and within the city of Mountain View.

The NASA Ames Development Plan (NADP), as discussed in more detail below, is a comprehensive long-range land use plan that has guided the use, renovation, management, and development of facilities at the approximately 2,000-acre NASA ARC. Four planning areas are identified within the NADP; the Project Site is within the NRP planning area. The NRP covers approximately 86 acres in the southwestern portion of NASA ARC. It is bordered by the Eastside/Airfield planning area, the NASA ARC planning area, military housing operated by a private developer on behalf of the Department of War, and U.S. 101. Under the NADP, allowed development within the NRP planning area includes laboratories, office space, classrooms, auditoriums, museums, a conference center, open space, a burrowing owl preserve, parking, housing, and limited retail facilities.

3.11.2.3 Limits of Work

The Limits of Work are located primarily on federal land within NASA ARC. A small portion of the Off-Site Areas is on federal land owned by the United States Army (Army). The Project Site is within the City of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. Most of the Off-Site Areas are also within the City of Mountain View Sphere of Influence and outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the city of Mountain View. The Project Site is a portion of Santa Clara County Assessor's Parcel Number 116-18-012.

The Limits of Work are currently developed with 18 one- to three-story buildings that total approximately 185,600 square feet (including approximately 132,500 square feet of vacant uses and approximately 53,100 square feet of occupied uses), along with surface parking lots, roadways, and utility infrastructure. The existing site is shown in Figure 2-4, Existing Conditions Site Plan (Limits of Work) in Chapter 2, *Proposed Project/Proposed Action and Alternatives*. Table 2-1 in Chapter 2 summarizes the condition of the existing buildings within the Limits of Work. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations (e.g., offices, food service, a gas station, pool, recreation center, and lodging). The other existing buildings within the Limits of Work comprise industrial, storage, and utility facilities. The buildings range in height from approximately 15 to 45 feet above the finished grade. In addition, there are approximately 900 existing parking spaces within the Limits of Work. As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work.

Land Use Designation and Zoning

Within the NRP planning area, the Project Site has been designated and conceptualized as University Reserve. The University Reserve designation category is intended for educational facilities and could include uses such as classrooms, offices, lecture halls, research facilities, and the ancillary facilities required to achieve NASA's mission related to education and outreach. The Project Site is located

within the NRP planning area on parcels designated for educational and research and development/office facilities. The NADP used floor area ratios (FARs) to identify preferred densities at the time it was prepared, but the FARs are not regulatory requirements. Thus, there is no minimum or maximum FAR applicable to the Project Site and the developable area established by the Project Proponent's Enhanced Use Lease applies to the Project Site.

3.11.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, State and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and State environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, State and local government requirements, as applicable to the proposed action, will not be considered, at least to the extent for a proposed action and environmental effects on NASA ARC jurisdictional property. This includes mitigation measures proposed in accordance with those State and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

This section summarizes plans, policies, and regulations considered in the analysis.

3.11.3.1 Federal Regulations

Executive Order 13148

Executive Order (EO) 13148 mandates that environmental management considerations must be a fundamental and integral component of federal government policies, operations, planning, and management. The primary goal of this EO in the natural resources arena is for each agency to strive to promote the sustainable management of federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices and programs to reduce adverse impacts on the natural environment.

NASA Cultural Resources Management Program

NASA's management of cultural resources and support its Integrated Cultural Resources Management Plan (ICRTMP). The ICRTMP, established in 2014 for NASA ARC, serves as an internal compliance and management tool to integrate the NASA Cultural Resources Management Program with the mission activities at ARC, ensuring that cultural resource considerations are incorporated into project planning and execution.

Ames Research Center Directives

The Ames Policy Directives (APDs) and Ames Procedural Requirements (APRs)[1] are a public listing of NASA ARC policies and procedures. These publicly available policies describe compliance with NASA's standards and contain the framework for how NASA ARC carries out the review, assessment, and approval of projects at NASA ARC. The policies also address NASA ARC's conformance with federal, state, and local land use plans and regulations. The following APDs and APRs would be applicable to the Project Site:

- **APD 8500.1: Ames Environmental Policy.** Demonstrates pollution prevention practices and continual improvement of NASA ARC's environmental program. The Environmental Management Division is responsible for establishing and overseeing the following programs to ensure compliance with applicable laws and NASA's policy: drinking water, industrial wastewater, spill prevention control and countermeasures, air quality, stormwater, hazardous materials, hazardous waste, restoration, National Environmental Policy Act (NEPA), natural resources, and sustainability.
- **APD 8829.1: Construction Permits.** Establishes the Ames-specific policies and responsibilities for construction activities. The policy of NASA ARC is that all construction work is to be reviewed in adherence to all appropriate and applicable building and construction codes and standards. This review shall be performed according to a construction permit process established for the request, review, and approval of all construction permits at NASA ARC.
- **APD 8835.1: Landscaping Planting and Grooming.** Establishes policies for NASA ARC grounds and landscaping.
- **APR 8822.1: NASA Research Park Design Review Program.** Establishes Ames-specific responsibilities and procedures for the Design Review Program for all tenant-proposed development projects within the jurisdiction of NASA ARC. Upon completion of the NEPA process, the specifics regarding each building's architectural design and configuration within the Project Site will be reviewed for conformance and approval through NASA's NRP Design Review Board process (pursuant to Ames Procedural Requirement [APR] 8822.1). The Design Review Program is typically a two-stage process: Pre-Conceptual Design Review (to adequately define the scope of a project, to determine the level of environmental review needed for site approval, and to ensure that an applicant conforms to applicable requirements) and Preliminary Design Review (which includes submission for the Concept Design Phase [CDP]). The NEPA process would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site-specific NEPA documents, including the Maximum and Minimum Development Parameters and Standards, as documented in the Record of Decision (ROD). Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction for the proposed project. Design review ensures that development projects are properly coordinated and that they comply with NEPA and the National Historic Preservation Act (NHPA).

[1] National Aeronautics and Space Administration. 2024. *Ames Research Center Directives*. Available: https://www.nasa.gov/ames-research-center-directives/. Accessed: November 18, 2025.

- **APR 8829.1: Construction Permit Process.** Establishes the construction permit process and the requirements imposed on all construction activities at NASA ARC. APR 8829.1 establishes minimum requirements to provide a reasonable level of safety, public health, and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire, explosion, and other hazards and provide a reasonable level of safety to fire and emergency responders during emergency operations. For NRP projects, the Project Proponent must first engage in the NRP design review process (described above) and obtain approval from the NRP design review board before approval of a construction permit. These planning review and approval procedures ensure consistency with Ames master planning and compatibility with other planned work as well as the project definition and readiness.

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

The plan is broken down into various planning and development districts and includes a description of land use, infrastructure, facilities, open space, and transportation requirements for each district. All development projects are reviewed for consistency with the planning principles established by the NADP.[2]

The NADP is the guiding advisory document for the Project Site, with development goals, objectives, and planning principles, along with planning goals specific to the NRP. The main development goal is to develop a world-class, shared-use R&D campus in association with government entities, academia, industry, and non-profit organizations. The NADP provides a framework to guide the use, renovation, management, and development of facilities at NASA ARC to achieve that goal. The NADP's primary objective is to extend and deepen the R&D capabilities of NASA ARC through R&D partnerships in key research areas. The unifying principles that guide planning for the entire NASA ARC site include:

- Creation of a Community
- Provision of On-site Housing
- Transportation Demand Management
- Public Accessibility
- Sustainability
- Resource Conservation
- Environmental Issues Management
- Wildlife Preservation

[2] NASA Ames Research Center. 2002. *NASA Ames Development Plan*. December 2002.

- Wetland Preservation
- Historic Resource Protection

Buildout of the NADP was projected to result in a total of 1,930 residential units, 4,909 residents, and 7,088 additional employees. Development in the NRP, where the Project Site is located, anticipated approximately 3 million square feet of new educational, office, R&D, museum, conference center, housing, and retail spaces. In addition, approximately 562,000 square feet of non-historic structures would be demolished and approximately 340,000 square feet of existing space would be renovated within the NADP. Development in the NRP area between 2002 and 2025 included the rehabilitation of several buildings within the NAS Sunnyvale Historic District, demolition of a mixed-use facility (Building 476) and construction of a new USGS lab (Building 800). Beyond 2025, there are currently no approved developments within the NRP area. Of the remaining developable area programmed in the NADP, NASA previously allocated approximately 1.4 million square feet of permitted uses for the proposed project, consisting of approximately 500,000 square feet of office/high density R&D uses; 514,700 square feet of educational space; 250,000 square feet of conference center space; and 144,200 square feet of retail/support space.3

Federal Aviation Regulation Part 77

Federal Aviation Regulation Part 77 establishes standards and notification requirements for objects affecting navigable airspace. This notification serves as the basis for:

- Evaluating the effect of the construction or alteration on operating procedures,
- Determining the potential hazardous effect of the proposed construction on air navigation,
- Identifying mitigating measures to enhance safe air navigation, and
- Charting of new objects.

Notification allows the Federal Aviation Administration (FAA) to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace. NASA ARC has applied FAA civilian standards to determine adjacent land uses and airport operating clearances for Moffett Federal Airfield. Due to the Project Site's proximity to Moffett Federal Airfield, the Project Site is within an FAA notification area and height restriction area with a contour range of 157 feet above mean sea level based in National Geodetic Vertical Datum (NGVD) of 1988 to 182 feet above mean sea level based in NVGD of 1988, per Federal Aviation Regulation Part 77, Surfaces Map, for Moffett Federal Airfield.[4] Federal Aviation Regulation Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, establishes imaginary surfaces for airports and runways as a means of identifying areas of airspace wherein objects would be obstructions to air navigation.

3.11.3.2 Regional and Local Regulations

The regional and local regulations listed below are included for informational purposes only, unless UC Berkeley or NASA has explicitly elected to comply. As stated above, UC Berkeley is

3 NASA. 2025. *Berkeley Space Center at NASA Research Park—NASA ARC Buildout Assumptions.* December 16.

4 Santa Clara County Airport Land Use Commission. 2012. Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan. Figure 6: Moffett Federal Airfield FAR Part 77 Surfaces. Adopted November 2, 2012; amended December 19, 2018.

constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. Although the regional and local regulations below are provided for informational purposes, the regulations listed below are not analyzed further in this section. However, as noted below, select plans, policies, and regulations are referred to in respective resource section and/or applied as thresholds for analysis.

Plan Bay Area 2050

Senate Bill (SB) 375, adopted in 2008, requires preparation of a Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan (RTP) for the Bay Area. In the Bay Area, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting an SCS that integrates transportation, land use, and housing to meet greenhouse gas (GHG) reduction targets set by the California Air Resources Board (CARB). MTC and ABAG adopted Plan Bay Area 2050 in 2021. Plan Bay Area 2050 is the integrated land use/transportation plan and demographic/economic forecast for the nine-county San Francisco Bay Area region. The plan coordinates housing plans, open space conservation efforts, economic development strategies, and transportation investments. Plan Bay Area 2050 includes transportation and environmental strategies that support active and shared modes of travel, combined with a transit-supportive land use pattern that places housing near transportation centers.

To reduce GHG emissions, Plan Bay Area 2050 promotes compact mixed-use infill development within bikeable/walkable neighborhoods that are close to public transit, jobs, schools, shopping, parks, recreation, and other amenities. Local jurisdictions voluntarily identified Priority Development Areas (PDAs) as appropriate locations for these types of neighborhoods. Plan Bay Area 2050 also forecasts changes to the Bay Area population, including projected household and job growth, at the regional, county, and sub-county level. The Plan Bay Area 2050 Final Blueprint includes ABAG's most recent projections for demographic, economic, and land use changes in the coming decades.[5]

San Francisco Bay Plan

The San Francisco Bay Plan (Bay Plan) was prepared during 3 years of study and public deliberation by members of the San Francisco Bay Conservation and Development Commission (BCDC). In making its study of the bay, the commission had the help of numerous consultants and received extensive and invaluable aid from city, county, state, and federal agencies, along with specialists on university faculties and staff members from business organizations. In addition, the commission was assisted by an advisory committee whose 19 members contributed greatly in the review of the commission's work. The commission's study resulted in the publication of 23 volumes of technical reports. Summaries of the studies were printed as a supplement to the plan. The detailed reports are available for reference in numerous public libraries and offices of the commission.

The Bay Plan was completed and adopted by the BCDC in 1968 and transmitted to the California Legislature and the governor in 1969. In those actions, the commission completed the original

[5] Association of Bay Area Governments and Metropolitan Transportation Commission. 2021. *Plan Bay Area 2050: A Vision for the Future*. Released: October 1, 2021. Available: www.planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_October_2021_rev.pdf. Accessed: December 30, 2025.

charge given to it in the provisions of the McAteer-Petris Act of 1965. That act created the commission, mandated study of the bay, and required preparation and submittal of a final report to the California Legislature in 1969. The federal Coastal Zone Management Act requires federal actions that affect the coastal zone to be consistent, to the maximum extent practicable, with approved state or local coastal zone plans. The Bay Plan is the approved coastal zone plan for the San Francisco Bay Area. Bay Plan Map 7 designates Moffett Federal Airfield as an "Airport Priority Use Area." A conclusion of the Bay Plan is that only limited areas of shoreline are suitable for "priority uses" such as airports, water-related industries, or wildlife refuges and that these areas should be reserved specifically for those uses.[6] However, the coastal zone would not be affected by the proposed project and the Project Site's status as an Airport Priority Use Area in the Bay Plan would not be affected by the proposed project. Thus, the proposed project would not require a consistency determination or other approval from BCDC.

Santa Clara County General Plan and Municipal Code

The Santa Clara County (County) General Plan establishes the overall policy framework for land use and development. Zoning districts and regulations must conform with and implement the goals and policies of the general plan. Subdivision regulations and all other discretionary land use approvals, including variances and use permits, must also conform with the general plan or they may not be legally approved. Under the County General Plan, the Project Site is designated as a Public Facility, a designation used for lands located outside of city or county urban service areas that are owned or operated by federal, State, or local governments for government purposes. Public Facility uses could include County government centers; federal government land, including lands used for defense or research installations; or other facilities of federal, State, or local governments. The Project Site is zoned A1 with Combining Districts, General Use, under the County Zoning Ordinance.[7]

The Santa Clara County General Plan and Municipal Code are included in this section for informational purposes. However, for purposes of CEQA and NEPA, UC Berkeley and NASA, respectively, have elected to use noise standards from the municipal code of the jurisdiction where the noise-sensitive receptor is located for the analysis of construction and operational noise sources associated with this project. For the proposed project, the nearest noise-sensitive land uses are in Santa Clara County. Section 3.12, *Noise*, and Chapter 4, *Environmental Impact Statement*, for an analysis of consistency with the Santa Clara County General Plan and Municipal Code.

Mountain View 2030 General Plan

The Mountain View 2030 General Plan is the guiding document for the city's physical development and preservation. It includes goals, policies, and graphics that convey a long-term vision and guide local decision-making to achieve that vision. The general plan is the foundation for zoning regulations, subdivisions, and public works plans. It also addresses other issues related to the city's physical environment, such as noise, open space, and safety. The entire NASA ARC is designated as

[6] San Francisco Bay Conservation and Development Commission. 2025. *San Francisco Bay Plan*. Plan Map 7: South Bay. Reprinted March 25, 2025. Available: www.bcdc.ca.gov/wp-content/uploads/sites/354/2025/05/SanFranciscoBayPlan_ADA.pdf. Accessed: January 28, 2026.

[7] Santa Clara County, 2012. *Santa Clara County Zoning Atlas*. Map 33. July 2, 2012. Available: https://stgenpln.blob.core.windows.net/document/zoning_atlas.pdf. Accessed: January 28, 2026.

"Institutional" in the 2030 General Plan Land Use Map.[8] The permitted range of uses supports public and quasi-public uses that serve an essential regional and/or local function. These include NASA ARC facilities as well as facilities owned by federal, state, or county governments. The 2030 General Plan emphasizes continued support of ARC as an important economic and cultural center that needs active connections to the city of Mountain View. In addition, the 2030 General Plan includes goals and policies specific to NASA ARC.[9]

For purposes of the CEQA transportation analysis for the proposed project (Section 3.16, *Transportation and Traffic*), UC Berkeley elected to use guidance from Office of Planning and Research (OPR) revised CEQA Statute and Guidelines and the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory) as part of the analysis for the proposed project. Surrounding local jurisdictions, such as the City of Mountain View General Plan, have also generally relied on OPR guidance for setting their CEQA local thresholds and standard of significance. For the purposes of NEPA, NASA elected to use guidance from the City of Mountain View General Plan for evaluation of intersection and freeway level of service as part of the analysis for the proposed project. Refer to Section 3.16, *Transportation and Traffic*, and Chapter 4, *Environmental Impact Statement*, for an analysis of consistency with the City of Mountain View General Plan.

City of Sunnyvale General Plan

The City of Sunnyvale General Plan is the local government's long-term blueprint for the community's vision of future growth. It includes goals, policies, and programs that convey a long-term vision for the Sunnyvale community and guides local decision-making to advance that vision. The general plan is the basis for determining acceptable land uses and related park, road, and other infrastructure needs. The City of Sunnyvale General Plan contains the seven elements mandated by State law and was adopted as a consolidated document on July 26, 2011; the Land Use and Transportation Element was updated in March 2024. The City of Sunnyvale does not indicate a land use designation for NASA ARC. However, the Sunnyvale General Plan notes the City of Sunnyvale's interest in closely monitoring increased usage of Moffett Airfield for corporate collaborations and includes goals and policies specific to NASA ARC.[10]

For purposes of the CEQA transportation analysis for the proposed project (Section 3.16, *Transportation and Traffic*), UC Berkeley elected to use guidance from Office of Planning and Research (OPR) revised CEQA Statute and Guidelines and the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory) as part of the analysis for the proposed project. Surrounding local jurisdictions, such as the City of Sunnyvale General Plan, have also generally relied on OPR guidance for setting their CEQA local thresholds and standard of significance. For the purposes of NEPA, NASA elected to use guidance from the City of Sunnyvale for evaluation of intersection and freeway level of service as part of the analysis for the proposed

8 City of Mountain View, 2023. *General Plan Land Use Map*. Available: www.mountainview.gov/home/showpublisheddocument/7625/638307977676730000. Accessed: January 28, 2026.

9 City of Mountain View. 2012. *Mountain View 2030 General Plan*. Adopted July 10, 2012. Available: https://www.mountainview.gov/home/showpublisheddocument/6469/638214115708670000. Accessed: January 28, 2026.

10 City of Sunnyvale. 2024. *Sunnyvale General Plan—Land Use and Transportation Element*. Available: https://www.sunnyvale.ca.gov/home/showpublisheddocument/596/638757473948470000. Accessed: January 28, 2026.

project. Refer to Section 3.16, *Transportation and Traffic*, and Chapter 4, *Environmental Impact Statement*, for an analysis of consistency with the City of Sunnyvale General Plan.

Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan

The Santa Clara County Airport Land Use Commission was established to provide for appropriate development of areas surrounding public airports in Santa Clara County. It is intended to minimize the public's exposure to excessive noise and safety hazards, and to ensure that the approaches to airports are kept clear of structures that could pose an aviation safety hazard.

Due to the Project Site's proximity to Moffett Federal Airfield, the Project Site is within the area covered by the Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan (Moffett CLUP), adopted in 2012 by the Santa Clara County Airport Land Use Commission. The Moffett CLUP is intended to safeguard the general welfare of inhabitants within the vicinity of Moffett Federal Airfield and aircraft occupants. Although NASA has not elected to apply the Moffett CLUP to NASA ARC, compatibility criteria contained within the Moffett CLUP are applicable to development within the Project Site. The Moffett CLUP is also intended to ensure that surrounding new land uses will not affect Moffett Federal Airfield's continued operation. The Moffett CLUP provides a guide to NASA management, as custodian, for decisions that affect the future of Moffett Federal Airfield and provides a basis for additional assessments, if required. The Project Site is not within an Airport Safety Zone, as defined in the Moffett CLUP.

3.11.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on land use and planning in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts for land use and planning in accordance with NEPA is provided separately in Section 4.5.10, *Land Use and Planning*, in Chapter 4, *Environmental Impact Statement*.

3.11.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on land use and planning if it would result in any of the conditions listed below.

Would the project:

- Physically divide an established community?
- Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to land use and planning?

3.11.6 Methods for Analysis

CEQA requires an environmental impact report (EIR) to consider whether a proposed project would conflict with any applicable land use plan, policy, or regulation that was adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. The former determination (intended for consideration in a CEQA document) is based on, and limited to, a review and analysis of environmental effects. The latter determination, by comparison, is made by the decision-making body of the jurisdiction and based on the jurisdiction's broad discretion to assess whether a proposed project would conform to the policies and objectives of its general plan/specific plan as a whole. In addition, the broader general plan consistency determination takes into account all evidence in the record concerning project characteristics, its desirability, as well as its economic, social, and other non-environmental effects.

A project's conflicts with land use policies do not, in and of themselves, constitute significant environmental impacts. Policy conflicts are considered environmental impacts only when they result in direct environmental effects. This analysis evaluates the consistency of the CEQA Proposed Project and the Project Alternative with policies adopted to avoid or mitigate environmental effects. Consistency with policies designed to avoid or mitigate environmental land use impacts are discussed in this section; consistency with policies designed to avoid or mitigate other physical impacts are discussed in sections that address those particular impacts (e.g., consistency with the National Historic Preservation Act and the Secretary of the Interior's Standards is discussed in the section that addresses historic resources). As discussed above, UC Berkeley is part of the University of California, a constitutionally created entity of the State of California (State), with "full powers of organization and government" (California Constitution, Article IX, Section 9). As a constitutionally created State entity, UC Berkely is not subject to municipal regulations of surrounding local governments, such as general plans and municipal codes. Similarly, as a federal agency, NASA is not subject to regulations at the city, county, or state level, unless authority is explicitly authorized by federal law or NASA policy or otherwise delegated by the federal government to the state for implementation and enforcement. Therefore, regional and local regulations do not pertain to the Project Site and are not analyzed further in this section.

3.11.7 Impacts Not Evaluated in Detail

Division of an Established Community

The proposed project would redevelop a site that is already developed. Specifically, it would aim to provide a greater connection with the rest of NASA ARC and surrounding communities. After implementation of the CEQA Proposed Project or CEQA Reduced Density Alternative, the Project Site would be bounded by Wescoat Road, Cody Road, and Girard Road. These roadways would provide site access as well as access to other areas of the NRP, Eastside/Airfield, and Ames campus, thereby increasing connectivity. In addition, Cody Road connects to Ellis Street, which provides direct access to U.S. 101. The Project Site is connected to the surrounding roadway network, which serves vehicles, emergency vehicles, pedestrians, and bicyclists. The proposed bicycle network would provide access and connections to other portions of NASA ARC north of the Project Site and the Bayshore/NASA Santa Clara Valley Transportation Authority (VTA) light rail station south of the Project Site. Therefore, rather than dividing an established community, the proposed project would provide increased connections to the surrounding communities.

A major goal outlined in the proposed Berkeley Space Center Master Plan (Master Plan) included in Appendix 2-1 of this joint EIR/EIS is to adopt a comprehensive approach that encompasses the entire district by integrating architecture, landscaping, open space, transportation networks, and other environmental considerations. The proposed project is intended to be a "center-point" of NASA ARC, a hub where industry, university, and government organizations come together to collaborate. Although the proposed buildings at the Project Site would add new development to the area, the development would be in an area with similar uses that are already physically separated from Mountain View and Sunnyvale by the airfield to the east, U.S. 101 to the south, and the rest of NASA ARC to the west. Nonetheless, the orientation of the Project Site would provide direct connections and easy access to the surrounding communities for vehicles, bicycles, pedestrians, and transit. Therefore, the proposed project would not divide the established communities surrounding the Project Site, resulting in no impact. This topic is not evaluated further.

3.11.8 Impacts and Mitigation Measures

Impact CEQA-LU-1: Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Consistency with the NASA Ames Development Plan

The NADP, as discussed in more detail below, is a comprehensive long-range land use plan that has guided the use, renovation, management, and development of facilities. The NADP is the guiding regulatory document for the Project Site, with development goals, objectives, and planning principles, along with planning goals specific to the NRP. The NADP describes NASA's plan for development of the property under its jurisdiction and stewardship. The plan is broken down into various planning and development districts and includes a description of land use, infrastructure, facilities, open space, and transportation requirements for each district. All development projects are reviewed for consistency with the planning principles established by the NADP.[11]

[11] NASA Ames Research Center. 2002. *NASA Ames Development Plan*. December 2002.

Land Use Consistency. Under the NADP, allowed development within the NRP planning area includes laboratories, office space, classrooms, auditoriums, museums, a conference center, open space, a burrowing owl preserve, parking, housing, and limited retail facilities. Specifically, development in the NRP anticipated approximately 3 million square feet of new educational, office, R&D, museum, conference center, housing, and retail spaces. Within the NRP planning area, the Project Site has been designated as University Reserve. The University Reserve designation is intended for educational facilities but could include uses such as classrooms, offices, lecture halls, research facilities, and the ancillary facilities required to achieve NASA's mission related to education and outreach. The proposed FAR (i.e., the total proposed square footage divided by the total parcel boundary [34.92 acres]) for the CEQA Proposed Project is 1.6; the proposed FAR for the CEQA Reduced Density Alternative is 1.0. As explained above, the NADP used floor area ratios (FARs) to identify preferred densities at the time it was prepared, but the FARs are not regulatory requirements. Thus, there is no minimum or maximum FAR applicable to the Project Site and the developable area established by the Project Proponent's Enhanced Use Lease applies to the Project Site.

The CEQA Proposed Project would create approximately 2.3 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Office uses would include space for corporate and general offices, which would allow multiple tenants to carry out research and technology, administrative, and professional office activities. In addition, the proposed laboratory and R&D uses would provide functional spaces that could include laboratories, supportive administrative offices, meeting rooms, and light manufacturing or fabrication spaces as part of the overall R&D use. The CEQA Proposed Project would include approximately 145 Student/Faculty Housing units within Subarea 6 that would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, summer). The Student/Faculty Housing would include a mix of studio, one-bedroom, and two-bedroom apartments as well as amenity space.

The land uses proposed at the Project Site under the CEQA Proposed Project would be consistent with the intent of the University Reserve land use designation. As discussed above, the University Reserve designation includes classrooms, offices, lecture halls, research facilities, and the ancillary facilities required to achieve NASA's mission related to education and outreach. These uses would also further NASA's purpose of the proposed project to support the integration of public and private research development efforts. Although residential uses are allowed in the NRP, the description of the University Reserve designation does not specifically include residential. However, residential uses under the CEQA Proposed Project would include short-term lodging for visitors and conference attendees and Student/Faculty Housing on a short-term basis (i.e., academic calendar year, semester, or summer). Housing would prioritize the UC students and faculty affiliated with the CEQA Proposed Project as well as on-site federal employees and student interns. Therefore, the proposed residential uses are consistent with the "ancillary facilities required to achieve NASA's mission related to education and outreach." The CEQA Proposed Project would not result in inconsistencies with the NADP land use designation for the Project Site. Impacts would be less than significant.

In addition to the land uses proposed at the Project Site, the CEQA Proposed Project includes approximately 6 acres of Off-Site Areas where utility improvements and building demolition would take place. Certain off-site utility improvements may be constructed within the limits of Zook Road, Cummins Avenue, Wescoat Road, Bailey Road, Perimeter Road, Cody Road, Clark Road, and Moffett Boulevard, dependent on utility layout options selected and to the extent feasible. Together, the

Project Site and Off-Site Areas comprise the approximate 45-acre Limits of Work. The Project Site is within the city of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. The Off-Site Areas are also within the city of Mountain View Sphere of Influence; most of the Off-Site Areas are outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the city of Mountain View. A small portion of the Off-Site Areas is on federal land owned by the Army. Any off-site utility improvements required for the CEQA Proposed Project and the CEQA Reduced Density Alternative would be subject to review and approval by NASA (for work within NASA jurisdiction) and/or potentially other landowners or entities with jurisdiction. In addition, as part of the CEQA Proposed Project, existing Buildings 543, 583A, 583C, 547E, and 944 would be demolished to accommodate the proposed off-site utility improvements and realignment of Girard Road. The CEQA Proposed Project would not result in inconsistencies with the NADP land use designations for the off-site areas. Impacts would be less than significant.

Consistency with NADP Planning Principles. The NADP provides a framework to guide the use, renovation, management, and development of facilities at NASA ARC. The main development goal of the NADP is to develop a world-class, shared-use R&D campus in association with government entities, academia, industry, and non-profit organizations. The NADP's primary objective is to extend and deepen the R&D capabilities of NASA ARC through R&D partnerships in key research areas. The CEQA Proposed Project would meet the main development goal and objective by leveraging its strategic position within a growing aerospace cluster and providing a spatial framework for a world-class research environment through partnerships with academic institutions. The NADP also includes the following unifying principles that guide planning for the entire NASA ARC: creation of a community, provision of on-site housing, transportation demand management (TDM), public accessibility sustainability, resource conservation, environmental issues management, wildlife preservation, wetland preservation, and historic resource preservation.

The determination of whether or not the CEQA Proposed Project would conflict with applicable policies adopted for the purpose of mitigating an environmental impact is addressed in part by the regulatory setting and environmental analysis provided in each resource section of this joint EIR/environmental impact statement (EIS). For example, noise- and vibration-related policies are addressed in Section 3.10, *Noise,* and transportation- and circulation-related policies are addressed in Section 3.16, *Transportation and Traffic*. In addition, Table 3.11-1 summarizes the unifying principles of the NADP that were adopted for the purpose of avoiding or mitigating an environmental impact and provides a determination of either "consistent" or "inconsistent" for each principle. Based on this analysis, the CEQA Proposed Project would be consistent with the environmental principles contained in the NADP, resulting in a less-than-significant impact. The ultimate determination of the consistency of the CEQA Proposed Project with the NADP overall (not only policies adopted for the purpose of protecting the environment) will be made by NASA.

Table 3.11-1. CEQA Proposed Project Consistency with NASA Ames Development Plan Principles

NADP Planning Principles	Project Consistency Analysis
Creation of a Community. Under the NADP, ARC will continue to provide critical municipal-type functions to the entire site, including NASA ARC. The mandatory services provided by NASA involve public safety, land use planning, code compliance and permitting, and safety, health, and environmental risk management oversight. Public safety includes police emergency response, law enforcement, structural fire response, fire marshal services, medical emergency response, and hazardous materials first response. NASA has established its own building permit process and architectural review board. ARC has adopted the California Building Standards Code. All developments at ARC will need to comply with these codes and receive NASA-issued permits prior to construction.	**CONSISTENT.** The CEQA Proposed Project would receive the mandatory public services provided by NASA, as included in Section 3.14, *Public Services*, of this joint EIR/EIS. As stated, police services for the Project Site would be provided by the National Aeronautics and Space Administration Ames Research Center (NASA ARC) through a contract service via the NASA/ARC Protective Services Contract—South Region. In addition, fire protection and emergency medical services for the Project Site would continue to be provided by NASA Ames Fire Department and the County of Santa Clara Emergency Medical Services Agency. As discussed in Section 3.7, *Geology, Soils, and Paleontological Resources*, of this joint EIR/EIS, the CEQA Proposed Project would comply with the California Building Standards Code. In addition, as discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, upon completion of the NEPA process, the specifics regarding each building's architectural design and configuration within the Project Site will be reviewed for conformance and approval through NASA's NRP Design Review Board process (pursuant to APR 8822.1). The Design Review Program is typically a two-stage process: Pre-Conceptual Design Review (to adequately define the scope of a project, to determine the level of environmental review needed for site approval, and to ensure that an applicant conforms to applicable requirements) and Preliminary Design Review (which includes submission for the CDP). The NEPA process would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site-specific NEPA documents, including the Maximum and Minimum Development Parameters and Standards, as documented in the ROD. Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction for the proposed project. Furthermore, APR 8829.1 establishes minimum requirements that provide a reasonable level of safety as it pertains to public health and general welfare through structural strength; safety for life and property with respect to fire, explosion, and other hazards, and a reasonable level of safety for fire and emergency responders during emergency operations.
Provision of On-site Housing. A critical component that enables the NADP is housing. The provision of on-site housing will contribute to a campus-like environment and allow some students, educators, and researchers an opportunity to come to the Silicon Valley,	**CONSISTENT.** The CEQA Proposed Project includes approximately 145 Student/Faculty Housing units within Subarea 6. Housing would prioritize the UC students and faculty affiliated with the CEQA Proposed Project as well as on-site federal employees and student interns. In addition, The CEQA Proposed Project would include approximately 100 short-term lodging units within Subarea 1. The short-term lodging would be used as temporary lodging for staff

NADP Planning Principles	Project Consistency Analysis
those who might not otherwise be able to because of the region's high cost of living.	members, researchers, academics, tenants, and their families while visiting the Project Site for conferences, meetings, research projects, and other short-term events. The provision of on-site housing would help to promote a campus-like environment and locate employees, students, and visitors near residential and academic uses, reducing the demand for travel in single-occupancy vehicles.
Transportation Demand Management. ARC is committed to aggressive TDM and offers, incentives, and programs to encourage an alternative community. A specific TDM plan has been developed for the NRP. Parking in the NRP will be kept to a minimum to encourage the use of public transportation. The NASA Ames Design Guide will ensure a minimal visual impact associated with the parking areas from the street and adjacent buildings.	**CONSISTENT.** The CEQA Proposed Project includes a project-specific TDM plan to reduce the vehicle trips and associated vehicle miles traveled (VMT) generated by the proposed project through a range of design features (e.g., mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle infrastructure, preferential carpool and vanpool parking, limited automobile parking supply, and ample bicycle parking) and ongoing operational programs (e.g., transit pass/subsidy programs, shuttles, and participation in the NRP Transportation Management Association) to achieve TDM mode-shift targets and thereby reduce the number of trips made by project-generated employees, students/faculty and visitors. Appendix 2-4 of this joint EIR/EIS includes the proposed project-specific TDM plan. The project-specific TDM plan is designed to reduce the trip generation by at least 22 percent as part of the CEQA Proposed Project. The 22 percent TDM reduction aligns with the TDM requirements in the 2002 PEIS. Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS include further details about the TDM plan. Mitigation Measure TRAN-1 would require a mitigated TDM plan that would achieve up to a 31 percent reduction (29 percent under the CEQA Proposed Project), which would help the CEQA Proposed Project to achieve VMT reductions, resulting in less-than-significant impacts. The proposed parking garages would be in the southeast and southwest corners of the Project Site, within Subareas 4 and 6. The height of the parking garages would be consistent with the height of the other proposed buildings. The parking garage in Subarea 4 would be set back from the southeast corner of the Project Site by the open space area at the intersection of Cody Road and Girard Road, allowing views of Hangar One to be maintained from this area. In addition, the parking structure in Subarea 6 would be set back from Wescoat Road by Gateway Plaza, allowing a view corridor from the Project Site to the Shenandoah Plaza and NAS Sunnyvale Historic District.
Public Accessibility. The NADP envisions an environment in which people and ideas flow freely through the site. To allow greater public access to many parts of the site, NASA ARC has redesigned the security perimeter.	**CONSISTENT.** Access to the Project Site and the surrounding area is currently controlled through security and visitor checkpoints located at the main gate on Clark Road or at the gate located on Ellis Street. However, separate from the CEQA Proposed Project, NASA anticipates operational modifications to allow a free flow of traffic at these two checkpoints. No physical improvements are required for these operational modifications, which are referred to as "Open Campus," as discussed under the *Open Campus* subheading in Section 2.3.5 in Chapter 2. With implementation of "Open Campus," at

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	occupancy of Phase 1 and prior to Phases 2 to 4 of construction, the Project Site would be connected to Wescoat Road, Cody Road, and Girard Road, which would provide public access to the Project Site and other areas of the NRP, Eastside/Airfield, and Ames campus.
Sustainability. ARC plans to incorporate sustainable design concepts into the NADP by encouraging its partners to design, construct, and operate structures according to the Leadership in Energy and Environmental Design (LEED) Green Building Rating System. ARC will encourage its partners to strive for the highest possible LEED rating in their building designs and at least meet the minimum required score to achieve LEED certification.	**CONSISTENT.** The CEQA Proposed Project would incorporate various sustainability strategies for both the proposed buildings and landscaping to reduce energy consumption, water consumption, and waste generation. The CEQA Proposed Project would achieve, at a minimum, a Leadership in Energy and Environmental Design (LEED) Silver rating. The proposed sustainability design responds to the climate and context by optimizing thermal comfort through passive cooling, providing windbreaks, prioritizing daylight within floor plates of the buildings and outdoor spaces, and providing a variety of courtyards and amenity terraces and patios. In addition, the CEQA Proposed Project would install photovoltaic systems as a strategy for generating power on-site and offsetting the energy use from each proposed building. Section 3.6, *Energy*, of this joint EIR/EIS discuss sustainability and energy use.
Resource Conservation. ARC is committed to energy conservation. All development projects will include appropriate conservation measures, such as energy-efficient lighting. Through its design guidelines and construction requirements, the NADP will promote further conservation, including a passive solar design, solar water heating, and photovoltaic arrays. Irrigation will use reclaimed water. NASA's sustainable design guidelines will also require the use of low-flow plumbing fixtures in all new construction.	**CONSISTENT.** As discussed above, the CEQA Proposed Project would design the proposed buildings and landscaping with sustainability strategies to promote resource conservation. In addition, the CEQA Proposed Project would incorporate potable water conservation features within buildings (e.g., low-flow fixtures for indoor water use, dual plumbing for recycled water usage for flushing), a drip irrigation system, and drought-friendly and ecologically appropriate plantings. The CEQA Proposed Project would also be designed to conserve resources and protect water quality through the management of stormwater runoff using low-impact development (LID) methods, where feasible. To treat stormwater discharges from the Project Site, the CEQA Proposed Project would incorporate a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, Silva Cells, and a centralized stormwater retention basin. The CEQA Proposed Project would also include a Water Reuse Facility (WRF) Option, which would produce recycled water for the proposed buildings and irrigated areas. The facility would process all of the CEQA Proposed Project's wastewater and have the capacity to process wastewater from the planned housing development south of the Project Site to supplement recycled water needs within the Project Site. All new building systems (e.g., heating, ventilation, air-conditioning [HVAC], mechanical systems) would be supplied with electricity, eliminating the need for connections to Pacific Gas & Electric's (PG&E) natural gas infrastructure for building operations. The CEQA Proposed Project also includes a Central Utility Plan (CUP) Option, which would provide a sustainable centralized heating and cooling system for all buildings

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	instead of building-by-building HVAC systems. Section 3.6, *Energy*, of this joint EIR/EIS discuss resource conservation and energy use. As stated in Section 3.6, the CEQA Proposed Project would be designed to incorporate environmentally sustainable features to reduce energy consumption and improve energy efficiency. Nonetheless, as demonstrated in Section 3.6, energy consumption during operation of the CEQA Proposed Project (with and without the CUP and WRF options) could result in a significant impact if additional measures or practices are not implemented to improve the energy efficiency of operational activities and reduce overall energy consumption to the greatest extent feasible. Implementation of Mitigation Measures AQ-1, AQ-2, AQ-6, and TRAN-1 would result in less-than-significant impacts related to the wasteful, inefficient, or unnecessary consumption of energy resources.
Environmental Issues Management. NASA has prepared an Environmental Issues Management Plan to address contamination, hazardous waste, and cleanup. Specifically, the plan involves the protection of construction workers, the use of remediation systems in contaminated areas, and the disposal of contaminated soils and groundwater encountered during construction. In addition, an Environmental Compliance Program has been designed to ensure that hazardous materials are managed in compliance with federal, state, and local laws. All development partners will be required to comply with the Environmental Issues Management Plan (EIMP) and the Environmental Compliance Program.	**CONSISTENT.** Soil and groundwater at the Project Site have been affected by contamination associated with the Middlefield-Ellis-Whisman (MEW) Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field. In addition, many of the buildings within the Project Site contain hazardous materials, such as asbestos-containing material (ACM) and lead-based paint (LBP); electrical equipment contains polychlorinated biphenyl (PCBs). Furthermore, hazardous materials have been or are being stored within the Project Site. As outlined in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS, the Spring 2026 project-specific EIMP was prepared for the Project Site to provide a decision framework for the management of residual chemicals in soil, groundwater, and existing structures as well as future structures within the Project Site during occupancy and development. The Spring 2026 project-specific EIMP includes required procedures that must be followed to address the known remaining environmental conditions within the Limits of Work. As discussed in Section 3.9, *Hazards and Hazardous Materials*, the CEQA Proposed Project would comply with requirements outlined in the Spring 2026 project-specific EIMP. In order to reduce impacts related to vapor intrusion, the Spring 2026 project-specific EIMP (Mitigation Measure HAZ-1) would be implemented to reduce potential vapor intrusion risks to less than significant.
Wildlife Preservation. Because NASA ARC has retained relatively large areas with open spaces and habitats, it supports a wide range of common, declining, rare, and endangered species, including the western burrowing owl. NASA ARC has prepared a Burrowing Owl Habitat Management Plan and a biological assessment. Development partners will be required to adhere to the	**CONSISTENT.** A project-specific Biological Resources Technical Report is included as Appendix 3.4-1 of this joint EIR/EIS. Although the Project Site is an urban infill development with buildings, impervious surfaces, and limited vegetation, it is close to open spaces and habitats. Therefore, the following special-status wildlife species could be affected by the CEQA Proposed Project: monarch butterfly, crotch bumblebee, northwestern pond turtle, burrowing owl, bats, and special-status bird species. Mitigation Measures BIO-1 through BIO-13 in Section 3.4, *Biological Resources*, of this joint EIR/EIS are identified to minimize potential impacts on

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mitigation measures of these plans to prevent impacts on protected species.	special-status species, reducing impacts to less than significant. In addition, as discussed in Appendix 3.4-1, the CEQA Proposed Project would comply with the Burrowing Owl Habitat Management Plan and implement measures to minimize adverse effects on burrowing owls from development activities at NASA ARC. As included in Section 3.4, *Biological Resources*, of this joint EIR/EIS, Mitigation Measures BIO-1 and BIO-8 though BIO-11 would be implemented to reduce impacts on burrowing owl habitats to less than significant. Mitigation Measures BIO-1, BIO-3, BIO-12 and BIO-13 would minimize impacts on nesting birds and roosting bats.
Wetland Preservation. There are approximately 300 acres of non-tidal wetlands at ARC, which comprise the most important habitats in the area. NASA ARC will avoid construction in these areas to reduce potential impacts on these sensitive habitats and the species that they sustain. Development plans will ensure no net loss of wetland functions, values, or acreage.	**CONSISTENT.** According to the Biological Resources Technical Report in Appendix 3.4-1 of this joint EIR/EIS, one palustrine emergent wetland feature is 33 feet outside of the Limits of Work. The CEQA Proposed Project construction and operations have the potential to affect jurisdictional waters. As outlined in Section 3.4, *Biological Resources*, of this joint EIR/EIS, Mitigation Measures BIO-1, BIO-3, BIO-14 and BIO-15 have been identified to avoid or minimize potential impacts on wetlands during construction, resulting in less-than-significant impacts.
Historic Resource Preservation. ARC includes one district and four individual buildings that are included or eligible for inclusion on the National Register of Historic Places: the Shenandoah Plaza Historic District, the Unitary Plan Wind Tunnel, the NASA Ames Administration Building, the 80-foot Wind Tunnel Building, and the Supersonic Wind Tunnel Building. Shenandoah Plaza includes Hangar One, ancillary buildings, roads, and a plaza encompassed in the oval formed by Wescoat Road and Bushnell Road. NASA is committed to protecting and preserving its historic resources at ARC and has developed a Historic Resources Protection Plan (HRPP) for the NRP. The primary purpose of the HRPP is to establish procedures that integrate the planning, preservation, and use of historic properties in the NRP.	**CONSISTENT.** As discussed in the Cultural Resource Inventory Report in Appendix 3.5-1 of this joint EIR/EIS and Section 3.5, *Cultural Resources*, the Project Site is in proximity to Shenandoah Plaza, NAS Sunnyvale Historic District, and Hangar One. The intention of the proposed Berkeley Space Center Development Guidelines (Development Guidelines), which provide Maximum and Minimum Development Parameters and Standards for the proposed project buildings and open space, is to support the architectural compatibility of new development in relation to the historic districts and historic resources, consequently lessening the impact of the project's scale and visual bulk. However, the design of the CEQA Proposed Project has not been developed to the extent that it can be demonstrated whether project-specific interpretation of the Standards will successfully achieve architectural compatibility with the historic district. Therefore, it is possible that the construction of the CEQA Proposed Project may result in physical damage due to construction vibration to Hangar One and contributors to Shenandoah Plaza. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5, as outlined in Section 3.5, *Cultural Resources,* and Section 3.12, *Noise*, would ensure that impacts on historic resources would be reduced to the extent feasible.

Consistency with the Ames Research Center Directives and Procedural Requirements

The Ames Research Center Directives and APR[12] are public listings of NASA ARC's policies and procedures, which ensure compliance with NASA standards and authorize review, assessment, and approval of projects at NASA ARC. The policies also address NASA ARC's conformance with federal, state, and local land use plans and regulations. Table 3.11-2 summarizes the Ames Policy Directives (ADPs) and APRs that have been adopted to help mitigate environmental impacts; these would be applicable to the CEQA Proposed Project. As shown in the table, the CEQA Proposed Project would be consistent with the applicable APDs and APRs. Impacts would be less than significant.

Table 3.11-2. CEQA Proposed Project Consistency with Ames Policy Directives and Ames Procedural Requirements

Ames Policy Directives and Ames Procedural Requirements	Project Consistency Analysis
APD 8500.1: Ames Environmental Policy. Demonstrates pollution prevention practices and continual improvement of NASA ARC's environmental program. The Environmental Management Division is responsible for establishing and overseeing the following to ensure compliance with applicable laws and NASA policy: drinking water, industrial waste water, spill prevention control and countermeasures, air quality, stormwater, hazardous materials, hazardous waste, restoration, NEPA, natural resources, and sustainability.	**CONSISTENT.** The CEQA Proposed Project would ensure compliance with applicable environmental laws and NASA policy. Pollution prevention practices and air quality are discussed in Section 3.3, *Air Quality*, of this joint EIR/EIS. Drinking water and wastewater are discussed in Section 3.18, *Utilities and Service Systems*. Stormwater is discussed in Section 3.10, *Hydrology and Water Quality*. Hazardous materials and hazardous waste are discussed in Section 3.9, *Hazards and Hazardous Materials*. Restoration and natural resources are discussed in Section 3.4, *Biological Resources*. Section 3.6, *Energy*, of this joint EIR/EIS discusses sustainability and energy use. NEPA impacts are discussed in Chapter 5, *Environmental Impact Statement*.
APD 8829.1: Construction Permits. Establishes Ames-specific policies and responsibilities for construction activities. The policy of NASA ARC is that all construction work is to be reviewed in adherence to all appropriate and applicable building and construction codes and standards. This review shall be performed according to a construction permit process established for the request, review, and approval of all construction permits at NASA ARC.	**CONSISTENT.** As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, laboratories constructed and operated as part of the CEQA Proposed Project will comply with required federal, State, and local standards. The CEQA Proposed Project will comply with applicable codes and regulations outlined in APD 8829.1, including, but not limited to, 29 Code of Federal Regulations (CFR) 1926, Safety and Health Regulations for Construction, and 29 CFR 1910, Occupational Safety and Health Standards, as well as the current adopted California Fire Code and California Building Code requirements addressing the prevention and control of dangerous conditions related to the storage, use, and handling of hazardous materials (California Code of Regulations [CCR] Title 24, Part 9).

[12] National Aeronautics and Space Administration. 2024. *Ames Research Center Directives*. Available: https://www.nasa.gov/ames-research-center-directives/. Accessed: November 18, 2025.

Ames Policy Directives and Ames Procedural Requirements	Project Consistency Analysis
APD 8835.1: Landscaping, Planting, and Grooming. Establishes policies for NASA ARC grounds and landscaping.	**CONSISTENT.** The CEQA Proposed Project would provide a minimum of 10 acres of publicly accessible open space. As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, of this joint EIR/EIS, landscaping would be incorporated throughout the Project Site and include a mix of native, climate-adaptive, and drought-resistant plant materials, along with phytoremediation-treated species. No invasive and/or noxious plant species would be used in project landscaping. The CEQA Proposed Project would adhere to the APD 8835.1 guidelines for landscaping, planting, and grooming.
APR 8822.1: NASA Research Park Design Review Program. Establishes Ames-specific responsibilities and procedures for the DRP for all tenant-proposed development projects within the jurisdiction of NASA ARC. Design review ensures that development projects are properly coordinated and that they comply with all NASA planning requirements, such as NEPA and the National Historic Preservation Act, and do not conflict with the NADP. New development projects in the NRP areas should be coordinated through the NRP design review process during conceptual design (before building design or prior to 50 percent completion of the schematic design phase) to ensure that they meet all applicable land use and design requirements. Completion of an environmental checklist in coordination with the Environmental Management Division is also required during design review because it will determine if additional environmental studies or approvals will be required before proceeding with the project.	**CONSISTENT.** As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, upon completion of the NEPA process, the specifics regarding each building's architectural design and configuration within the Project Site will be reviewed for conformance and approval through NASA's NRP Design Review Board process (pursuant to APR 8822.1). The Design Review Program is typically a two-stage process: Pre-Conceptual Design Review (to adequately define the scope of a project, to determine the level of environmental review needed for site approval, and to ensure that an applicant conforms to applicable requirements) and Preliminary Design Review (which includes submission for the CDP). The NEPA process would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site-specific NEPA documents, including the Maximum and Minimum Development Parameters and Standards, as documented in the ROD. Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction for the proposed project. In addition, the CEQA Proposed Project will undergo consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA). The NHPA mandates that federal agencies consider the effects of projects on historic properties and seek comments on their actions from an independent reviewing agency, the State Historic Preservation Office (SHPO) and/or the Advisory Council on Historic Preservation (ACHP). The CEQA Proposed Project would adhere to the Development Guidelines, which include a regulatory framework to manage the proposed redevelopment; the regulatory framework is categorized as principles, standards, and guidelines; and Section 106.
APR 8829.1: Construction Permit Process. Establishes the construction permit process and the requirements imposed on all construction activities at NASA ARC. APR 8829.1 establishes minimum requirements to ensure a reasonable level of safety, public health,	**CONSISTENT.** As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the CEQA Proposed Project will comply with applicable codes and regulations outlined in APR 8829.1, including, but not limited to, requirements to ensure a reasonable level of safety, public health, and general welfare. The Project Proponent would first engage in the NRP design review process and obtain approval

Ames Policy Directives and Ames Procedural Requirements	Project Consistency Analysis
and general welfare through structural strength, egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety for life and property from fire, explosion, and other hazards; it also provides a reasonable level of safety for fire and emergency responders during emergency operations. For NRP projects, the project proponent must first engage in the NRP design review process (described above) and obtain approval from the NRP design review board before applying for a construction permit. These planning review and approval procedures ensure consistency with Ames master planning and compatibility with other planned work as well as the project definition and readiness.	from the NRP design review board before applying for a construction permit. Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction of the proposed project.

Consistency with Federal Aviation Regulation Part 77

Development within the Project Site would be subject to certain height limitations pursuant to Federal Aviation Regulation Part 77.9 of the CFR notification requirements, which would require consultation with the FAA prior to construction of any structure or object within Federal Aviation Regulation Part 77 surfaces. Compatibility with Federal Aviation Regulation Part 77 would be contingent on issuance of a Determination of No Hazard from the FAA for any proposed structures. The proposed building heights under the CEQA Proposed Project would comply with FAA requirements. However, the use of construction equipment (such as cranes) or the construction of buildings with heights in excess of 55 feet above ground level could pose a safety hazard for construction workers and future residents. With issuance of a Determination of No Hazard from the FAA, project construction and operation would comply with Moffett CLUP safety guidelines (discussed below) and pose no risk to aviation safety. In addition, and as discussed in Section 3.12, *Noise*, of this joint EIR/EIS, impacts related to aircraft noise would be considered less than significant.

Due to the Project Site's proximity to Moffett Federal Airfield, the CEQA Proposed Project would be within the area covered by the Moffett CLUP. Although NASA has not elected to apply the Moffett CLUP to NASA ARC, compatibility criteria contained within the Moffett CLUP are applicable to development within the Project Site. The Moffett CLUP provides a guide to NASA management, as custodian, for decisions that affect the future of Moffett Federal Airfield and provides a basis for additional assessments, if required. The CLUP compatibility criteria, as derived from the FAA, are used to safeguard the general welfare of the public.

Moffett CLUP Policy G-6 states that proposed uses that may cause a hazard to aircraft in flight are not permitted within the airport influence area (AIA); the policy includes uses that attract birds (e.g., certain agricultural uses, sanitary landfills). The proposed project does not propose uses that would be expected to attract large flocks of birds. Moreover, the project would adhere to the Advisory Circular on Airport Construction Standards, AC 150/5370-10, which includes seeding

guidelines (901-2.1) that require consideration be given to eliminate the use of seeds that could attract birds or large animals.

In addition, Moffett CLUP Policy G-7 states that all new exterior lighting shall be designed so as to create no interference with aircraft operations and that only the intended area is illuminated and off-site glare is fully controlled. As discussed in further detail in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, in order to reduce lighting at the Project Site and offsite spillage, the lighting performance standards set by Leadership in Energy and Environmental Design (LEED) could be followed through a combination of adherence to lighting specifications, shielding techniques, automatic lighting controls, and light pollution considerations. Energy-efficient site lighting and designs that meet IESNA lighting density and control standards would attempt to minimize light pollution. Furthermore, the proposed buildings within each of the Subareas would incorporate light spill-out zones along the building frontages, which would include patios and terraces with seating areas that would be fully or partially covered by building articulation, trellises, or tree canopies.

As discussed in Section 3.9, *Hazards and Hazardous Materials*, and Section 3.12, *Noise*, the CEQA Proposed Project would be consistent with applicable safety- and noise-related policies for Moffett Federal Airfield. As such, the CEQA Proposed Project would not pose a safety hazard or generate excessive noise for people working in the project area. Impacts would be less than significant.

Consistency with Plan Bay Area

As discussed above, the SCS for the region is Plan Bay Area 2050. This document is not a land use plan and does not mandate any specific actions from local municipalities, such as changes to zoning rules, general plans, or project review processes. Instead, Plan Bay Area 2050 consists of 35 strategies to improve conditions throughout the Bay Area related to housing, the economy, transportation, and the environment. Included are transportation and environmental strategies that support active and shared modes of travel, combined with a transit-supportive land use pattern that places housing near transportation centers throughout the Bay Area.

The Project Site is an already-developed urban site and near transit centers. The Limits of Work, which include the Project Site, are currently developed with 18 buildings. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations. Most of the perimeter of the Project Site adjoins urban uses. MTC has identified locations for Transit Priority Areas (TPAs) within the Bay Area. The Project Site is within a TPA because of its proximity to the Bayshore/NASA VTA light rail station, as shown in Figure 2-14, Transit Priority Area Map, in Chapter 2.[13]

Consistent with Plan Bay Area 2050, the Proposed Project would include a TDM plan. As discussed under the *Transportation Demand Management* subheading in Section 2.3.5, *Transportation and Circulation* in Chapter 2, the CEQA Proposed Project would include a project-specific TDM plan to reduce the vehicle trips and associated VMT generated by the CEQA Proposed Project. Appendix 2-4

[13] Metropolitan Transportation Commission. 2021. *Transit Priority Areas*. Available: Available: https://opendata.mtc.ca.gov/datasets/transit-priority-areas-2021-1/explore?location=37.408725%2C-122.057220%2C15.36. Accessed: December 30, 2025.

of this joint EIR/EIS includes the proposed project-specific TDM plan.[14] Overall, the CEQA Proposed Project would implement TDM measures that would complement its mixed-use land use program as well as its proximity to the Bayshore/NASA VTA light rail station. In addition, Mitigation Measure TRAN-1 would include a mitigated TDM Plan that further reduces VMT. Section 3.16, *Transportation and Traffic*, describes the Proposed Project's relationship to transit and TDM in detail.

As discussed in Section 3.14, *Population and Housing*, the CEQA Proposed Project is an infill development within an already developed area of NASA ARC. While the employment growth under the CEQA Proposed Project is greater than previously approved for the site, the growth overall is accounted for in Santa Clara County's Housing Element and regional ABAG growth plans. The CEQA Proposed Project would not induce a substantial level of unplanned population growth for the region. The CEQA Proposed Project would be consistent with Plan Bay Area 2050 by locating a mixed-use high-density development within 0.5-mile of a major transit stop, implementing a TDM plan, and being within growth objectives of Plan Bay Area. Therefore, the CEQA Proposed Project would be consistent with Plan Bay Area, and the impact would be less than significant. No mitigation is required.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Proposed Project. Under the Variant, the CEQA Proposed Project would include an additional 130,000 square feet of research and office uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. However, the Variant would have the same type of land uses (with the exception of student and faculty housing), would disturb the same footprint, and would conduct the same construction activities proposed and evaluated under the CEQA Proposed Project. Therefore, the analysis of the CEQA Proposed Project would generally apply. Because the uses would be the same as under the CEQA Proposed Project (with the exception of residential use), the Variant would be generally consistent with the NADP land use designation for the site, NADP planning principles, ADPs, and APRs. However, the CEQA Proposed Project Variant could conflict with the NADP planning principle of on-site housing. As stated in the NADP, the provision of on-site housing will contribute to a campus-like environment and allow some students, educators, and researchers an opportunity to come to the Silicon Valley, those who might not otherwise be able to because of the region's high cost of living. Under the CEQA Proposed Project Variant, the number of Short-Term Lodging units would be the same as for the CEQA Proposed Project (100 units). However, none of the 145 Student/Faculty Housing units in Subarea 6 would be constructed. The provision of on-site Short-Term Lodging would help to promote a campus-like environment and reduce the demand for travel in single-occupancy vehicles, but not to the same extent as the CEQA Proposed Project since the Student/Faculty Housing would not be constructed. Regardless, a proposed project can be generally consistent with plan even though the project may not promote every applicable goal and policy. While the CEQA Proposed Project Variant could conflict with the NADP planning principle of on-site housing, it would be generally consistent with the other planning principles of

[14] The project-specific TDM Plan is tentative, as transportation-related studies may validate the approach in the TDM Plan or require adjustments to the TDM Plan.

the NADP. As discussed above, the ultimate determinations of NADP consistency will be made by NASA. In addition, the Variant would be consistent with applicable safety- and noise-related policies for Moffett Federal Airfield and would not pose a safety hazard or generate excessive noise for people working in the project area. Because the CEQA Proposed Project Variant would be generally consistent with the NADP, APDs, APRs, Federal Aviation Regulation Part 77, and the Moffett CLUP, conflicts with these policies would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would not change the basic characteristics of the CEQA Proposed Project. The CEQA Reduced Density Alternative would be conducted within the same project footprint and include the same land uses (albeit with less space for research and office uses); as such, the analysis of the CEQA Proposed Project would apply. In addition, the same uses proposed at the Off-Site Areas would occur under the CEQA Reduced Density Alternative. The Reduced Density Alternative would be consistent with applicable safety- and noise-related policies for Moffett Federal Airfield and would not pose a safety hazard or generate excessive noise for people working in the project area. Because the CEQA Reduced Density Alternative would be generally consistent with the NADP, APDs, APRs, Federal Aviation Regulation Part 77, and the Moffett CLUP, conflicts with these policies would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would not change the basic characteristics of the CEQA Reduced Density Alternative. Under the variant, the CEQA Reduced Density Alternative would include an additional 130,000 square feet of research and office uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. However, the Reduced Density Alternative Variant would have the same types of land uses (with the exception of student and faculty housing), the same general site plan, and the same construction activities proposed and evaluated under the CEQA Proposed Project or the CEQA Reduced Density Alternative. Therefore, the analysis of the CEQA Proposed Project and the CEQA Reduced Density Alternative would generally apply. The CEQA Reduced Density Alternative Variant would be consistent with the NADP land use designation for the site, NADP planning principles, APDs, and APR

However, the CEQA Reduced Density Alternative No Student/Faculty Housing Variant could conflict with the NADP planning principle of on-site housing. The number of Short-Term Lodging units would be the same as for the CEQA Proposed Project (100 units) but none of the 145 Student/Faculty Housing units in Subarea 6 would be constructed. The provision of on-site Short-Term Lodging would help to promote a campus-like environment and reduce the demand for travel in single-occupancy vehicles, but not to the same extent as the CEQA Proposed Project or CEQA Reduced Density Alternative since the Student/Faculty Housing would not be constructed. Regardless, a proposed project can be generally consistent with plan even though the project may not promote

every applicable goal and policy. Although the CEQA Reduced Density Alternative No Student/Faculty Housing Variant could conflict with the NADP planning principle regarding on-site housing, it would be generally consistent with the other planning principles of the NADP. As discussed above, the ultimate determinations of NADP consistency will be made by NASA. In addition, the CEQA Reduced Density Alternative Variant would be consistent with applicable safety- and noise-related policies for Moffett Federal Airfield and would not pose a safety hazard or generate excessive noise for people working in the project area. Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would be generally consistent with the NADP, APDs, APRs, Federal Aviation Regulation Part 77, and the Moffett CLUP, conflicts with these policies would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.11.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.11.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to the division of an established community, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.11.8, *Impacts and Mitigation Measures*, above.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. Because land use policies are regional in scope, the geographic context for the cumulative assessment of land use impacts is broader than NASA ARC and includes regional development under the jurisdiction of the Association of Bay Area Governments (ABAG). Past, present, and reasonably foreseeable future cumulative development within this geographic context assumes full buildout of the general plans of the nine ABAG counties as well as development envisioned in the NADP.

Impact CEQA-C-LU-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to land use and planning? (No Significant Cumulative Impact)

CEQA requires that an EIR consider whether a proposed project would conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental impact. This environmental determination differs from the larger policy determination of whether a proposed project is consistent with a jurisdiction's general plan. Regional growth in general is reviewed for consistency with adopted land use plans and policies by the individual cities and counties in the geographic context, in accordance with the requirements of CEQA, which require findings of plan and policy consistency prior to approval of entitlements for development. This process applies to all cumulative projects identified in the projections-based approach and the list-based approach, as discussed in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3. Project consistency with land use policies or regulations adopted for the purpose of avoiding or mitigating an environmental impact is similarly evaluated for each individual

project and addressed in the analysis for each specific resource area. For example, if an individual project results in the division of an established community, this would be addressed in the land use section of that project's EIR or other environmental document. The environmental evaluation for the project would also include an analysis of the division of an established community on a cumulative basis.

Therefore, because consistency with land use plans and policies is inherently a project-specific issue, and each jurisdiction would decide on project consistency at the project level, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to land use and planning as a result of cumulative development in the ABAG region. Furthermore, as discussed above, the CEQA Proposed Project and CEQA Reduced Density Alternative would be consistent with the NADP.

3.12 Noise

3.12.1 Introduction

This section evaluates potential impacts related to noise and vibration that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the project:

- *Berkeley Space Center at NASA Research Park Noise and Vibration Technical Report* (Noise and Vibration Technical Report) prepared by ICF, April 2026 (Appendix 3.12-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])

No questions or concerns related to noise and vibration were raised in the Notice of Preparation (NOP) or Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*).

3.12.2 Affected Environment/Environmental Setting

3.12.2.1 Noise Fundamentals

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is often defined as sound that is objectionable because it is unwanted, disturbing, or annoying. In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receptor, determine the sound level and the characteristics of the noise perceived by the receptor.

The sections that follow provide an explanation of key concepts and the acoustical terms used in the analysis of environmental and community noise.

Frequency, Amplitude, and Decibels

Continuous sound can be described by its *frequency* (pitch) and *amplitude* (loudness). A low-frequency sound is perceived as low in pitch; a high-frequency sound is perceived as high pitched. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hz. The audible frequency range for humans is generally between 20 and 20,000 Hz.

The amplitude of pressure waves generated by a sound source correlates with the loudness of that source. The amplitude of a sound is typically described in terms of sound pressure level (SPL), also

referred to simply as the sound level. The SPL refers to the root-mean-square (rms)[1] pressure of a sound wave. It is measured in units called micropascals (μPa). One μPa is approximately one hundred-billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to more than 100,000,000 μPa. Because of this large range of values, sound is rarely expressed in terms of μPa. Instead, a logarithmic scale is used to describe the SPL in terms of decibels, abbreviated dB. The decibel is a logarithmic unit that describes the ratio of the actual sound pressure to a reference pressure (20 μPa is the standard reference pressure level for acoustical measurements in air). Specifically, an SPL, in dB, is calculated as follows:

$$SPL = 20 \times \log_{10}\left(\frac{X}{20\mu Pa}\right)$$

where *X* is the actual sound pressure and *20 μPa* is the reference pressure. The threshold of hearing for young people is about 0 dB, which corresponds to 20 μPa.

Decibel Calculations

Because decibels represent noise levels on a logarithmic scale, SPLs cannot be added, subtracted, or averaged through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources produce sound of the same loudness, their combined sound level at a given distance is 3 dB higher than that of one source under the same conditions. For example, if one bulldozer produces an SPL of 80 dB, two bulldozers would not produce a combined sound level of 160 dB. Rather, they would combine to produce 83 dB. The cumulative sound level of any number of sources, such as excavators, can be determined using decibel addition. The same decibel addition is used for A-weighted decibels, as described below.

The arithmetic mean (average) of a series of noise levels does not accurately represent the overall average noise level. Instead, the values must be averaged using a linear scale before converting the result back into a logarithmic (dB) noise level. This method is typically referred to as calculating the "energy average" of the noise levels. Table 3.12-1 demonstrates the general results of adding noise from multiple sources. The examples summarized in the table are rounded to the nearest whole number.

Table 3.12-1. Rules for Combining Sound Levels by Decibel Addition

When two decibel values differ by…	…add the following amount to the higher decibel value	Example
0 to 1 dB	3 dB	60 dB + 61 dB = 64 dB
2 to 3 dB	2 dB	60 dB + 63 dB = 65 dB
4 to 9 dB	1 dB	60 dB + 69 dB = 70 dB
10 dB or more	0 dB	60 dB + 75 dB = 75 dB

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Available: *https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf*. Accessed: August 28, 2025.

[1] Root mean square (rms) is defined as the square root of the mean (average) value of the squared amplitude of the noise signal.

A-Weighting

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on human response to that sound. Although the intensity (i.e., energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000 to 5,000 Hz and perceive sounds within that range better than sounds of the same amplitude at higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted (i.e., adjusted), depending on human sensitivity to those frequencies. The resulting SPL is expressed in A-weighted decibels, or dBA.

The A-weighting scale approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted sound levels of those sounds. Table 3.12-2 describes typical A-weighted sound levels for various noise sources.

Table 3.12-2. Typical A-Weighted Sound Levels

Common Outdoor Noise Source	Sound Level (dBA)	Common Indoor Noise Source
	— 110 —	Rock band
Jet flying at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban area, daytime	— 50 —	Dishwasher in next room
Quiet urban area, nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban area, nighttime		
	— 30 —	Library
Quiet rural area, nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September. Available: *https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf*. Accessed: August 28, 2025.

Noise Descriptors

Because sound levels can vary markedly over a short period of time, various descriptors or noise "metrics" have been developed to quantify environmental and community noise. These metrics generally describe either the average character of the noise or the statistical behavior of the variations in the noise level. Some of the most common metrics used to describe environmental noise, including those used in this report, are described below.

- **Equivalent Sound Level (L_{eq})** is the most common metric used to describe short-term average noise levels. Many noise sources produce levels that fluctuate over time; examples include mechanical equipment that cycles on and off or construction work, which can vary sporadically. The L_{eq} describes the average acoustical energy content of noise for an identified period of time, commonly 1 hour. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustical energy over the duration of the exposure. For many noise sources, the L_{eq} will vary, depending on the time of day. A prime example is traffic noise, which rises and falls, depending on the amount of traffic on a given street or freeway.
- **Maximum Sound Level (L_{max}) and Minimum Sound Level (L_{min})** refer to the maximum and minimum sound levels, respectively, that occur during the noise measurement period. More specifically, they describe the rms sound levels that correspond to the loudest and quietest 1-second intervals occurring during the measurement.
- **Percentile-Exceeded Sound Level (L_{xx})** describes the sound level exceeded for a given percentage of a specified period. For example, L_{50} is the sound level exceeded 50 percent of the time (i.e., 30 minutes per hour) and L_{25} is the sound level exceeded 25 percent of the time (i.e., 15 minutes per hour).
- **Community Noise Equivalent Level (CNEL)** is a measure of the 24-hour average, A-weighted noise level, which is also time weighted to "penalize" noise that occurs during evening and nighttime hours when noise is generally recognized to be more disturbing (because people are trying to rest, relax, or sleep). Specifically, 5 dBA is added to the L_{eq} during the evening hours of 7:00 p.m. to 10:00 p.m., 10 dBA is added to the L_{eq} during the nighttime hours of 10:00 p.m. to 7:00 a.m., and the energy average is then taken for the whole 24-hour day.
- **Day-Night Sound Level (L_{dn})** is very similar to the CNEL described above. L_{dn} is also a time-weighted average of the 24-hour, A-weighted noise level. The only difference is that no "penalty" is applied to the evening hours of 7:00 p.m. to 10:00 p.m. However, 10 dBA is added to the L_{eq} during the nighttime hours of 10:00 p.m. to 7:00 a.m.; the energy average is then taken for the whole 24-hour day. The abbreviation "L_{dn}" is used throughout this chapter; however, some agencies use the alternative abbreviation of "DNL."

Various federal, state, and local agencies have adopted CNEL or L_{dn} as the measure of community noise. Although not identical, CNEL and L_{dn} are normally within 1 dBA of each other when measured in typical community environments, and many noise standards/regulations use the two interchangeably.

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise attenuates (decreases) with distance depends on the factors described below. In general, noise attenuates with distance. Roadway noise sources tend to be arranged linearly.

Therefore, noise from roadway vehicular traffic attenuates at a rate of approximately 3.0 to 4.5 dB per doubling of distance from the source, depending on the intervening surface (e.g., paved or vegetated). Point sources of noise, such as stationary equipment or construction equipment, typically attenuate at a rate of approximately 6.0 to 7.5 dB per doubling of distance from the source.[2] For example, a sound level of 80 dBA at 50 feet from the noise source will be reduced to 74 dBA at 100 feet, 68 dBA at 200 feet, and so on. Noise levels can also be attenuated by shielding the noise source or providing a barrier between the source and the receptor.

- **Geometric Spreading.** Sound from a single source (i.e., a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a general rate of 6 dBA for each doubling of distance. Highway noise is not a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a "line" source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level (i.e., attenuation) from a line source is generally 3 dBA per doubling of distance.
- **Ground Absorption.** The noise path between the source and the observer is usually close to the ground. The excess noise attenuation from ground absorption occurs due to acoustic energy losses on sound wave reflection. For acoustically "hard" sites (i.e., sites with a reflective surface, such as a parking lot or a smooth body of water, between the source and the receptor), no excess ground attenuation is assumed because the sound wave is reflected without energy losses. For acoustically absorptive or "soft" sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.
- **Atmospheric Effects.** Research by the California Department of Transportation (Caltrans) and others has shown that atmospheric conditions can have a major effect on noise levels. Factors include wind, air temperature (including vertical temperature gradients), humidity, and turbulence. Receptors downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas receptors upwind can have lower noise levels. Increased sound levels can also occur over relatively large distances because of temperature inversion conditions (i.e., increasing temperature with elevation).
- **Shielding by Natural or Human-Made Features.** A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receptor, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor with the specific purpose of reducing noise. In addition to the noise that diffracts over the top of a barrier, noise will also diffract around the ends of the barrier, leading to "flanking" noise, which can reduce the overall efficacy of the barrier. Assuming it is long enough to minimize the effects of flanking noise, a barrier that breaks the

[2] The 1.5 dB variation in the attenuation rate (6 dB versus 7.5 dB) can result from ground-absorption effects, which occur as sound travels over soft surfaces such as earth or vegetation (with a 7.5 dB attenuation rate) versus hard surfaces such as pavement or hard-packed earth (with a 6 dB rate).

line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

Human Response to Noise

Noise can have a range of effects on people, including hearing damage, sleep interference, speech interference, performance interference, physiological responses, and annoyance. Each of these is briefly described below.

- **Hearing Damage.** A person exposed to high noise levels can suffer either gradual or traumatic hearing damage. Gradual hearing loss occurs with repeated exposure to excessive noise levels. It is most commonly associated with occupational noise exposures in heavy industry or other very noisy work environments. Traumatic hearing loss is caused by sudden exposure to an extremely high noise level, such as a gunshot or explosion at very close range. The potential for noise-induced hearing loss is not generally a concern in typical community noise environments. Noise levels in neighborhoods, even in very noisy airport environs, are not loud enough to cause hearing loss.
- **Sleep Interference.** Exposure to excessive noise levels at night has been shown to cause sleep disturbance. Sleep disturbance refers not only to awakening from sleep but also to effects on the quality of sleep, such as altered sleep patterns and stages. World Health Organization guidelines recommend noise limits of 30 dBA L_{eq} (8-hour average) for continuous noise and 45 dBA L_{max} for single sound events inside bedrooms at night to minimize sleep disturbance.[3]
- **Speech Interference.** Speech interference can be a problem in any situation where clear communication is desired but is often of particular concern in learning environments (such as schools) or situations where poor communication could jeopardize safety. Normal conversational speech inside homes is typically in the range of 50 to 65 dBA;[4] any noise in this range or louder may interfere with speech. As background noise levels rise, the intelligibility of speech decreases, and the listener fails to recognize an increasing percentage of the words spoken. A speaker may raise his or her voice in an attempt to compensate for higher background noise levels, but this, in turn, can lead to vocal fatigue for the speaker.
- **Performance Interference.** Excessive noise has been found to have various detrimental effects on human performance, including information processing, concentration, accuracy, reaction times, and academic performance. Intrusive noise from individual events can also cause distraction. These effects are of obvious concern for learning and work environments.
- **Physiological Responses.** Acute noise has been shown to cause measurable physiological responses in humans, including changes in stress hormone levels, the pulse rate, and blood pressure. The extent to which these responses cause harm or are signs of harm is not clearly defined, but it has been postulated that they could contribute to stress-related diseases, such as hypertension, anxiety, and heart disease. However, research indicates that the links between environmental noise and permanent health effects are generally weak and inconsistent. Statistically significant health risks have been found from extended exposure to very high noise levels, such as the exposure associated with workers in an industrial setting for 5 to 30 years.[5]

[3] World Health Organization. 1999. *Guidelines for Community Noise*. April. London, United Kingdom.

[4] U.S. Environmental Protection Agency. 1977. *Speech Levels in Various Noise Environments*. EPA-600/1-77-025. May. Prepared by Bolt, Beranek, and Newman. Washington, D.C.

[5] World Health Organization. 1999. *Guidelines for Community Noise*. April. London, United Kingdom.

- **Annoyance.** The subjective effects of annoyance, nuisance, and dissatisfaction are possibly the most difficult to quantify. No accurate method exists to measure these effects. This difficulty arises primarily from differences in individual sensitivity and habituation to sound, which can vary widely from person to person. What one person considers tolerable can be unbearable to another of equal hearing acuity. An important method in estimating the likelihood of annoyance due to a new sound is comparing it to the existing baseline or "ambient" environment to which that person has adapted. In general, the more the level or tonal (frequency) variation of a sound exceeds the previously existing ambient sound level or tonal quality, the less acceptable the new sound will be.

In most cases, effects from sounds typically found in the natural environment are limited to annoyance or interference. Physiological effects and hearing loss are more commonly associated with long-term human-made noise, such as in an industrial or occupational setting.

Studies have shown that, under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of 1 dBA. In the normal environment, the healthy human ear can detect changes of about 2 dBA; however, it is widely accepted that a doubling of sound energy, which results in a change of 3 dBA in the normal environment, is considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway), resulting in a 3 dBA increase in sound, would generally be barely detectable.

Noise-Sensitive Land Uses

Noise-sensitive land uses are the locations most likely to be adversely affected by excessive noise levels, along with places where quiet is an essential element of their intended purpose. What constitutes a noise-sensitive land use can vary by jurisdiction; however, such uses typically include residential areas, educational and religious facilities, and, in some cases, certain commercial land uses. Noise-sensitive land uses located near the Project Site include the existing Wescoat Village residences west of the Project Site, schools (i.e., Carnegie Mellon University Silicon Valley and the Ames Child Care Center), and a church (i.e., Moffet Field Chapel).

3.12.2.2 Groundborne Vibration Fundamentals

This section describes basic concepts related to groundborne vibration. Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground. The effects of groundborne vibrations are typically limited to nuisance or annoyance for people; however, at extreme vibration levels, damage to buildings may also occur.

In contrast to airborne sound, groundborne vibration is not a phenomenon that most people experience every day. The ambient groundborne vibration level in residential areas is usually much lower than the threshold of human perception. Most perceptible indoor vibration is caused by sources within buildings, such as mechanical equipment while in operation, people moving, or doors slamming. Typical outdoor sources of perceptible groundborne vibration are heavy construction activity, such as blasting, pile driving, or earthmoving; steel-wheeled trains; and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible, even in locations close to major roads. The strength of groundborne vibration from typical environmental sources diminishes (or attenuates) fairly rapidly over distance.

For the prediction of groundborne vibration, the fundamental model consists of a vibration source, a receptor, and the propagation path between the two. The power of the vibration source and the characteristics and geology of the intervening ground, which affect the propagation path to the receptor, determine the groundborne vibration level and the characteristics of the vibration perceived by the receptor.

The sections that follow provide an explanation of key concepts and terms used in the analysis of environmental groundborne vibration.

Displacement, Velocity, and Acceleration

When a vibration source (e.g., blasting, construction equipment, train) impacts the ground, it imparts energy to the ground, creating vibration waves that propagate away from the source along the surface and downward into the ground. As vibration waves travel outward from a source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The distance that these particles move is referred to as *displacement.* It is typically very small, usually only a few ten-thousandths to a few thousandths of an inch. *Velocity* describes the instantaneous speed of the motion, and *acceleration* is the instantaneous rate of change in the speed. Each of these measures can be further described in terms of *frequency* and *amplitude*, as discussed below.

Although displacement is generally easier to understand than velocity or acceleration, it is rarely used to describe groundborne vibration because most transducers used to measure vibration directly measure velocity or acceleration, not displacement.

Frequency and Amplitude

The frequency of a vibrating object describes how rapidly it is oscillating. The unit of measurement for the frequency of vibration is Hz (the same as used in the measurement of noise), which describes the number of cycles per second.

The amplitude of displacement describes the distance that a particle moves from its resting (or equilibrium) position as it oscillates. This can be measured in inches. The amplitude of vibration velocity (the speed of the movement) can be measured in inches per second (in/sec). The amplitude of vibration acceleration (the rate of change in speed) can be measured in in/sec per second.

Vibration Descriptors

As noted above, there are various ways to quantify groundborne vibration, based on its fundamental characteristics. Because vibration can vary markedly over a short period of time, various descriptors have been developed to quantify vibration. The two most common descriptors used in the analysis of groundborne vibration are vibration velocity level (Lv) and peak particle velocity (PPV), each of which is described below.

PPV is defined as the maximum instantaneous positive or negative peak amplitude of vibration velocity. The unit of measurement for PPV is in/sec. Unlike many quantities used in the study of environmental acoustics, PPV is typically presented with use of linear values, not a dB scale. Because it is related to the stresses that are experienced by buildings, PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (both Federal Transit Administration [FTA] and Caltrans guidelines recommend using PPV for this purpose). It is also used in many instances to evaluate the human response to groundborne vibration (Caltrans guidelines

recommend using PPV for this purpose). The PPV level can be calculated using methods provided in Caltrans' guidance manual[6] and the following equation from the guidance manual:

$$PPV_{rec} = PPV_{ref} \times (25/D)^n$$

where PPV_{rec} is the PPV at a receptor; PPV_{ref} is the reference PPV at 25 feet from the equipment; D is the distance from the equipment to the receptor, in feet; and n is a value related to the vibration attenuation rate through ground (the default recommended value for n is 1.1).

L_V describes the rms vibration velocity. Due to the typically small amplitudes of groundborne vibrations, vibration velocity is often expressed in decibels, calculated as follows:

$$L_V = 20 \times \log_{10}\left(\frac{V}{V_{ref}}\right)$$

where *V* is the actual rms velocity amplitude and V_{ref} is the reference velocity amplitude. There is no universally accepted value for V_{ref}, but the accepted reference quantity for vibration velocity in the U.S. is 1 micro-inch per second (1×10^{-6} in/s). The abbreviation VdB is commonly used for vibration decibels to distinguish from noise-level decibels. L_V is often used to evaluate human response to vibration levels (FTA guidelines recommend using L_V for this purpose).

Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations attenuate much more rapidly than low frequencies; therefore, low frequencies tend to dominate the spectrum at large distances from the source. The propagation of groundborne vibration is not as simple to model as airborne noise. This is because noise in the air travels through a relatively uniform medium, while groundborne vibrations travel through the ground, which may contain significant geological differences. Geological factors that influence the propagation of groundborne vibration include those listed below.

- **Soil conditions.** The type of soil is known to have a strong influence on the levels of groundborne vibration. Among the most important factors are the stiffness and internal damping of the soil. Hard, dense, and compacted soil; stiff clay soil; and hard rock transmit vibration more efficiently than loose, soft soils; sand; or gravel.
- **Depth to bedrock.** Shallow depth to bedrock has been linked to efficient propagation of groundborne vibration. One possibility is that shallow bedrock acts to concentrate the vibration energy near the surface, reflecting vibration waves back toward the surface that would otherwise continue to propagate farther down into the ground.
- **Soil strata.** Discontinuities in the soil strata (i.e., soil layering) can also cause diffraction or channeling that affects the propagation of vibration over long distances.
- **Frost conditions.** Vibration waves typically propagate more efficiently in frozen soils than in unfrozen soils. Propagation also varies, depending on the depth of the frost.

[6] California Department of Transportation. 2020. Transportation and Construction Vibration Guidance Manual. April. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed: July 9, 2025.

- **Water conditions.** The amount of water in the soil can affect vibration propagation. The depth of the water table in the path of the propagation also appears to have substantial effects on groundborne vibration levels.

Specific conditions at the source and receptor locations can also affect vibration levels. For instance, how the source is connected to the ground (e.g., direct contact, through rails, or as part of a structure) will affect the amount of energy transmitted into the ground. There are also notable differences when the source is underground, such as in a tunnel, versus on the surface. At the receptor, vibration levels can be affected by variables such as the foundation type, building construction, and acoustical absorption inside the rooms where people are located. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

Effects of Groundborne Vibration

Vibration can result in effects that range from annoyance to structural damage. Annoyance or disturbance may occur at vibration levels that are substantially below those that would pose a risk of damage to buildings. Each of these effects is discussed below.

Potential Building Damage

When groundborne vibration encounters a building, vibrational energy is transmitted to the structure, causing it to vibrate. If the vibration levels are high enough, damage to the building may occur. Depending on the type of building and the vibration levels, this damage could range from cosmetic architectural damage (e.g., cracked plaster, stucco, or tile) to more severe structural damage (e.g., cracking of floor slabs, foundations, columns, beams, or walls). Buildings can typically withstand higher levels of vibration from transient sources than from continuous or frequent intermittent sources. Transient sources are those that create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers (impact or vibratory), crack-and-seat equipment, and vibratory compaction equipment. Older fragile buildings, which may include important historic buildings, are of particular concern. Modern commercial and industrial buildings can generally withstand much higher vibration levels before damage occurs.

Human Disturbance or Annoyance

Groundborne vibration can be annoying to people and cause serious concern for nearby neighbors of vibration sources, even when vibration is well below levels that could cause physical damage to structures. Groundborne vibration is almost exclusively a concern inside buildings. It is rarely perceived as a problem outdoors where the motion may be discernible but with a less adverse reaction in the absence of the effects associated with the shaking of a building. The normal frequency range of most groundborne vibration that can be felt generally starts at a low frequency of less than 1 Hz and extends to a high of about 200 Hz.

When groundborne vibration waves encounter a building, vibrational energy is transmitted to the building foundation. It then propagates throughout the remainder of the structure, causing building surfaces (walls, floors, and ceilings) to vibrate. This movement may be felt directly by building occupants; it may also generate a low-frequency rumbling noise as sound waves are radiated by the vibrating surfaces. At higher frequencies, building vibration can cause other audible effects, such as

rattling among windows, building fixtures, or items on shelves or hanging on walls. These audible effects due to groundborne vibration are referred to as groundborne noise. Groundborne vibration levels that result in groundborne noise are often experienced as a combination of perceptible vibration and low-frequency noise. However, sources that have the potential to generate groundborne noise are likely to produce airborne noise impacts that mask the radiated groundborne noise. Any perceptible effect (vibration or groundborne noise) can lead to annoyance. The degree to which a person is annoyed depends on the activity in which they are participating at the time of the disturbance. For example, someone sleeping or reading will be more sensitive than someone who is engaged in any type of physical activity. Reoccurring vibration effects often lead people to believe that the vibration is damaging their home, even though the vibration levels are well below minimum thresholds for damage potential.[7]

Numerous studies have been conducted to characterize the human response to vibration. Over the years, numerous vibration criteria and standards have been suggested by researchers, organizations, and governmental agencies. These studies suggest that the thresholds for perception and annoyance vary, according to duration, frequency, and amplitude of vibration. For continuous or frequent intermittent vibration sources, such as construction activity, including the use of pile drivers or vibratory compaction equipment, the human response to vibration varies from barely perceptible at a PPV of 0.01 in/sec to distinctly perceptible at a PPV of 0.04 in/sec, strongly perceptible at a PPV of 0.1 in/sec, and severe at a PPV of 0.4 in/sec.[8] With respect to vibration-sensitive equipment, vibration-sensitive instruments or machinery, such as those used in research laboratories, can be disrupted at much lower levels than those that would typically affect other uses. FTA has developed guidelines for evaluating potential effects on such equipment, as described in more detail in the Regulatory Setting section of this document.

Vibration-Sensitive Land Uses

As noted above, the potential effects of groundborne vibration can generally be divided into three categories for the purposes of the California Environmental Quality Act (CEQA) vibration evaluation: building damage, potential human annoyance, and potential disruption to vibration-sensitive equipment. Because building damage would be considered a permanent negative effect at any building, regardless of land use, any type of building would typically be considered sensitive to this type of impact. Fragile structures, which often include historic buildings, are most susceptible to damage and are of particular concern.

Regarding the potential effects of groundborne vibration and noise for people, except for long-term occupational exposure, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that can affect concentration or disturb sleep. People may tolerate infrequent, short-duration vibration levels, but human annoyance to vibration becomes more pronounced if the vibration is continuous or occurs frequently. Human annoyance effects from groundborne vibration are typically considered only inside occupied buildings, not within outside areas such as residential yards, parks, or open space.

Buildings that would be considered sensitive to human annoyance caused by vibration are generally the same as those that would be sensitive to noise (e.g., residential land uses). The primary vibration-sensitive receptors in the project area are structures near the Project Site, which could be

[7] Ibid.

[8] Ibid.

susceptible to damage, and residents of nearby residential structures, which could be susceptible to vibration-related annoyance, especially during nighttime hours. In addition, one nearby building houses U.S. Geological Survey (USGS) laboratories. Microscopes and other vibration-sensitive types of equipment are located within several of these laboratories; the operation of such laboratory equipment can be affected by construction vibration. Other buildings with sensitive research equipment could also be located in the vicinity of project construction.

3.12.2.3 Existing Noise Environment

The existing noise environment in the project vicinity generally comprises transportation, industrial, and residential noise sources. Traffic along U.S. 101 heavily influences the ambient noise levels in this area, along with aircraft noise from Moffett Federal Airfield. Industrial noise sources (e.g., exhaust fans and other mechanical equipment) are also present within the National Aeronautics and Space Administration Ames Research Center (NASA ARC). Lastly, residential sources, such as air conditioners and lawn maintenance equipment, were noticed in the project vicinity during the project noise survey.

To quantify existing ambient noise levels near the Project Site, long-term (24-hour) and short-term (15-minute) ambient noise measurements were conducted between April 22 and 24, 2025. On these days, weather conditions ranged from clear to overcast, with no precipitation. Winds were light, with wind speeds averaging approximately 1 to 2 miles per hour.

Long- and short-term monitoring locations were selected to capture existing ambient noise levels throughout the day and night near the Project Site as well as in areas that were representative of nearby noise-sensitive receptors, including residential, educational, and child-care facilities. Noise monitoring locations were also selected to capture existing ambient noise levels at nearby office uses to the south and the industrial land uses to the north. The long-term measurements were conducted using a Piccolo Type 2 sound-level meter (SLM). Each SLM measured the 1-minute L_{eq} for a period of approximately 24 hours. The recorded 1-minute L_{eq} noise levels were converted into 1-hour L_{eq} noise levels and used to generate 24-hour average L_{dn}, 24-hour CNEL, and average noise levels for daytime and nighttime hours. In addition, the highest and lowest 1-hour L_{eq} noise level during the measurement window were noted.

Seven long-term noise measurement locations were selected near the Project Site. The 24-hour noise levels from the long-term measurements ranged from approximately 63 to 75 dBA L_{dn}, with the highest noise levels generally corresponding to areas near U.S. 101. In addition, three short-term (15-minute) noise measurements were conducted near the Project Site using a Larson Davis LxT Type 1 SLM. The measured short-term noise levels ranged from approximately 51 to 54 dBA L_{eq}.

The relevant noise data from the noise measurement survey are summarized in Tables 3.12-3 and 3.12-4 for the long- and short-term noise measurements, respectively. Figure 3.12-1, Noise Measurement Locations, shows the noise measurement locations. Appendix A to the Noise and Vibration Technical Report includes the complete dataset of noise measurement data from the field survey.

Table 3.12-3. Measured Existing Noise Levels in the Project Vicinity, Long Term

				12-Hour Noise Metrics (7:00 a.m. to 7:00 p.m.)		Daytime Noise Metrics (7:00 a.m. to 10:00 p.m.)		Nighttime Noise Metrics (10:00 p.m. to 7:00 a.m.)	
Site	Site Description	L_{dn}	CNEL	Average L_{eq}[a]	Lowest 1-Hour L_{eq}[b]	Average L_{eq}[c]	Lowest 1-Hour L_{eq}[d]	Average L_{eq}[e]	Lowest 1-Hour L_{eq}[f]
LT-1	Wescoat Road east of Stewart Drive	63.7	63.9	56.4	53.4	56.4	53.4	57.4	52.1
LT-2	Dailey Road south of Wescoat Road	67.6	67.9	61.6	58.3	61.4	58.3	61.2	53.7
LT-3	Fairchild Drive west of Whisman Road	75.3	75.7	71.1	66.5	71.0	66.5	68.4	63.1
LT-4	Parking lot south of Edquiba Road	66.5	67.0	62.1	59.5	62.1	59.5	59.7	49.2
LT-5	Macon Road and Ellis Street	69.9	70.3	65.2	61.3	65.3	61.3	63.1	56.4
LT-6	Arnold Avenue north of Clark Road	63.4	63.8	59.8	57.3	59.5	57.0	55.4	50.3
LT-7	Wescoat Road west of Bailey Road	66.1	66.4	59.4	55.1	59.7	55.1	59.6	55

LT = long-term (24-hour) ambient noise measurement.
All noise levels are reported in A-weighted decibels (dBA).
a. The 12-hour average L_{eq} from 7:00 a.m. to 7:00 p.m.
b. The lowest hourly L_{eq} between 7:00 a.m. and 7:00 p.m.
c. The 15-hour daytime average L_{eq} from 7:00 a.m. to 10:00 p.m.
d. The lowest hourly L_{eq} between 7:00 a.m. and 10:00 p.m.
e. The 9-hour nighttime average L_{eq} from 10:00 p.m. to 7:00 a.m.
f. The lowest hourly L_{eq} between 10:00 p.m. and 7:00 a.m.

Table 3.12-4. Measured Existing Noise Levels in the Project Vicinity, Short Term

Site	Site Description	Measurement Start Time	L_{eq}	L_{max}	L_{min}	Dominant Noise Source(s)
ST-1	Grassy field west of Kaiser Road	10:34 a.m.	51.4	64.2	45.7	Traffic, aircraft
ST-2	Southeast of Carnegie Mellon University Silicon Valley	10:57 a.m.	52.4	60.6	49.7	Traffic, birds
ST-3	Parking lot near Jacobs Technology AFSS	11:29 a.m.	53.7	67.0	48.1	Traffic, aircraft, HVAC equipment

ST = short-term (15-minute) ambient noise measurement.
All noise levels are reported in A-weighted decibels (dBA).
AFSS = Ames Facilities Support Services; HVAC = heating, ventilation, air-conditioning

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Graphics ... 104894 (3-25-2026)

Figure 3.12-1
Noise Measurement Locations
Berkeley Space Center at NASA Research Park

3.12.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For purposes of CEQA, UC Berkeley has elected to use noise standards from the municipal code of the jurisdiction where the nearest noise-sensitive receptor is located for the analysis of construction and operational noise sources associated with the project. For the proposed project, the nearest noise-sensitive receptors are in Santa Clara County (County). UC Berkeley has elected to evaluate construction vibration effects per the guidelines and criteria contained in Caltrans' *Transportation and Construction Vibration Guidance Manual*; this guidance includes clear standards that pertain specifically to construction vibration and are commonly used throughout the state.[9]

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use FTA General Assessment Methodology construction noise limits to evaluate construction noise effects, and local Santa Clara County (County) thresholds to evaluate potential operational noise effects associated with the project. Finally, NASA has elected to evaluate construction vibration effects per the guidelines and criteria contained in Caltrans' *Transportation and Construction Vibration Guidance Manual*.[10]

Plans, policies, and regulations considered in the analysis of the proposed project's impacts related to noise are identified in the Noise and Vibration Technical Report (Appendix 3.12-1 of this joint EIR/EIS). A list of plans, policies, and regulations considered in the analysis is provided below.

- Federal Transit Administration
- Title 24 of the California Code of Regulations, Noise Insulation
- Governor's Office of Planning and Research
- California Department of Transportation
- Santa Clara County General Plan
- Santa Clara County Code

[9] California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. April. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed: July 9, 2025.

[10] Ibid.

3.12.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project related to noise in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts related to noise and vibration in accordance with NEPA is provided separately in Section 4.5.11, *Noise*, in Chapter 4, *Environmental Impact Statement*.

3.12.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have a significant effect related to noise if it would result in any of the conditions listed below.

Would the project:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project construction?
- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project operations?
- Generate excessive groundborne vibration or groundborne noise levels?
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to noise?

3.12.5.1 Short-term Construction Noise Criteria

Regarding the CEQA evaluation, as described above, UC Berkeley elected to use noise standards from the municipal code of the jurisdiction where the noise-sensitive receptor is located for this project. Because the nearest existing noise-sensitive receptors are in an unincorporated area of Santa Clara County, the CEQA analysis evaluates construction noise in the context of the hourly restrictions and quantitative noise limits pertaining to construction in the jurisdiction. For purposes of this analysis, construction noise is evaluated to determine if the following were to occur, resulting in a significant construction noise impact:

- Construction noise levels at any noise-sensitive receptor would exceed the limits listed in Table 4-10 of the Noise and Vibration Technical Report, included as Appendix 3.12-1 of this joint EIR/EIS (construction phases would have durations of 10 days or more).
- For multi-family dwellings (i.e., the nearest noise-sensitive receptors to the Project Site):
  - ***The daytime (7:00 a.m. to 7:00 p.m.) construction noise threshold is 65 dBA, and;***
  - ***The nighttime (7:00 p.m. to 7:00 a.m.) construction noise threshold is 55 dBA.***

Construction noise is evaluated to determine if a significant noise impact related to a substantial temporary increase in noise from construction activities would be expected to occur, as follows:

- ***An increase in noise of 10 dB or more above the existing ambient noise level at any off-site noise-sensitive receptor during project construction.***

The Santa Clara County Code does not contain numerical noise standards for construction traffic noise. For the purposes of this analysis, traffic noise increases associated with heavy trucks and haul trucks is evaluated to determine if the following would occur, resulting in a significant traffic noise impact:

- ***A 3 dB increase in noise in areas where existing and resulting noise levels are above the "satisfactory" range for that land use (as defined in the Santa Clara County General Plan [55 dBA L_{dn} for residential land uses])***
- ***A 5 dB increase in noise in areas where existing and resulting noise levels are below the "satisfactory" range for that land use.***

3.12.5.2 Long-term Operational Noise Criteria

Estimated noise levels from on-site project operations are assessed relative to County noise exposure limits. Specifically, predicted noise levels were estimated to determine if they would exceed the County noise limits (presented in Table 4-8 of the Noise and Vibration Technical Report [Appendix 3.12-1]) at any off-site noise-sensitive receptor. Mechanical equipment could operate during both daytime and nighttime hours, with the nighttime noise limits being more stringent. Therefore, estimated noise levels are compared to the more stringent County noise exposure limit for nighttime hours (10:00 p.m. to 7:00 a.m.) to ensure a conservative analysis. According to Table 4-8 of the Noise and Vibration Technical Report, if measured ambient noise levels are higher than the standards, the allowable noise exposure standard is increased in 5 dB increments, as needed, to encompass or reflect the ambient noise level. The measured existing noise level at the residential receptors at Wescoat Village was 52.1 dBA L_{eq}. This ambient noise level is greater than the nighttime noise level standard outlined in Table 4-8 for multi-family dwellings of 50 dBA L_{eq}. Consequently, the noise standard used to assess mechanical equipment noise at this location is increased by 5 dB to encompass or reflect the ambient noise level. The applicable noise limit at this location is therefore 55 dBA L_{eq} during nighttime hours.

With respect to traffic noise, the County does not establish specific thresholds to assess the potential for a substantial traffic noise increase to occur. Based on commonly used CEQA thresholds throughout the state, a traffic noise increase is considered substantial for this analysis if the following were to occur:

- ***A project-generated increase of 5 dBA in traffic noise at a noise-sensitive receptor when the resulting (i.e., existing plus project) traffic noise level at that sensitive use remains below the "satisfactory" range for that land use (as defined in the County General Plan [55 dBA L_{dn} for residential land uses])***
- ***A project-generated 3 dBA or greater increase in traffic noise when the resulting (i.e., existing plus project) traffic noise level at that sensitive use is above the "satisfactory" range for that land use (as defined in the County General Plan [55 dBA L_{dn} for residential land uses])***

3.12.5.3 Groundborne Vibration Criteria

Evaluation of the potential for project construction to result in vibration-related damage and annoyance effects is based on vibration-related damage and annoyance criteria from the Caltrans *Transportation and Construction Vibration Guidance Manual*.[11] The Caltrans thresholds for potential damage and annoyance were presented in Tables 4-4 and 4-5 of the Noise and Vibration Technical Report (Appendix 3.12-1). As shown in Table 4-4, the Caltrans vibration damage criterion for both "new residential structures" and for "modern industrial/commercial buildings" is a PPV of 0.5 in/sec for continuous/frequent intermittent vibration sources; the Caltrans criterion for "historic and some old buildings" is a PPV of 0.25 in/sec. All of the analyzed equipment was classified as continuous/frequent intermittent vibration sources. With respect to vibration-related annoyance, the Caltrans "strongly perceptible" annoyance criterion (PPV of 0.1 in/sec) is used to assess the potential for sleep disturbance to occur at occupied residential land uses during nighttime hours. In addition, an analysis was conducted to determine if construction-related vibration from the proposed project could potentially be disruptive to sensitive research equipment at nearby off-site laboratories, such as the USGS Building 800 located north of the Project Site. FTA's Criteria for Detailed Vibration Analysis are contained in Table 4-3 of the Noise and Vibration Technical Report. The FTA vibration criteria range from a vibration level of 42 VdB (the most demanding criterion for extremely vibration-sensitive equipment) to 90 VdB (appropriate for workshops and similar areas).

In summary, estimated vibration levels are evaluated to determine if the following would occur:

- ***Groundborne vibration levels would exceed the applicable Caltrans criteria for potential damage to any off-site building at any time (Table 4-4 of the Noise and Vibration Technical Report; a PPV of 0.25 in/sec for "historic and some old buildings," and a PPV of 0.5 in/sec for both "new residential structures" and for "modern industrial/commercial buildings").***
- ***Groundborne vibration levels would exceed the Caltrans criterion for strongly perceptible vibration, which is defined as a PPV of 0.1 in/sec at any off-site residential use during the nighttime hours of 10:00 p.m. to 7:00 a.m.***
- ***Groundborne vibration levels would exceed the applicable FTA vibration criteria for detailed vibration analysis at nearby laboratory equipment locations (e.g., U.S. Geological Survey [USGS] Building 800) (Table 4-3 of the Noise and Vibration Technical Report).***

3.12.6 Methods for Analysis

Refer to Section 5.1, *Methods for Analysis*, in the Noise and Vibration Technical Report, included as Appendix 3.12-1 of this joint EIR/EIS, for a description of the methods used for the analysis of noise and vibration impacts.

[11] Ibid.

3.12.7 Impacts and Mitigation Measures

Impact CEQA-NOI-1a: Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	NOI-1. Construction Noise Control Plan (required for CEQA Proposed Project, Central Utility Plant [CUP] Option, and Water Reuse Facility [WRF] Option) NOI-2. Temporary Noise Barriers (required for CEQA Proposed Project, CUP Option, and WRF Option)	Significant and Unavoidable with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Construction for the proposed project has the potential to generate noise that could exceed applicable CEQA noise thresholds at nearby sensitive receptors. Construction of the WRF Option or CUP Option would require additional off-road equipment and on-road vehicles, beyond that required for construction of the CEQA Proposed Project. However, the overall footprint of construction, as well as the types of equipment proposed for construction, would be the same. Construction associated with the WRF and CUP subphases would not result in noise levels that would be higher than noise levels from other construction subphases for the CEQA Proposed Project. Therefore, the worst-case daytime construction noise levels (i.e., estimated noise levels from the worst-case [i.e., loudest] construction subphase) from the proposed project with the CUP or WRF options would be the same as under the CEQA Proposed Project.

The proposed project would be constructed in four main phases, along with more than 100 subphases, from 2027 to 2040. Construction would consist of both on-site and off-site work. On-site construction activities would generally take place no closer than 100 feet from the nearest existing residences. As described in the Noise and Vibration Technical Report included as Appendix 3.12-1 of this joint EIR/EIS, the FTA general assessment construction noise analysis method recommends combining noise levels from the two loudest pieces of equipment expected to operate

simultaneously, assuming both pieces of equipment are located at the center of the construction site. Rather than assuming construction equipment is located at the approximate center of the overall Project Site, the construction noise analysis assumes that equipment is operating at the approximate center of a given building footprint or subphase area. For on-site construction, the distance between the approximate center of the nearest project building is an estimated 200 feet from the nearest off-site existing residences (i.e., the existing Wescoat Village residences to the west). In addition, the two loudest pieces of equipment expected to operate simultaneously varies by subphase.

Off-site work, which would be limited to utility and in-road work, would occur within the street along the perimeter of the Project Site and on portions of Wescoat Road, Clark Road, Moffett Boulevard, Perimeter Road, Cody Road, Girard Road, and Ellis Street. Off-site work would generally take place no closer than 50 feet from the nearest sensitive receptors (i.e., the existing residences at Wescoat Village).

Daytime Construction Noise

Except as discussed under *Nighttime Construction*, below, all proposed project construction would be limited to the daytime construction hours, defined by the County as 7:00 a.m. to 7:00 p.m. Monday through Saturday (excluding legal holidays), noting that construction would not occur on Saturdays. Initial modeling was conducted to estimate combined construction noise levels at a reference distance of 50 feet for each subphase type under the CEQA Proposed Project, using the analysis approach described in Section 5.1, *Methods for Analysis,* of the Noise and Vibration Technical Report (Appendix 3.12-1). Specifically, this assessment assumes simultaneous operation of the two loudest pieces of equipment that are expected to operate during a given subphase of construction (noting that the modeled equipment would vary by subphase). Both pieces of equipment are assumed to operate simultaneously at the center of a given construction site (i.e., a given future building footprint), which could be as close as approximately 200 feet from the nearest off-site receptor for on-campus buildings.

The results of the analysis are summarized in Table 3.12-5. Although proposed project construction would include more than 100 subphases, each subphase type (e.g., Buildings – Site Preparation) would use the same equipment. Therefore, while detailed modeling results for all subphases are included in Appendix A of the Noise and Vibration Technical Report, the summary below presents noise levels for each subphase type rather than all 100 subphases.

Table 3.12-5. Combined Project Construction Noise Levels at 50 Feet by Subphase Type

Subphase Type/Construction Activity[a]	Combined Noise Level at 50 Feet (dBA, L_{eq})
Buildings – Site Preparation	87
Buildings – Grading	87
Buildings – Demolition	93
Buildings – Vertical Construction,[b] Foundations	83
Buildings – Vertical Construction,[b] Trenching	86
Buildings – Vertical Construction,[b] Core and Shell	84
Buildings – Architectural Coating	81
Utilities/Roads – Grubbing and Land Clearing	88
Utilities/Roads – Excavation	91
Utilities/Roads – Drainage and Subgrade	91

Subphase Type/Construction Activity[a]	Combined Noise Level at 50 Feet (dBA, L_{eq})
Utilities/Roads – Paving	88
Surface Parking – Grading	88
Surface Parking – Site Preparation	88
Surface Parking – Paving	88
Parking Structure – Grading	87
Parking Structure – Site Preparation	87
Parking Structure – Building Construction	84
Parking Structure – Building Coatings	78
Parking Structure – Paving	83
Central Utility Plant – Site Preparation	87
Central Utility Plant – Grading	87
Central Utility Plant – Vertical Construction	82
Water Reuse Facility – Site Preparation	87
Water Reuse Facility – Grading	87
Water Reuse Facility – Vertical Construction	82

Source: Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide*. FHWA–HEP–05–054. January. Available: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/rcnm/rcnm.pdf. Accessed: June 18, 2025.

[a] Although project construction would include more than 100 subphases, each subphase type (e.g., Buildings – Site Preparation) would use the same equipment. Detailed modeling results for all subphases are included in Appendix A. The summary below presents noise levels for each subphase type rather than all 100 subphases.

dBA = A-weighted decibels; L_{eq} = equivalent sound level

[b] Vertical Construction is a category of project subphases that includes activities related to the construction of structures that extend upward from ground level.

Table 3.12-5 demonstrates that combined noise levels at a reference distance of 50 feet during all project construction subphase types would be between 78 and 93 dBA L_{eq}. This initial modeling demonstrated that the worst-case, or loudest, on-site subphase of construction would be the Buildings – Demolition subphase, which would generate an estimated noise level of 93 dBA L_{eq} at a reference distance of 50 feet. This subphase would involve potentially concurrent operation of multiple concrete saws. Table 3.12-6 presents the FTA general assessment modeling results for combined noise levels from the worst-case loudest on-site subphase of construction (i.e., Buildings – Demolition) at various distances from the Project Site.

Table 3.12-6. Worst-case On-site Construction Noise Phase, Buildings – Demolition

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	L_{eq} Sound Level (dBA)
Source 1: Concrete Saw – Sound level (dBA) at 50 feet =	90	100%	90
Source 2: Concrete Saw – Sound level (dBA) at 50 feet =	90	100%	90
Calculated Data:			
All sources combined – L_{max} sound level (dBA) at 50 feet =	—	—	93
All sources combined – L_{eq} sound level (dBA) at 50 feet =	—	—	93

Receptor	Distance between Source and Receptor (feet)[a]	Attenuation Due to Distance (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[b]
Existing residential (Wescoat Village)	**200**	**-12**	**81**	**81**
Office/warehouse north of project Building 2[c]	210	-12	81	81
Moffett Field Museum[c]	270	-15	78	78
Jacobs Technology AFSS[c]	270	-15	78	78
EMC (software company)[c]	420	-18	75	75
Hangar One[c]	480	-20	73	73
Carnegie Mellon University Silicon Valley	530	-21	73	73
Moffett Field Chapel	790	-24	69	69
Ames Child Care Center	1,530	-30	63	63

[a.] FTA guidance for a general assessment typically recommends measuring from the analyzed receptor to the middle of a project site. However, distances were conservatively measured from the analyzed receptor to the approximate center of the nearest project building footprint (i.e., 200 feet for the nearest off-site existing residences).

[b.] FTA guidance for a general assessment recommends using a utilization factor of 1 for all construction equipment, resulting in L_{eq} values that are equal to L_{max} values.

[c.] Noise levels are presented at commerical and industrial uses to inform the NEPA assessment.

AFSS = Ames Facilities Support Services; dB = decibels; dBA = A-weighted decibels; L_{eq} = equivalent sound level; L_{max} = maximum sound level

Bold text denotes the nearest off-site sensitive receptors (residential)

The nearest sensitive receptors to on-site construction activities would be the existing residences at Wescoat Village west of the Project Site, which would be approximately 200 feet from the center of the nearest proposed project building. At that distance, estimated noise levels from on-site construction activities with concrete saws were modeled to be approximately 81 dBA L_{eq}, based on the modeling assumptions described in Section 5.1, *Methods for Analysis of the* Noise and Vibration Technical Report. The subphase that includes the use of concrete saws (i.e., Buildings – Demolition) is the loudest subphase type for the proposed project. Other construction subphase types would result in lower noise levels at the nearest receptors. Although noise levels are estimated to be lower for some construction subphases, noise levels from all subphases would be in the range of 66 dBA L_{eq} (for building coatings) to 81 dBA L_{eq} (for demolition) at a distance of 200 feet, according to the modeling results; most subphases would result in noise levels greater than 70 dBA L_{eq} at that distance. For example, the Buildings – Site Preparation and Buildings – Grading subphases would both result in an estimated noise level of 75 dBA L_{eq} at a distance of 200 feet. Additional receptors that may be considered sensitive are farther away, including Carnegie Mellon University Silicon Valley, Moffett Field Chapel, and the Ames Child Care Center. At these greater distances, noise levels from on-site construction would be lower than at the nearest sensitive receptors, as shown in Table 3.12-6.

Based on the analysis results presented above, on-site project construction noise levels at the nearest existing noise-sensitive receptors (i.e., Wescoat Village, approximately 200 feet from the center of the nearest proposed project building) were estimated to be up to 81 dBA L_{eq}. This noise level would exceed the County threshold of 65 dBA by 16 dB (the applicable threshold is based on long-term construction activity [10 days or more] affecting a multi-family residential area). Although demolition on a given parcel would only take place for 3 to 7 months, all other

construction subphases would also result in noise levels greater than 65 dBA at a distance of 200 feet.

With respect to the potential for a substantial temporary increase over the existing ambient noise level to occur, the existing average ambient daytime noise level near the nearest receptors (i.e., the Wescoat Village residences) is approximately 56 dBA (based on the noise measurements at LT-1; refer to Table 3.12-3). Therefore, noise levels from the worst-case loudest subphase of on-site construction (i.e., Buildings - Demolition, with an estimated noise level of 81 dBA L_{eq} at 200 feet) could be up to 25 dB higher than existing ambient noise levels. Almost all other construction subphases are also modeled to result in noise levels of 10 dB or more than the existing ambient noise level of 56 dBA L_{eq} at this receptor. Therefore, a substantial temporary increase in noise would be expected to occur during project construction.

Additional sensitive receptors include the existing Carnegie Mellon University Silicon Valley, Moffett Field Chapel, and Ames Child Care Center. Construction noise levels would be reduced because of the additional distance to receptors located farther from project construction areas. Worst-case estimated noise levels from on-site construction (i.e., during demolition) were modeled to be 73 dBA L_{eq} at the nearest Carnegie Mellon University Silicon Valley structure, 69 dBA L_{eq} at Moffet Field Chapel, and 63 dBA L_{eq} at the Ames Child Care Center. The County thresholds for construction noise include only noise limits for single- and two-family dwellings, multi-family dwellings, and commercial areas (as shown in Table 4-10 of the Noise and Vibration Technical Report). Although the aforementioned sensitive uses are not residential, they are generally considered to be more sensitive than commercial land uses; therefore, the construction noise threshold that applies to multi-family residential land uses (i.e., 65 dBA for construction activities of 10 days or longer) is conservatively applied to the sensitive uses for purposes of this analysis.

At Carnegie Mellon University Silicon Valley, the worst-case daytime noise level of up to 73 dBA L_{eq} from on-site construction (during demolition) is approximately 17 dB higher than the existing average daytime ambient noise level of approximately 56 dBA (based on measurement LT-1). At Moffett Field Chapel, the daytime noise level of 69 dBA L_{eq} from the loudest on-site construction subphase type (demolition) is estimated to be approximately 9 dB higher than the existing average daytime ambient noise level of approximately 60 dBA (based on measurement LT-6). At the Ames Child Care Center, the daytime noise level of up to 63 dBA L_{eq} from on-site construction is estimated to be approximately 3 dB higher than the existing average daytime ambient noise level of approximately 60 dBA (based on measurement LT-6). Although noise increases at Moffett Field Chapel and Ames Child Care Center would not exceed the 10 dB increase threshold established for the proposed project during the worst-case loudest construction phase, worst-case on-site noise levels at Carnegie Mellon University Silicon Valley would exceed the 10 dB increase threshold.

With respect to off-site construction, limited in-street work would occur to install utilities throughout the Ames campus and near the Project Site as part of the Utilities/Roads – Excavation and Utilities/Roads – Drainage and Subgrade subphases. The nearest sensitive receptors to proposed off-site construction would be the existing residences at Wescoat Village west of the Project Site, which are approximately 55 feet from the center of the nearest portion of in-street work. The two loudest pieces of equipment included on the construction list for off-site construction subphases would be a grader and a concrete saw. Table 3.12-7 presents the modeled combined noise levels from these worst-case, off-site subphases of construction at various receptor distances, including at a distance of 55 feet (the distance to the nearest residence from expected locations of in-street/off-site utility work).

Table 3.12-7. Worst-case Off-site/In-street Construction Noise Phase, Utilities/Roads – Excavation and Utilities/Roads – Drainage and Subgrade (same worst-case equipment)

Source Data:	Maximum Sound Level (dBA)	Utilization Factor	L_{eq} Sound Level (dBA)
Source 1: Grader – sound level (dBA) at 50 feet =	85	100%	85
Source 2: Concrete saw – sound level (dBA) at 50 feet =	90	100%	90
Calculated Data:			
All sources combined – L_{max} sound level (dBA) at 50 feet =	—	—	91
All sources combined – L_{eq} sound level (dBA) at 50 feet =	—	—	91

Receptor	Distance between Source and Receptor (feet)[a]	Attenuation Due to Distance (dB)	Calculated L_{max} Sound Level (dBA)	Calculated L_{eq} Sound Level (dBA)[b]
Hangar One[c]	15	10	102	102
Jacobs Technology AFSS[c]	30	4	96	96
Office/warehouse north of project Building 2[c]	40	2	93	93
Moffett Field Museum[c]	55	-1	90	90
Existing residential (Wescoat Village)	**55**	**-1**	**90**	**90**
Ames Child Care Center	85	-5	87	87
Moffett Field Chapel	95	-6	86	86
Carnegie Mellon University Silicon Valley	145	-9	82	82
EMC (software company)[c]	290	-15	76	76

[a.] FTA guidance for a general assessment typically recommends measuring from the analyzed receptor to the middle of a project site. However, distances were conservatively measured from the analyzed receptor to the middle of the nearest proposed in-street work (utilities/roads).

[b.] FTA guidance for a general assessment recommends using a utilization factor of 1 for all construction equipment, resulting in L_{eq} values that are equal to L_{max} values.

[c.] Noise levels are presented at commerical and industrial uses to inform the NEPA assessment.

AFSS = Ames Facilities Support Services; dB = decibels; dBA = A-weighted decibels; L_{eq} = equivalent sound level; L_{max} = maximum sound level

Bold text denotes the nearest off-site sensitive land use (residential)

Additional receptors that may be considered sensitive but located farther away include Carnegie Mellon University Silicon Valley, Moffett Field Chapel, and Ames Child Care Center. At these greater distances, noise levels from off-site construction would be lower than at the nearest sensitive receptors.

At the nearest sensitive receptors to proposed off-site/in-street construction (i.e., the existing residences at Wescoat Village west of the Project Site), approximately 55 feet from the center of the nearest portion of in-street work, the worst-case loudest noise levels from off-site/in-street construction activities were estimated to be up to 90 dBA L_{eq}. This noise level would exceed the applicable County threshold for daytime construction of 65 dBA by 25 dB (the applicable threshold is based on long-term construction activity [10 days or more] affecting a multi-family residential area). The existing average daytime ambient noise level near the Wescoat Village receptors is approximately 56 dBA, based on the noise measurements at LT-1 (refer to Table 3.12-3). Therefore,

noise levels from the worst-case loudest subphase of off-site construction could be up to 34 dB higher than existing ambient noise levels. This increase is considered substantial because it exceeds the 10 dB increase threshold established for the proposed project.

At the nearby Ames Child Care Center, Moffett Field Chapel, and Carnegie Mellon University Silicon Valley, estimated noise levels from the nearest off-site/in-street construction activities were estimated to be up to 87 dBA L_{eq}, 86 dBA L_{eq}, and 82 dBA L_{eq}, respectively. These construction noise levels all exceed the 65 dBA L_{eq} threshold applied to these sensitive uses for the purpose of this analysis. At the Ames Child Care Center, the daytime noise level of 87 dBA L_{eq} from off-site/in-street construction is estimated to be approximately 27 dB higher than the existing average daytime ambient noise level of approximately 60 dBA (based on measurement LT-6). At Moffett Field Chapel, the daytime noise level of 86 dBA L_{eq} from off-site/in-street construction is estimated to be approximately 26 dB higher than the existing average daytime ambient noise level of approximately 60 dBA (based on measurement LT-6). At Carnegie Mellon University Silicon Valley, the daytime noise level of 82 dBA L_{eq} from off-site/in-street construction is estimated to be approximately 26 dB higher than the existing average daytime ambient noise level of approximately 56 dBA (based on measurement LT-1). The increases at all three receptors are considered substantial because they exceed the 10 dB increase threshold established for the proposed project.

In conclusion, daytime construction noise levels from both on- and off-site (in-street) construction would be expected to exceed County construction noise thresholds at the nearest noise-sensitive receptors of 65 dBA L_{eq} from construction activities lasting 10 days or longer. In addition, a 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Because noise levels from daytime construction may exceed the applicable construction noise thresholds and may result in a 10 dB or greater increase in the ambient noise level, daytime construction noise impacts would be potentially significant before mitigation.

Nighttime Construction Noise

The only on-site construction activities proposed for nighttime hours are concrete pours; in addition, off-site/in-street work for utilities may also occur during nighttime hours. Noise associated with each activity is discussed separately below.

Concrete pours often must occur during nighttime hours because cooler temperatures and higher humidity levels provide better conditions for concrete curing. In general, approximately 5 individual nights of construction would be required per building for concrete pours. In some instances, nighttime concrete pours could occur on back-to-back nights. However, the concrete pours would be limited in number and would generally occur months apart from each other. Estimated combined noise levels from nighttime concrete pours were modeled at a distance of 200 feet, the estimated distance from the approximate center of the nearest proposed project building to the nearest existing multi-family residential land uses (Wescoat Village). Table 3.12-8 provides the modeled combined noise levels from nighttime concrete pours at various distances from a given construction area.

Table 3.12-8. Estimated Construction Noise from Nighttime Concrete Pours (L_{max} and L_{eq})

Source Data	Maximum Sound Level (dBA)	Utilization Factor	L_{eq} Sound Level (dBA)
Construction Condition: Nighttime Concrete Pours			
Source 1: Concrete mixer – sound level (dBA) at 50 feet =	79	100%	79.0
Source 2: Concrete pump – sound level (dBA) at 50 feet =	81	100%	81.0
Calculated Data:			
All sources combined – L_{max} sound level (dBA) at 50 feet =			83 L_{max}
All sources combined – L_{eq} sound level (dBA) at 50 feet =			83 L_{eq}

Distance between Source and Receptor (feet)	Attenuation Due to Distance (dB)[a]	Calculated L_{max} Sound Level (dBA)[b]	Calculated L_{eq} Sound Level (dBA)[b]
50	0	83	83
100	-6	77	77
150	-10	74	74
200	***-12***	***71***	***71***
250	-14	69	69
300	-16	68	68
350	-17	66	66
400	-18	65	65
500	-20	63	63
600	-22	62	62
700	-23	60	60
800	-24	59	59
1,000	-26	57	57

Source: Federal Highway Administration 2006.

[a.] Distance attenuation based on 6 dB per doubling of distance.

[b.] This calculation does not include the effects, if any, of ground attenuation or local shielding from intervening walls, topography, or other barriers that may reduce sound levels further.

Bold text denotes the nearest off-site sensitive receptors (existing residential)

dB = decibels; dBA = A-weighted decibels; L_{eq} = equivalent sound level; L_{max} = maximum sound level

As shown in Table 3.12-8, construction noise during nighttime concrete pours was modeled to be approximately 71 dBA L_{eq} at a distance of 200 feet, the approximate distance from the center of the nearest proposed project building to the nearest off-site existing sensitive receptors (i.e., Wescoat Village residences). This noise level would exceed the County threshold of 55 dBA by 16 dB (the applicable threshold is based on nighttime construction noise between 7:00 p.m. and 7:00 a.m. that affects a multi-family residential area) (refer to Table 4-10 of the Noise and Vibration Technical Report for additional details related to this construction noise threshold). The existing average ambient nighttime noise level near the existing Wescoat Village residences is approximately 57 dBA. The lowest 1-hour nighttime ambient noise level is approximately 52 dBA L_{eq}, based on the noise measurements at LT-1 (refer to Table 3.12-3). Therefore, noise levels from the worst-case loudest subphase of on-site nighttime construction could be up to 14 dB higher than the existing average ambient nighttime noise level and 19 dB higher than the lowest existing hourly ambient nighttime noise level. This increase is considered substantial because it exceeds the 10 dB increase threshold established for the proposed project.

Off-site construction in roadways for utility installation may also occur outside of normal business hours and on weekends, per NASA requirements. In general, this would include approximately 10 days of nighttime construction per utility system (e.g., sewer, stormwater, recycled water, power, telecom systems). The nearest sensitive receptors to proposed in-road construction that may take place at night would also be the existing residences west of the Project Site at Wescoat Village, which are approximately 55 feet from the center of the nearest portion of in-street work.

The loudest off-site/in-street subphases (i.e., Utilities/Roads – Excavation and Utilities/Roads – Drainage and Subgrade) would involve potentially concurrent operation of a grader and a concrete saw. These are the same subphases that were previously analyzed as part of the daytime construction noise assessment. The associated noise levels are reported in Table 3.12-7. As shown in the table, off-site/in-street utility work required to take place during nighttime hours could result in noise levels of up to 90 dBA L_{eq} at the nearest noise-sensitive use (i.e., the existing residences at Wescoat Village). This noise level would exceed the applicable County threshold of 55 dBA by 35 dB (the applicable threshold is based on nighttime construction noise between 7:00 p.m. and 7:00 a.m. that affects a multi-family residential area). The existing average ambient nighttime noise level near the existing Wescoat Village residences is approximately 57 dBA. The lowest 1-hour nighttime ambient noise level is approximately 52 dBA L_{eq}, based on the noise measurements at LT-1 (refer to Table 3.12-3). Therefore, noise levels from the worst-case loudest subphase of off-site/in-road nighttime construction could be up to 33 dB higher than the existing average ambient nighttime noise levels and 38 dB higher than the lowest existing hourly ambient nighttime noise level. This increase is considered substantial because it exceeds the 10 dB increase threshold established for the proposed project.

In conclusion, concrete pour activities and off-site/in-street construction activities that take place during nighttime hours may result in noise levels that exceed the applicable construction noise thresholds and may result in a 10 dB or greater increase in the ambient nighttime noise level. Nighttime construction noise impacts would be considered potentially significant before mitigation.

Haul Truck and Heavy Truck Traffic Noise

Demolition and construction activities would require the use of haul trucks to remove debris and excavated materials and vendor trucks to deliver building materials. Based on information provided for the CEQA Proposed Project, up to 91 one-way haul truck trips and 20 one-way vendor truck trips (total of 111 one-way heavy truck trips) would travel to and from the site on a worst-case day.[12] Haul trucks would access the site via U.S. 101, exit at Ellis Street, travel pass the campus guard station on Ellis Street, and continue to the Project Site via Cody Road. Trucks leaving the Project Site would exit the site via Cody Road, continue to Ellis Street, travel past the campus guard station, and enter U.S. 101 at the on-ramp.

Table 3.12-9 shows the modeled noise levels for roadway segments where traffic from heavy construction trucks would occur under the CEQA Proposed Project.

[12] Typically, haul trucks would be considered to be heavy trucks, while vendor trucks would be considered to be medium-size trucks. Under normal operating conditions, heavy trucks generally produce higher noise levels than medium trucks. This analysis conservatively assumes that all haul and vendor trucks are heavy trucks.

Table 3.12-9. Haul Truck Traffic Noise Analysis

Roadway	Segment	Traffic Noise Levels, dBA L_{dn}, at 50 feet		Noise Increase Due to Project Construction Truck Traffic, dBA
		Existing Noise Levels	Existing plus Heavy-Truck Noise Levels	
Cody Road[a]	Between Ellis Street and Girard Road	52.7	55.4	2.7
Ellis Street	Between Manila Avenue and the NASA ARC driveway	52.7	55.4	2.7
Ellis Street	Between U.S. 101 northbound ramps and Manila Avenue	61.5	62.4	0.9
Ellis Street	Between U.S. 101 southbound ramps and U.S. 101 northbound ramps	62.2	62.7	0.5

Refer to Appendix A of the Noise and Vibration Technical Report in Appendix 3.12-1 of this joint EIR/EIS for complete traffic noise modeling results.

Note: Modeled noise levels at a fixed distance of 50 feet from the roadway centerline.

[a] Traffic counts and estimated average-daily-traffic (ADT) volumes for roadway segments within the campus (beyond the NASA ARC guard stations) were not available/not provided by the project traffic consultant. To evaluate potential haul truck noise effects within the campus, it was conservatively assumed that all traffic passing through the Ellis Street guard station would turn left and travel to the Project Site and the greater campus.

dBA = A-weighted decibels; L_{dn} = day/night sound level

As shown in Table 3.12-9, construction-related heavy trucks could increase traffic noise levels along haul-route roadway segments by 0.5 to 2.7 dB. During most subphases of construction, there would be fewer daily trips by haul trucks or heavy trucks compared with the numbers presented in this analysis, resulting in even smaller noise increases. There are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For this reason, and because the maximum modeled noise increase resulting from construction truck activity would be less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would be less than significant under CEQA.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-1. Construction Noise Control Plan

The Project Proponent or its contractor(s) shall develop a construction noise control plan to reduce noise levels to a level below the limits defined in the County Code, as well as FTA noise limits for daytime and nighttime construction noise, to the extent feasible (i.e., to the greatest extent practicable without impairing the contractors' ability to safely and effectively construct the project, causing unreasonable inefficiencies in the project's construction schedule, or substantially increasing costs such that they that are not commensurate with the noise reduction achieved). Further, the plan shall include measures to reduce construction noise levels such that a 10 dB or greater increase over the existing ambient noise level shall not occur at the nearest sensitive uses, to the extent feasible (as defined previously). The final construction noise control plan shall be provided to and approved by NASA at the time of construction permit applications for each building and/or phase of development. The plan shall

include measures to reduce daytime construction noise to the following, to the extent feasible (as defined previously):

- 65 dBA L_{eq}, or less, at the nearest multi-family residences, per the County Code (noting that noise levels below this limit would also ensure that noise levels would be below the FTA limit for daytime noise of 90 dBA L_{eq}, or less, at the nearest residences)
- Less than 10 dB greater than the existing daytime ambient noise level

The plan shall also include measures to reduce nighttime noise levels to the following, to the extent feasible (as defined previously):

- 55 dBA L_{eq}, or less, at the nearest multi-family residences, per the County Code (noting that noise levels below this limit would also ensure that noise levels would be below the FTA limit for nighttime noise of 80 dBA L_{eq}, or less, at the nearest residences)
- Less than 10 dB greater than the existing nighttime ambient noise level

In order to assess construction noise increases relative to existing ambient noise levels, measurements obtained as part of this study may be used to define daytime and nighttime ambient noise levels. Alternatively, additional ambient noise measurements may be conducted as part of the construction noise control plan to further refine the ambient noise levels.

Techniques to reduce noise from construction activities to the relevant levels shall be incorporated into the plan and include, at a minimum, the following:

- Any construction activity that is not required to occur outside of typical construction hours due to technical or safety reasons (such as concrete pours or off-site utility installations) shall be conducted between 7:00 a.m. and 7:00 p.m. Monday through Saturday (excluding legal holidays), noting that construction would not occur on Saturdays. Material/equipment deliveries shall not be permitted at the job site before 7:00 a.m. or after 7:00 p.m.
- The noisiest construction activities shall be planned to occur during daytime hours when people are less sensitive to noise, when existing ambient noise levels are higher, and when quantitative noise standards pertaining to construction are less stringent.
- The quietest available type of construction equipment readily available to the construction contractor shall be used. This applies to both stationary equipment (e.g., compressors) and mobile equipment (e.g., forklifts). Newer equipment is generally quieter than older equipment, electrically powered equipment is typically quieter than diesel, and hydraulically powered equipment is typically quieter than pneumatic. If compressors powered by diesel or gasoline engines are to be used, they shall be contained or have baffles to help abate noise levels.
- Require all construction equipment to be equipped with mufflers and sound control devices (e.g., intake silencers and noise shrouds) that are in good condition (at least as effective as those originally provided by the manufacturer) and appropriate for the equipment.
- Maintain all construction equipment to minimize noise emissions.
- Locate construction equipment (particularly stationary equipment, such as generators or compressors, that may operate at the same location for an extended period of time) as far as feasible from adjacent or nearby noise-sensitive receptors (e.g., as far as feasible from the western edge of the Project Site).

- Require stationary noise sources associated with construction (e.g., generators and compressors) in proximity to noise-sensitive receptors to be muffled and/or enclosed within temporary enclosures and shielded by barriers, which can reduce construction noise by 5 to 10 dB.
- Limit the use of impact tools (e.g., jack hammers) during nighttime/non-standard daytime hours, as feasible.
- Prohibit idling of inactive construction equipment for prolonged periods during both daytime and nighttime/non-standard hours (i.e., more than 2 minutes).
- Reduce noise from backup alarms (to the extent feasible without resulting in safety concerns) on construction vehicles and equipment by:
    - Providing a construction site layout that minimizes the need for reversing construction vehicles, or
    - Setting backup alarm noise levels to the minimum necessary for safe operation,
    - Using white-noise backup alarms, when feasible and safe, or
    - Using flagmen to keep the area behind maneuvering vehicles clear and minimize the time needed to back up vehicles.
- A construction notice shall be prepared that describes the project and the construction schedule, including the various types of activities that would occur throughout the construction period. The notice shall provide the name and telephone number of an on-site construction liaison. The notice shall be delivered to all property owners and residents within 500 feet of the Project Site at least 14 days (two weeks) before the start of construction. The contact information shall also be posted on a sign at each entrance to the construction site from the public right-of-way; the sign shall be large enough to be legible from the public right-of-way. If construction noise is found to be intrusive to the community (i.e., if complaints are received), the construction liaison shall take reasonable efforts to investigate the source of the noise and require reasonable measures be implemented to correct the problem.

Mitigation Measure NOI-2. Temporary Noise Barriers

Prior to the start of construction in each Subarea, the Project Proponent or its contractor(s) shall install temporary noise barriers. The barriers shall be located along all portions of the western and southern construction Subarea perimeters that are within 1,400 feet of the Wescoat Village receptors. Each barrier shall be a minimum of 8 to 12 feet tall and constructed of material with a surface weight of at least 1 to 1.5 pounds per square foot and a Sound Transmission Class (STC) of at least 25. There shall be no gaps or openings from the ground to the top of the barrier or along the length of the barrier. The barrier shall be constructed with plywood supported on a wood frame, acoustical blankets supported on a frame or metal construction fence, or another type constructed with comparable material. A barrier may need to be temporarily moved or removed when it physically interferes with construction activities (e.g., the barrier is located on top of an area where a curb or sidewalk is to be constructed). Barriers are not required where complete project building(s) (i.e., complete with solid exterior facades, including all exterior walls and windows) fully block the line of sight from sensitive receptors to active construction areas. However, barriers are required where there are gaps or

there are other locations where the line of sight is not fully shielded by complete project building(s).

Significance after Mitigation

Mitigation Measure NOI-1, which would require a noise control plan that comprises measures to reduce noise from construction during all hours (i.e., daytime and nighttime hours), would be implemented to reduce the proposed project's significant impacts related to daytime and nighttime construction noise. Although this mitigation measure would reduce construction noise levels, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. For example, locating equipment as far as possible from noise-sensitive receptors and providing equipment with mufflers and sound control devices would reduce noise but may not be enough to reduce noise to levels below the significance criteria. Mitigation Measure NOI-2 includes the installation of temporary construction noise barriers along western and southern Subarea perimeters that are within 1,400 feet of the Wescoat Village receptors. Such noise barriers would reduce construction noise effects on nearby residences, especially from ground-level noise sources (e.g., equipment engines). In order for temporary noise barriers to be most effective, they must block the full line of sight between the noise source and the receiver. Such temporary barriers would most likely block the line of sight between the equipment and the nearest sensitive uses during portions of project construction, resulting in noise attenuation. However, it may not be feasible to block the full line of sight between all equipment and the nearest receptors at all locations during all portions of project construction activities. For example, construction trucks may enter or exit the site along project perimeters through open gates or gaps. When gates are open or gaps exist in the barriers, or when construction activities occur at heights greater than the height of the wall (i.e., once the second-story, or higher, construction work is completed), the amount of noise reduction provided by such a wall would be reduced. In addition, a noise barrier may need to be temporarily moved or removed when it physically interferes with building a given construction feature (e.g., the barrier is located on top of an area where a curb or sidewalk is to be constructed). Further, installing a temporary construction noise barrier may not reduce noise from all activities to a level below the applicable significance criterion at the nearest receptors, even if noise is somewhat reduced. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Construction Noise

Daytime Construction

Construction of the CEQA Proposed Project No Student/Faculty Housing Variant would include the same demolition, ground disturbance and excavation, schedule and phasing, construction equipment, and construction hours as the CEQA Proposed Project. In place of the student/faculty

housing building, additional office and research-and-development (R&D) space would be constructed, but the overall footprint of construction, as well as the types of equipment proposed for construction, would be the same. For that reason, potential effects related to daytime construction noise would be the same as described for the CEQA Proposed Project. Refer to the daytime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case daytime construction noise.

Worst-case daytime construction noise levels from both on- and off-site construction activities under the CEQA Proposed Project with the Variant may exceed the applicable criterion of 65 dBA L_{eq} from construction activities lasting 10 days or longer for daytime construction noise in the County. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Daytime construction noise impacts would be potentially significant before mitigation.

Nighttime Construction

Potential effects related to nighttime construction noise under the CEQA Proposed Project with the Variant would be the same as the effects described for the CEQA Proposed Project. Therefore, the nighttime construction noise analysis presented previously for the CEQA Proposed Project would apply to this Variant. Refer to the nighttime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case nighttime construction noise.

Nighttime construction noise associated with the CEQA Proposed Project with the Variant may exceed the applicable County criterion of 55 dBA for multi-family residential land uses. A 10 dB (or greater) increase over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Nighttime construction noise impacts would be potentially significant before mitigation.

Noise from Haul Trucks and Heavy Trucks

The worst-case number of haul trucks and heavy trucks per day would be the same under the CEQA Proposed Project with the Variant as disclosed for the CEQA Proposed Project. This Variant would also use the same truck route, as outlined above for the CEQA Proposed Project. In addition, existing noise levels along haul routes would be the same as disclosed above under the analysis of the CEQA Proposed Project. For these reasons, the noise analysis for heavy trucks presented for the CEQA Proposed Project would apply to the CEQA Proposed Project with the Variant. Refer to Table 3.12-9 for modeled traffic noise levels on roadway segments where heavy construction trucks would be present.

As shown in Table 3.12-9, haul truck modeling results indicate that increases in traffic noise from construction truck activity along the project haul routes would be 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul truck or heavy truck trips compared with the number presented in this analysis, resulting in even smaller noise increases. There are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For that reason, and because the maximum modeled noise increase resulting from construction truck activity would be less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would be less than significant.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-1. Construction Noise Control Plan

Mitigation Measure NOI-2. Temporary Noise Barriers

See discussion for the CEQA Proposed Project under Impact NOI-1a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-1 and Mitigation Measure NOI-2 would be expected to somewhat reduce construction noise levels at nearby sensitive uses; however, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Construction Noise

Daytime Construction Noise

Daytime construction activities for the CEQA Reduced Density Alternative would generally be the same as for the CEQA Proposed Project because both would include the same demolition, ground disturbance and excavation, footprint of construction, schedule and phasing, construction equipment, and construction hours. For that reason, potential effects related to daytime construction noise would be the same as described for the CEQA Proposed Project. Refer to the daytime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case daytime construction noise.

Worst-case daytime construction noise levels from the CEQA Reduced Density Alternative may exceed the applicable criterion for daytime construction noise in the County of 65 dBA L_{eq} at the nearest noise-sensitive receptors from construction activities lasting 10 days or longer. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Daytime construction noise impacts would be potentially significant before mitigation.

Nighttime Construction

Potential effects related to nighttime construction noise would be the same under the CEQA Reduced Density Alternative as the effects described for the CEQA Proposed Project. Therefore, the nighttime construction noise analysis presented previously for the CEQA Proposed Project would apply to this alternative. Refer to the nighttime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case nighttime construction noise.

Nighttime construction noise levels under the CEQA Reduced Density Alternative may exceed the applicable County criterion of 55 dBA for multi-family residential land uses. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Nighttime construction noise impacts would be potentially significant before mitigation.

Noise from Haul Trucks and Heavy Trucks

The worst-case number of haul trucks and heavy trucks per day along the project truck route would be the same under the CEQA Reduced Density Alternative as discussed for the CEQA Proposed Project. In addition, existing noise levels along haul routes would be the same as disclosed above under the analysis for the CEQA Proposed Project. For these reasons, the analysis of heavy truck noise presented for the CEQA Proposed Project would apply to the CEQA Reduced Density Alternative. Refer to Table 3.12-9 for modeled traffic noise levels for roadway segments where heavy construction trucks would be present.

As shown in Table 3.12-9, haul truck modeling results indicate that increases in traffic noise from construction truck activity along the project haul routes would be 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul truck or heavy truck trips compared with the number presented in this analysis, resulting in even smaller noise increases. There are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For that reason, and because the maximum modeled noise increase resulting from construction truck activity would be less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would be less than significant.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-1. Construction Noise Control Plan

Mitigation Measure NOI-2. Temporary Noise Barriers

See discussion for the CEQA Proposed Project under Impact NOI-1a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-1 and Mitigation Measure NOI-2 would be expected to somewhat reduce construction noise levels at nearby sensitive uses; however, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Therefore, even with the implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Construction Noise

Daytime Construction

As was the case for the CEQA Reduced Density Alternative, the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would provide less space for R&D uses than the CEQA Proposed Project, but the overall footprint of construction, as well as the types of equipment proposed for construction, would be the same. Construction of CEQA Reduced Density Alternative with the Variant would therefore include the same demolition, ground disturbance and excavation, schedule and phasing, construction equipment, and construction hours as the CEQA Proposed Project. For the reasons described above, the potential effects related to daytime construction noise would be the same as described for the CEQA Proposed Project. Refer to the daytime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case daytime construction noise.

Worst-case daytime construction noise levels from the CEQA Reduced Density Alternative No Student/Faculty Housing Variant may exceed the applicable criterion for daytime construction noise in the County of 65 dBA L_{eq} at the nearest noise-sensitive receptors from construction activities lasting 10 days or longer. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Daytime construction noise impacts would be potentially significant before mitigation.

Nighttime Construction

Potential effects related to nighttime construction noise under the CEQA Reduced Density Alternative with the Variant would be the same as the effects described for the CEQA Proposed Project. Therefore, the nighttime construction noise analysis presented previously for the CEQA Proposed Project would apply to this Variant. Refer to the nighttime construction noise analysis for the CEQA Proposed Project, presented previously, for an in-depth analysis of worst-case nighttime construction noise.

Nighttime construction noise levels from the CEQA Reduced Density Alternative with the Variant may exceed the applicable County criterion of 55 dBA for multi-family residential land uses. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Nighttime construction noise impacts would be potentially significant before mitigation.

Noise from Haul Trucks and Heavy Trucks

The worst-case number of haul trucks and heavy trucks per day would be the same under the CEQA Reduced Density Alternative with the Variant as under the CEQA Proposed Project. This Variant would also use the same truck route outlined above for the CEQA Proposed Project. In addition, existing noise levels along haul routes would be the same as disclosed above under the analysis for the CEQA Proposed Project. For these reasons, the heavy truck noise analysis presented for the CEQA Proposed Project would apply to the CEQA Reduced Density Alternative with the Variant. Refer to Table 3.12-9 for modeled traffic noise levels on roadway segments where heavy construction trucks would be present.

As shown in Table 3.12-9, haul truck modeling results indicate that increases in traffic noise from construction truck activity along the project haul routes would be 0.5 to 2.7 dB. This is less than the

3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul or heavy truck trips than the number presented in this analysis, resulting in even smaller noise increases. There are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For that reason, and because the maximum modeled noise increase resulting from construction truck activity would be less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would be less than significant.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-1. Construction Noise Control Plan

Mitigation Measure NOI-2. Temporary Noise Barriers

See discussion for the CEQA Proposed Project under Impact NOI-1a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-1 and Mitigation Measure NOI-2 would be expected to somewhat reduce construction noise levels at nearby sensitive uses; however, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Therefore, even with the implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

Impact CEQA-NOI-1b: Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant (mechanical equipment)	NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards	Less than Significant with Mitigation (mechanical equipment)
	Potentially Significant (emergency generator testing)	NOI-4. Design and Install Emergency Generators to Comply with Noise Standards	Less than Significant with Mitigation (emergency generator testing)
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Reduced Density Alternative	Potentially Significant (mechanical equipment) Potentially Significant (emergency generator testing)	Same as CEQA Proposed Project	Less than Significant with Mitigation (mechanical equipment) Less than Significant with Mitigation (emergency generator testing)
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Mechanical Equipment

Heating, Cooling, and Ventilation Equipment – CEQA Proposed Project

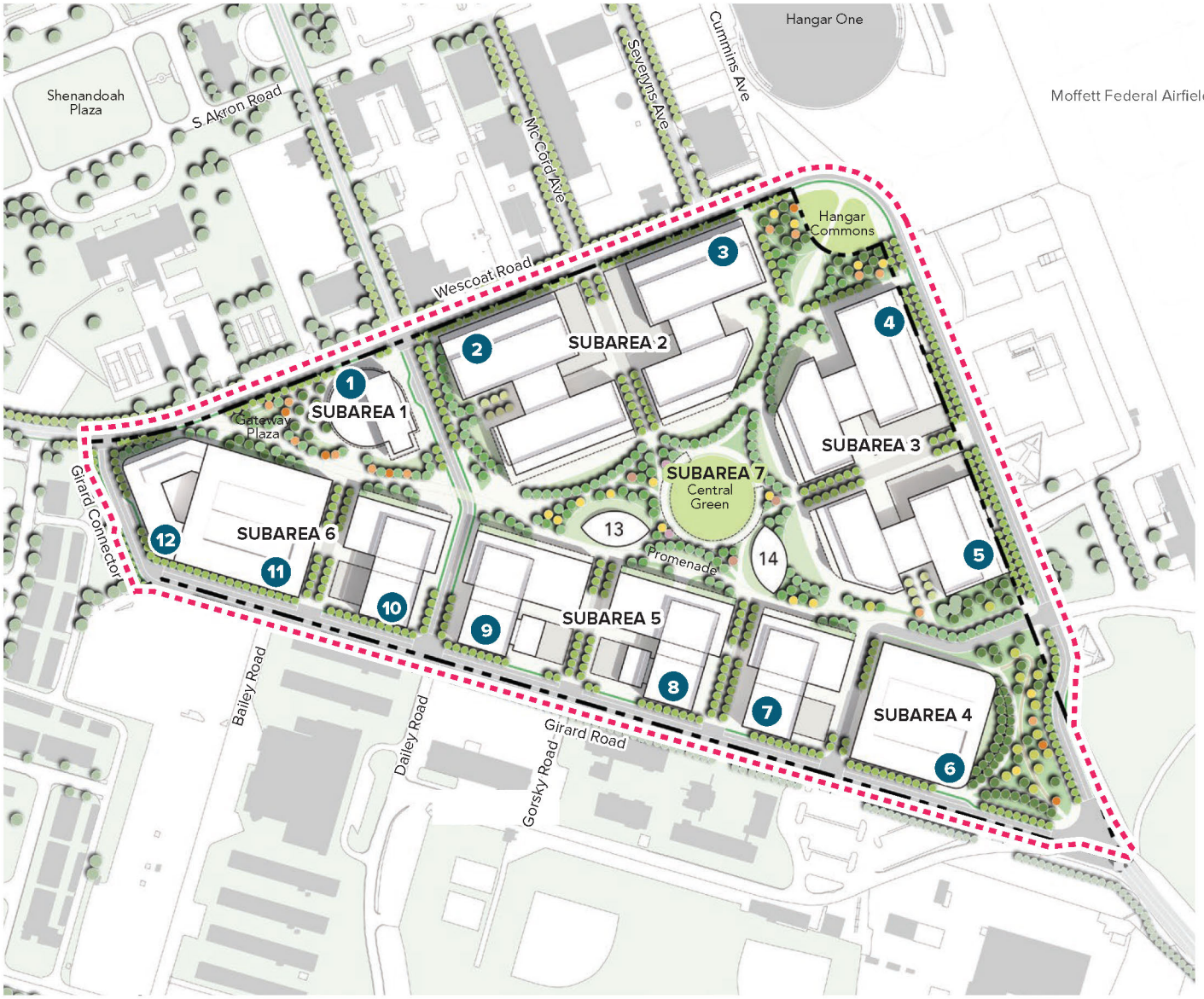
For purposes of the noise analysis, Figure 3.12-2, Conceptual Location of Buildings for the CEQA Proposed Project and CEQA Reduced Density Alternative, shows the conceptual locations of the proposed buildings within each Subarea. Under the CEQA Proposed Project, buildings in Subarea 6 (i.e., Buildings 10 through 12) would be closest to off-site sensitive uses, with Building 12 located approximately 100 feet from the nearest residence in Wescoat Village. Because the Subarea 6 buildings would be closer to off-site residential land uses than any other area within the Project Site, the noise analysis of mechanical heating and cooling equipment focuses on equipment on proposed buildings within Subarea 6. According to the Project Proponent, all rooftop equipment would be installed at least 5 feet from the edge of the roof and screened by a mechanical screen (with the exception of some flues and exhaust vents that may extend beyond the screen.)

Under the CEQA Proposed Project, Building 10 within Subarea 6 would be developed with R&D, academic, and office uses; Building 12 would be developed with Student/Faculty Housing. Building 11 would be developed with a parking garage; it would not be expected to have heating and cooling equipment on the roof. Based on information provided by the Project Proponent on what equipment might be installed for such uses, mechanical equipment noise levels were estimated for the individual R&D, academic, and office uses within Subarea 6 (i.e., Building 10) and Building 12, the proposed Student/Faculty Housing building proposed for the western corner of the Project Site.

According to the Project Proponent, mechanical heating and cooling equipment installed on the rooftop of Building 12 (Student/Faculty Housing within Subarea 6) would be expected to include:

- 16 outdoor air-handling units (assumed to be variable-refrigerant-flow systems)
- Mechanical equipment installed on the rooftops of R&D, academic, and office buildings (e.g., Building 10) would be expected to include the following:
- Two cooling towers (600 tons each)
- One redundant cooling tower (600 tons)

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

- # Building Numbers
- Project Site
- Parcel Boundary

N Not to Scale

Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024 and 2026.

Graphics ... 104894 (2-10-2026) TG

Figure 3.12-2

Conceptual Building Locations for the CEQA Proposed Project and CEQA Reduced Density Alternative

Berkeley Space Center at NASA Research Park

- Three air-source heat pumps (3,500 MBH[13] each)
- Additional mechanical equipment required for the R&D, academic, and office uses (e.g., Building 10) would be installed in a rooftop mechanical room, including an estimated:
- Three water-cooled chillers (500 tons each)
- Nine circulation pumps
- Two expansion tanks

This assessment conservatively assumes that all equipment would operate simultaneously and be located relatively close together on a building rooftop. For equipment located in a mechanical room, 10 dB of noise reduction was assumed to represent the noise attenuation provided by the room. For rooftop equipment, 5 dB of noise reduction was applied to account for attenuation from the proposed project's solid rooftop mechanical screens. Refer to Table 3.12-10 for the estimated combined noise levels of the heating, cooling, and ventilation equipment by modeled building. This analysis conservatively uses horizontal distances between the mechanical equipment noise sources and the nearest receptor (sensitive residential uses) and ignores the additional diagonal distance due to the elevated rooftop location (with building heights of up to 80 feet). Heating, cooling, and ventilation equipment under the CEQA Proposed Project with the WRF Option would be the same as under the CEQA Proposed Project. Therefore, the same analysis and results would apply. Separate analyses of noise levels from the WRF- and CUP-specific equipment are included below.

Based on the mechanical equipment modeling conducted, the estimated combined noise level from rooftop mechanical equipment on the nearest project building to a noise-sensitive use (i.e., Building 12 in the southwest portion of Subarea 6) would be approximately 75.6 dBA L_{eq} at the nearest Wescoat Village residences (located approximately 100 feet from Building 12). Noise levels at these residences from mechanical equipment on the nearest R&D, academic, and office building (i.e., Building 10 in Subarea 6) was estimated to be approximately 61 dBA L_{eq}. Because the noise level at the nearest receptors from the rooftop equipment at Building 12 is estimated to be more than 15 dB greater than the estimated noise level from Building 10 rooftop equipment, overall equipment noise experienced by the Wescoat Village receptors would be dominated by Building 12 equipment noise.[14]

It is assumed that project mechanical equipment could operate during both daytime and nighttime hours. Therefore, modeled mechanical equipment noise levels are compared to the more stringent nighttime noise thresholds for nearby noise-sensitive receptors. As described in Section 5.1, *Methods for Analysis*, of the Noise and Vibration Technical Report, the applicable nighttime noise threshold for Wescoat Village receptors would be 55 dBA L_{eq}, based on the existing measured ambient noise levels. Accordingly, the estimated noise level from mechanical equipment of approximately 75.6 dBA L_{eq} at the Wescoat Village residences would exceed the applicable noise exposure limit of 55 dBA L_{eq} for nighttime hours at this location. In addition, the analysis provided above is based on reasonable assumptions about the equipment noise levels and on a library of data from example equipment that provided high-level details related to the types of equipment proposed under the proposed project; the final mechanical equipment noise levels would be subject

[13] MBH = 1,000 British thermal units (BTU) per hour.

[14] When the difference between noise sources is more than 10 dBA, the combined noise level is generally equal to the louder noise level.

Table 3.12-10. Estimated Heating, Cooling, and Ventilation Equipment Noise – CEQA Proposed Project

Type of Equipment	Number of Pieces	dBA L_{eq} Noise at 50 Feet for One Piece of Equipment (assuming 100% utilization)	Located in a Room or Exterior?	Attenuation Based on Equipment Location in Room or behind Screen (dB)	Attenuated Noise at 50 Feet for One Piece of Equipment	Combined Attenuated Noise by Equipment Type (dBA)	Source for Estimated Equipment Noise
Individual Office, R&D, and Academic Building (i.e., Building10 in Subarea 6)							
Cooling towers (duty)	2	74	Exterior	5	69	72.0	H&K
Air-source heat pumps	3	75	Exterior	5	70	74.8	H&K
Water-cooled chillers	3	71	Room	10	61	65.8	H&K
Circulation pumps	9	81	Room	10	71	80.5	FHWA
Expansion tanks	2	N/A	Room	N/A	N/A	N/A	N/A
Building combined equipment noise at 50 feet				—	—	82.1	—
Building Combined Equipment Noise at Nearest Residences (Wescoat Village, approximately 560 feet from equipment and 555 feet from the roof edge)						**61.1**	—
Residential Building (i.e., Building 12 in Subarea 6)							
HVAC	16	75	Screen	5	70	82.0	H&K
Residential building combined equipment noise at 50 feet					—	82.0	
Residential Building Combined Equipment Noise at Nearest Residences (Wescoat Village, approximately 105 feet from equipment and 100 feet from the roof edge)						**75.6**	—

Sources: Hoover and Keith 2000; FHWA 2006.

dB = decibels; dBA = A-weighted decibels; FHWA = Federal Highway Administration; H&K = Hoover and Keith; HVAC = heating, ventilation, and air-conditioning; L_{eq} = equivalent sound level; R&D = research and development

to change, pending final selections and locations. Therefore, the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Based on the analysis included above, mechanical heating and cooling equipment noise impacts under the CEQA Proposed Project would be potentially significant before mitigation.

Heating, Cooling, and Ventilation Equipment – CUP Option

For the CUP Option under the CEQA Proposed Project, a centralized heating and cooling system (located at the CUP) would be used for all buildings instead of building-by-building heating, ventilation, air-conditioning (HVAC) systems. The CUP would be located on the ground floor of the parking garage in Building 6 within Subarea 4. The CUP would require additional equipment on the roof deck of the parking structure compared to the CEQA Proposed Project without the CUP Option; the equipment would be screened from public view at ground level, with a limited number of minor protrusions allowed for exhaust fans and other small appurtenances. The final makes and models for the equipment that would be included in the CUP, as well as the number of pieces, are not known at this time. However, a representative selection of the equipment that could be installed was provided by the Project Proponent, as outlined below.

- Four chillers
- Three heat-recovery chillers
- Four cooling towers
- Twelve air-source heat pumps
- Seven primary chilled water pumps
- Four secondary chilled water pumps
- Seven primary-heating hot-water pumps
- Four secondary-heating hot-water pumps
- Four condenser water pumps
- One chilled-water thermal energy storage tank (located adjacent to the parking garage)
- One hot-water thermal energy storage tank (located adjacent to the parking garage)

Additional equipment would be installed as needed during future phases to meet the demands of the buildings as they are constructed and become operational.

Estimates of noise levels from the CUP equipment were based on data from readily available sources (e.g., Federal Highway Administration [FHWA] and Hoover and Keith manuals) regarding similar types of equipment. This assessment conservatively assumes that all equipment would operate simultaneously and be located relatively close together. All equipment would be behind screens, according to the Project Proponent (equipment is not proposed to be located inside mechanical equipment rooms). Therefore, this analysis includes 5 dB of noise reduction to account for attenuation from the proposed project's solid mechanical screens. Refer to Table 3.12-11 for the estimated combined noise levels of mechanical equipment associated with the CUP. This analysis conservatively uses horizontal distances between the mechanical equipment noise sources and the nearest receptor for all CUP equipment (even though some may be on the rooftop) and ignores the additional diagonal distance due to the elevated rooftop location for rooftop equipment (with building heights of up to 80 feet).

Table 3.12-11. Estimated Heating, Cooling, and Ventilation Equipment Noise for the CUP

Type of Equipment	Number of Pieces	dBA L_{eq} Noise at 50 Feet for One Piece of Equipment (assuming 100% utilization)	Located in a Room or Exterior?	Attenuation Based on Equipment Location in Room or behind Screen (dB)	Attenuated Noise at 50 Feet for One Piece of Equipment	Combined Attenuated Noise by Equipment Type (dBA)	Source for Estimated Equipment Noise
CUP (Building 6, Subarea 4)							
Chillers	4	71	Exterior	5	66	72.0	H&K
Heat-recovery chillers	3	71	Exterior	5	66	70.8	H&K
Cooling towers	4	74	Exterior	5	69	75.0	H&K
Air-source heat pumps	12	75	Exterior	5	70	80.8	FHWA
Primary chilled water pumps	7	81	Exterior	5	76	84.5	FHWA
Secondary chilled water pumps	4	81	Exterior	5	76	82.0	FHWA
Primary-heating hot-water pumps	7	81	Exterior	5	76	84.5	FHWA
Secondary-heating hot-water pumps	4	81	Exterior	5	76	82.0	FHWA
Condenser water pumps	4	81	Exterior	5	76	82.0	FHWA
CUP combined equipment noise at 50 feet				—	—	90.8	—
CUP Combined Equipment Noise at Nearest Residences (Wescoat Village, approximately 1,575 feet from the CUP and 1,570 feet from the roof edge)					—	**60.9**	—

Sources: Hoover and Keith 2000; FHWA 2006.

dB = decibels; dBA = A-weighted decibels; CUP = central utility plant; FHWA = Federal Highway Administration; H&K = Hoover and Keith; L_{eq} = equivalent sound level

Based on the modeling conducted for mechanical equipment similar to CUP equipment (as described previously), the estimated combined noise level from CUP equipment at the nearest sensitive use could be approximately 61 dBA L_{eq}.[15] That noise level is less than the estimated noise level of rooftop equipment, as presented in the noise analysis for each office, R&D, and academic building (i.e., Building 10) and for the CEQA Proposed Project residential building (Building 12 in the southwest portion of Subarea 6). According to that analysis, the nearest project building (i.e., the student/faculty housing building) could produce an estimated noise level of 75.6 dBA L_{eq} at the nearest residences (i.e., the Wescoat Village residences). Therefore, worst-case mechanical heating and cooling equipment noise levels under the CEQA Proposed Project with the CUP would not be greater than those presented under the CEQA Proposed Project without the CUP Option. Overall, estimated combined noise levels from project mechanical equipment associated with each project building would be up to 75.6, based on the analyses contained in the CEQA Proposed Project subsection. In addition, the analysis provided above is based on reasonable assumptions about equipment noise levels and on a library of data from example equipment that provided high-level details related to the types of equipment proposed under the project; the final mechanical equipment noise levels would be subject to change, pending final selections and locations. Therefore, the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, mechanical heating and cooling equipment noise impacts under the CEQA Proposed Project with the CUP Option would be potentially significant before mitigation but no greater than the impacts under the CEQA Proposed Project without the CUP Option.

Water Reuse Facility Equipment

With respect to WRF-specific equipment, nearly all equipment associated with the WRF (e.g., tanks, screens, pumps) would be inside the basement of Building 11 within Subarea 6, thereby greatly reducing exterior noise levels from said equipment. WRF equipment with external components would most likely be limited to blowers and exhaust fans. A blower or exhaust fan can result in an estimated noise level of 79 dBA at a distance of 50 feet,[16] which would equate to approximately 66 dBA L_{eq} at a distance of 220 feet (i.e., the distance to the nearest sensitive use, the existing Wescoat Village residences development to the west, from equipment locations in Building 11). Any exhaust vents would be on the roof and behind the rooftop screens proposed under the project, most likely reducing noise from such fans. This analysis assumes an estimated 5 dB of reduction from such solid screens. Therefore, each external exhaust fan for the WRF could result in a noise level of up to 61 dBA L_{eq} at the nearest sensitive uses. This noise level is below the worst-case equipment noise levels predicted to occur at Wescoat Village (approximately 76 dBA) from mechanical heating, cooling, and ventilation equipment. However, because this noise level still exceeds the applied thresholds, noise impacts related to WRF equipment would be potentially significant before mitigation.

Sewer Lift Station Noise

The proposed project's sewer lift station is proposed to be located below grade; however, it would still have the potential to generate audible noise at nearby sensitive uses from use of the proposed

[15] The CUP would be more than 1,500 feet from the nearest residence at Wescoat Village. At a distance of 1,500 feet, estimated combined noise levels from the CUP would be reduced to approximately 61 dBA L_{eq}.

[16] Federal Highway Administration. 2006. *FHWA Roadway Construction Noise Model User's Guide.* FHWA-HEP-05-054. January. Available: https://www.fhwa.dot.gov/ENVIRonment/noise/construction_noise/rcnm/rcnm.pdf. Accessed: June 18, 2025.

pump. The make and model of the pump associated with the sewer lift station has not been finalized; therefore, this analysis uses the estimated noise level of a typical pump, per FHWA. Based on noise levels cited in the *FHWA Roadway Construction Noise Model User's Guide,* a pump can generate noise in the range of 81 dBA at 50 feet. The sewer lift station would be approximately 140 feet from the existing Wescoat Village residences. Because the pump is proposed to be located below grade, 10 dB of attenuation is applied to estimated pump noise in this analysis. At a distance of 140 feet, pump noise was modeled to be approximately 62 dBA L_{eq}.

A noise level of 62 dBA L_{eq} at the nearby Wescoat Village exceeds the applicable noise exposure limit of 55 dBA L_{eq} that applies at this location by approximately 7 dB. Because the noise levels exceed the applied thresholds, noise impacts related to the proposed sewer lift station would be potentially significant before mitigation.

Battery Energy Storage System Equipment

Under the CEQA Proposed Project, a battery energy storage system (BESS) would be installed on multiple project parcels. The same BESS units would be installed under the CEQA Proposed Project with the CUP Option or the WRF Option. Therefore, the same analysis would apply, and the same results would occur. However, the specific makes and models for the proposed BESS units have not been determined. As described in Section 5.1, *Methods for Analysis,* of the Noise and Vibration Technical Report, the dominant noise source associated with each BESS would be the climate control system, with an estimated noise level of approximately 55 dBA at a distance of 50 feet, based on reference data for an industrial air conditioner[17] that would be compatible with a modular BESS enclosure. Conceptual plans indicate that the closest BESS unit to the existing multi-family residences west of the Project Site (i.e., Wescoat Village) would be approximately 130 feet away. At that distance, BESS noise levels would be reduced to approximately 47 dBA. At the nearest receptors, noise from all other BESS units is expected to be negligible because they would all be more than 500 feet away, and shielded from view by intervening project buildings. Therefore, 47 dBA constitutes a reasonable worst-case estimate of BESS noise levels at the nearest multi-family residence associated with Wescoat Village. Noise levels would be lower in residences at Wescoat Village that would be farther from the BESS and/or shielded from the nearest BESS by intervening project buildings.

Based on the estimated noise levels presented above, noise from BESS operations would not be expected to exceed the noise exposure limit for nighttime hours at the existing residences associated with Wescoat Village. However, the analysis provided above is based on reasonable assumptions about the equipment noise levels; the final mechanical equipment noise levels would be subject to change, pending selections and locations. Therefore, the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, noise impacts related to BESS equipment would be potentially significant before mitigation.

[17] The primary noise source associated with the containers would be the climate control system, which would regulate the temperature of the batteries to optimize BESS performance. For purposes of analysis, it has been assumed that the noise level from each BESS unit would be comparable to the noise level from an industrial air conditioner. The example used in the noise calculations was a Marvair ComPac air conditioner, Model AYPA72AC, which is a wall-mounted industrial air conditioner, used primarily to cool electronic and communication equipment in shelters. This model was identified during prior noise studies as a unit that would be compatible with a modular BESS enclosure. The Marvair ComPac AYPA72AC has a manufacturer's-tested noise level of 55 dBA at 50 feet (Marvair 2011).

Mechanical Equipment Conclusion

Based on the analysis above, noise levels from mechanical heating, cooling and ventilation equipment and sewer lift station equipment have the potential to exceed the applicable noise standards at the nearest noise-sensitive receptors. In addition, although modeled levels from example BESS equipment were below applied thresholds, BESS equipment would also have the potential to exceed the applicable noise standards at the nearest noise-sensitive receptors depending on the final makes and models of BESS equipment selected for the proposed project. In addition, the analysis provided above is based on reasonable assumptions about the equipment noise levels; the final noise levels would be subject to change, pending final equipment selections and locations. Therefore, the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, noise impacts related to project mechanical equipment, including heating and cooling equipment, WRF- and CUP-specific equipment, sewer lift station equipment, and BESS equipment, would be potentially significant before mitigation.

Emergency Generator Testing

Noise from the operation of generators during an emergency is generally exempt from local noise ordinances. However, noise from the testing of emergency generators is evaluated to determine if it would be below the local noise limits for operational equipment. Periodic testing of project emergency generators would occur for 2 to 4 hours per month per generator during daytime hours. It is likely that multiple generators, but not all generators, would be tested on the same day. Thus, generator testing would most likely occur on multiple days each month. The CEQA Proposed Project would involve the installation of twelve 500-kilowatt (kW) (equal to six megawatt [MW] emergency generators). Specifically, under the CEQA Proposed Project, the 12 generators would be located in Subareas 2, 3, 5, and 6 of the Project Site (with one generator located at Building 3, 4, 7, and 8 and two generators located at Building 2, 5, 9, and 10). At each building, generators would either be located at the ground level (i.e., potentially in ground-floor outdoor working yards) or on building rooftops (i.e., approximately 80 feet above ground level). This analysis conservatively assumes that generators would be located on the ground level because this would result in a shorter (and therefore, conservative) modeled worst-case distance between generator locations and sensitive receptors. General locations for the proposed generators under the CEQA Proposed Project have been identified by the Project Proponent. The nearest sensitive receptors to any of the proposed generator locations would be the existing residences at Wescoat Village, west of the Project Site.

Although the final makes and models of the generators have not been determined, specification data for a sample 500 kW generator were used to estimate project generator noise. According to the generator specification data, a 500 kW Cummins 500DFEK[18] generator could produce an unattenuated noise level of 101.5 dBA at 50 feet, including both engine and exhaust noise. The emergency generators associated with the proposed project would be screened from view from interior streets and surrounding areas. Specifically, generators would be screened to the height of the generator on all four sides (buildings may be used for all or part of the enclosure). However, specific details about generator attenuation features, including the noise reduction anticipated, are not known at this time. Therefore, this analysis conservatively assumes that a generator enclosure and screen would result in approximately 5 dB of noise reduction.

Under the CEQA Proposed Project with the WRF Option and the CEQA Proposed Project with the CUP Option, thirteen 500 kW emergency generators would be installed at the Project Site, compared

[18] Cummins, Inc. 2019. *Cummins Power Generation.* Sound data, 500DFEK. October.

to the 12 emergency generators proposed under the CEQA Proposed Project. Specifically, for the WRF Option, one additional generator would be installed in Subarea 6 of the Project Site (at Building 11), which would become the nearest project generator to the Wescoat Village residences (instead of the generator at Building 10). Under the CEQA Proposed Project with the CUP, one additional generator would be installed in Subarea 4 of the Project Site (at Building 6). However, the distance from this new generator to off-site sensitive receptors would be no closer than the distance evaluated for the CEQA Proposed Project. Therefore, the reasonable worst-case emergency generator noise levels under this option would be the same as presented for the CEQA Proposed Project. Refer to Table 3.12-12 for a summary of the emergency generator noise modeling results for the CEQA Proposed Project with or without the CUP and with or without the WRF Option.

Table 3.12-12. Summary of Emergency Generator Testing Noise

Land Use Type	Option?	Distance to Nearest Generator Testing (feet)	Modeled Noise Level[a] (dBA)	Noise Standard (dBA)	Exceeds Standard?
Existing multi-family residential (Wescoat Village)	CEQA Proposed Project with or without CUP Option	560[b]	76	55	Yes
Existing multi-family residential (Wescoat Village)	CEQA Proposed Project with the WRF Option	230[c]	83	55	Yes

a. Emergency generators associated with the proposed project would be screened from view from interior streets and surrounding areas to the height of the generator on all four sides (buildings may be used for all or part of the enclosure). However, because specific details about generator attenuation features, including the noise reduction anticipated, are not known at this time, this analysis conservatively assumes that a generator enclosure and screen would result in approximately 5 dB of noise reduction.

b. 560 feet is the estimated distance between the potential generator zone associated with Building 10 under the CEQA Proposed Project with or without the CUP option and the nearest Wescoat Village receptor.

c. 230 feet is the estimated distance between the potential generator zone associated with Building 11 under the CEQA Proposed Project with the WRF Option and the nearest Wescoat Village receptor.

dB = decibel; CUP = central utility plant; WRF = water reuse facility

The nearest existing residential receptor (a Wescoat Village residence) is approximately 560 feet west of the nearest potential generator zone under the CEQA Proposed Project with or without the CUP Option (i.e., the Building 10 generator zone within Subarea 6 of the Project Site). At that distance, generator testing noise was modeled to be 76 dBA. The nearest generator to Wescoat Village under the CEQA Proposed Project with the WRF Option (the Building 11 generator associated with the WRF within Subarea 6 of the Project Site) could be as close as 230 feet from existing residences. Generator testing noise levels at that distance were modeled to be up to 83 dBA L_{eq}. As described in Section 5.1, *Methods for Analysis*, of the Noise and Vibration Technical Report, the applied noise limit for daytime emergency generator testing noise at the Wescoat Village receptors would be 55 dBA L_{eq}. Therefore, the estimated emergency generator testing noise level at this location, 76 to 83 dBA (without or with the WRF Option, respectively), is approximately 21 to 28 dB higher than the applicable noise exposure limit.

Outside of emergency operations, generator use would consist of testing that would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applicable noise standards at the nearest noise-sensitive receptors under

the CEQA Proposed Project. Noise impacts related to emergency generator testing would be potentially significant before mitigation.

Loading Noise

With respect to noise from delivery trucks and loading activity, the delivery of goods (e.g., food and parcel deliveries) is a common occurrence in cities and urban environments. The Project Site is in an urban area, and background ambient noise levels are elevated by both the nearby U.S. 101 and Moffett Federal Airfield. Measured existing noise levels at the Project Site and at nearby sensitive uses were 63 to 75 dBA L_{dn}. Usage at each project loading dock or zone would be short term, sporadic, and low intensity. The same loading docks and zones would be developed under the CEQA Proposed Project with the CUP Option and with the WRF Option as under the CEQA Proposed Project. Therefore, the same analysis would apply and the same results would occur. None of the proposed land uses are substantial truck-trip generators such as warehousing or distribution centers. During the peak hour, each project building could expect to receive between zero and nine deliveries. Each building would receive between zero and 45 truck deliveries daily. The vast majority of daily deliveries would be completed with medium-sized trucks and/or United Parcel Service– (UPS-) style delivery vans (smaller than 40 feet in length), with only 11 out of an estimated 302 total deliveries per day being made with a heavy-duty truck greater than 40 feet in length for the CEQA Proposed Project. In addition, exterior loading zones would not accommodate deliveries by large trucks (i.e., greater than 40 feet in length); all such deliveries would take place at interior project loading docks. Further, most of the proposed project's loading areas would be loading docks internal to buildings, which would be shielded from the view of the neighboring land uses. Limited loading and delivery activities would occur along on-street loading zones, which would be external to the proposed project buildings.

On a per building basis for the CEQA Proposed Project, Building 1 (Subarea 1) would have an estimated two delivery or loading activities per hour during daytime hours at an on-street loading zone on the east side of the building. Building 2 within Subarea 2, which would have an internal loading dock but would not have any on-street loading, would have an estimated nine delivery or loading activities per hour during daytime hours. Building 3, also within Subarea 2, which would also have an internal loading dock but would not have any on-street loading, would have an estimated seven delivery or loading activities per hour during daytime hours. All loading for Buildings 4 and 5 (in Subarea 3) would also take place at internal loading docks, with an estimated nine and eight delivery or loading activities per peak hour, respectively. Buildings 6 and 11, the parking garages, would not be anticipated to have any daily deliveries. Buildings 7, 8, 9, and 10 (in Subareas 5 and 6) would have both on-street loading zones (along the southern perimeter of the Project Site) and internal loading docks, with an estimated six or seven delivery or loading activities predicted to occur during the peak hour at each building. Building 12 within Subarea 6, which would have both an internal loading dock and an on-street loading zone, would have approximately one delivery per peak hour during daytime hours. Buildings 13 and 14 would have two or three deliveries per peak hour each; these would be internal to the campus and would not be expected to generate meaningful noise levels outside of the Project Site.

Project loading docks that would be internal to buildings would not be anticipated to generate substantial noise outside the proposed project buildings. Buildings 1, 7, 8, 9, 10, and 12 would have some external loading zones, but all of these buildings would also have internal loading docks. As a result, external loading at these buildings would still be limited. Further, delivery or loading

activities would typically occur during daytime hours when ambient noise levels are higher and when people are less sensitive to noise.

Overall, delivery and loading activities would be temporary and intermittent, primarily during daytime hours. Noise impacts associated with loading activities under the CEQA Proposed Project would be less than significant.

Traffic Noise

Traffic noise increases along nearby roadway segments resulting from project development were quantitatively modeled using traffic volumes and existing vehicle-mix assumptions (i.e., the proportion of automobiles, trucks, buses, and other vehicles) provided by the project traffic engineer (Fehr & Peers). Project traffic noise modeling was conducted using a spreadsheet that was based on the FHWA Traffic Noise Model, version 2.5. The spreadsheet calculates the traffic noise level at a fixed distance from the centerline of a roadway, according to the traffic volume, roadway speed, and vehicle mix predicted to occur under each condition. Traffic volumes under the CEQA Proposed Project with or without the CUP Option and with or without the WRF Option would be the same, according to the traffic data provided by the project traffic engineer. In addition, project traffic volumes would be reduced with implementation of Mitigation Measure TRAN-1, Mitigated TDM Plan that Further Reduces VMT, in Section 3.16, *Transportation*, of this joint EIR/EIS. This would reduce project-related traffic noise below the noise levels presented in this analysis.

An initial screening evaluation of direct traffic noise increases from the proposed project was conducted by comparing traffic noise modeling results for the existing and the existing plus project traffic scenarios. This screening analysis was based on modeling alone and did not take into account measured existing noise levels. If the screening analysis predicted the potential for a 3 dB increase,[19] the land uses along the segment were examined to determine if any would be considered noise sensitive; if land uses along a given segment were not considered to be noise sensitive, a potential 3 dB or greater increase in noise was not considered to be substantial, and no further analysis was conducted for that segment. If the screening analysis predicted a potential 3 dB increase along segments with sensitive uses (e.g., residential or school land uses), the increase was flagged, and a more detailed assessment was conducted to determine the actual noise increase as a result of the proposed project.

A detailed traffic noise evaluation, taking into consideration actual distances to nearby sensitive uses from the roadway centerline (compared to the 50-foot fixed distance used in the screening analysis) and taking into consideration existing measured noise levels (which were available for all segments flagged in the screening analysis), was conducted for segments flagged in the screening analysis. In some cases, modeled traffic noise levels do not fully characterize the existing noise environment along a given roadway segment; for example, traffic noise from an adjacent larger-capacity roadway segment or overhead aircraft may dominate the overall noise environment in some areas. Therefore, along roadway segments where overall noise levels are influenced by traffic on other roadway segments (e.g., U.S. 101) or aircraft traffic, field-measured noise levels (when available) are also considered in the analysis of potential traffic noise effects, as appropriate. Refer to Table 5-9 of the Noise and Vibration Technical Report for a summary of the traffic noise screening

[19] Table 5-9 of the Noise and Vibration Technical Report shows that modeled traffic noise levels from the existing-plus-project scenario were between 62.3 and 70.1 dBA L_{dn}. These modeled noise levels all exceed the "satisfactory" range for sensitive uses (up to 55 dBA L_{dn} for residential). Consequently, project-related traffic noise increases that exceed 3 dB are considered substantial for purposes of this analysis.

analysis results for existing and existing plus project (CEQA Proposed Project) conditions along all evaluated roadway segments. According to Table 5-9 of the Noise and Vibration Technical Report, two roadway segments near sensitive receptors were flagged in the screening analysis as having a 3 dB or greater increase in traffic noise as a result of project implementation.

To conduct the detailed assessment, project-only average-daily-traffic (ADT) volumes (i.e., existing plus project minus existing volumes) for the segments where a potentially substantial increase was identified were used to calculate project-only traffic noise levels at actual distances between the roadway centerline and the nearest sensitive land use along a given segment. Project-only traffic noise levels were then combined with existing measured ambient noise levels to create a composite ambient plus project traffic condition. These composite noise levels were then compared to nearby measured ambient (existing) noise levels to determine if a 3 dB increase from the existing measured noise level would be anticipated to occur as a result of project implementation. Refer to Table 3.12-13 for the detailed traffic noise evaluation for the CEQA Proposed Project, which includes a comparison of the existing (measured ambient) and existing plus project (composite ambient plus project) noise levels along roadway segments where the screening analysis identified potential substantial increases.

As shown in Table 3.12-13, a comparison of measured existing ambient noise levels and composite ambient plus project traffic noise levels along the two roadway segments demonstrates that project-related traffic would increase existing ambient noise levels by up to 1.2 dB. This increase would be below the 3 dB increase threshold for traffic noise. Therefore, project traffic noise impacts would be considered less than significant under the CEQA Proposed Project.

Parking Garage Noise

Under the CEQA Proposed Project, two parking garages would be built and operated on the Project Site (in Building 6 within Subarea 4 and in Building 11 within Subarea 6) with a total of 3,419 parking spaces. The spaces would be split roughly evenly between the two garages, according to the Project Proponent (i.e., 1,709/1,710 spaces). Although the number of vehicles that may use each garage during a peak hour is not currently known, reasonable worst-case noise levels from parking garage activity can be estimated by assuming full capacity within the garage during a single hour. Parking garage spaces and assumed usage under the CEQA Proposed Project with the CUP and WRF options would be the same as under the analysis of the CEQA Proposed Project. Consequently, the same analysis and results would apply

Without accounting for shielding from the parking garage, parking activity noise from 1,710 cars operating simultaneously at a reference distance of 50 feet would be approximately 58.8 dBA L_{eq}. Modeled parking activity noise levels from each garage were estimated at the nearest noise-sensitive receptor using the acoustical average distance[20] between the garages and the nearest sensitive receptors. The results of this analysis are shown in Table 3.12-14.

[20] The acoustical average distance was calculated by multiplying the shortest distance between the nearest receiver and the parking garage by the farthest distance, then taking the square root of the product.

Table 3.12-13. Detailed Traffic Noise Evaluation for Roadway Segments Flagged in the Screening Analysis, CEQA Proposed Project

Roadway	Segment	Modeled Distance to Centerline (feet)	Measured Ambient Noise Level (dBA L_{dn})	Project-Only Traffic Noise Level (dBA L_{dn})	Composite Ambient Plus Project Noise Level (dBA L_{dn})[a]	Change Compared to Measured Ambient Noise (dB)	3 dB or Greater Increase?
Clark Road	Between R T Jones Road and NASA ARC driveway	200	63.4[b]	55.6	64.1	0.7	No
Wescoat Road	Between Clark Road and the Project Site	100	63.7[c]	58.7	64.9	1.2	No

Refer to Appendix A of the Noise and Vibration Technical Report in Appendix 3.12-1 of this joint EIR/EIS for complete traffic noise modeling results.

[a.] Project-only ADT volumes (i.e., existing plus project minus existing volumes) for the segments where a potentially substantial increase was identified during modeling were used to calculate project-only traffic noise levels. Modeled project-only traffic noise levels were then combined with existing measured ambient noise levels to create a composite ambient plus project traffic condition.

[b.] The measured ambient noise level representative of this segment is LT-6 (63.4 dBA L_{dn}).

[c.] The measured ambient noise level representative of this segment is LT-1 (63.7 dBA L_{dn}).

ADT = average daily traffic; dB = decibels; dBA = A-weighted decibels; L_{dn} = day/night sound level; LT = long term; NASA ARC = National Aeronautics and Space Administration Ames Research Center

Table 3.12-14. Parking Garage Noise Modeling Results – CEQA Proposed Project

Receiving Land Use	Acoustical Average Distance (feet)[a]	Average Daytime Ambient Noise Level (dBA L_{eq})	Modeled Noise Level at Receptor (dBA L_{eq})	Difference between Existing and Project Parking Garage Noise Levels (dB)
Parking Garage in Building 6 (Subarea 4)				
Wescoat Village	1,710	56.4[b]	28.0	-28.4
Parking Garage in Building 11 (Subarea 6)				
Wescoat Village	345	56.4[b]	41.9	-14.5

[a.] The acoustical average distance was calculated by multiplying the shortest distance between the nearest receptor and the parking garage by the farthest distance, then taking the square root of the product. Distances were then conservatively rounded down. The acoustical average distances from Building 6 and Building 11 to Wescoat Village were 1,713 and 347 feet, respectively.

[b.] Represented by measurement location LT-1.

dB = decibels; LT = long term

The sensitive receptors closest to the parking garages would be the existing Wescoat Village residences. The acoustical average distance between Wescoat Village and the Building 6 (Subarea 4) parking garage would be approximately 1,710 feet; the acoustical average distance between Wescoat Village and the Building 11 (Subarea 6) parking garage would be approximately 345 feet. At those distances, modeled parking garage noise levels are 28.0 and 41.9 dBA L_{eq}, respectively, based on the modeling assumptions described previously. Actual noise levels at Wescoat Village from the Building 6 (Subarea 4) parking garage may be even lower due to shielding from other future on-site project structures. Even without accounting for this additional attenuation, estimated noise levels from the garages in Building 6 (Subarea 4) and Building 11 (Subarea 6) would be approximately 28 dB and 15 dB lower than the existing average daytime ambient noise level at Wescoat Village (represented by LT-1), respectively. The increase from combined noise levels would be negligible (0.2 dB or less).

In conclusion, as shown in Table 3.12-14, modeled parking garage noise levels under the CEQA Proposed Project are 15 to 28 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., the existing residences at Wescoat Village). The resulting overall increases in ambient noise levels would be negligible (0.2 dB or less). Noise impacts related to parking garage activity would be less than significant.

Amplified Music or Speech at Events

With respect to noise from amplified music or speech associated with the proposed project, temporary programming and events that may use amplified sound would be relatively infrequent in nature. Specifically, once operational, the proposed project would have approximately one event per month (approximately 12 events per year) that may use amplified sound. All events would take place in the proposed project's Central Green, which would be more than 1,200 feet from the existing residences at Wescoat Village. Potential effects related to amplified music or speech would be the same under the CEQA Proposed Project with the CUP and WRF options as described for the CEQA Proposed Project because the frequency and types of proposed events would not change with implementation of either option. Therefore, the same analysis would apply and the same results would occur.

Estimates of noise levels from project programming and events are based on previous measurements of events with amplified music or speech. According to the Project Proponent, the proposed project's Central Green may be used for corporate gatherings that could, at times, include amplified sound from a single speaker or background music from a small live band. Events are anticipated to occur monthly, with approximately 12 events per year. Noise from speech amplified by a single loudspeaker has been measured at approximately 59 dBA L_{eq} at 100 feet.[21] Noise from a small live band with a guitar, vocalists, and a single amplifier has been measured at approximately 65 dBA L_{eq} at 100 feet.[22] These previously recorded noise levels are expected to be reasonably representative of temporary project-related programming or events that may include amplified

[21] Individual Speaker Noise: Noise measured at Lakeside, California, on February 25, 2019, at approximately 140 feet from an individual (single speaker) officiating over a wedding was between approximately 55 and 56 dBA L_{eq}, equating to a noise level of 58 to 59 dBA L_{eq} at 100 feet.

[22] Acoustic Band Noise: Noise measured at a restaurant patio in Santee, California, on June 21, 2019, at approximately 73 feet from a small live band with a single amplifier was 67.5 dBA L_{eq}, equating to 64.8 dBA L_{eq} at 100 feet. The band included a guitar and vocalists.

sound, based on the details provided by the Project Proponent (as described in Section 5.1, *Methods for Analysis,* of the Noise and Vibration Technical Report).

At a distance 1,200 feet (i.e., the distance to the Wescoat Village residences), the noise level from amplified human speech, cited above, would be reduced to approximately 37 dBA L_{eq}. Noise levels from the small live band, cited above, would be reduced to approximately 43 dBA L_{eq} at the Wescoat Village residences.

Average existing daytime noise levels at the nearby Wescoat Village residences are estimated to be between 56 to 62 dBA L_{eq} (LT-1 and LT-4). Refer to Table 3.12-15 for a summary of estimated noise levels from events with amplified sound and a comparison of estimated noise levels with existing measured noise levels at sensitive uses in the vicinity of the Project Site.

Table 3.12-15. Estimated Noise Levels of Amplified Music of Speech (based on example data)

Noise Source	Receptor	Distance to Receptor (feet)	Existing Measured Daytime Noise Levels (range) (dBA L_{eq})	Estimated Noise Level at Receptor (dBA L_{eq})	Difference between Existing and Amplified Event Noise Levels (dB)
Amplified music (small live band)[a]	Wescoat Village residences	1,200	56 to 62	43	-19 to -13
Amplified speech[b]	Wescoat Village residences	1,200	56 to 62	37	-25 to -19

[a.] Acoustic Band Noise: Noise measured at approximately 73 feet from a small live band with a single amplifier was 67.5 dBA L_{eq}, equating to 64.8 dBA L_{eq} at 100 feet. The band included a guitar and vocalists.

[b.] Individual Speaker Noise: Noise measured at approximately 140 feet from an individual (single speaker) officiating over a wedding was between approximately 55 and 56 dBA L_{eq}, equating to a noise level of 58 to 59 dBA L_{eq} at 100 feet.

dB = decibels; dBA = A-weighted decibels; L_{eq} = equivalent sound level

Based on the example noise levels presented above, noise levels from sound-amplifying equipment at project-related programming or events would most likely be 13 to 25 dBA below the existing daytime noise levels at the nearest noise-sensitive receptors. This would result in noise increases of 0.2 dB or less. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (approximately 12 per year).

For these reasons, noise impacts associated with amplified sound under the CEQA Proposed Project would be considered less than significant.

Potential for Noise from New Stationary Sources to Combine

The evaluation of project operational noise is based on the potential for noise from the individual sources or activities described above to exceed the applicable noise ordinance limits or criteria for each respective source. Although it is possible for noise levels from multiple stationary sources to combine and result in greater noise levels, overall, noise levels are generally dominated by the loudest and closest source of noise. To ensure a reasonably conservative analysis, the analysis of each source includes realistic worst-case assumptions for noise sources at the closest reasonable distance from the nearest receptors. For these reasons, the analysis of stationary operational noise effects evaluates potential noise levels from individual pieces of equipment or noise sources associated with the proposed project rather than scenarios with multiple types of stationary noise sources operating at the same time.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards

Prior to the issuance of building permit(s) for each project building that would include mechanical equipment, the Project Proponent or its contractor(s) shall retain a qualified acoustical consultant to prepare an acoustical report and address mechanical equipment noise issues, based on the selected equipment models and design features. The analysis of mechanical equipment noise and emergency generator noise, required under Mitigation Measure NOI-4, could be completed by the same consultant and presented in a single report. The final report, including the analysis results and any recommended noise control measures, shall be provided to and approved by NASA at the time of construction permit applications for each building and/or phase of development. The recommendations of the report shall be incorporated into the applicable project plans (site, architectural, civil, and mechanical, as needed) and implemented during project construction. The acoustical report shall satisfy the following requirements:

- The analysis shall evaluate the design and provide recommendations, as necessary, to ensure that combined noise levels from mechanical equipment at project buildings, including the recommended noise-control measures incorporated into the project design, shall not exceed the County noise exposure limits for the nearby noise-sensitive receptors (i.e., 55 dBA Leq at Wescoat Village.
- The analysis shall consider all noise-generating equipment, including the anticipated worst-case combination(s) of equipment that could run simultaneously. Noise-generating equipment may include, but is not limited to, air conditioners, air handlers, exhaust fans, cooling towers, chillers, pumps, and BESS units.
- Noise-control recommendations may include, but are not limited to, the measures listed below.
    - Changing equipment locations, including locating equipment inside buildings, as feasible (taking into account site-specific constraints such as structural limitations, ventilation requirements, access for maintenance, and cost considerations).
    - Selecting quieter equipment models.
    - Providing equipment sound-power limits in procurement specifications.
    - Shielding equipment with rooftop parapet walls, louvers, screens, or enclosures.
    - Using acoustic absorption materials in shielding materials.
    - Installing mechanical equipment base isolators.
    - Installing intake or exhaust silencers.

Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards

Prior to the issuance of building permit(s) for each building that would include an emergency generator, the Project Proponent or its contractor(s) shall retain a qualified acoustical consultant to prepare an acoustical report and address emergency generator testing noise

issues, based on the selected generator models and design features. (Note that the analysis of emergency generator noise and mechanical equipment noise under Mitigation Measure NOI-3 could be completed by the same consultant and presented in a single report.) The final report, including the analysis results and any recommended noise control measures, shall be provided to and approved by NASA prior to the issuance of building permits for each building and/or phase of development. The recommendations of the report shall be incorporated into the applicable project plans (site, architectural, civil, and mechanical, as needed) and implemented during project construction. The acoustical report shall satisfy the following requirements:

- The analysis shall evaluate the design and provide recommendations, as necessary, to ensure that combined noise levels from emergency generator testing at project buildings, including the recommended noise control measures incorporated into the project design, shall not exceed the County noise exposure limits for the nearby noise-sensitive receptors. The applicable noise exposure limit for the nearest existing residential land uses at Wescoat Village is 55 dBA L_{eq}. Note that additional ambient noise measurements may be conducted as part of the acoustical report to further refine the applicable noise exposure limits (should existing ambient levels already exceed the applicable County noise exposure limit).
- Noise-control recommendations may include, but are not limited to, the measures below.
    - Selecting and installing quieter generator models
    - Upgrading the generators' acoustical enclosures
    - Upgrading the generators' mufflers or silencers
    - Orienting or shielding generator(s) to protect noise-sensitive receptors to the greatest extent feasible (taking into account generator ventilation requirements, spatial limitations, and cost considerations)
    - Increasing the distance between the generator(s) and noise-sensitive receptors
    - Placing noise-attenuating barriers around generator(s)

In addition, all project generators shall be tested only between 7:00 a.m. and 7:00 p.m.

Significance after Mitigation

Mechanical Equipment

Mitigation Measure NOI-3 has been identified to reduce noise levels from mechanical equipment. Although the exact makes and models of project mechanical equipment are not currently known, several noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment. For that reason, noise impacts from project mechanical equipment would be less than significant with mitigation.

Emergency Generator Testing

Mitigation Measure NOI-4 has been identified to reduce temporary noise levels from emergency generator testing. Although the exact makes and models of project emergency generators are not

currently known, noise-reduction options for emergency generators are available to reduce generator testing noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter generator models, upgrading the generators' acoustical enclosures, upgrading the generators' mufflers or silencers, orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the generators and noise-sensitive receptors, and/or placing noise-attenuating barriers around generators. For that reason, noise impacts from project emergency generator testing are considered to be less than significant with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Mechanical Equipment

Heating, Cooling, and Ventilation Equipment

Project heating, cooling, and ventilation equipment under the CEQA Proposed Project No Student/ Faculty Housing Variant would be essentially the same as the equipment proposed under the CEQA Proposed Project, with the exception of the equipment associated with Building 12 in Subarea 6, which would be developed as an office, R&D, and academic building under this Variant instead of a residential building. The previously presented analysis related to operational mechanical equipment under the CEQA Proposed Project at all project buildings other than Building 12 in Subarea 6 would therefore apply to this Variant (as shown in Table 3.12-16 for Building 10).

According to the modeling of example mechanical equipment conducted for the CEQA Proposed Project, as described previously, the estimated combined noise level from rooftop mechanical equipment at the proposed residential building (Building 12) was approximately 75.6 dBA L_{eq} at Wescoat Village. If Building 12 in Subarea 6 were to be developed as an office, R&D, and academic building, estimated noise from the associated equipment would be 77 dBA L_{eq} at a distance of 105 feet (the distance to the nearest Wescoat Village residence). Refer to Table 3.12-16 for the estimated combined noise levels from the heating, cooling, and ventilation equipment for Building 12 in Subarea 6 under this Variant (i.e., if Building 12 were developed as an office, R&D, and academic building).

Table 3.12-16. Estimated Heating, Cooling, and Ventilation Equipment Noise – Building 12 (Subarea 6)

Type of Equipment	Number of Pieces	dBA L_{eq} Noise at 50 Feet for One Piece of Equipment (assuming 100% utilization)	Located in a Room or Exterior?	Attenuation Based on Equipment Location in Room or behind Screen (dB)	Attenuated Noise at 50 Feet for One Piece of Equipment	Combined Attenuated Noise by Equipment Type (dBA)	Source for Estimated Equipment Noise
Building 12, Subarea 6 (Office, R&D, and Academic Building under this Variant/Sub-Alternative)							
Cooling towers (duty)	2	74	Exterior	5	69	72.0	H&K
Air-source heat pumps	3	75	Exterior	5	70	74.8	H&K
Water-cooled chillers	3	71	Room	10	61	65.8	H&K
Circulation pumps	9	81	Room	10	71	80.5	FHWA
Expansion tanks	2	N/A	Room	N/A	N/A	N/A	N/A
Building combined equipment noise at 50 feet				—	—	82.1	—
Building Combined Equipment Noise at Nearest Residences (Wescoat Village, approximately 105 feet from equipment and 100 feet from roof edge; 5-foot setback from roof edge included for all equipment)					—	**77.0**	—

Sources: Hoover and Keith 2000; FHWA 2006.

dB = decibels; dBA = A-weighted decibels; FHWA = Federal Highway Administration; H&K = Hoover and Keith; R&D = research and development

Modeled noise levels from mechanical equipment would exceed the applicable noise standards at the nearest noise-sensitive receptors under the CEQA Proposed Project No Student/Faculty Housing Variant. In addition, the analysis and results are based on reasonable assumptions about mechanical equipment noise levels. The final noise levels are subject to change; the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Noise impacts from mechanical heating and cooling equipment would be considered significant under the CEQA Proposed Project No Student/Faculty Housing Variant.

Sewer Lift Station

The same sewer lift station would be installed under the CEQA Proposed Project with the Variant as under the CEQA Proposed Project. Therefore, the same analysis would apply and the same results would occur. Refer to the sewer lift station analysis for the CEQA Proposed Project, presented previously, for details.

BESS Equipment

The same BESS units would be installed under the CEQA Proposed Project with the Variant as under the CEQA Proposed Project. Therefore, the same analysis would apply and the same results would occur. Refer to the BESS equipment analysis for the CEQA Proposed Project, presented previously, for details.

Mechanical Equipment Conclusion

Based on the analysis above, noise levels from mechanical heating, cooling and ventilation equipment and sewer lift station equipment have the potential to exceed the applicable noise standards at the nearest noise-sensitive receptors. In addition, although modeled levels from example BESS equipment were below applied thresholds, BESS equipment would also have the potential to exceed the applicable noise standards at the nearest noise-sensitive receptors, depending on the final makes and models of BESS equipment selected for the proposed project. In addition, the analysis and results are based on reasonable assumptions about mechanical equipment noise levels. The final noise levels are subject to change; the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, noise impacts related to project mechanical equipment would be potentially significant before mitigation.

Emergency Generator Testing

Under the CEQA Proposed Project with the Variant, thirteen 500 kW emergency generators would be installed at the Project Site, compared to the 12 emergency generators under the CEQA Proposed Project. Specifically, one additional generator would be installed in Subarea 6 of the Project Site (at Building 12), which would become the nearest project generator to the Wescoat Village residences (instead of the generator at Building 10 under the CEQA Proposed Project and Building 11 under the CEQA Proposed Project with the WRF Option). The nearest emergency generator to Wescoat Village under the CEQA Proposed Project with the Variant (at Building 12 in the southwest portion of Subarea 6) could be as close as 160 feet from existing residences. Refer to Table 3.12-17 for a summary of emergency generator noise modeling results for the CEQA Proposed Project with the Variant.

Table 3.12-17. Summary of Emergency Generator Testing Noise – CEQA Proposed Project with Variant

Land Use Type	Distance to nearest Generator Testing (feet)	Modeled Noise Level[a] (dBA)	Noise Standard (dBA)	Exceeds Standard?
Existing multi-family residential (Wescoat Village)	160[b]	86	55	Yes

[a.] Emergency generators associated with the proposed project would be screened from view from interior streets and surrounding areas to the height of the generator on all four sides (buildings may be used for all or part of the enclosure). However, because specific details about generator attenuation features, including the noise reduction anticipated, are not known at this time, this analysis conservatively assumes that a generator enclosure and screen would result in approximately 5 dB of noise reduction.

[b.] 160 feet is the estimated distance between the potential generator zone associated with Building 12 under the CEQA Proposed Project with Variant and the nearest Wescoat Village receptor.

According to the modeling results, noise levels from Building 12 generator testing at the nearest Wescoat Village residences could be up to 86 dBA L_{eq}. This is 10 dB greater than the emergency generator testing noise level predicted to occur at this location under the CEQA Proposed Project (76 dBA) and 3 dB greater than the noise level predicted under the CEQA Proposed Project with the WRF (83 dBA) (refer to Table 3.12-12). The identified noise level of 86 dBA at the nearest receptors exceeds the applicable noise exposure limit.

Based on the analysis results presented above, emergency generator testing under the CEQA Proposed Project No Student/Faculty Housing Variant would exceed the daytime noise exposure limit of 55 dBA L_{eq} at Wescoat Village by approximately 31 dBA.

Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applicable noise standards at the nearest noise-sensitive receptors. Noise impacts related to project emergency generator testing would be potentially significant before mitigation.

Loading Noise

Under the CEQA Proposed Project with the Variant, usage at each project loading dock or loading zone would be similar to the usage under the CEQA Proposed Project, with up to seven additional deliveries expected to occur at the Project Site overall in a given day (309 per day instead of 302). This small increase (approximately 2 percent) would have a negligible impact on overall loading noise levels. The analysis and findings would be the same as for the CEQA Proposed Project, which concluded that loading activities associated with the proposed project would not be expected to result in substantial increases in noise in the project area. Refer to the loading noise analysis for the CEQA Proposed Project, presented previously, for details.

In conclusion, a large portion of project deliveries would take place inside project buildings, most likely resulting in negligible noise levels at the nearest noise-sensitive receptors. In addition, delivery and loading activities would be temporary and intermittent, occurring primarily during daytime hours. Noise impacts associated with loading activities for the CEQA Proposed Project with the Variant would be less than significant.

Traffic Noise

Potential effects related to traffic noise under the CEQA Proposed Project with the Variant would be similar to those described for the CEQA Proposed Project, with only a slight increase in overall traffic volumes under this Variant because more individuals would need to drive to the campus daily if there is no on-site housing. As was the case for the CEQA Proposed Project, an initial screening evaluation of direct traffic noise increases from the proposed project was conducted by comparing traffic noise modeling results for the existing and the existing plus project traffic scenarios. If the screening analysis predicted a 3 dB increase along segments with sensitive uses (e.g., residential or school uses), the increase was flagged in the screening analysis and a more detailed assessment was conducted.

Table 5-23 of the Noise and Vibration Technical Report includes a summary of the screening analysis. Two roadway segments were flagged in the screening analysis as having a potential 3 dB or greater increase in traffic noise as a result of project implementation. A detailed traffic noise assessment for the CEQA Proposed Project with Variant, as described in the traffic noise analysis for the CEQA Proposed Project, was conducted for these two roadway segments. Refer to Table 3.12-18 for the detailed traffic noise evaluation for the CEQA Proposed Project with the Variant, which includes a comparison of the existing (measured ambient) and existing plus project (composite ambient plus project) noise levels along roadway segments where the screening analysis identified potential substantial increases.

As shown in Table 3.12-18, a comparison of measured ambient noise levels and composite existing plus project traffic noise levels along the two roadway segments demonstrates that project-related traffic noise would increase existing ambient noise levels by up to a maximum of 1.2 dB under this Variant. Therefore, traffic noise impacts would be considered less than significant for the CEQA Proposed Project with the Variant.

Parking Garage Noise

Parking garage spaces and assumed usage under the CEQA Proposed Project with the Variant would be the same as under the CEQA Proposed Project. Consequently, the same analysis and results would apply. Modeled parking garage noise levels would be 15 to 28 dB lower than the existing (measured) average daytime noise levels at nearby noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.2 dB or less). Refer to the parking garage analysis for the CEQA Proposed Project, presented previously, for details. In conclusion, noise impacts related to parking garage activity would be less than significant.

Amplified Music or Speech at Events

Potential effects related to amplified music or speech would be the same under the CEQA Proposed Project with the Variant as presented for the CEQA Proposed Project because the number and types of programming and events at the Central Green would be the same. Therefore, the same analysis would apply and the same results would occur. Based on the example noise levels presented above, noise levels from sound-amplifying equipment at project-related programming or events would most likely be 13 to 25 dBA below existing daytime noise levels at the nearest noise-sensitive receptors. This would result in noise increases of 0.2 dB or less. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (approximately 12 per year). For these reasons, noise impacts associated with amplified sound would be considered less than significant.

Table 3.12-18. Detailed Traffic Noise Evaluation for Roadway Segments Flagged in the Screening Analysis, CEQA Proposed Project, CEQA Proposed Project with the Variant

Roadway	Segment	Modeled Distance to Centerline (feet)	Measured Ambient Noise Level (dBA L_{dn})	Project-Only Traffic Noise Level (dBA L_{dn})	Composite Ambient plus Project Noise Level (dBA L_{dn})[a]	Change Compared to Measured Ambient Noise (dB)	3 dB or Greater Increase?
Clark Road	Between R T Jones Road and NASA ARC driveway	200	63.4[b]	55.7	64.1	0.7	No
Wescoat Road	Between Clark Road and the Project Site	100	63.7[c]	58.7	64.9	1.2	No

Refer to Appendix A of the Noise and Vibration Technical Report in Appendix 3.12-1 of this joint EIR/EIS for complete traffic noise modeling results.

[a.] Project-only ADT volumes (i.e., existing plus project minus existing volumes) for the segments where a potentially substantial increase was identified during modeling were used to calculate project-only traffic noise levels. Modeled project-only traffic noise levels were then combined with existing measured ambient noise levels to create a composite ambient plus project traffic condition.

[b.] The measured ambient noise level representative of this segment is LT-6 (63.4 dBA L_{dn}).

[c.] The measured ambient noise level representative of this segment is LT-1 (63.7 dBA L_{dn}).

ADT = average daily traffic; dB = decibels; dBA = A-weighted decibels; L_{dn} = day/night sound level; LT = long term; NASA ARC = National Aeronautics and Space Administration Ames Research Center

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards

Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards

See discussion for the CEQA Proposed Project under Impact NOI-1b.

Significance after Mitigation

Mechanical Equipment

Mitigation Measure NOI-3 has been identified to reduce noise levels from mechanical equipment. Although the exact makes and models of project mechanical equipment are not currently known, several noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment. For that reason, noise impacts from project mechanical equipment would be less than significant with mitigation.

Emergency Generator Testing

Mitigation Measure NOI-4 has been identified to reduce noise levels from emergency generator testing. Although the exact makes and models of project emergency generators are not currently known, several noise-reduction options for emergency generators are available to reduce generator testing noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter generator models, upgrading the generators' acoustical enclosures, upgrading the generators' mufflers or silencers, orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the generators and noise-sensitive receptors, and/or placing noise-attenuating barriers around generators. For that reason, noise impacts from project emergency generator testing are considered to be less than significant with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Mechanical Equipment

Project heating, cooling, and ventilation equipment under the CEQA Reduced Density Alternative would essentially be the same as proposed under the CEQA Proposed Project, noting that the overall developed square footage would be reduced under this alternative. This reduction in development could result in slightly fewer individual pieces of heating and cooling equipment needing to be installed per building under this alternative. However, specific details related to a potential reduction in equipment are not currently known. In addition, the analysis of mechanical equipment noise under the CEQA Proposed Project was based on example equipment, using reasonable assumptions of the types of equipment proposed for each project building. Therefore, even with a

slight reduction in the number of pieces of equipment required under this alternative, the previously presented analysis of operational mechanical equipment under the CEQA Proposed Project would conservatively apply to the CEQA Reduced Density Alternative and the same results would occur. Refer to the heating, cooling, and ventilation equipment analysis for the CEQA Proposed Project, presented previously, for details.

As is the case with project mechanical equipment, the same sewer lift station equipment and BESS units would be installed under the CEQA Reduced Density Alternative as under the CEQA Proposed Project. Therefore, the same analysis would apply and the same results would occur. Refer to the sewer lift station equipment and BESS equipment analysis for the CEQA Proposed Project, presented previously, for details.

Noise levels from mechanical equipment, including mechanical heating, cooling, and ventilation equipment and the sewer lift station and BESS equipment, could exceed the applicable noise standards at Wescoat Village under the CEQA Reduced Density Alternative. In addition, the analysis and results are based on reasonable assumptions about the mechanical equipment noise levels; the final noise levels are subject to change, pending the final equipment selections and locations. Therefore, the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, noise impacts related to project mechanical equipment would be potentially significant before mitigation.

Emergency Generator Testing

The same twelve 500 kW emergency generators that would be installed at the Project Site under the CEQA Proposed Project would be installed under the CEQA Reduced Density Alternative. Therefore, the emergency generator noise analysis presented for the CEQA Proposed Project would also apply to the CEQA Reduced Density Alternative and the same results would occur. Refer to the emergency generator noise analysis for the CEQA Proposed Project, presented previously, for details.

As described under the analysis of the CEQA Proposed Project, emergency generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, modeling results demonstrated that emergency generator testing noise levels would exceed the applicable daytime noise standards at the nearest existing noise-sensitive receptors under the CEQA Reduced Density Alternative. Noise impacts related to project emergency generator testing would be potentially significant before mitigation.

Loading Noise

Under the CEQA Reduced Density Alternative, usage at each project loading dock or loading zone would be similar to the usage under the CEQA Proposed Project, except that total deliveries across the Project Site would be reduced by almost one third (206 per day instead of 302). With this decrease, the analysis and findings for the CEQA Proposed Project, which concluded loading activities associated with the proposed project would not be expected to result in substantial increases in noise in the project area, can conservatively be applied to the CEQA Reduced Density Alternative. Refer to the loading noise analysis for the CEQA Proposed Project, presented previously, for details.

In conclusion, a large portion of project deliveries would take place inside project buildings, most likely resulting in negligible noise levels at the nearest noise-sensitive receptors. In addition, delivery and loading activities would be temporary and intermittent, occurring primarily during

daytime hours. Therefore, noise impacts associated with loading activities under the CEQA Reduced Density Alternative would be less than significant.

Traffic Noise

Potential effects related to traffic noise under the CEQA Reduced Density Alternative would be similar to those described for the CEQA Proposed Project but with a slight reduction due to the smaller intensity of development proposed under this alternative. As was the case for the CEQA Proposed Project, an initial screening evaluation of direct traffic noise increases from the proposed project was conducted by comparing traffic noise modeling results for the existing and the existing plus project traffic scenarios. If the screening analysis predicted a potential 3 dB increase along segments with sensitive uses (e.g., residential or school uses), the increase was flagged in the screening analysis and a more detailed assessment was conducted.

Table 5-27 of the Noise and Vibration Technical Report includes a summary of the screening analysis. The screening analysis flagged two roadway segments with the potential for a 3 dB or greater increase in traffic noise as a result of project implementation under the CEQA Reduced Density Alternative. A detailed traffic noise assessment was conducted for the CEQA Reduced Density Alternative, as described in the traffic noise analysis for the CEQA Proposed Project, for the two roadway segments. Refer to Table 3.12-18 for a comparison of the existing (measured ambient) and existing plus project (composite ambient plus project) noise levels along roadway segments where the screening analysis identified potential substantial increases. Refer to Table 3.12-19 for the detailed traffic noise evaluation for the CEQA Reduced Density Alternative, which includes a comparison of the existing (measured ambient) and existing plus project (composite ambient plus project) noise levels along roadway segments where the screening analysis identified potential substantial increases.

As shown in Table 3.12-19, a comparison of measured existing ambient noise levels and composite ambient plus project traffic noise levels along these two roadway segments demonstrates that project-related traffic would increase existing ambient noise levels by up to 0.8 dB. This increase is below the 3 dB increase threshold for traffic noise. Therefore, traffic noise impacts would be considered less than significant for the CEQA Reduced Density Alternative.

Parking Garage Noise

Under the CEQA Reduced Density Alternative, two parking garages would be built and operated on the Project Site. These would be located within Building 6 (Subarea 4) and Building 11 (Subarea 6), the same locations where the parking garages would be constructed under the CEQA Proposed Project. Under the CEQA Reduced Density Alternative, there would be 2,063 total parking spaces (compared to a total of 3,419 parking spaces under the CEQA Proposed Project). These spaces would be roughly evenly split between the two garages, according to the Project Proponent (i.e., 1,031/1,032 spaces). Although the number of vehicles that may use each garage during a peak hour is not currently known, reasonable worst-case noise levels from parking garage activity can be estimated by assuming full capacity of the garages (i.e., 1,031/1,032 vehicles per garage) during a single hour.

Table 3.12-19. Detailed Traffic Noise Evaluation for Roadway Segments Flagged in the Screening Analysis, CEQA Reduced Density Alternative

Roadway	Segment	Modeled Distance to Centerline (feet)	Measured Ambient Noise Level (dBA L_{dn})	Project-Only Traffic Noise Level (dBA L_{dn})	Composite Ambient plus Project Noise Level (dBA L_{dn})[a]	Change Compared to Measured Ambient Noise (dB)	3 dB or Greater Increase?
Clark Road	Between R T Jones Road and NASA ARC driveway	200	63.4[b]	53.7	63.8	0.4	No
Wescoat Road	Between Clark Road and the Project Site	100	63.7[c]	56.8	64.5	0.8	No

Refer to Appendix A of the Noise and Vibration Technical Report in Appendix 3.12-1 of this joint EIR/EIS for complete traffic noise modeling results.

[a.] Project-only ADT volumes (i.e., existing plus project minus existing volumes) for the segments where a potentially substantial increase was identified during modeling were used to calculate project-only traffic noise levels. Modeled project-only traffic noise levels were then combined with existing measured ambient noise levels to create a composite ambient plus project traffic condition.

[b.] The measured ambient noise level representative of this segment is LT-6 (63.4 dBA L_{dn}).

[c.] The measured ambient noise level representative of this segment is LT-1 (63.7 dBA L_{dn}).

ADT = average daily traffic; dB = decibels; dBA = A-weighted decibels; L_{dn} = day/night sound level; LT = long term; NASA ARC = National Aeronautics and Space Administration Ames Research Center

Without accounting for shielding from the parking garage, the noise level from parking garage activity, with 1,032 cars operating simultaneously, at a reference distance of 50 feet would be approximately 56.6 dBA L_{eq}. Modeled parking activity noise levels from each garage are estimated at the nearest noise-sensitive receptor, using the acoustical average distance[23] between the garages and the nearest sensitive receptors. These results of this analysis are shown in Table 3.12-20.

Table 3.12-20. Parking Garage Noise Modeling Results – CEQA Reduced Density Alternative

Receiving Land Use	Acoustical Average Distance (feet)[a]	Average Daytime Ambient Noise Level (dBA L_{eq})	Modeled Noise Level at Receptor (dBA L_{eq})	Delta dB
Parking Garage in Building 6 (Subarea 4)				
Wescoat Village	1,710	56.4[c]	25.8	-30.6
Parking Garage in Building 11 (Subarea 6)				
Wescoat Village	345	56.4[c]	39.7	-16.7

[a.] The acoustical average distance was calculated by multiplying the shortest distance between the nearest receptor and the parking garage by the farthest distance, then taking the square root of the product.

[b.] Represented by measurement location LT-4.

[c.] Represented by measurement location LT-1.

dB = decibel; LT = long term

The closest sensitive receptors to the parking garages would be the existing Wescoat Village residences. The acoustical average distance between Wescoat Village and the Building 6 (Subarea 4) parking garage is approximately 1,710 feet; the acoustical average distance between Wescoat Village and the Building 11 (Subarea 6) parking garage is approximately 345 feet. At those distances, modeled parking garage noise levels are 25.8 and 39.7 dBA L_{eq}, respectively, based on the modeling assumptions described previously. Actual noise levels at Wescoat Village from the Building 6 (Subarea 4) parking garage may be even lower due to shielding from future on-site project structures. Even without accounting for that attenuation, estimated noise levels from the garages in Building 6 (Subarea 4) and Building 11 (Subarea 6) would be approximately 31 dB and 17 dB lower than the existing average daytime ambient noise level at Wescoat Village, respectively. The increase in combined noise levels would be negligible (0.1 dB or less).

As shown in Table 3.12-20, modeled parking garage noise levels under the CEQA Reduced Density Alternative are 17 to 31 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.1 dB or less). Noise impacts related to parking garage activity would be less than significant.

Amplified Music or Speech at Events

Potential effects related to amplified music or speech would be the same for the CEQA Reduced Density Alternative as presented for the CEQA Proposed Project because the number and types of programming and events at the Central Green would be the same. Therefore, the same analysis

[23] The acoustical average distance was calculated by multiplying the shortest distance between the nearest receiver and the parking garage by the farthest distance, then taking the square root of the product.

would apply and the same results would occur. Based on the example noise levels presented above, noise levels from sound-amplifying equipment at project-related programming or events would most likely be 13 to 25 dBA below the existing daytime noise levels at the nearest noise-sensitive receptors. This would result in noise increases of 0.2 dB or less. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (approximately 12 per year). For these reasons, noise impacts associated with amplified sound would be considered less than significant.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards

Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards

See discussion for the CEQA Proposed Project under Impact NOI-1b.

Significance after Mitigation

Mechanical Equipment

Mitigation Measure NOI-3 has been identified to reduce noise levels from mechanical equipment. Although the exact makes and models of project mechanical equipment are not currently known, several noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment. For that reason, noise impacts from project mechanical equipment would be less than significant with mitigation.

Emergency Generator Testing

Mitigation Measure NOI-4 has been identified to reduce noise levels from emergency generator testing. Although the exact makes and models of project emergency generators are not currently known, several noise-reduction options for emergency generators are available to reduce generator testing noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter generator models, upgrading the generators' acoustical enclosures, upgrading the generators' mufflers or silencers, orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the generators and noise-sensitive receptors, and/or placing noise-attenuating barriers around generators. For that reason, noise impacts from project emergency generator testing are considered to be less than significant with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Mechanical Equipment

Project heating, cooling, and ventilation equipment under the CEQA Reduced Density Alternative with the Variant would be similar to equipment proposed for the CEQA Proposed Project with the Variant, noting that overall developed square footage would be reduced under the CEQA Reduced Density Alternative compared to the CEQA Proposed Project. This reduction in development could result in slightly fewer individual pieces of heating and cooling equipment needing to be installed per building. However, specific details related to a potential reduction in equipment are not currently known. In addition, the analysis of mechanical equipment noise under the CEQA Reduced Density Alternative was based on example equipment, using reasonable assumptions for the types of equipment proposed for each project building. Therefore, even if there is a slight reduction in the number of pieces of equipment required under this alternative, the previously presented analysis of operational mechanical equipment under the CEQA Proposed Project with the Variant would conservatively apply to the CEQA Reduced Density Alternative with the Variant and the same results would occur. Refer to the heating, cooling, and ventilation equipment analysis for the CEQA Proposed Project No Student/Faculty Housing Variant, presented previously, for details.

As is the case with project mechanical equipment, the same sewer lift station equipment and BESS units would be installed under the CEQA Reduced Density Alternative with the Variant as under the CEQA Proposed Project. Therefore, the same analyses would apply and the same results would occur. Refer to the sewer lift station equipment and BESS equipment analyses for the CEQA Proposed Project, presented previously, for details.

Noise levels from mechanical equipment, including mechanical heating, cooling, and ventilation equipment and the sewer lift station equipment and BESS equipment, could exceed the applicable noise standards at the nearest noise-sensitive receptors under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant. In addition, the analysis and results are based on reasonable assumptions about the mechanical equipment noise levels. The final noise levels are subject to change, and the potential exists for actual noise levels to be higher or lower than those presented in this analysis. Accordingly, noise impacts related to project mechanical equipment would be potentially significant before mitigation.

Emergency Generator Testing

Under the CEQA Reduced Density Alternative with the Variant, thirteen 500 kW emergency generators would be installed at the Project Site compared to the 12 proposed under the CEQA Proposed Project. Specifically, one additional generator would be installed at Building 12 (in the southwest portion of Subarea 6) under this Variant because the building would be developed as an office, R&D, and academic building instead of a student/faculty housing building. The closest generators to the neighboring existing noise-sensitive receptors would be the same as under the

CEQA Proposed Project No Student/Faculty Housing Variant. Therefore, the same analysis and results also apply to the CEQA Reduced Density Alternative with the Variant. The resulting emergency generator noise levels would be approximately 86 dBA at the existing Wescoat Village residences. This is 10 dB greater than the emergency generator testing noise level predicted to occur at this location under the CEQA Proposed Project (76 dBA) (refer to Table 3.12-12). The identified noise level of 86 dBA at the nearest receptors exceeds the applicable noise exposure limit. Refer to the emergency generator noise analysis for the CEQA Proposed Project No Student/Faculty Housing Variant, presented previously, for additional details.

In conclusion, emergency generator testing under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would exceed the daytime noise exposure limit of 55 dBA L_{eq} at Wescoat Village by approximately 31 dB. Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applicable noise standards at the nearest noise-sensitive receptors. Noise impacts related to project emergency generator testing would be potentially significant before mitigation.

Loading Noise

Under the CEQA Reduced Density Alternative with the Variant, usage at each project loading dock or loading zone would be similar to usage under the CEQA Proposed Project, except that the total number of deliveries across the Project Site would be reduced by almost one third (217 per day instead of 302). Loading activities under the CEQA Reduced Density Alternative with the Variant are expected to result in only 11 additional deliveries per day compared with the CEQA Reduced Density Alternative without the Variant.

With the decrease in loading activities compared to the CEQA Proposed Project, the analysis and findings for the CEQA Proposed Project, which concluded that loading activities associated with the proposed project would not be expected to result in substantial increases in noise in the project area, can conservatively be applied to the CEQA Reduced Density Alternative with Variant. Refer to the loading noise analysis for the CEQA Proposed Project, presented previously, for details.

In conclusion, a large portion of project deliveries would take place inside project buildings, most likely resulting in negligible noise levels at the nearest noise-sensitive receptors. In addition, delivery and loading activities would be temporary and intermittent, occurring primarily during daytime hours. Loading activities under the CEQA Reduced Density Alternative with Variant would not be expected to result in substantial increases in noise in the project area. Noise impacts associated with loading activities for the CEQA Reduced Density Alternative with Variant would be less than significant.

Traffic Noise

Potential effects related to traffic noise under the CEQA Reduced Density Alternative with the Variant would be similar to those described for the CEQA Reduced Density Alternative but with a slight increase in overall traffic volumes. An initial screening evaluation of direct traffic noise increases from the proposed project was conducted by comparing traffic noise modeling results for the existing and the existing plus project traffic scenarios. If the screening analysis predicted a potential 3 dB increase along segments with sensitive uses (e.g., residential or school uses), the increase was flagged and a more detailed assessment was conducted for those segments.

Table 5-32 of the Noise and Vibration Technical Report includes a summary of the screening analysis. Two roadway segments were flagged in the screening analysis to potentially have a predicted 3 dB or greater increase in traffic noise as a result of project implementation. A detailed traffic noise assessment, as described in the traffic noise analysis for the CEQA Proposed Project, was conducted for the CEQA Reduced Density Alternative with Variant. Refer to Table 3.12-21 for the detailed traffic noise evaluation for the CEQA Reduced Density Alternative with Variant, which includes a comparison of the existing (measured ambient) and existing plus project (composite ambient plus project) noise levels along roadway segments where the screening analysis identified potential substantial increases.

As shown in Table 3.12-21, a comparison of measured ambient noise levels and composite ambient plus project traffic noise levels along the two roadway segments demonstrates that project-related traffic noise would increase existing ambient noise levels by up to 0.8 dB under this Variant. This increase is below the 3 dB (or greater) increase threshold for traffic noise. Therefore, traffic noise impacts would be considered less than significant for the CEQA Reduced Density Alternative with the Variant.

Parking Garage Noise

Parking garage spaces and assumed usage under the CEQA Reduced Density Alternative with the Variant would be the same as under the CEQA Reduced Density Alternative. Consequently, the same analysis would apply and the same results would occur. Refer to the parking garage analysis for the CEQA Reduced Density Alternative, presented previously, for additional details.

Modeled parking garage noise levels would be 17 to 31 dB lower than the existing (measured) average daytime noise levels at the nearest noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.1 dB or less). Noise impacts related to parking garage activity would be less than significant.

Amplified Music or Speech at Events

Potential effects related to amplified music or speech would be the same for the CEQA Reduced Density Alternative with the Variant as presented for the CEQA Proposed Project because the number and types of programming and events at the Central Green would be the same. Therefore, the same analysis would apply and the same results would occur. Based on the example noise levels presented above, noise levels from sound-amplifying equipment at project-related programming or events would most likely be 13 to 25 dBA below the existing daytime noise levels at the nearest noise-sensitive receptors. This would result in noise increases of 0.2 dB or less. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (approximately 12 per year). For these reasons, noise impacts associated with amplified sound would be considered less than significant.

Table 3.12-21. Detailed Traffic Noise Evaluation for Roadway Segments Flagged in the Screening Analysis, CEQA Reduced Density Alternative with Variant

Roadway	Segment	Modeled Distance to Centerline (feet)	Measured Ambient Noise Level (dBA L_{dn})	Project-Only Traffic Noise Level (dBA L_{dn})	Composite Ambient Plus Project Noise Level (dBA L_{dn})[a]	Change Compared to Measured Ambient Noise (dB)	3 dB or Greater Increase?
Clark Road	Between R T Jones Road and NASA ARC driveway	200	63.4[b]	53.9	63.9	0.5	No
Wescoat Road	Between Clark Road and the Project Site	100	63.7[c]	56.9	64.5	0.8	No

Refer to Appendix A of the Noise and Vibration Technical Report in Appendix 3.12-1 of this joint EIR/EIS for complete traffic noise modeling results.

[a.] Project-only ADT volumes (i.e., existing plus project minus existing volumes) for the segments where a potentially substantial increase was identified during modeling were used to calculate project-only traffic noise levels. Modeled project-only traffic noise levels were then combined with existing measured ambient noise levels to create a composite ambient plus project traffic condition.

[b.] The measured ambient noise level representative of this segment is LT-6 (63.4 dBA L_{dn}).

[c.] The measured ambient noise level representative of this segment is LT-1 (63.7 dBA L_{dn}).

ADT = average daily traffic; dB = decibels; dBA = A-weighted decibels; L_{dn} = day/night sound level; LT = long term; NASA ARC = National Aeronautics and Space Administration Ames Research Center

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards

Mitigation Measure NOI-4. Design and Install Emergency Generators to Comply with Noise Standards

See discussion for the CEQA Proposed Project under Impact NOI-1b.

Significance After Mitigation

Mechanical Equipment

Mitigation Measure NOI-3 has been identified to reduce noise levels from mechanical equipment. Although the exact makes and models of project mechanical equipment are not currently known, several noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment. For that reason, noise impacts from project mechanical equipment would be less than significant with mitigation.

Emergency Generator Testing

Mitigation Measure NOI-4 has been identified to reduce noise levels from emergency generator testing. Although the exact makes and models of project emergency generators are not currently known, several noise-reduction options for emergency generators are available to reduce generator testing noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter generator models, upgrading the generators' acoustical enclosures, upgrading the generators' mufflers or silencers, orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the generators and noise-sensitive receptors, and/or placing noise-attenuating barriers around generators. For that reason, noise impacts from project emergency generator testing are considered to be less than significant with mitigation.

Impact CEQA-NOI-2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant (vibration-induced damage)	NOI-5. Construction Vibration Control Plan for Vibratory Rollers	Less than Significant with Mitigation (vibration-induced damage)
	Potentially Significant (interference with vibration-sensitive equipment)	NOI-6. Vibration Control Plan for Sensitive Equipment	Significant and Unavoidable with Mitigation (interference with vibration-sensitive equipment)
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant (vibration-induced damage)	Same as CEQA Proposed Project	Less than Significant with Mitigation (vibration-induced damage)
	Potentially Significant (interference with vibration-sensitive equipment)		Significant and Unavoidable with Mitigation (interference with vibration-sensitive equipment)
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Construction of the proposed project would involve the use of construction equipment that could generate groundborne vibration. Construction of the WRF Option or CUP Option would require additional off-road equipment and on-road vehicles beyond that required for construction of the CEQA Proposed Project. However, the overall footprint of construction, as well as the types of equipment proposed for construction, would be the same. Construction associated with the WRF and CUP subphases would not result in greater vibration levels at nearby sensitive uses or structures than those from construction of the CEQA Proposed Project. Therefore, the worst-case vibration impacts (i.e., estimated noise levels from the loudest worst-case construction subphase) from the CEQA Proposed Project with the CUP or WRF options would be the same as for the CEQA Proposed Project.

Vibration-Induced Damage

Typical vibration levels associated with heavy-duty construction equipment at various distances are shown in Table 3.12-22. All analyzed construction equipment would be classified as continuous/ frequent intermittent vibration sources. The most vibration-intensive type of equipment expected to be used for the proposed project is a vibratory roller. A vibratory roller could be used throughout the Project Site for soil compaction and within streets near the Project Site for in-street utility work.

Table 3.12-22. Vibration Source Levels for Project Construction Equipment

Equipment	PPV at 20 Feet	PPV at 25 Feet	PPV at 50 Feet	PPV at 75 Feet	PPV at 100 Feet	PPV at 130 Feet	PPV at 150 Feet
Vibratory roller	0.268	0.210	0.098	0.063	0.046	0.034	0.029
Auger drill	N/A[a]	0.089[b]	N/A[a]	0.027	0.019	0.015	0.012
Large bulldozer[c]	0.114	0.089	0.042	0.027	0.019	0.015	0.012
Loaded trucks	0.097	0.076	0.035	0.023	0.017	0.012	0.011
Small bulldozer[d]	0.004	0.003	0.001	0.001	0.001	0.000	0.000

Source: California Department of Transportation. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf. Accessed: August 28, 2025.

[a.] This equipment would not be used at that distance from existing structures.

[b.] Although this equipment would not be used at that distance from existing structures, this value is the reference vibration level (e.g., PPV vibration at 25 feet) used in the analysis.

[c.] Considered representative of other heavy earthmoving equipment such as excavators, graders, backhoes, etc.

[d.] Considered representative of smaller types of equipment such as small skid steers and mini-excavators.

PPV = peak particle velocity

This analysis is based on the worst-case closest distance between a given piece of vibration-generating equipment at the nearest receptor, noting that the construction noise analysis instead uses the distance to a receptor from the approximate center of a given construction site. A vibratory roller, the most vibration-intensive piece of equipment proposed for project construction, could be used anywhere on the Project Site and anywhere within the in-street/off-site construction areas. In-street/off-site construction would generally take place closer to off-site existing structures than any on-site construction. Based on the estimated footprint of construction (including construction for in-street areas), a vibratory roller could be used as close as 20 to 25 feet from existing off-site non-residential structures.

The most stringent threshold expected to apply to structures near the Project Site is the Caltrans "historic and some old buildings" category. Specifically, Buildings 21, 22, 566, 16, 510, 6, and 126, located north of Wescoat Road, were all constructed between 1933 and 1979, and are conservatively considered to be most similar to the "historic and some old buildings" Caltrans structure type[24] (with an applicable PPV vibration criterion of 0.25 in/sec) and are referred to herein as

[24] Rusch, J., Project Architectural Historian & Preservation Planner (2025, June 16). Email regarding the appropriate Caltrans vibration criteria to apply to buildings near project construction areas.

"Vibration-Sensitive Structures."[25] Of these Vibration-Sensitive Structures, only Buildings 6, 16, and 510 are located within approximately 20 to 25 feet of the Limits of Work.[26, 27]

At a distance of 20 feet, a vibratory roller could generate a PPV vibration level of approximately 0.268 in/sec, as shown in Table 3.12-22. This estimated PPV vibration level exceeds the threshold for Vibration-Sensitive Structures. A vibratory roller must be operated 22 feet or more from such a structure to result in PPV vibration levels below the threshold of 0.25 in/sec. None of the other equipment proposed for use during the in-street construction (i.e., besides a vibratory roller) would be expected to result in vibration levels with a PPV of more than 0.25 in/sec at a distance of 20 feet. In addition, no construction equipment proposed for on-site construction would result in vibration levels in excess of the applicable PPV of 0.25 in/sec criterion.

With respect to off-site residential structures, the residential land uses west of the Project Site are most likely in the "new residential structures" category from the Caltrans vibration damage guidelines because they were constructed around 2005. New residential structures have an applicable vibration-related damage criterion with a PPV of 0.5 in/sec for continuous/frequent intermittent sources of vibration (i.e., for all construction equipment included in this analysis). In-street construction activities may take place as close as 50 feet from the nearest residential structures. At that distance, a vibratory roller could result in a vibration level with a PPV of approximately 0.098 in/sec. This vibration level is below the damage threshold for newer residential structures (PPV of 0.5 in/sec).

Because estimated worst-case vibration levels are all below the applicable damage criteria for nearby residential structures, damage-related vibration effects from on-site in-street/off-site construction at nearby residential land uses would not be expected to occur.

In conclusion, estimated vibration levels from use of a vibratory roller for in-street utility work within 22 feet of a Vibration-Sensitive Structure under the CEQA Proposed Project would be expected to exceed the applicable Caltrans damage criterion (PPV of 0.25 in/sec), resulting in a potentially significant impact before mitigation. Vibration levels at nearby residential receptors would not be expected to exceed the applicable criterion for such structures.

Vibration-Related Annoyance

Most project construction would be limited to the daytime hours of 7:00 a.m. to 7:00 p.m. weekdays. However, limited nighttime or weekend construction could be required for concrete pours and in-street/off-site utility work, as described previously. In general, this would include approximately 5 nights of construction per building for concrete foundation pours and approximately 10 nights of construction per utility system.

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25 For the purpose of this analysis, structures most similar to the "historic and some old buildings" Caltrans structure type are called Vibration-Sensitive Structures in the vibration-related damage discussion.

26 Building 510 does not qualify for listing in the National Register of Historic Places; Buildings 6 and 16 have been identified as contributors to the NAS Sunnyvale Historic District and are eligible for National Register of Historic Places listing.

27 Rusch, J., Project Architectural Historian & Preservation Planner (2026, March 23). Email regarding the historic status of buildings within 22 feet of project construction areas.

As described previously, for the purposes of this analysis, the Caltrans "strongly perceptible" annoyance criterion (PPV of 0.1 in/sec) is used to assess the potential for sleep disturbance to occur at occupied residential land uses during nighttime hours (refer to Table 4-5 of the Noise and Vibration Technical Report). The equipment that would be used during nighttime hours for project concrete pours, such as concrete mixers and pumps, would generally not be vibration intensive. Concrete mixers and pumps generally generate lower vibration levels than a small bulldozer, which is the piece of equipment with the lowest vibration level, as shown in Table 3.12-22. Concrete pours would take place on the Project Site, and associated equipment would generally be at least 100 feet from off-site residential land uses. At a distance of 100 feet, equipment similar to a small bulldozer would result in a vibration level with a PPV of approximately 0.001 in/sec. This level is well below the "strongly perceptible" threshold from the Caltrans guidelines (PPV of 0.1 in/sec). When nighttime construction occurs at even greater distances from nearby residences, nighttime vibration levels would be even lower. Because concrete pours on the Project Site are expected to produce vibration levels that would be well below the applicable threshold related to sleep disturbance at nearby residential land uses, vibration-related annoyance impacts from nighttime concrete pours would be less than significant.

With respect to the off-site utility work, more vibration-intensive equipment would be used for this work than would be used for the on-site concrete pours. Specifically, the most vibration-intensive piece of equipment proposed for the nighttime in-street utility work is a vibratory roller. A vibratory roller may be used as close as 50 feet from the nearest occupied residence during nighttime hours.

A vibratory roller would generally be used for compaction of the repaired roadway after new utility infrastructure is installed. It is expected that nighttime use of a vibratory roller near occupied residences would be limited to a few nights per residence. This is because utility work would move linearly down the alignment. At a distance of 50 feet, a vibratory roller could result in a vibration level with a PPV of 0.098 in/sec. This level is below the strongly perceptible threshold (PPV of 0.1 in/sec). Use of a vibratory roller would usually take place more than 50 feet from occupied residences. Because vibration levels are estimated to be below the strongly perceptible threshold (PPV of 0.1 in/sec) at nearby residential land uses, vibration-related annoyance impacts from nighttime off-site utility work would be less than significant.

In conclusion, estimated vibration levels from short-term concrete pour activities (on-site) and in-street utility work during nighttime hours are estimated to be below the applicable "strongly perceptible" threshold. Vibration-related annoyance impacts under the CEQA Proposed Project (with or without the CUP or WRF options) would be less than significant.

Vibration-Sensitive Equipment

An analysis was conducted to determine if construction-related vibration from the proposed project could be disruptive for sensitive research equipment at nearby off-site laboratories, such as USGS Building 800, which is north of the Project Site. Vibration-sensitive machinery or instruments, such as those used in research laboratories or hospitals, can be affected by much lower vibration velocity levels than other uses. As described previously, the FTA has established guidelines and suggested equipment-specific criteria for evaluating such effects. The criteria for the detailed vibration analysis are presented in Table 4.3 of the Noise and Vibration Technical Report.

Modeling methodologies and guidance from FTA's *Transit Noise and Vibration Impact Assessment Manual*[28] were used to estimate VdB velocity levels from project construction equipment at varying distances. Although it is known that vibration-sensitive equipment is located within the nearby USGS Building 800 (and could be located within other nearby research buildings), details related to the exact equipment present and the appropriate sensitivity thresholds of individual pieces of equipment cannot be known with certainty. To address this, vibration levels were estimated for each type of construction equipment, and corresponding screening distances were estimated to evaluate the distances within which vibration levels could exceed the various impact criteria for different categories of sensitive laboratory instruments. Potential effects on sensitive laboratory equipment could occur if project construction equipment would result in vibration levels greater than the levels associated with the applicable criteria for a given piece of sensitive laboratory equipment. Refer to Table 3.12-23 for the distances at which various types of construction equipment could result in vibration levels in excess of the FTA criteria for detailed vibration analysis.

As shown in Table 3.12-23, vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment categories at distances of approximately 9 to 1,350 feet (depending on both the type of construction equipment in use and the specific sensitivity of nearby laboratory equipment).

The nearby USGS Building 800 includes some vibration-isolation features in select rooms, which may reduce the propagation of external vibration to sensitive equipment within those rooms. In addition, background vibration velocity levels in typical residential and educational environments are generally around 50 VdB, as noted in FTA's *Transit Noise and Vibration Impact Assessment Manual*.[29] Consequently, ambient vibration levels at laboratory facilities near the Project Site, including USGS Building 800, may already exceed the VC-D and VC-E criteria established for highly sensitive equipment. However, vibration from project construction may still interfere with the use of some sensitive research equipment within nearby laboratory buildings, resulting in a potentially significant impact before mitigation.

[28] Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment Manual*. FTA Report 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/ 118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: July 9, 2025.

[29] Ibid.

Table 3.12-23. Vibration-Related Buffer Distances to Ensure Vibration Limits Are Not Exceeded

Equipment	Residential Night, Operating Rooms (buffer distance [feet])[a]	VC-A (buffer distance [feet])[a]	VC-B (buffer distance [feet])[a]	VC-C (buffer distance [feet])[a]	VC-D (buffer distance [feet])[a]	VC-E (buffer distance [feet])[a]
Threshold	**72 VdB**	**66 VdB**	**60 VdB**	**54 VdB**	**48 VdB**	**42 VdB**
Vibratory roller	136	215	340	539	856	1,356
Large bulldozer, other large earthmoving equipment	80	126	199	315	500	791
Auger drill	80	126	199	315	500	791
Small bulldozer	9	14	21	33	52	83

[a] Distance required to ensure threshold is not exceeded.

Residential Night, Operating Rooms: Vibration is not felt, but groundborne noise may be audible inside quiet rooms. Suitable for medium-power optical microscopes (100X) and other equipment of low sensitivity.

VC-A: Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment.

VC-B: Adequate for high-power optical microscopes (1000X) and inspection and lithography equipment to 3-micron line widths.

VC-C: Appropriate for most lithography and inspection equipment to 1-micron detail size.

VC-D: Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capabilities

VC-E: The most demanding criterion for extremely vibration-sensitive equipment.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

This mitigation measure applies to construction with vibratory rollers that occurs within 22 feet of Vibration-Sensitive Structures (i.e., structures in the "historic and some old buildings" category per the Caltrans Vibration Damage Criteria). Structures within approximately 22 feet of the Limits of Work that would be expected to fit into this category, having been constructed between 1933 and 1979, include Buildings 6, 16, and 510.

The Project Proponent or its contractor(s) shall develop a construction vibration control plan to mitigate potential vibration-related damage effects. The plan shall be prepared by a qualified vibration expert, with input from a qualified historical architect and the construction contractors and submitted to NASA for review and approval prior to the start of construction with vibratory rollers within 22 feet of Vibration-Sensitive Structures (expected to include Buildings 6, 16, and 510). The Project Proponent shall incorporate a requirement into construction specifications for the proposed project for the construction contractor(s) to use all feasible means to avoid damage to the nearby Vibration-Sensitive Structures without resulting in safety concerns. For the purposes of this mitigation measure, feasible is defined as being possible without impairing the contractors' ability to safely and effectively construct the project, causing unreasonable inefficiencies in the project's construction schedule, or substantially increasing costs such that they that are not commensurate with the vibration reduction achieved. Methods to reduce vibration-related damage effects may include using smaller and less vibration-intensive equipment in proximity to the potentially affected building.

The construction contractor shall implement a monitoring program to minimize damage to adjacent buildings and ensure that any such damage is documented and repaired. The monitoring program shall include the following components:

- Prior to the start of any construction activity that includes the use of a vibratory roller within 22 feet of a Vibration-Sensitive Structure (expected to include Buildings 6, 16 and 510), the construction contractor shall engage a structural engineer or other professionals with similar qualifications to document and photograph the existing conditions of potentially affected buildings within 22 feet of areas where the use of a vibratory roller is proposed.
- Based on the type, age, and existing condition of Buildings 6, 16, and 510 as observed during pre-construction surveys, the qualified vibration expert, in conjunction with project architectural historians and/or structural engineers, may establish a building-specific maximum vibration threshold for each building that shall not be exceeded during construction. The Caltrans criterion for "historic and some old buildings" (PPV limit of 0.25 in/sec, as shown in Table 4-4), shall be used as the default criterion unless otherwise justified. Any such adjustment shall be documented and approved by NASA prior to construction.
- To ensure that vibration levels do not exceed the established standard, the Project Proponent shall monitor vibration levels at Buildings 6, 16 and 510 when a vibratory roller is used within 22 feet of said structures, and prohibit vibratory construction activities that generate vibration levels in excess of the applied standard.

- Should vibration levels be observed in excess of the applicable standard, construction shall be temporarily halted to the extent feasible (i.e., when it is safe to do so), and alternative construction techniques used, to the extent feasible (i.e., if using alternative construction techniques, such as a static roller in lieu of a vibratory roller).
- A structural engineer shall conduct an initial inspection of the Vibration-Sensitive Structure for damage within 7 days of construction within 22 feet of said buildings (i.e., Buildings 6, 16 and 510). If damage is observed at the initial inspection, additional inspections should be conducted every 7 days (for as long as that activity at that location takes place) to evaluate if further damage has occurred. However, if no damage occurs to a given building within the first 7 days of a given construction activity at a given location, the 7-day inspection period may be increased to 30 days for that activity (i.e., the subsequent inspection could take place 30 days after the initial inspection).
- Should damage to a Vibration-Sensitive Building occur and be identified during the inspections described above, the damage shall be remediated to bring the Vibration-Sensitive Building to its pre-construction condition at the conclusion of ground-disturbing activity on the site.

Mitigation Measure NOI-6. Construction Vibration Control Plan for Sensitive Research Equipment

Prior to the start of construction activities, the Project Proponent or its contractor(s) shall retain a qualified vibration expert to prepare a construction vibration control plan for nearby sensitive research equipment. The plan shall be designed to minimize construction-related vibration effects on nearby facilities housing vibration-sensitive research equipment (including, but not necessarily limited to, USGS Building 800).

The plan shall include the following requirements and components:

- Conduct a pre-construction survey identifying and documenting the location, type, and sensitivity of vibration-sensitive equipment within potentially affected off-site laboratory buildings. Where feasible, the plan author may coordinate with facility managers to obtain equipment specifications and operational thresholds.
- Conduct pre-construction continuous vibration monitoring within or adjacent to potentially affected laboratory buildings to establish background vibration levels.
- Establish equipment-specific vibration criteria based on FTA guidelines (listed below), or other resources (e.g., vibration thresholds defined in equipment manuals), to apply to equipment present within nearby research buildings. Applied criteria may vary by laboratory room or by equipment piece. The FTA Vibration Criteria that may be used are included in Table 4-3 and are summarized below.
    - VC-A: 66 VdB
        - Adequate for medium- to high-power optical microscopes (400X), microbalances, optical balances, and similar specialized equipment.
    - VC-B: 60 VdB
        - Adequate for high-power optical microscopes (1000X) and inspection and lithography equipment to 3-micron line widths.

  - VC-C: 54 VdB
    - Appropriate for most lithography and inspection equipment to 1-micron detail size.
  - VC-D: 48 VdB
    - Suitable in most instances for the most demanding equipment, including electron microscopes operating to the limits of their capabilities
  - VC-E: 42 VdB
    - The most demanding criterion for extremely vibration-sensitive equipment.

  Note that, when determining applicable thresholds, consideration should be given to background pre-construction vibration levels at a given building; the lowest vibration standard established shall not exceed the previously established background vibration levels for a given laboratory

- Identify construction equipment with the potential to exceed vibration thresholds and specify minimum setback distances or alternative low-vibration equipment to be used near sensitive facilities, as feasible. Feasibility considerations include that specified restrictions would not unduly restrict the contractors' ability to safely and effectively construct the project, cause unreasonable inefficiencies in the project's construction schedule, or substantially increase costs that are not commensurate with the reduction in vibration levels achieved.
- Implement real-time vibration monitoring at potentially affected laboratory buildings during project construction. Note that the plan may include adaptive management and monitoring provisions to adjust requirements, based on observed results. For instance, vibration thresholds may be relaxed if monitoring confirms no adverse effects on the performance of specific equipment.
- Designate a vibration complaint coordinator to serve as the primary point of contact for nearby vibration-sensitive facilities. Contact information for the project vibration coordinator shall be posted at the Project Site and on a publicly available project website. The vibration coordinator would be contacted if vibration effects disrupt technical activities at nearby laboratory uses. The project vibration coordinator would then work with the construction team to adjust construction activities to reduce vibration or to reschedule activities to a less sensitive time, as feasible (as defined previously). The coordinator shall also maintain a log of communications and corrective actions taken.
- In coordination with affected facilities and based on actual identified effects (e.g., interference with the use of research equipment rather than exceedances of determined thresholds) resulting from adjacent project construction, identify vibration-sensitive equipment that most likely cannot operate at its current location during project construction. Where feasible, arrange for temporary relocation of equipment on a case-by-case basis (either during high-vibration construction activities and/or in proximity to construction activities, or for the duration of construction, as appropriate).

The vibration control plan shall be submitted to NASA for review and approval prior to the start of construction.

Significance after Mitigation

Implementation of Mitigation Measure NOI-5, which would be required if a vibratory roller were to operate within 22 feet of Vibration-Sensitive Structures, would reduce construction-related vibration impacts by ensuring that specific buffer distances between sensitive buildings and vibration-intensive equipment would be maintained during construction, as feasible. Structures within approximately 22 feet of the Limits of Work that fit into this category include Buildings 6, 16, and 510, which were all constructed between 1933 and 1979. Mitigation Measure NOI-5 would also require pre-construction surveys to document the existing condition of buildings close to construction activities involving a vibratory roller, vibration monitoring, post-construction surveys, and remediation of structures to pre-construction conditions (should damage occur) when such buffer distances are infeasible to maintain. Implementation of this mitigation measure would avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions). Vibration-related damage impacts would be less than significant with mitigation.

With respect to impacts on vibration-sensitive equipment at nearby laboratory buildings, Mitigation Measure NOI-6 has been identified to reduce impacts. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Vibration-Induced Damage

Potential effects related to vibration-induced damage would be the same for the CEQA Proposed Project with the Variant as presented for the CEQA Proposed Project because the equipment proposed for use and the general footprint of construction would be the same. Therefore, as was the case for the CEQA Proposed Project, estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures would be expected to exceed the applied Caltrans damage criterion for such buildings (a PPV of 0.25 in/sec) under the CEQA Proposed Project with the Variant. Vibration-related damage impacts under the CEQA Proposed Project with the Variant would be potentially significant before mitigation.

Vibration-Related Annoyance

Vibration-related annoyance effects would be the same for the CEQA Proposed Project with the Variant as described for the CEQA Proposed Project. Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels below the “strongly perceptible” annoyance threshold at nearby residential land uses. Vibration-related annoyance impacts under the CEQA Proposed Project with the Variant would be less than significant.

Vibration-Sensitive Equipment

Effects on vibration-sensitive equipment would be the same for the CEQA Proposed Project with the Variant as described for the CEQA Proposed Project. Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction, resulting in a potentially significant impact before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

Mitigation Measure NOI-6. Construction Vibration Control Plan for Sensitive Research Equipment

See discussion for the CEQA Proposed Project under Impact NOI-2a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-5 would be expected to avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions). Vibration-related damage impacts would be less than significant with mitigation. With respect to impacts on vibration-sensitive equipment at nearby laboratory buildings, Mitigation Measure NOI-6 has been identified to reduce impacts. However, even with the implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Vibration-Induced Damage

Potential impacts related to vibration-induced damage would be the same for the CEQA Reduced Density Alternative as presented for the CEQA Proposed Project because the equipment proposed for use and the general footprint of construction would be the same. Therefore, as was the case for the CEQA Proposed Project, estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures would be expected to exceed the applicable Caltrans damage criterion for such buildings (a PPV of 0.25 in/sec). Vibration-related damage impacts under the CEQA Reduced Density Alternative would be potentially significant before mitigation.

Vibration-Related Annoyance

Vibration-related annoyance effects would be the same for the CEQA Reduced Density Alternative as described for the CEQA Proposed Project. Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels below the “strongly perceptible” annoyance threshold at nearby residential land uses. Vibration-related annoyance impacts under the CEQA Proposed Project with the Variant would be considered less than significant.

Vibration-Sensitive Equipment

Effects on vibration-sensitive equipment would be the same for the CEQA Proposed Project with the Variant as described for the CEQA Proposed Project. Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction, resulting in a potentially significant impact before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

Mitigation Measure NOI-6. Construction Vibration Control Plan for Sensitive Research Equipment

See discussion for the CEQA Proposed Project under Impact NOI-2a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-5 would be expected to avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions). Vibration-related damage impacts would be less than significant with mitigation. With respect to impacts on vibration-sensitive equipment at nearby laboratory buildings, Mitigation Measure NOI-6 has been identified to reduce impacts. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Vibration-Induced Damage

Potential impacts related to vibration-induced damage would be the same for the CEQA Reduced Density Alternative with the Variant as those presented for the CEQA Proposed Project because the equipment proposed for use and the general footprint of construction would be the same. Therefore, as was the case for the CEQA Proposed Project, estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures would be expected to exceed the applicable Caltrans damage criterion for such buildings (a PPV of 0.25 in/sec). Vibration-related damage impacts under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would be potentially significant before mitigation.

Vibration-Related Annoyance

Vibration-related annoyance effects would be the same for the CEQA Reduced Density Alternative with the Variant as described for the CEQA Proposed Project. Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels below the "strongly perceptible" annoyance threshold at nearby residential land uses. Vibration-related annoyance impacts under the CEQA Proposed Project with the Variant would be less than significant.

Vibration-Sensitive Equipment

Effects on vibration-sensitive equipment would be the same for the CEQA Reduced Density Alternative with the Variant as described for the CEQA Proposed Project. Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction, resulting in a potentially significant impact before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure NOI-5. Construction Vibration Control Plan for Vibratory Rollers

Mitigation Measure NOI-6. Construction Vibration Control Plan for Sensitive Research Equipment

See discussion for the CEQA Proposed Project under Impact NOI-2a.

Significance after Mitigation

As described for the CEQA Proposed Project, Mitigation Measure NOI-5 would be expected to avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions). Vibration-related damage impacts would be less than significant with mitigation. With respect to impacts on vibration-sensitive equipment at nearby laboratory buildings, Mitigation Measure NOI-6 has been identified to reduce impacts. However, even with the implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research laboratory or research. Construction-related vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

Impact CEQA-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Aircraft Noise

With implementation of the CEQA Proposed Project (including the CEQA Proposed Project with either the WRF Option or CUP Option), the closest airport or airstrip to the Project Site would be Moffett Federal Airfield, which is directly east of the Project Site. No other airports or airstrips are within 2 miles of the Project Site. According to the 2012 Comprehensive Land Use Plan (CLUP) for Moffett Federal Airfield,[30] the eastern edge of the Project Site is at the outer boundary of the 65 dBA CNEL noise contour for this airfield. Most of the Project Site, including the majority of each project building along the eastern project perimeter, is outside of the 65 dBA CNEL contour; that portion of the Project Site would be developed with office and/or R&D buildings and a parking structure (i.e., Subareas 3 and 4). According to the Moffett Federal Airfield CLUP, noise levels of up to 65 dBA CNEL are generally acceptable for office and professional land uses. Noise levels of 65 to 70 dBA CNEL are considered conditionally acceptable, provided that necessary noise insulation features are included in the design of the building. No portion of the Project Site is within the 70 or 75 dBA CNEL noise contours. This would also be the case under the CEQA Proposed Project with the CUP or WRF options. Exterior-to-interior noise attenuation at buildings with closed windows is approximately 25 dBA, according to U.S. Environmental Protection Agency's (EPA's) national average data.[31] The office and R&D buildings would be expected to have similar exterior-to-interior noise attenuation. As such, given that exterior noise levels at all project buildings would be approximately 65 dBA CNEL or less, interior noise levels would most likely be around 40 dBA CNEL or less at the office and R&D buildings. The proposed Student/Faculty Housing and Short-Term Lodging uses would also be exposed to aircraft noise. However, these uses would be required to comply with the interior noise performance standards prescribed by Title 24 of the California Code of Regulations (refer to Section 4.2.1.1), ensuring such uses would be designed to provide interior noise levels of 45 dBA

[30] Santa Clara County Airport Land Use Commission. 2012. *Comprehensive Land Use Plan for Moffett Federal Airfield.* November. Available: https://stgenpln.blob.core.windows.net/document/ ALUC_NUQ_CLUP.pdf.

[31] U.S. Environmental Protection Agency. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* Appendix B, Table B-4. March.

CNEL or less. For these reasons, impacts related to aircraft noise under the CEQA Proposed Project would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

The aircraft noise analysis and findings for the CEQA Proposed Project No Student/Faculty Housing Variant are the same as described for the CEQA Proposed Project because the project footprint would be the same, and the exterior noise levels from aircraft at the Project Site would be the same. As described for the CEQA Proposed Project, impacts related to aircraft noise under the CEQA Proposed Project No Student/Faculty Housing Variant would be considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The aircraft noise analysis and findings for the CEQA Reduced Density Alternative are the same as described for the CEQA Proposed Project because the project footprint would be the same, and the exterior noise levels from aircraft at the Project Site would be the same. As described for the CEQA Proposed Project, impacts related to aircraft noise under the CEQA Reduced Density Alternative would be considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

The aircraft noise analysis and findings for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant are the same as described for the CEQA Proposed Project because the project footprint would be the same, and the exterior noise levels from aircraft at the Project Site

would be the same. As described for the CEQA Proposed Project, impacts related to aircraft noise under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would be considered less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.12.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.12.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for noise and vibration varies, depending on the source of the noise or vibration. Specifically, the geographic context for cumulative construction noise impacts typically encompasses cumulative projects within 1,000 feet of a project site. Beyond 1,000 feet, the contributions of noise from the construction of other projects would be greatly attenuated through both distance and intervening structures, and their contribution would be expected to be minimal. The cumulative context for stationary-source noise impacts, such as noise effects from heating and cooling or other mechanical equipment, as well as vibration effects from construction activities, is generally smaller than that distance (a few hundred feet, at most). Finally, cumulative impacts related to vehicular traffic noise are based on overall forecast ADT along roadway segments near a project site, which includes traffic increases from all growth in a project area, as predicted in the applicable traffic model.

Impact CEQA-C-NOI-1a: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction? (Significant and Unavoidable with Mitigation)

Construction noise is a localized impact that reduces as distance from the noise source increases. In addition, intervening features (e.g., buildings) between construction areas and nearby noise-sensitive receptors result in additional noise attenuation by providing barriers that break the line of sight between noise-generating equipment and sensitive receptors. These barriers can block sound wave propagation and somewhat reduce noise at a given receiver.

The cumulative setting for construction noise impacts is considered to be approximately 1,000 feet from the Project Site because projects located within that distance could expose receptors between, or equidistant from, the two projects to greater overall noise levels, depending on the intervening distances.

The following cumulative projects are within approximately 1,000 feet of the Project Site:

- United States Geological Survey (USGS) Lab B800 (complete)
- USGS B19 Relocation (complete)
- Planetary Ventures Moffett Federal Airfield Hangar One Reskinning (complete)

Daytime and nighttime construction activities for CEQA Proposed Project (with and without the Variant), the CEQA Reduced Density Alternative (with and without the Variant), the CEQA Proposed Project with the WRF Option, and the CEQA Proposed Project with the CUP Option, would generally be the same because they would include roughly the same demolition and construction activities, footprint of construction, construction equipment, and construction hours.

As described previously, worst-case daytime construction noise levels in the County may exceed the applicable criterion for daytime construction noise (65 dBA L_{eq}) from construction activities lasting 10 days or longer. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Similarly, nighttime construction noise levels may exceed the applicable criterion of 55 dBA for multi-family residential land uses. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors.

Construction of the cumulative projects is already complete; consequently, cumulative project construction would not be expected to occur concurently with project construction activities (beginning in 2027). Construction noise from cumulative projects would therefore not be expected to combine with construction noise from the proposed project and expose nearby sensitive receptors to greater overall construction noise levels. However, because project construction noise levels for both daytime and nighttime hours were modeled to exceed applicable thresholds, cumulative construction noise impacts would conservatively be considered significant. Although mitigation measures would be expected to somewhat reduce project construction noise, it may not be possible to reduce all construction noise levels to a level below the significance thresholds used in this assessment, even with implementation of all feasible mitigation measures. Therefore, cumulative construction noise effects during daytime and nighttime hours are considered to be significant and unavoidable, and the project's contribution would be considered cumulatively considerable, even with the implementation of project-specific mitigation.

Impact CEQA-C-NOI-1b: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation? (Less than Significant with Mitigation)

Mechanical Equipment

In general, most operational sources of noise do not generate noise that is perceptible far beyond the edge of a project site. Although project heating and cooling equipment would be localized and associated noise would attenuate rapidly with distance, it is possible that such heating and cooling equipment could generate noise in excess of allowable levels at nearby sensitive uses before mitigation.

There are no cumulative projects between the nearest noise-sensitive receptors (i.e., the Wescoat Village residences) and the proposed project or within a similar distance from the nearest noise-sensitive use. The nearest cumulative project to Wescoat Village is the USGS Building 800, which is more than 1,000 feet from the nearest Wescoat Village residence (with the nearest project building an estimated 100 feet from the Project Site). Construction for this project is already completed, and the building is currently operational. Because of the distance between the USGS Building 800 location and the Wescoat Village residences (i.e., more than 1,000 feet), and because project

buildings would be expected to block the line of sight between USGS Building 800 and the Wescoat Village residences once construction is complete, noise-generating uses (e.g., mechanical equipment) for this project would not be expected to combine with noise from project mechanical equipment and result in a cumulative operational noise impact. However, because project-specific mechanical equipment impacts were determined to be potentially significant, cumulative impacts related to operational equipment noise levels would conservatively be considered significant. Mitigation Measure NOI-3 has been identified to reduce noise levels from project mechanical equipment. With implementation of this mitigation measure, project mechanical equipment noise levels would be reduced to below applicable significance thresholds, thereby also reducing the cumulative impact to a less than significant level. Therefore, cumulative noise impacts related to mechanical equipment would be considered less than significant with mitigation.

Emergency Generator Testing

Emergency generators included in development of the Project Site would result in the generation of audible noise during testing. With regard to the potential for cumulative impacts, the nearest cumulative projects to the Project Site involve rehabilitation and relocation of USGS Building 19, construction of USGS Lab Building 800, and reskinning Hangar One. Should nearby projects (e.g., USGS buildings) also install emergency generators and should generator testing occur simultaneously at a nearby project and the proposed project, a cumulative impact could occur.

Emergency generators are tested intermittently (often on the order of once per month for 30 to 60 minutes), and their use is often exempted during actual emergencies. Although specific details regarding the emergency generators proposed for nearby cumulative projects are not known at this time, it is known that periodic testing of project emergency generators would occur for 2 to 4 hours per month per generator during daytime hours.

In general, it is very unlikely that the testing of an emergency generator for the proposed project would occur concurrently with the testing of a generator at a nearby project. Even if testing were to occur simultaneously, which is unlikely, it is not likely that the generators would be close enough to one another for the noise to combine at a given individual receptor. However, because project emergency generator noise testing was determined to potentially exceed applicable standards, cumulative impacts related to emergency generator testing noise would conservatively be considered significant. Mitigation Measure NOI-4 has been identified to reduce noise levels and ensure that applicable noise exposure limits would not be exceeded during project emergency generator testing. With implementation of this mitigation measure, emergency generator noise levels would be reduced to below applicable significance thresholds, thereby also reducing the cumulative impact to a less than significant level. Therefore, cumulative impacts related to emergency generator noise would be less than significant with mitigation.

Loading Noise

Delivery and loading activity at loading docks and zones associated with the project could result in the generation of audible noise. However, the Project Site is in an urban area with existing levels of elevated noise. A large portion of project deliveries would take place inside project buildings, thereby greatly reducing exterior audible noise from said loading activities. In addition, delivery and loading activities would be temporary and intermittent, primarily during daytime hours. The nearest cumulative projects to the Project Site involve rehabilitation and relocation of USGS Building 19, construction of USGS Lab Building 800, and reskinning Hangar One. Should nearby cumulative

projects also include loading docks or zones that receive daily deliveries, loading activity noise could be generated near the cumulative projects. In general, however, loading activity noise is intermittent, and noise levels are often abated by intervening buildings. Even if loading activities for nearby buildings were to occur simultaneously, which is unlikely, it is not likely that the loading docks or zones would be close enough to one another for the noise to combine at a given individual receptor. Cumulative noise impacts related to loading dock activity would be less than significant.

Traffic Noise

To evaluate potential direct and cumulative traffic noise effects in the project area, traffic noise modeling for cumulative conditions was conducted at a reference distance of 50 feet from the roadway centerline, using a spreadsheet based on the FHWA Traffic Noise Model, version 2.5. Refer to the methodology subsection of the Noise and Vibration Technical Report for additional details related to the traffic noise modeling. For the purposes of this analysis, the thresholds applied to assess cumulative traffic noise impacts are:

- A 3 dB increase in noise in areas where existing and resulting noise levels are above the "satisfactory" range for that land use (as defined in the County General Plan [55 dBA L_{dn} for residential land uses])
- A 5 dB increase in noise in areas where existing and resulting noise levels are below the "satisfactory" range for that land use.

Should a cumulative traffic noise impact be identified, the project's contribution to the cumulative impact would be evaluated. The applied threshold for the assessment of the project's contribution to a cumulative traffic noise impact is 1 dB.

An initial screening evaluation of cumulative traffic noise increases was conducted by comparing traffic noise modeling results for the existing and the cumulative plus project traffic scenarios. If the screening analysis showed a potential 3 dB increase, the land uses along the segment were examined to determine if any would be considered noise sensitive; if land uses along a given segment were not considered to be noise sensitive, a 3 dB or greater increase in noise was not considered to be potentially substantial. If the screening analysis showed a potential 3 dB increase along segments with sensitive uses (e.g., residential or school uses), the increase was flagged and a more detailed assessment (with consideration given to existing measured noise levels and the actual distances between the roadway centerline and the nearest sensitive use) was conducted. Refer to Section 5.1, *Methods for Analysis*, in the Noise and Vibration Technical Report for additional details related to the cumulative traffic noise modeling approach.

CEQA Proposed Project (NEPA Build Alternative 1)

According to the screening traffic noise analysis results for the CEQA Proposed Project (contained in Table 5-15 of the Noise and Vibration Technical Report), the screening analysis flagged six roadway segments with sensitive receptors with the potential for a 3 dB or greater increase in traffic noise when comparing existing and cumulative plus project conditions. The screening also found that three of these six segments have the potential to experience a 1 dB or greater increase in noise as a result of project implementation (i.e., when comparing cumulative-no-project conditions to cumulative plus project conditions). Traffic volumes under the CEQA Proposed Project with or without the CUP and with or without the WRF would be the same, according to the traffic data provided by the project traffic engineer.

For the reasons described previously, a detailed traffic noise evaluation, taking into consideration actual distances to nearby sensitive uses from the roadway centerline and existing measured noise levels (which were available for all segments flagged in the screening analysis), was then conducted for segments flagged in the screening analysis. The results of the detailed traffic noise modeling assessment for the CEQA Proposed Project are included in Table 3.12-24.

According to the detailed traffic noise assessment for the CEQA Proposed Project, no evaluated segments would have a 3 dB increase over existing measured noise levels. Although no significant cumulative noise impacts were identified, that the project's contribution to increases is presented in Table 3.12-24 for informational purposes. As shown in the table, the project would also not result in a 1 dB or greater increase in cumulative-with-project noise levels along any evaluated segment. Cumulative traffic noise impacts under the CEQA Proposed Project would be less than significant.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Cumulative traffic noise effects would be similar to those described for the CEQA Proposed Project. According to the screening traffic noise analysis results for the CEQA Proposed Project with Variant (contained in Table 5-25 of the Noise and Vibration Technical Report), six roadway segments with adjacent sensitive receptors were flagged as having the potential for a 3 dB or greater increase in traffic noise when comparing existing and cumulative plus project conditions. Three of the segments were flagged as having the potential to experience a 1 dB or greater increase in noise as a result of project implementation (i.e., when comparing cumulative-no-project conditions to cumulative plus project conditions).

According to the detailed cumulative traffic noise assessment for the CEQA Proposed Project with Variant, none of the flagged segments would have a 3 dB increase over existing measured noise levels. The results of the detailed cumulative traffic noise modeling assessment for the CEQA Proposed Project with Variant are included in Table 3.12-25. Although no significant cumulative noise impacts were identified, the Variant's contribution to the increase is presented in Table 3.12-27 for informational purposes. As shown in the table, the Variant would also not result in a 1 dB or greater increase in cumulative-with-project noise levels along any evaluated segment. Cumulative traffic noise impacts under the CEQA Proposed Project with Variant would be less than significant.

CEQA Reduced Density Alternative

Cumulative traffic noise effects would be similar to those described for the CEQA Proposed Project. The traffic noise analysis for the CEQA Reduced Density Alternative (contained in Table 5-30 of the Noise and Vibration Technical Report) flagged six roadway segments with adjacent sensitive receptors and the potential for a 3 dB or greater increase in traffic noise when comparing existing and cumulative plus project conditions. Three of these segments were flagged as having the potential to experience a 1 dB or greater increase in noise as a result of project implementation (i.e., when comparing cumulative-no-project conditions to cumulative plus project conditions).

According to the detailed traffic noise assessment for the CEQA Reduced Density Alternative, none of the flagged segments would have a 3 dB increase over existing measured noise levels. The results of the detailed traffic noise modeling assessment for the CEQA Reduced Density Alternative are included in Table 3.12-26. Although no significant cumulative noise impacts were identified, the project's contribution to increased noise levels is still presented in Table 3.12-27 for informational purposes. As shown in the table, the project would also not result in a 1 dB or greater increase in cumulative-with-project noise levels along any evaluated segment. Cumulative traffic noise impacts under the CEQA Reduced Density Alternative would be less than significant.

Table 3.12-24. Cumulative Traffic Noise Evaluation for Potentially Affected Segments, CEQA Proposed Project – Detailed Assessment

Roadway	Segment Location	Modeled Distance to Centerline (feet)	Representative Measurement Location	Measured Ambient Noise Level, "Existing" (dBA L_{dn})	Ambient with Cumulative "No-Project" Traffic Noise Levels (dBA L_{dn})	Ambient with Cumulative plus Project Traffic Noise Levels (dBA L_{dn})	Change in Sound Level (dBA L_{dn}) from "Existing" to Ambient with Cumulative plus Project	Significant Cumulative Increase? [a]	Change in Sound Level (dBA L_{dn}) between Cumulative Scenarios [b]	Cumulatively Considerable Project Contribution? [b]
Clark Road	Between R T Jones Road and NASA Ames driveway	200	LT-6	63.4	63.9	64.5	1.1	No	0.6	N/A
Moffett Boulevard	Between U.S. 101 northbound ramps and R T Jones Road	400	LT-6	63.4	64.2	64.8	1.4	No	0.6	N/A
Wescoat Road	Between Clark Road and Project Site	100	LT-1	63.7	64.7	65.6	1.9	No	0.9	N/A

[a] A detailed assessment was conducted to determine if the potential cumulative traffic noise increases identified in the screening analysis are actual cumulative traffic noise increases, with consideration given to existing measured noise levels and the actual distances between the roadway centerline and the nearest sensitive use.

[b] Although no significant cumulative increases were determined to occur in the detailed assessment, the project contribution to the cumulative increase is still presented here for informational purposes. "N/A" is used to emphasize that the project-related increase is presented for informational purposes only.

dBA = A-weighted decibel; L_{dn} = day/night sound level; LT = long term; NASA = National Aeronautics and Space Administration

Table 3.12-25. Cumulative Traffic Noise Evaluation for Potentially Affected Segments, CEQA Proposed Project with Variant – Detailed Assessment

Roadway	Segment Location	Modeled Distance to Centerline (feet)	Representative Measurement Location	Measured Ambient Noise Level, "Existing" (dBA L_{dn})	Ambient with Cumulative "No-Project" Traffic Noise Levels (dBA L_{dn})	Ambient with Cumulative plus Project Traffic Noise Levels (dBA L_{dn})	Change in Sound Level (dBA L_{dn}) from "Existing" to Ambient with Cumulative plus Project	Significant Cumulative Increase?[a]	Change in Sound Level (dBA L_{dn}) between Cumulative Scenarios[b]	Cumulatively Considerable Project Contribution?[b]
Clark Road	Between R T Jones Road and NASA Ames driveway	200	LT-6	63.4	63.9	64.5	1.1	No	0.5	N/A
Moffett Boulevard	Between U.S. 101 northbound ramps and R T Jones Road	400	LT-6	63.4	64.2	64.8	1.4	No	0.6	N/A
Wescoat Road	Between Clark Road and Project Site	100	LT-1	63.7	64.7	65.5	1.8	No	0.9	N/A

[a] A detailed assessment was conducted to determine if the potential cumulative traffic noise increases identified in the screening analysis are actual cumulative traffic noise increases, with consideration given to existing measured noise levels and the actual distances between the roadway centerline and the nearest sensitive use.

[b] Although no significant cumulative increases were determined to occur in the detailed assessment, the project contribution to the cumulative increase is still presented here for informational purposes. "N/A" is used to emphasize that the project-related increase is presented for informational purposes only.

dBA = A-weighted decibel; L_{dn} = day/night sound level; LT = long term; NASA = National Aeronautics and Space Administration

Table 3.12-26. Cumulative Traffic Noise Evaluation for Potentially Affected Segments, CEQA Reduced Density Alternative – Detailed Assessment

Roadway	Segment Location	Modeled Distance to Centerline (feet)	Representative Measurement Location	Measured Ambient Noise Level, "Existing" (dBA L_{dn})	Ambient with Cumulative "No-Project" Traffic Noise Levels (dBA L_{dn})	Ambient with Cumulative plus Project Traffic Noise Levels (dBA L_{dn})	Change in Sound Level (dBA L_{dn}) from "Existing" to Ambient with Cumulative plus Project	Significant Cumulative Increase?[a]	Change in Sound Level (dBA L_{dn}) between Cumulative Scenarios[b]	Cumulatively Considerable Project Contribution?[b]
Clark Road	Between R T Jones Road and NASA Ames driveway	200	LT-6	63.4	63.9	64.3	0.9	No	0.4	N/A
Moffett Boulevard	Between U.S. 101 northbound ramps and R T Jones Road	400	LT-6	63.4	64.2	64.6	1.2	No	0.4	N/A
Wescoat Road	Between Clark Road and Project Site	100	LT-1	63.7	64.7	65.3	1.6	No	0.6	N/A

[a] A detailed assessment was conducted to determine if the potential cumulative traffic noise increases identified in the screening analysis are actual cumulative traffic noise increases, with consideration given to existing measured noise levels and the actual distances between the roadway centerline and the nearest sensitive use.

[b] Although no significant cumulative increases were determined to occur in the detailed assessment, the project contribution to the cumulative increase is still presented here for informational purposes. "N/A" is used to emphasize that the project-related increase is presented for informational purposes only.

dBA = A-weighted decibel; L_{dn} = day/night sound level; LT = long term; NASA = National Aeronautics and Space Administration

Table 3.12-27. Cumulative Traffic Noise Evaluation for Potentially Affected Segments, CEQA Reduced Density Alternative with Variant – Detailed Assessment

Roadway	Segment Location	Modeled Distance to Centerline (feet)	Representative Measurement Location	Measured Ambient Noise Level, "Existing" (dBA L_{dn})	Ambient with Cumulative "No-Project" Traffic Noise Levels (dBA L_{dn})	Ambient with Cumulative plus Project Traffic Noise Levels (dBA L_{dn})	Change in Sound Level (dBA L_{dn}) from "Existing" to Ambient with Cumulative plus Project	Significant Cumulative Increase?[a]	Change in Sound Level (dBA L_{dn}) between Cumulative Scenarios[b]	Cumulatively Considerable Project Contribution?[b]
Clark Road	Between R T Jones Road and NASA Ames driveway	200	LT-6	63.4	63.9	64.2	0.8	No	0.2	N/A
Moffett Boulevard	Between U.S. 101 Northbound Ramps and R T Jones Road	400	LT-6	63.4	64.2	64.6	1.2	No	0.4	N/A
Wescoat Road	Between Clark Road and Project Site	100	LT-1	63.7	64.7	65.0	1.3	No	0.3	N/A

[a] A detailed assessment was conducted to determine if the potential cumulative traffic noise increases identified in the screening analysis are actual cumulative traffic noise increases, with consideration given to existing measured noise levels and the actual distances between the roadway centerline and the nearest sensitive use.

[b] Although no significant cumulative increases were determined to occur in the detailed assessment, the project contribution to the cumulative increase is still presented here for informational purposes. "N/A" is used to emphasize that the project-related increase is presented for informational purposes only.

dBA = A-weighted decibel; L_{dn} = day/night sound level; LT = long term; NASA = National Aeronautics and Space Administration

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Sub-Alternative)

Cumulative traffic noise effects for the CEQA Reduced Density Alternative with Variant would be similar to those described for the CEQA Proposed Project. According to the screening traffic noise analysis results for the CEQA Reduced Density Alternative with Variant (contained in Table 5-34 of the Noise and Vibration Technical Report), six roadway segments with sensitive receptors were flagged as having the potential for a 3 dB or greater increase in traffic noise when comparing existing and cumulative plus project conditions. Three of these segments were flagged as having the potential to experience a greater than 1 dB increase in noise as a result of project implementation (i.e., when comparing cumulative-no-project conditions to cumulative plus project conditions).

According to the detailed traffic noise assessment for the CEQA Reduced Density Alternative with Variant, none of the flagged segments would have a 3 dB increase over existing measured noise levels. The results of the detailed traffic noise modeling assessment for the CEQA Reduced Density Alternative are included in Table 3.12-27. Although no significant cumulative noise impacts were identified, the project's contribution to increased noise levels is still presented in Table 3.12-27 for informational purposes. As shown in this table, the project would also not result in a 1 dB or greater increase in cumulative with project noise levels along any evaluated segment. Cumulative traffic noise impacts under the CEQA Reduced Density Alternative with the Variant would be less than significant.

Parking Garage Noise

Parking activity noise at project parking structures was evaluated; based on the modeling results, parking garage noise levels would be well below the existing ambient noise level at the nearest receivers (i.e., 15 to 31 dB lower than the existing average daytime noise levels, depending on the alternative developed). The resulting overall increases in ambient noise levels would be negligible. Noise impacts related to parking garage activity were determined to be less than significant. In addition, no cumulative projects have parking garages between the nearest noise-sensitive receptors (i.e., the Wescoat Village residences) and the proposed project or within a similar distance. Therefore, noise from parking garage activity within project parking garages would not be expected to combine with noise from parking garage activity at nearby cumulative projects. Cumulative noise impacts related to parking garage activity would be less than significant.

Amplified Music or Speech at Events

With respect to amplified music or speech at events, although cumulative projects could involve events with amplified music or speech, it is very unlikely that these events would occur on the same day and at the same time as an event associated with the project. Even if an event were to occur simultaneously, which is unlikely due to the infrequent nature (i.e., approximately 12 per year) of events under the project, it is not likely that the events would be close enough to one another for the noise to combine at a given individual receiver. Cumulative noise impacts associated with amplified sound from infrequent events would be less than significant.

Impact CEQA-C-NOI-2: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to the generation of excessive groundborne vibration or groundborne noise levels? (Significant and Unavoidable with Mitigation)

With respect to the potential for cumulative vibration effects to result in damage, the evaluation of vibration-related damage effects is based on instantaneous PPV levels. Because PPV is a measure of the peak instantaneous vibration level rather than an average, other sources of vibration operating simultaneously (e.g., on other project sites or even on the same site) would not be expected to combine to raise the overall peak vibration level experienced at a nearby sensitive use. Worst-case groundborne vibration levels are generally determined by whichever piece of equipment generates the highest vibration level at the affected location; therefore, vibration would be dominated by the closest and most vibration-intensive equipment being used at a given time. For example, unlike the analysis for average noise levels, in which noise levels from multiple pieces of equipment can be combined to generate a maximum combined noise level, instantaneous peak vibration levels do not combine in that way. Vibration from multiple construction sites, even if they are close to one another, would not combine to raise the maximum PPV level at sensitive uses near the Project Site.

In summary, the cumulative geographic context for vibration is highly localized, and vibration from multiple construction projects near one another (or even adjacent to one another) would generally not combine to increase PPV vibration levels. The cumulative projects near the Project Site are described in Section 4.5, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Environmental Impacts*, and shown in Figure 3.1-1. The majority of the projects have either already undergone construction and are complete or have not yet begun construction and do not have specific locations within NRP or construction dates set at this time. The nearest cumulative projects to the Project Site involve rehabilitation and relocation of USGS Building 19 (complete), construction of USGS Lab Building 800 (complete), and reskinning Hangar One (complete).

Daytime and nighttime construction activities for the CEQA Proposed Project (with and without the Variant), the CEQA Reduced Density Alternative (with and without the Variant), the CEQA Proposed Project with the WRF Option, and the CEQA Proposed Project with the CUP Option, would generally be the same because they would include roughly the same demolition and construction activity, footprint of construction, construction equipment, and construction hours.

Because vibration from multiple pieces of equipment would not be expected to combine and raise the overall peak vibration level experienced at a nearby sensitive use, vibration felt by the nearby Wescoat Village residents and experienced at other nearby residential structures would be dominated by vibration from the closest project with vibration-generating equipment. Overall vibration levels at nearby structures/receptors would be governed by the nearest and closest ground-disturbing equipment associated with any project. Because project impacts related to annoyance were not to be considered significant, and because construction for nearby cumulative projects is complete, cumulative vibration-related annoyance impacts would similarly not be considered substantial.

However, project-specific vibration effects to Vibration-Sensitive Structures were determined to be potentially significant. As a result, cumulative vibration-related damage effects would conservatively be considered significant. Implementation of Mitigation Measure NOI-5 would avoid or reduce and repair vibration-related damage effects. Therefore, the contribution of the project would not be cumulatively considerable and the cumulative vibration-related damage effects would be less than significant with mitigation.

With respect to vibration-sensitive equipment, vibration-sensitive equipment criteria are expressed in VdB, which is an average vibration level. However, the cumulative projects list does not include construction projects in proximity to the nearby USGS Building 800 (with construction of all nearby cumulative projects already complete). For the reasons described above, vibration from project construction would not be expected to combine with vibration from the construction of cumulative projects and result in greater levels of interference with nearby vibration-sensitive research equipment. However, because project-specific impacts related to interference with vibration-sensitive research equipment were considered significant, cumulative impacts related to interference with vibration-sensitive research equipment would also conservatively be considered significant. Mitigation Measure NOI-6 has been identified to reduce impacts on vibration-sensitive equipment. Even with implementation of all feasible mitigation, it may not be possible to fully reduce vibration-related annoyance effects on nearby sensitive laboratory or research equipment. Cumulative vibration impacts related to interference with vibration-sensitive equipment would be conservatively be considered significant and unavoidable, and the project's contribution would be cumulatively considerable, even with implementation of mitigation.

Impact CEQA-C-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No Significant Cumulative Impact)

The closest airport or airstrip to the Project Site is Moffett Federal Airfield, which is directly east of the Project Site. No other airports or airstrips are within 2 miles of the Project Site. As described for the analysis of aircraft noise under the project, most of the Project Site, including the majority of each project building along the eastern project perimeter, is outside of the 65 dBA CNEL contour. A small portion of the Project Site (the far eastern edge) is within the 65 dBA CNEL contour, but this portion would be developed with office and/or R&D buildings and a parking structure. According to the Moffett Federal Airfield CLUP, noise levels of up to 65 dBA CNEL are generally acceptable for office and professional land uses. Noise levels of 65 to 70 dBA CNEL are considered conditionally acceptable, provided that necessary noise insulation features are included in the design of the building. No portion of the Project Site is within the 70 or 75 dBA CNEL noise contours. The exterior-to-interior noise attenuation of buildings with closed windows is approximately 25 dBA, according to EPA's national average data. The office and R&D buildings would be expected to have similar exterior-to-interior noise attenuation. As such, given that exterior noise levels at all project buildings would be approximately 65 dBA CNEL or less, interior noise levels would most likely be around 40 dBA CNEL or less at the office and R&D buildings. The proposed Student/Faculty Housing and Short-Term Lodging uses would also be exposed to aircraft noise. However, these uses would be required to comply with the interior noise performance standards prescribed by Title 24 of the California Code of Regulations (refer to Section 4.2.1.1 of the noise and vibration technical report), ensuring these uses would be designed to provide interior noise levels of 45 dBA CNEL or less. For these reasons, project impacts related to aircraft noise were determined to be less than significant.

Development of the project would not result in an increase in aircraft activity at Moffett Federal Airfield. Consequently, development of the project in conjunction with nearby cumulative projects would not result in a significant cumulative impact related to the exposure of persons residing or working in the project area to excessive aircraft noise levels. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to aircraft noise.

3.13 Population and Housing

3.13.1 Introduction

This section evaluates the potential impacts on population and housing that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical report prepared for the project:

- *Berkeley Space Center at NASA Research Park Socioeconomics Technical Report* (Socioeconomics Technical Report) prepared by ICF, April 2026 (Appendix 4-1 of this joint environmental impact report/environmental impact statement [EIR/EIS]).

The information in the Socioeconomics Technical Report is used to provide context for the evaluation of potential impacts of the proposed project related to population and housing as well as data for decision-makers during the entitlement process. The analysis also incorporates population, employment, and housing data published in Projections 2050 by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) as well as other demographic information from the Demographic Research Unit of the California Department of Finance (DOF), the U.S. Census Bureau, the updated Housing Elements from Santa Clara County, Sunnyvale and Mountain View, as well as feedback from the National Aeronautics and Space Administration (NASA). Projections 2050 is the most recent of ABAG's statistical compendia on demographic, economic, and land use changes in each local San Francisco Bay Area (Bay Area) jurisdiction through 2050. As such, the data from Projections 2050 are used in this analysis.

The purpose of this section is to characterize the potential for project-induced population, housing, and employment changes that may trigger physical environmental effects; these potential environmental impacts are also examined in other sections of Chapter 3, *Environmental Impacts*, and Chapter 4, *Environmental Impact Statement*, of this joint EIR/EIS.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to population and housing include a recommendation by Kate Spear from the American Federation of State, County, and Municipal Employees Local 3299 to offset project effects on the jobs-housing imbalance. The assessment of population and housing under CEQA addresses growth in employment resulting in population growth and an increase in demand for housing. The balance of jobs and housing is addressed in the Socioeconomics Technical Report.

3.13.2 Affected Environment/Environmental Setting

3.13.2.1 Population

Within the context of CEQA, population typically refers to residents within a particular jurisdiction. The Project Site is in unincorporated Santa Clara County with the city of Mountain View bordering NASA Ames Research Center (NASA ARC) to the north and southwest and the city of Sunnyvale

bordering it to the southeast and east. The 2025 population estimate for Santa Clara County is 1,908,826 people and population projection for 2040 is 1,949,323 people.[1] Table 3.13-1 presents population estimates and projections for 2025 through 2040 pertaining to Santa Clara County and the Bay Area (i.e., Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco Counties). The data indicate that rate of population growth in Santa Clara County from 2025 to 2040 (2.1 percent) will be less than the rate of growth in the Bay Area as a whole (about 5.3 percent).

Table 3.13-1. Population Trends in Santa Clara County and the Bay Area, 2025–2040

Region	2025	2040	Growth (2025–2040)
Santa Clara County	1,908,826	1,949,323	40,497 (2.1%)
Bay Area	7,597,391	7,998,150	400,7590 (5.3%)

Source: California Department of Finance. 2025. Demographic Research Unit. Report P-2A: Total Population Projections, California Counties, 2020-2070 (Baseline 2023 Population Projections; Vintage 2025 Release). Sacramento: California. April 2025.

3.13.2.2 Housing

This section provides details regarding housing data in Santa Clara County, and a larger area that would contribute to housing supply for the proposed project.

Housing Study Area

The Bay Area includes Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco Counties. As detailed in the Socioeconomics Technical Report (Appendix 4-1 of this joint EIR/EIS), Bay Area housing markets do not exclusively conform with geographic and jurisdictional boundaries; thus, as part of the Socioeconomics Technical Report, a housing impact area ("Housing Study Area") was identified to analyze housing-related impacts of the proposed project. The Housing Study Area was defined by examining residential patterns of commuters to the MTC *superdistrict* that contains the area covered by the 2002 programmatic EIS (PEIS). These were limited to only regions that experience a greater than 1 percent commute percentage to NASA ARC; these patterns were verified by the most recent commuting data (2016) and the Housing Study Area remains consistent with the 2002 PEIS. As shown in Figure 3.13-1, Housing Study Area, the MTC superdistricts that shape the Housing Study Area encapsulate all of Santa Clara County, extends into south and east Alameda County; to include Newark, Fremont, Union City, Pleasanton, Dublin, and Livermore, as well as into south and central San Mateo County; to include Half Moon Bay, Hillsborough, San Mateo, Foster City, Belmont, part of Burlingame, Atherton, Menlo Park, Redwood City, Woodside, East Palo Alto, Portola Valley, and San Carlos.

[1] California Department of Finance. 2025. Demographic Research Unit. Report P-2A: *Total Population Projections, California Counties, 2020-2070* (Baseline 2023 Population Projections; Vintage 2025 Release). Sacramento, California. April 2025.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

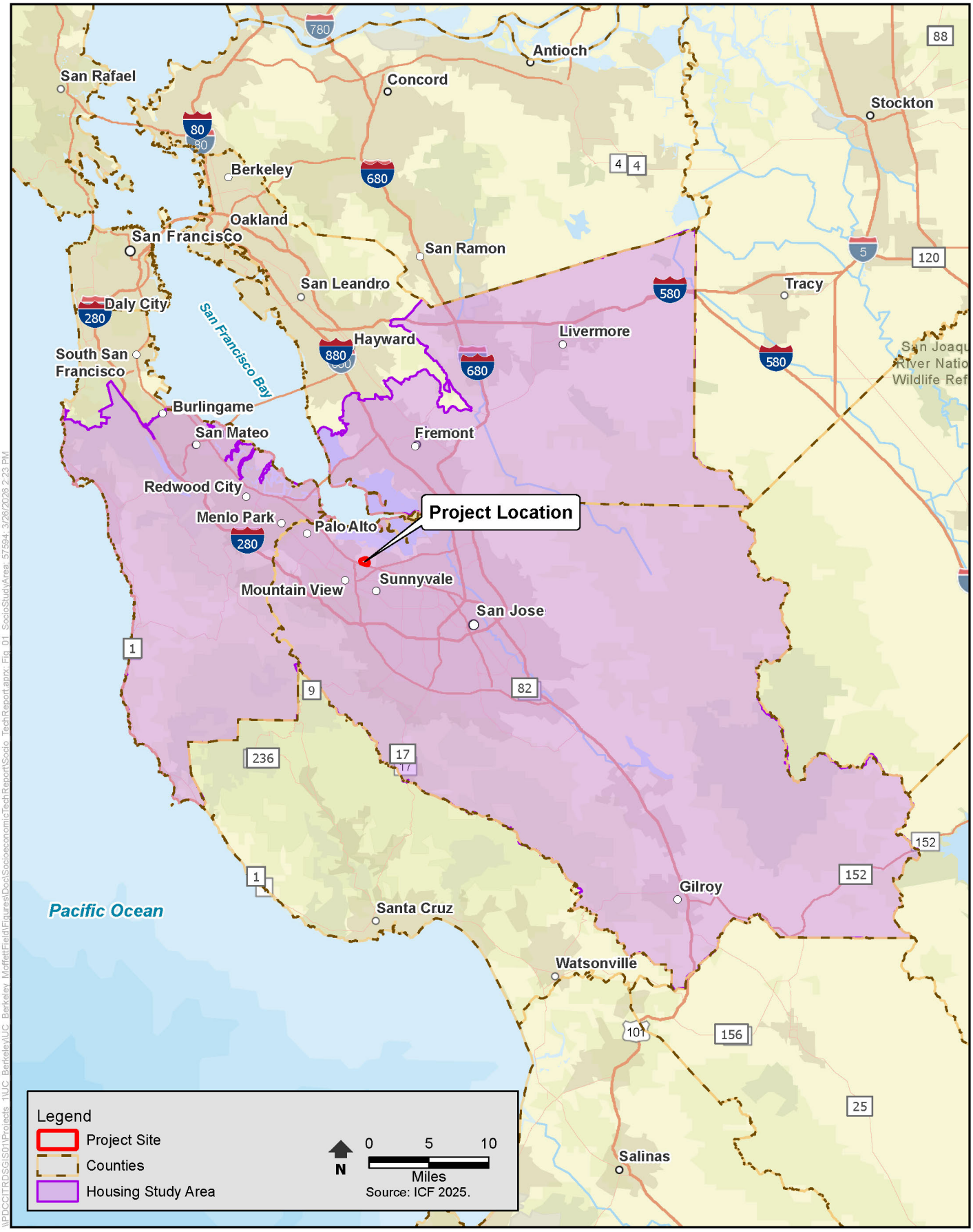


Figure 3.13-1
Housing Study Area
Berkeley Space Center at NASA Research Park

Housing Estimates and Data

According to DOF, the estimated number of households in Santa Clara County as of January 1, 2025, was 676,868, with an average household size of 2.78 persons. The housing stock of Santa Clara County in 2025 was made up of 50.9 percent single-family detached homes, 10.2 percent single-family attached homes, 7.1 percent multifamily homes with two to four units, and 29.3 percent multifamily homes with five or more units. In Santa Clara County, the housing type that experienced the most growth between 2020 and 2025 was multifamily housing with two to four units.[2] January 2025 housing estimates indicate 33,046 vacant housing units in Santa Clara County, representing a vacancy rate of 4.7 percent.[3] There are currently an estimated 47,796 vacant housing units in the larger Housing Study Area with a vacancy rate of 4.5 percent (refer to Table 5 in the Socioeconomics Technical Report in Appendix 4-1 of this joint EIR/EIS for additional vacancy comparisons). The updated Housing Element of the Santa Clara County General Plan (adopted February 2025) forecasts housing needs for 2023 through 2031 as part of the regional housing needs allocation process. ABAG allocated 3,125 additional units to the unincorporated county (between 2023 and 2031), a goal Santa Clara County is currently projected to exceed as it anticipates construction of 6,745 new units during this period.[4] The ABAG Final Regional Housing Needs Allocation (RHNA) Plan for the Bay Area from 2023 to 2031 identifies 11,966 additional units in the city of Sunnyvale, 11,135 additional units in the city of Mountain View, and a total of 129,577 additional units countywide by 2031 (including both cities and unincorporated areas).[5]

The cities of Mountain View and Sunnyvale are adjacent to the Project Site and may provide housing to NASA employees. According to Sunnyvale's 2015–2023 Housing Element, the city had a balanced employment–housing ratio of 1.0; and, while NASA was identified as a nearby major employer, it was not considered in their general plan, while the plan did consider other in-town employers, like Lockheed Martin and Apple.[6] In Sunnyvale's 2023–2031 Housing Element, the employee-housing ratio evolved to 1.31 (2018), and the city considered itself a "net importer" of workers. Based on Plan Bay Area forecasts, the City of Sunnyvale anticipates more job growth and is sensitive to providing new housing. "The City is conducting a comprehensive update to the Moffett Park Specific Plan, anticipated for adoption in early 2023, and recently updated the Lawrence Station Area Plan, both of which will substantially increase housing opportunities near these employment centers to improve Sunnyvale's job-housing balance."[7] According the 2023–2031 quantified objectives for new construction based on the RHNA, the City of Sunnyvale should construct 11,966 new housing units during this period.[8] Nearby, the City of Mountain View's updated Housing Element also considers

2 California Department of Finance. 2025. E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2025. Sacramento, CA. May 2025.

3 California Department of Finance. 2025. E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2025. Sacramento, CA. May 2025.

4 Santa Clara County. 2025. County of Santa Clara Housing Element Update, 2023–2031. Page 171, Table 3.1. Available: https://files.santaclaracounty.gov/exjcpb1361/2025-01/full-heu-adopted-1.28.25.pdf?VersionId=hmZZAShxgrc81qC0khFQQTUvsjYxlpb3. Accessed: May 28, 2025.

5 Association of Bay Area Governments. 2025. *Final Regional Housing Needs Allocation (RHNA) Plan: San Francisco Bay Area, 2023-2031*. Adopted December 2021, Updated June 2025

6 City of Sunnyvale, 2014. *2015-2023 Housing Element.* Available: https://www.hcd.ca.gov/housing-elements/docs/sunnyvale_5th_draft091214.pdf. Accessed: March 13, 2026.

7 City of Sunnyvale, 2023. *2023-2031 Housing Element*. Adopted December 12. https://www.sunnyvale.ca.gov/home/showpublisheddocument/4964/638923995037100000. Accessed: March 13, 2026.

8 Ibid.

housing growth related to the RHNA, with 11,135 housing units identified as needed between 2023 and 2031. Similar to Sunnyvale, the City of Mountain View is also classified as a net importer of workers, according to its Housing Element, "Mountain View has both a jobs-housing imbalance, reflected in a high ratio of jobs relative to housing units, and a jobs-housing mismatch, with housing costs that are not aligned with the incomes for a portion of the workers that work in Mountain View." The jobs-household ratio in Mountain View has changed from 1.68 in 2002 to 2.74 jobs per household in 2018.[9] Currently, the ratio of jobs to housing units in the cities of Mountain View and Sunnyvale, based on 2023 employment numbers and 2025 housing stock data, is 1.18 and 1.35, respectively.[10]

Table 3.13-2 presents historic and projected estimates for households in Santa Clara County, the Housing Study Area, and the Bay Area for 2025 and 2040. The number of households in the Santa Clara County is projected to grow from approximately 677,000 in 2025 to 956,300 in 2040, an increase of approximately 42.6 percent, or 2.8 percent on average per year. The number of households in the Housing Study Area is projected to grow from approximately 1,089,900 in 2025 to 1,435,800 in 2040, an increase of 31.7 percent or 2.12 percent per year. The number of households in the Bay Area is projected to grow from approximately 2,893,000 in 2025 to 3,771,500in 2040, an increase of approximately 28.3 percent, or 1.9 percent on average per year. Overall, the household growth rate in the Housing Study Area (31.7 percent) is a mix between Santa Clara County growth (42.6 percent) and that of the Bay Area as a whole (28.3 percent).

Table 3.13-2. Historic and Projected Households

Area	2015 [a]	2025 [b]	2040 [c]	Projected Growth (2025–2040)
Santa Clara County	623,000	677,000	965,300	288,324 (+42.6%)
Housing Study Area	967,000	1,089,900	1,435,800	345,900 (+31.7%)
Bay Area	2,677,000	2,893,000	3,711,500	818,544 (+28.3%)

Sources:

[a] Association of Bay Area Governments. 2021. Plan Bay Area 2050. Forecasting and Modeling Report. Updated January 21, 2021. Available: https://planbayarea.org/sites/default/files/documents/Plan_Bay_Area_2050_Forecasting_Modeling_Report_October_2021.pdf. Accessed: July 29, 2025.

[b] California Department of Finance. 2025. E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–-2025. Sacramento, CA., May 2025[c] 2025 and 2040 estimates have been projected in a secondary analysis using total population growth per 5-year period estimated by Association of Bay Area Governments2021. These estimates align with actual population estimates from California Department of Finance 2025.

[c] ABAG 2021 (the 2025 and 2040 estimates have been projected in a secondary analysis, using total population growth per 5-year period, as estimated by ABAG. These estimates align with actual population estimates from the California Department of Finance [2025b]).

[9] City of Mountain View. 2023. *6th Cycle Housing Element 2023-2031.* Adopted April 11. Available at: https://www.mountainview.gov/home/showpublisheddocument/6471/638290892983930000. Accessed: March 13, 2026.

[10] The cities of Mountain View and Sunnyvale had 48,914 and 87,854 employed persons in 2024, respectively (per U.S. Census Bureau. *"Selected Economic Characteristics" American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2024*. Available: https://data.census.gov/table/ACSDP5Y2024.DP03?q=DP03: Accessed March 41, 2026.). Mountain View and Sunnyvale had 40,534 and 64,268 housing units in 2025 respectively, (per California Department of Finance 2025. *E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2025*. May. Sacramento, CA).

Median home and rent prices vary across the Housing Study Area, with median list prices for homes in communities like Atherton reaching as high as $17 million.[11] The median home price in Santa Clara County in Quarter 1 of 2025 was approximately $1.6 million,[12] and average monthly rent in Santa Clara County was about $3,000 in 2023.[13] Homes in cities with high vacancy rates may be prohibitively expensive to NASA ARC employees and students, meaning the pool of housing units from which they are seeking housing may be smaller than indicated by the vacancy rate and they are thus more likely to introduce competition with other individuals seeking housing in the housing study area.

3.13.2.3 Employment

Employment growth is an important driver of housing demand, both regionally and locally. Unemployment rates have been low in the Bay Area. Recent data (as of July 2025) from the U.S. Bureau of Labor Statistics show that total unemployment in the San Francisco metro area increased from 4.0 percent in March 2024 to 4.1 percent in March 2025, while the unemployment rate in the San José metro area remained the same at 4.1 percent; the national unemployment rate increased from 3.9 percent to 4.2 percent during the same period. The number of construction industry jobs decreased in both metro areas from March 2024 to March 2025, with the number of construction jobs in San Francisco decreasing 4.0 percent and in San José decreasing 4.2 percent. Jobs in the professional and business services industry, the industry to which construction operations jobs likely belong, also decreased in both metro areas between March 2024 and March 2025, with San Francisco down 1.7 percent and San José down 2.1 percent.[14]

As indicated in Table 3.13-3, ABAG projections for 2023 to 2040 show a steady increase in jobs in the Bay Area (27.7 percent). The projections for Santa Clara County identify a higher job gain (46.1 percent) compared with the Bay Area region.

Table 3.13-3. Employment Trends in Santa Clara County and the Bay Area (2015–2040)

Area	2015 [a]	2023 (total employed persons) [b]	2040 (projected jobs) [c]	Projected Growth (2023–2040)
Santa Clara County	1,099,000	1,011,709	1,478,600	466,891 (+46.1%)
Bay Area [d]	4,005,000	3,951,918	5,047,229	1,095,311 (+27.7%)

Sources:

[a] 2015 actual and 2050 projected from Association of Bay Area Governments 2021.

[b] 2023 actual from U.S. Census Bureau 2023. American Community Survey, ACS 1-Year Estimates. Selected Economic Characteristics. Data Profiles, Table DP03. Available:

[11] Realtor.com. 2025. Home values in Atherton, CA. Available: https://www.realtor.com/realestateandhomes-search/Atherton_CA/overview. Accessed: September 10, 2025.

[12] National Association of Realtors. 2025. Median Home Prices and Mortgage Payments by County. Available: https://www.nar.realtor/research-and-statistics/housing-statistics/county-median-home-prices-and-monthly-mortgage-payment. Accessed: July 29, 2025.

[13] California Housing Partnership. 2023. Santa Clara County 2023 Affordable Housing Needs Report. Available: https://chpc.net/wp-content/uploads/2023/05/Santa-Clara-County_Housing-Report_2023.pdf. Accessed: July 29, 2025.

[14] U.S. Department of Labor, Bureau of Labor Statistics. 2025. San Francisco Area Economic Summary. Available: www.bls.gov/regions/west/summary/blssummary_sanfrancisco.pdf. Updated April 30, 2025. Accessed: June 2, 2025.

https://data.census.gov/table/ACSDP1Y2023.DP03?q=santa+clara+county+employment&g=050XX00US06001,06013,06041,06055,06069,06075,06081,06095,06097_310XX00US41940. Accessed: July 29, 2025.

[c] 2040 estimate has been projected in a secondary analysis using total employment growth per 5-year period estimated by Association of Bay Area Governments 2021.

[d] Includes Marin, Sonoma, Napa, Solano, Contra Costa, Alameda, Santa Clara, San Mateo, and San Francisco Counties.

During the past 65 years, the economy of Santa Clara County has transitioned from agriculture to the technology industry, with Silicon Valley serving as the headquarters for some of the world's largest companies.[15] Major employers in Santa Clara County include Alphabet Inc., Cisco Systems Inc., eBay Inc., Apple Inc., and NASA.[16]

In 2023, the median household income in Santa Clara County was $159,674, per-capita income was $77,018, and the median age was 37.9.[17], [18] The total labor force of the San José-Sunnyvale-Santa Clara Metropolitan Statistical Area in 2023 was estimated to be 1,093,078.[19]

Table 3.13-4 depicts the distribution of household incomes in both Santa Clara County and the Bay Area in 2023. As of 2023, approximately 51.5 percent of households in Santa Clara County earned more than $150,000 annually; about 43.7 percent of households in the greater Bay Area earned more than $150,000 in 2023.

Table 3.13-4. Estimated Household Income Distribution (2023)

2023 Income	Santa Clara County	San Francisco Bay Area
Less than $10,000	3.3%	4.0%
$10,000 to $14,999	1.7%	2.4%
$15,000 to $24,999	3.0%	3.8%
$25,000 to $34,999	3.2%	3.8%
$35,000 to $49,999	4.9%	6.0%
$50,000 to $74,999	8.6%	10.3%
$75,000 to $99,999	8.4%	9.6%
$100,000 to $149,999	15.2%	16.4%
$150,000 to $199,999	12.0%	12.1%
$200,000 or more	39.5%	31.6%
Median income (dollars)	$154,954	$130,449

[15] Silicon Valley Chamber of Commerce. 2025. *Our History*. Available: https://www.svcentralchamber.com/our-history/. Accessed: June 2, 2025.

[16] California Employment Development Department. 2024. *Major Employers in Santa Clara County*. Available: https://labormarketinfo.edd.ca.gov/majorer/countymajorer.asp?CountyCode=000085. Accessed: June 2, 2025.

[17] U.S. Census Bureau. 2024. *2019-2023 American Community Survey (5-year estimates). General Demographics. Total Population and Median Age. California, Counties, Incorporated Cities, and Census Designated Places*. December 12, 2024. Available: https://dof.ca.gov/reports/demographic-reports/american-community-survey/. Accessed: June 2, 2025.

[18] U.S. Census Bureau. 2024. *Quick Facts: Santa Clara County, California*. Available: https://www.census.gov/quickfacts/fact/table/santaclaracountycalifornia/INC110223. Accessed: June 2, 2025

[19] U.S. Census Bureau, U.S. Department of Commerce. 2023. *"Selected Economic Characteristics." American Community Survey, ACS 1-Year Estimates Data Profiles, Table DP03*. Available: https://data.census.gov/table/ACSDP1Y2023.DP03?q=santa+clara+county+employment&g=050XX00US06001,06013,06041,06055,06069,06075,06081,06095,06097_310XX00US41940. Accessed: July 29, 2025.

Sources: U.S. Census Bureau, U.S. Department of Commerce. n.d. "Income in the Past 12 Months (in 2023 Inflation-Adjusted Dollars)." American Community Survey, ACS 1-Year Estimates Subject Tables, Table S1901, Available: https://data.census.gov/table/ACSST1Y2023.S1901?q=Income+distribution&g=050XX00US06001,06013,06041,06055,06075,06081,06085,06095,06097&moe=false. Accessed on 29 Jul 2025

As discussed above, the ratio of jobs to housing units in the cities of Mountain View and Sunnyvale, based on 2024 employment numbers and 2025 housing stock data, is 1.21 and 1.37, respectively.[20] In comparison, the ratio of jobs to housing units in Santa Clara County, based on 2023 employment numbers and 2025 housing stock data, is 1.41, and the jobs to housing ratio in the Bay Area overall is 1.4.[21] The lower value for the cities of Mountain View and Sunnyvale suggests a relatively higher availability of housing near the Project Site compared to other areas in Santa Clara County and Bay Area as a whole.

A detailed breakdown of recent construction employment trends is included in the Socioeconomics Technical Report in Appendix 4-1 of this joint EIR/EIS. Table 3.13-5 presents Bureau of Labor Statistics employment estimates for San Benito and Santa Clara Counties[22] for various occupations in the construction industry from May 2022, 2023, and 2024 (note that data points from these regions and years reflect the latest and most applicable points of reference for regional demand and trends).[23, 24, 25] The data indicate that some construction occupations experienced a decrease in employment between 2022 and 2024, with the highest losses being in the sheet metal worker and structural iron/steel workers occupations. Some of these perceived losses may be attributed to the reclassification of some roles as other occupations. Overall, the construction occupations that would likely be demanded by the proposed project experienced growth of about 3.3 percent between 2022 and 2024, and can be expected to generally grow until 2027, when construction of the proposed project is expected to begin. As recently as January 2026, data indicate that construction jobs were

[20] The cities of Mountain View and Sunnyvale had 48,914 and 87,854 employed persons in 2024, respectively (per U.S. Census Bureau. *"Selected Economic Characteristics" American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP03, 2024*. Available: https://data.census.gov/table/ACSDP5Y2024.DP03?q=DP03: Accessed February 10, 2026.). Mountain View and Sunnyvale had 40,534 and 64,268 housing units in 2025 respectively, (per California Department of Finance 2025. *E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2021–2025*. May. Sacramento, CA.

[21] This rate (1.4) calculated as the number of employed residents in the Bay Area in 2024 (4,073,900) (Bay Area Council Economic Institute. 2024. *Bay Watch: A Weekly Look into the Bay Area Economy*. Available: https://www.bayareaeconomy.org/bay-watch/bay-watch-january-2024-jobs-report-and-benchmark-revision/. Accessed: August 29, 2025.) and the number of households in the Bay Area (2.9 million) (2020 data from Association of Bay Area Governments. 2025. Bay Area Census. Available: https://census.bayareametro.gov/households. Accessed: August 29, 2025, scaled to 2024 assuming a 0.5-1 percent annual growth rate). 4,074,900/2,900,000=1.40.

[22] While located further away, San Benito County is considered given that it are part of the San José-Sunnyvale-Santa Clara metropolitan statistical area. Construction workers could also come from SanMateo County.

[23] Bureau of Labor Statistics, U.S. Department of Labor. 2022. May 2022 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San Jose-Sunnyvale-Santa Clara, CA. Available: https://www.bls.gov/oes/2022/may/oes_41940.htm#47-0000. Accessed: July 30, 2025.

[24] Bureau of Labor Statistics, U.S. Department of Labor. 2023. May 2023 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San Jose-Sunnyvale-Santa Clara, CA. Available: https://www.bls.gov/oes/2023/may/oes_41940.htm#47-0000. Accessed: July 30, 2025.

[25] Bureau of Labor Statistics, U.S. Department of Labor. 2024. May 2024 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San Jose-Sunnyvale-Santa Clara, CA. Available: https://data.bls.gov/oes/#/area/0041940. Accessed: July 30, 2025.

among the highest-growing jobs month-to-month in San Benito and Santa Clara Counties, even as other occupations decreased.[26]

Table 3.13-5. Employment Growth in Construction Occupations (2022–2024)

San Benito and Santa Clara Counties (San José-Sunnyvale-Santa Clara MSA)	Year 2022	Year 2023	Year 2024	Percent Change (2022–2024)
Carpenters	5,230	4,230	4,800	-8.2%
Construction Laborers	4,570	4,470	4,100	-10.3%
Electricians	4,700	5,110	5,540	17.9%
Structural Iron and Steel Workers	250	300	210	-16.0%
Plumbers, Pipefitters, and Steamfitters	2,330	2,370	2,230	-4.3%
Operating Engineers and Other Construction Equipment Operators	1,180	1,090	1,350	14.4%
Cement Masons and Concrete Finishers	1,730	1,820	1,620	-6.4%
Roofers	1,290	1,390	1,670	29.5%
Sheet Metal Workers	1,120	1,030	860	-23.2%
Painters, Construction and Maintenance	2,310	2,040	2,600	12.6%
Supervisors of Construction and Extraction Workers	3,620	4,060	4,290	18.5%
Total	**28,330**	**27,910**	**29,270**	**3.3%**

Source:
Bureau of Labor Statistics, U.S. Department of Labor. 2022. May 2022 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San José-Sunnyvale-Santa Clara, CA. Available: https://www.bls.gov/oes/2022/may/oes_41940.htm#47-0000. Accessed: July 30, 2025.
Bureau of Labor Statistics, U.S. Department of Labor. 2023. May 2023 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San José-Sunnyvale-Santa Clara, CA. Available: https://www.bls.gov/oes/2023/may/oes_41940.htm#47-0000. Accessed: July 30, 2025.
Bureau of Labor Statistics, U.S. Department of Labor. 2024. May 2024 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates San José-Sunnyvale-Santa Clara, CA. Available: https://data.bls.gov/oes/#/area/0041940. Accessed: July 30, 2025.
Notes: MSA = metropolitan statistical area

The project's construction workforce is expected to be derived from the greater Bay Area and is not likely to induce workers to temporarily (during construction) move closer to the Project Site. A recent study indicates that more than 90 percent of construction workers in the Bay Area choose to drive their commute, with a one-way drive averaging about 90 minutes,[27] suggesting the existing construction labor force may choose to live outside of the urban center and commute in rather than temporarily relocate closer to their work.

3.13.2.4 Project Site

As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work.

[26] California Employment Development Department, Labor Market Information Division. 2025b. *San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA)*. Available: https://labormarketinfo.edd.ca.gov/file/lfmonth/sjos$pds.pdf. Accessed: April 1, 2026.

[27] Argue, E.J. 2024. *A Study of Commuting Conditions for Construction Professionals in the San Francisco Bay Area*.

3.13.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use the ABAG's Projections 2050 report, as well as ABAG's RHNA for Santa Clara County, for the analysis of population and housing associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to apply the standards identified in ABAG's Projections 2050 report, as well as ABAG's RHNA for Santa Clara County for the analysis of population and housing associated with the project.

Plans, policies, and regulations considered in the analysis of the project's potential impacts on population and housing are identified in the Socioeconomics Technical Report, included as Appendix 4-1 to this joint EIR/EIS. Refer to Appendix 4-1 for a summary of the applicable plans, policies, and regulations. A list of plans, policies, and regulations considered in the analysis is provided below.

- ABAG 2050 Projections: ABAG is responsible for forecasting changes in the Bay Area population and economy to help local governments prepare for an ever-changing environment. Plan Bay Area 2050 was adopted by the ABAG Executive Board and the MTC on October 21, 2021. The Plan Bay Area 2050 growth pattern shows the plan's projected household and job growth for the region looking out to 2050. Plan Bay Area 2050 is the region's long-range strategic plan. It focuses on the interrelated elements of housing, the economy, transportation, and the environment.
- RNHA for Santa Clara County: The RHNA involves a process established under California Housing Element Law that requires cities in California to plan for development of new housing units to meet their share of regional housing needs. ABAG conducts the RHNA process every 8 years, as required by State law. The heart of ABAG's work on the RHNA is developing the methodology for allocating a portion of the housing needs to each city, town, and county in the region.

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus

of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

The NADP includes planning principles that help guide the development throughout the entirety of NASA ARC. The planning principles include the provision of on-site housing. On-site housing will allow some students, educators, and researchers an opportunity to come to Silicon Valley who might not otherwise be able to because of the region's very high cost of living.

3.13.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on population and housing in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on socioeconomics in accordance with NEPA is discussed separately in Section 4.5.14, *Socioeconomics*, in Chapter 4, *Environmental Impact Statement*.

3.13.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on population and housing if it would result in any of the following conditions.

Would the project:

- Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?
- Result in cumulatively considerable contribution to a significant environmental impact with respect to population and housing?

3.13.6 Methods for Analysis

This analysis considers whether population and household growth would occur with the construction and operation of proposed project and whether this growth would be within the forecasts for or considered substantial with respect to remaining growth potential Santa Clara County and Housing Study Area (shown in Figure 3.13-1).[28] This analysis considers project employment growth, direct population growth from proposed housing, and growth related to housing demand by project employees and then compares that with the most currently available data points for forecast employment, population, and housing growth at project operation in 2040.

[28] Because construction and operation of the proposed project would have different direct and indirect growth potentials, the analysis compares proposed project growth in the county, with forecast growth, as well as total housing demand in the Housing Study Area.

For additional consideration, the analysis examines what percentage of housing demand growth from operation of the project would be expected in the adjacent cities of Sunnyvale and Mountain View and whether this growth would be within the household forecast growth for the respective cities based on the most current data. As noted in Section 3.13.2.2, *Housing*, ABAG's Final RHNA Allocations for the Bay Area from 2023–2031 identifies 11,966 additional units in Sunnyvale and 11,135 additional units in Mountain View. Fehr and Peers calculated the origin of project workers based on the results of the MTC Travel Demand Model as a location-based percentage. Based on this data, approximately 38 percent of Project Site workers would be expected to begin their commutes from Santa Clara County (exclusive of the cities of Palo Alto, Sunnyvale and Mountain View), 10 percent from Sunnyvale, and 8 percent from Mountain View, with the remaining commute originating from other counties and cities throughout the housing impact area.[29]

This section uses ABAG projections to analyze the impacts of the proposed project. The primary sources of information used in preparing the analysis of population and housing were the 2002 PEIS and the sources identified within the Socioeconomics Technical Report (Appendix 4-1 of this joint EIR/EIS), which include the U.S. Census Bureau, U.S. Bureau of Labor Statistics, and California Employment Development Department data along with feedback from NASA. The Socioeconomics Technical Report presents the anticipated socioeconomic effects, including housing needs, associated with the proposed project. Issues related to both increased demand for housing and the regional housing needs allocation are addressed. The Socioeconomics Technical Report is part of a range of analyses that will be used in the decision-making and entitlement process for the proposed project.

The Project Site is one of the locations considered for redevelopment in the 2002 PEIS and within the scope of the analysis set forth in that document and the Record of Decision. The preferred alternative analyzed in the 2002 PEIS (i.e., Mitigated Alternative 5) anticipated 7,088 employees, 1,560 residents (which could be students/faculty), and 250 conference guests in the NRP.[30]

NASA previously allocated approximately 1.4 million square feet of permitted uses for the proposed project, consisting of approximately 500,000 square feet of office/high density R&D uses; 514,700 square feet of educational uses; 250,000 square feet of conference center uses; and 144,200 square feet of retail/support uses.[31] Based on the above, the proposed project includes the types of land uses at the Project Site consistent with the types of land uses that were evaluated in the 2002 PEIS. However, the intensity of development for the CEQA Proposed Project (i.e., approximately 2.3 million square feet) is generally greater than the development intensity NASA allocated for the proposed project (i.e., approximately 1.4 million square feet).

As of 2025, the remaining developable area programmed in the NADP for NASA ARC that has not been allocated towards any current projects include approximately 2.7 million square feet consisting of 340,345 square feet for historic district space; 21,945 square feet for educational uses; 114,710 square feet for Hangar One uses; 1,843,000 square feet for housing; 12,000 square feet for

[29] Although not calculated in the analysis due to their diffused origins, other notable MTC commute patterns include 15 percent from San Mateo County, 9 percent Alameda County, and 7 percent from San Francisco, 5 percent from Palo Alto, 5 percent from the Moffet Field Area 2 percent from outside of the Bay Area and 1 percent from Contra Costa County. Sam Tabibnia (Fehr and Peers), email message to Jessica Viramontes. January 30, 2026.

[30] Overall development of the NADP under Mitigated Alternative 5 would result in 1,930 residential units, 4,909 residents, and 7,088 employees.

[31] NASA. 2025. *Berkeley Space Center at NASA Research Park—NASA ARC Buildout Assumptions.* December 16.

public uses; 320,981 square feet of office/high density R&D uses; 12,000 square feet of retail; and 71,000 square feet of technical/low density office/R&D uses. Based on the above, the amount proposed Student/Faculty Housing under the proposed project is less than the remaining unallocated space for housing programmed in the NADP for NASA ARC. However, the amount of proposed employment-generating land uses (i.e., approximately 2 million square feet of Research and Office Uses) is greater than the employment-generating development intensity NASA allocated for the proposed project (i.e., approximately 500,000 square feet of office/high density R&D, 514,700 square feet of educational uses, and 144,200 square feet of retail/support uses) and is greater than the remaining unallocated space for office/high density R&D programmed in the NADP for NASA ARC.

The County of Santa Clara's previous 2009–2014 Housing Element addressed the projected growth in the county's housing needs and identified the future development of housing at NASA ARC as a way to secure housing credits.[32] Although the current Santa Clara County Housing Element (2021-2031), excludes the NASA NADP and campus from its site inventory list, it provides for increased residential development within the unincorporated County across a relatively broad geography,[33] including potential housing development that exceeds the regional forecast included for Santa Clara County in regional plans (Plan Bay Area 2040) and the County's transportation model.[34] Therefore, while this analysis considers the proposed project against forecast growth from the current baseline through 2040, much of the scoped project was previously approved and thus is already accounted in Santa Clara County and ABAG projections.

Numbers in the footnote formulas in this section may not add up exactly because of rounding. For ease of reference, decimal places are not shown. The totals described in the text are correct, when accounting for rounding. The numbers in this section are also consistent with the numbers provided in the Socioeconomics Technical Report.

3.13.7 Impacts Not Evaluated in Detail

Displacement of Existing People or Housing

The proposed project would not directly displace housing because there is no existing operational housing on the Project Site. The Limits of Work are currently developed with 18 one- to three-story buildings that total approximately 185,600 square feet, along with surface parking lots, roadways, and utility infrastructure. The existing buildings are mostly vacant; many were formerly used as ancillary buildings that supported Navy operations (e.g., offices, food service, a gas station, pool, recreation center, and lodging). The other existing buildings within the Limits of Work comprise industrial, storage, and utility facilities. As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) live

[32] Santa Clara County. 2010. *Santa Clara County Housing Element Update: 2009-2014*. Adopted by the Board of Supervisors August 24 and Certified by the California State Department of Housing and Community Development November 10. Available at: https://stgenpln.blob.core.windows.net/document/Housing_2009_Final.pdf. Accessed: December 23, 2025.

[33] Santa Clara County. 2025. *County of Santa Clara Housing Element Update, 2023–2031.* Available: https://files.santaclaracounty.gov/exjcpb1361/2025-01/full-heu-adopted-1.28.25.pdf?VersionId=hmZZAShxgrc81qC0khFQQTUvsjYxlpb3. Accessed: May 28, 2025.

[34] While the Sunnyvale Housing Element previously acknowledged the NASA campus as a major regional employer, neither the current City of Sunnyvale or the Mountain View housing elements directly identify jobs from NASA in their updates. Refer to Section 3.13.2.2, *Housing*, for discussion of these housing elements.

within the Limits of Work. Therefore, the proposed project would not directly displace people or housing by demolishing housing units.

The displacement of housing units or residents is an appropriate subject for study under CEQA to the extent that a project would displace housing onsite and result in a need to construct replacement housing elsewhere. By itself, the possibility of a project resulting in economic displacement of existing residents represents a social and economic issue that would not be considered an impact on the physical environment, unless there is substantial evidence that economic displacement would result in reasonably foreseeable (i.e., not speculative) indirect physical effects that would require the construction of new housing. For the proposed project, determining how economic effects influence future housing development in particular locations throughout a region is too speculative to predict or evaluate. Therefore, for purposes of CEQA, the proposed project would not result in the displacement of substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere.

3.13.8 Impacts and Mitigation Measures

Impact CEQA-POP-1: Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes or businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Construction

Construction of the CEQA Proposed Project, including demolition, grading, utility work, excavation, landscaping, building and parking garage construction, and the application of architectural coatings, would temporarily increase construction employment. Given the relatively common nature and scale of the construction associated with the CEQA Proposed Project compared to proposed development projects throughout the San Francisco Bay Area (Bay Area), the demand for construction employment would most likely be met with the existing and future labor market in the Bay Area. The size of the construction workforce would vary during the different phases of construction, with the annual average number of workers being 457. It is anticipated that construction workers would be hired from Bay Area sources. Although some workers would

commute from outside the Bay Area because of the temporary nature of construction, these workers would not be expected to relocate permanently. Therefore, impacts related to indirect population growth during construction of the CEQA Proposed Project would be less than significant.

Operation

The CEQA Proposed Project would have impacts on both the supply and demand for housing. New student/faculty housing units developed by the project would increase the supply of housing, whereas the project's non-residential components would increase employment and student population compared to existing conditions and, therefore, would result in new demand for additional housing within commuting distance for workers (i.e., the "Housing Study Area"). Table 3.13-6 includes a summary regarding employment as well as housing supply and demand induced by the CEQA Proposed Project. The numbers provided in the table are described and analyzed in more detail below the table. As shown in this table, the CEQA Proposed Project would result in added housing supply and housing demand.

- **Added Housing Supply**: The CEQA Proposed Project would increase the housing supply with the construction of approximately 145 Student/Faculty Housing units at the Project Site. With an assumed 2.5 occupants per unit, the proposed Student/Faculty Housing would support an estimated 363 persons (inclusive of students, faculty, and their families/household members).
- **Added Housing Demand**: New employees and students added by the CEQA Proposed Project would result in a new residential population that would need housing somewhere within the Housing Study Area. Under the CEQA Proposed Project, up to approximately 5,955 net new employees and 177 new students would work and study at NASA ARC. This analysis conservatively assumes that none of these employees or students would be existing residents of the Housing Study Area. As a result, all of these employees and students would need housing in the Housing Study Area; 145 employees and students are expected to find short-term, on-site housing in the proposed 145 Student/Faculty Housing units,[35] with the remaining 5,987 employees and students requiring housing elsewhere in the Housing Study Area. These employees and students would generate a demand of 4,276 new households, based on an average of 1.4 workers per worker household.[36]

[35] To account for anticipated partners/spouses and children of employees and students addressed elsewhere in this joint EIR/EIS, this analysis (along with the Socioeconomics Technical Report in Appendix 4-1) assumes that of the average 2.5 occupants per unit, an estimated 1 occupant would be a student or faculty member and up to 1.5 occupants could be their family/household members.

[36] Households are calculated by dividing the proposed project's estimated number of employees and students by the ratio of employed residents per household for the Bay Area in 2025. This rate (1.4) calculated as the number of employed residents in the Bay Area in 2024 (4,073,900) (Bay Area Council Economic Institute. 2024. Bay Watch: A Weekly Look into the Bay Area Economy. Available: https://www.bayareaeconomy.org/bay-watch/bay-watch-january-2024-jobs-report-and-benchmark-revision/. Accessed August 29, 2025.) and the number of households in the Bay Area (2.9 million) (2020 data from Association of Bay Area Governments. 2025. Bay Area Census. Available: https://census.bayareametro.gov/households. Accessed August 29, 2025, scaled to 2024 assuming a 0.5-1% annual growth rate). 4,074,900/2,900,000=1.40.

Table 3.13-6. Employee, Student/Faculty Housing Population, and Housing Growth under the CEQA Proposed Project

Considered Factor	Net New Value Generated by CEQA Proposed Project	Forecast Growth (by Region)	% of Forecast Growth by CEQA Proposed Project
Employees	5,955 [a]	479,254 (Santa Clara County) [b]	1.24%
Students	177	-	-
Student/Faculty Housing Units	145 [c]	288,324 (Santa Clara County) [d]	0.05%
Total Housing Demand	4,276[e]	345,900 (Housing Study Area) [d]	1.24%

Notes:

[a] The CEQA Proposed Project includes a total of 5,997 employees/faculty minus 42 existing employees = net new value of 5,955 employees.

[b] From Table 3.13-4 (Table 6 in Appendix 4-1 of this joint EIR/EIS); time range is 2023–2040.

[c] Based on occupancy rate of 2.5 persons/unit, the proposed Student/Faculty Housing provides for 363 students and faculty.

[d] "Households" from Table 3.13-3 (Table 4 in Appendix 4-1 of this joint EIR/EIS); time range is 2025–2040.

[e] The CEQA Proposed Project includes a net increase of 5,955 employees and 177 students that would work and study at NASA ARC. 6,132 (total)-145 (faculty and students housed onsite), leaves a remaining 5, 987employees and students that require housing. Considering a housing demand rate of 1.4 employees (+students) per household results in 4,276 households.

Employment Growth

While the total square footage of employment-generating uses under the CEQA Proposed Project is greater than that approved under the 2002 PEIS for the NRP this employment growth is within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. Operation of the CEQA Proposed Project would generate up to 5,955 net new jobs when accounting for the 42 existing employees who would no longer work at the Project Site with the proposed project. In addition, the CEQA Proposed Project would add 145 Student/Faculty Housing units in NASA ARC in Santa Clara County. As shown in Table 3.13-6, ABAG estimates that the number of jobs in Santa Clara County will grow by approximately 479,254 between 2023 and 2040, a forecast that likely includes NASA ARC, given that, as noted above, the County of Santa Clara's 2009–2014 Housing Element addressed the ARC projected growth in the county's housing needs and identified the future development of housing at NASA ARC. Ultimately, the number of employees generated by the CEQA Proposed Project in Santa Clara County would equal approximately 1.24 percent of the anticipated employment growth from 2023 to 2040, which is within employment growth forecasts. Therefore, the number of employees generated by the CEQA Proposed Project would not exceed ABAG employment projections.

Direct Population Growth from Proposed Student/Faculty Housing

The CEQA Proposed Project would provide approximately 130,000 square feet for Student/Faculty Housing (i.e., approximately 145 units). As noted in Section 3.13.6, *Methods for Analysis,* this volume of housing at NASA ARC was approved under the 2002 PEIS. Based on ABAG projections, households in Santa Clara County are expected to increase by 288,324 over the next 15 years. As shown in Table 3.13-6, the addition of new residents in the 145 Student/Faculty Housing units due to the CEQA Proposed Project would represent approximately 0.05 percent of the anticipated population growth between 2025 and 2040.

Total Study Area Housing Demand and Growth

While the total square footage of employment-generating uses under the CEQA Proposed Project exceeds that approved under the 2002 PEIS and according to NASA, the employment growth and related housing demand would still be within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. When accounting for Student/Faculty Housing provided by the CEQA Proposed Project, it would result in a demand for 4,276 households in the Housing Study Area due to proposed employment. As discussed above, this conservatively assumes that none of these employees or students would be existing residents of the Housing Study Area. According to current California Department of Finance household counts and ABAG projections, the number of households in the Housing Study Area is expected to grow by 345,900 between 2025 and 2040. ABAG projections are considered the benchmark for foreseeable housing growth (i.e., built housing) in each area. As shown in Table 3.13-2, ABAG projects that between 2025 and 2040 the number of households will grow by 28.3 percent in the Bay Area, 31.7 percent in the Housing Study Area, and 42.6 percent in Santa Clara County. The CEQA Proposed Project household demand growth represents 124 percent of the forecast growth in the Housing Study Area, which is within forecast housing supply growth. When further considering commute patterns for the Project Site and housing demand impacts on the nearby cities of Sunnyvale and Mountain View, it is expected that of the total identified housing demand an estimated 428 housing units would be in Sunnyvale and 342 would be in Mountain View.[37] While not forecasting through 2040 (as with the Housing Study Area comparison), based on the projected 2023–2031 RHNA housing supply allocations for Sunnyvale and Mountain View, the CEQA Proposed Project would generate a demand of 3.6 percent and 3. percent of the future housing in these cities, respectively, which is also within the forecast housing supply growth.[38]

Conclusion

The CEQA Proposed Project is an infill development within an already developed area of NASA ARC. While the employment growth under the CEQA Proposed Project is greater than previously approved for the site, the growth overall is accounted for in Santa Clara County's Housing Element and regional ABAG growth plans. The CEQA Proposed Project would increase the supply of housing in Santa Clara County by providing new short-term faculty/student housing. However, non-residential project components would increase employment and result in the demand for additional housing in the Housing Study Area for workers. The housing demand in the Housing Study Area that would result from the CEQA Proposed Project can be accommodated, and the anticipated housing demand in the region is considered in regional growth plans. The Project Site is an urban infill site and served by existing infrastructure and services. The CEQA Proposed Project would not induce a substantial level of unplanned population growth, either directly or indirectly, resulting in less-than-significant impacts. The Central Utility Plant Option, the Water Reuse Facility Option, and other utility options would not alter the project's employment or residential populations or housing demand.

Mitigation Measures

No mitigation is required for this impact.

[37] Per the methodology described under Section 3.13.6, it is anticipated that 10 percent and 8 percent of commutes to the Project Site would originate in Sunnyvale and Mountain View, respectively.

[38] As detailed under *Housing Estimates and Data* under Section 3.13.2.2, above, the RHNA identifies 11,966 additional units in the city of Sunnyvale, 11,135 additional units in the city of Mountain View, included in their respective housing elements.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Construction

Construction of the CEQA Proposed Project No Student/Faculty Housing Variant is anticipated to require the same demand from the construction labor force as under the CEQA Proposed Project. Therefore, impacts related to population growth during construction of the Variant would be the same as under the CEQA Proposed Project and would be less than significant.

Operation

As with the CEQA Proposed Project, operation of the CEQA Proposed Project with the Variant would have impacts on demand for housing. Unlike the CEQA Proposed Project, the Variant would not provide new Student/Faculty Housing units to increase the supply of housing. The Variant would result in an increase in employment and student populations compared to the CEQA Proposed Project. It would also result in a greater increase in employment and student populations compared to existing employment conditions and, therefore, would result in new and greater demand for additional housing within commuting distance for workers (i.e., the Housing Study Area). Table 3.13-7 includes a summary of employment as well as housing supply and demand induced by the CEQA Proposed Project with the Variant.

- **Added Housing Demand**: New employees and students) added by the CEQA Proposed Project with the Variant would result in a new residential population that would need housing somewhere in the Housing Study Area. Under the CEQA Proposed Project with the Variant up to approximately 6,331 net new employees and 187 net new students would work and study at NASA ARC. This analysis conservatively assumes that none of these employees or students would be existing residents of the Housing Study Area. These employees and students would generate a demand of 4,656 new households, based on an average of 1.4 workers per worker household.

Table 3.13-7. Employee, Student/Faculty Housing Population, and Housing Growth under the CEQA Proposed Project with the Variant

Considered Factor	Net New Value Generated by CEQA Proposed Project with Variant	Forecast Growth (by Region)	% of Forecast Growth by CEQA Proposed Project with Variant
Employees	6,331[a]	479,254 (Santa Clara County) [b]	1.32%
Students	187	-	
Student/Faculty Housing Units	0	288,324 (Santa Clara County) [c]	0.00%
Total Housing Demand	4,656 [d]	345,900 (Housing Study Area) [c]	1.35%

Notes:

[a] The CEQA Proposed Project with the Variant includes a total of 6,373 employees/faculty new employees minus existing 42 employees = net new value of 6,331 employees.

[b] From Table 3.13-4 (Table 6 in Appendix 4-1 of this joint EIR/EIS); time range is 2023–2040.

[c] "Households" from Table 3.13-3 (Table 4 in Appendix 4-1 of this joint EIR/EIS); time range is 2025–2040.

[d] The CEQA Proposed Project with the Variant includes a net new total of6,331 employees and 187 students that would work and study at NASA ARC and require housing. Considering a housing demand rate of 1.4 employees (+students) per household results in 4,656 households.

Employment Growth

The Variant would include Research and Office uses instead of Student/Faculty Housing in Subarea 6. While the total square footage of employment-generating uses under the CEQA Proposed Project with the Variant is greater than that approved under the 2002 PEIS and currently undeveloped for the NRP according to NASA, this employment growth is still within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis*). As shown in Table 3.13-7, operation of the CEQA Proposed Project with the Variant would generate up to 6,331 net new jobs. This is greater than the 5,955 net new employees under the CEQA Proposed Project and represents 1.32 percent of the anticipated employment growth in Santa Clara County from 2023 to 2040, which is within employment growth forecasts. Therefore, the number of employees generated by the Variant would not exceed ABAG projections.

Direct Population Growth from Proposed Student/Faculty Housing

The CEQA Proposed Project with the Variant does not provide any housing and therefore would not contribute directly to the anticipated population growth within Santa Clara County between 2025 and 2040.

Total Study Area Housing Demand and Growth

While the total square footage of employment-generating uses under the CEQA Proposed Project exceeds that approved under the 2002 PEIS and currently undeveloped for according to NASA, the employment growth and related housing demand would still be within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. As shown in Table 3.13-7, the CEQA Proposed Project with the Variant would result in a demand for 4,656 households in the Housing Study Area due to proposed employment and students, which represents 1.35 percent of the forecast growth in the Housing Study Area. While this is a greater demand on housing than required under the CEQA Proposed Project (which represents a demand of 1.24 percent of planned growth), it is still with forecast housing supply growth. When further considering commute patterns for the Project Site and housing demand impacts on the nearby cities of Sunnyvale and Mountain View, it is expected that of the total identified housing demand 466 housing units would be in Sunnyvale and 372 would be in Mountain View.[39] It is anticipated that that the majority of CEQA Proposed Project employees already live in the San Francisco Bay Area and that the net number of new employees that would choose to relocate to Mountain View would not be substantial. While not forecasting through 2040 (as with the Housing Study Area comparison), based on the projected 2023–2031 RHNA housing supply allocations for Sunnyvale and Mountain View, the CEQA Proposed Project with the Variant would generate a demand of 3.9 percent and 3.3 percent of housing growth in these cities, respectively, which would still be within forecast housing supply growth. [40]

Conclusion

The CEQA Proposed Project with the Variant, like the CEQA Proposed Project, is an infill development within an already developed area of NASA ARC. While employment growth under the CEQA Proposed Project with the Variant, is greater than previously approved for the site, and higher

[39] Per the methodology described under Section 3.13.6, it is anticipated that 10 percent and 8 percent of commutes to the Project Site originate in Sunnyvale and Mountain View respectively.

[40] As detailed under *Housing Estimates and Data* under Section 3.13.2.2, above, the RHNA identifies 11,966 additional units in the city of Sunnyvale, 11,135 additional units in the city of Mountain View, included in their respective housing elements.

than that under the CEQA Proposed Project, the growth overall is accounted for in Santa Clara County's Housing Element and regional ABAG growth plans. The Variant would result in a greater demand for additional housing (beyond the CEQA Proposed Project) in the Housing Study Area for employees and students. However, similar to the CEQA Proposed Project, the housing demand in the Housing Study Area can be accommodated, and the anticipated housing demand in the region has been anticipated in regional growth plans. The CEQA Proposed Project with the Variant would not induce a substantial level of unplanned population growth, either directly or indirectly, resulting in less-than-significant impacts.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Construction

Construction of the CEQA Reduced Density Alternative is anticipated to require a reduced demand from the construction labor force than under the CEQA Proposed Project, given that there would be 920,000 fewer square feet constructed. Therefore, impacts related to population growth during construction of the CEQA Reduced Density Alternative would be less than that under the CEQA Proposed Project and would be less than significant.

Operation

Like the CEQA Proposed Project, the CEQA Reduced Density Alternative would have impacts on both the supply and demand for housing. Table 3.13-8 includes a summary regarding employment as well as housing supply and demand induced by the CEQA Reduced Density Alternative. As shown in this table, the CEQA Reduced Density Alternative would result in added housing supply and housing demand that is greater than existing conditions, but less than the CEQA Proposed Project.

- **Added Housing Supply**: The CEQA Reduced Density Alternative would increase the housing supply with the construction of 145 Student/Faculty Housing units at the Project Site. With an assumed 2.5 occupants per unit, the proposed housing would support an estimated 363 persons (inclusive of students, faculty, and their families/household members).
- **Added Housing Demand**: New employees and students added by the CEQA Reduced Density Alternative would result in a new residential population that would need housing somewhere in the Housing Study Area. Under the CEQA Reduced Density Alternative up to approximately 3,289 net new employees and 95 net new students would work and study at NASA ARC. This analysis conservatively assumes that none of these employees or students would be existing residents of the Housing Study Area. As a result, all of these employees and students would need housing in the Housing Study Area; 145 employees and students are expected to find short-term on-site housing in the 145 proposed Student/Faculty Housing units, [41] with the remaining total of 3,239 employees and students requiring housing elsewhere in the Housing Study Area. These

[41] To account for anticipated partners/spouses and children of employees and students addressed elsewhere in this joint EIR/EIS, this analysis (along with the Socioeconomics Technical Report in Appendix 4-1) assumes that of the 2.5 occupants per unit, an estimated 1 occupant would be a student or faculty member and up to 1.5 occupants could be their family/household members.

employees and students would generate a demand of 2,314 new households, based on an average of 1.4 workers per worker household.

Table 3.13-8. Employee, Student/Faculty Housing Population, and Housing Growth under the CEQA Reduced Density Alternative

Considered Factor	Net New Value Generated by CEQA Reduced Density Alternative	Forecast Growth (by Region)	% of Forecast Growth by CEQA Reduced Density Alternative
Employees	3,289 [a]	479,254(Santa Clara County) [b]	0.78%
Students	95	-	-
Student/Faculty Housing Units	145 [c]	288,324 (Santa Clara County) [d]	0.05%
Total Household Demand	2,314 [e]	345,900 (Housing Study Area) [d]	0.67%

Notes:

[a] The CEQA Reduced Density Alternative includes a total of 3,331 employees/faculty new employees minus 42 existing employees = net new value of 3,289 employees.

[b] From Table 3.13-4 (Table 6 in Appendix 4-1 of this joint EIR/EIS); time range is 2023–2040.

[c] Based on occupancy rate of 2.5 persons/unit, the housing provides for 363 students and faculty.

[d] "Households" from Table 3.13-3 (Table 4 in Appendix 4-1 of this joint EIR/EIS); time range is 2025–2040.

[e] The CEQA Reduced Density Alternative includes a net increase of 3,289 employees and 95 students that would work and study at NASA ARC. 3,384 (total)-145 (faculty and students house on-site), leaves a remaining 3,239 employees that require housing. Considering a housing demand rate of 1.4 employees (+students) per household results in 2,314 households.

Employment Growth

While the total square footage of employment-generating uses under the CEQA Reduced Density Alternative is within the scale of that approved under the 2002 PEIS for the NRP and exceeds the total currently undeveloped according to NASA, this employment growth is still within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. As shown in Table 3.13-8, operation of the CEQA Reduced Density Alternative would generate up to 3,289 net new jobs. This is less than the 5,955 net new employees under the CEQA Proposed Project and represents 0.68 percent of the anticipated employment growth in Santa Clara County from 2023 to 2040, which is within employment growth forecasts. Therefore, the number of employees generated by CEQA Reduced Density Alternative would not exceed ABAG projections.

Direct Population Growth from Proposed Student/Faculty Housing

Like the CEQA Proposed Project, the CEQA Reduced Density Alternative would provide approximately 130,000 square feet for Student/Faculty Housing (i.e., approximately 145 units). As noted in Section 3.13.6, *Methods for Analysis,* this volume of housing at NASA ARC was approved under the 2002 PEIS. Also, as shown in Table 3.13-8, the addition of new residents in the 145 Student/Faculty Housing units provided by the CEQA Reduced Density Alternative represents approximately 0.05 percent of the anticipated population growth in Santa Clara County between 2025 and 2040. This is the same as under the CEQA Proposed Project.

Total Study Area Housing Demand and Growth

While the total square footage of employment-generating uses under the CEQA Reduced Density Alternative is within the scale of that approved under the 2002 PEIS for the NRP and exceeds the

total currently undeveloped according to NASA, the employment growth and related housing demand would still be within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. As shown in Table 3.13-8, the CEQA Reduced Density Alternative would result in a demand for 2,314 households in the Housing Study Area due to proposed employment and students, which represents 0.67 percent of the forecast growth in the Housing Study Area. This is a smaller demand on housing than that generated under the CEQA Proposed Project (which represents a demand of 1.24 percent of planned growth) and is within forecast housing supply growth. When further considering commute patterns for the Project Site and housing demand impacts on the nearby cities of Sunnyvale and Mountain View, it is expected that of the total identified housing demand an estimated 231 housing units would be in Sunnyvale and 185 would be in Mountain View. [42] While not forecasting through 2040 (as with the Housing Study Area comparison), based on the projected 2023–2031 RHNA housing supply allocations for Sunnyvale and Mountain View, the CEQA Reduced Density Alternative would generate a demand of 1.9 percent and 1.7 percent of housing growth in these cities, respectively, which would still be within forecast housing supply growth. [43]

Conclusion

The CEQA Reduced Density Alternative, as with the CEQA Proposed Project, is an infill development within an already developed area of NASA ARC. While the employment growth under the CEQA Reduced Density Alternative is greater than the remaining undeveloped square footage approved for the site, and less than that under the CEQA Proposed Project, the growth overall is accounted for in Santa Clara County's Housing Element and regional ABAG growth plans. The CEQA Reduced Density Alternative would result in a reduced demand for additional housing (compared with the CEQA Proposed Project) in the Housing Study Area for employees and students, and as such the housing demand in the Housing Study Area can be accommodated, having been anticipated in regional growth plans. The CEQA Reduced Density Alternative would not induce a substantial level of unplanned population growth, either directly or indirectly, resulting in less-than-significant impacts.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Construction

Construction of the CEQA Reduced Density Alternative with the Variant is anticipated to require a reduced demand from the construction labor force than the CEQA Proposed Project, given that there would be approximately 920,000 fewer square feet constructed. Therefore, impacts related to population growth during construction of the Variant would be less than under the CEQA Proposed Project and would be less than significant.

[42] Per the methodology described under Section 3.13.6, it is anticipated that 10 percent and 8 percent of commutes to the Project Site originate in Sunnyvale and Mountain View respectively.

[43] As detailed under *Housing Estimates and Data* under Section 3.13.2.2, above, the RHNA identifies 11,966 additional units in the city of Sunnyvale, 11,135 additional units in the city of Mountain View, included in their respective housing elements.

Operation

As with the CEQA Proposed Project, operation of the CEQA Reduced Density Alternative with the Variant would have impacts on demand for housing. Unlike the CEQA Proposed Project, the Variant would not provide new Student/Faculty Housing units to increase the supply of housing. Relative to the CEQA Proposed Project, the Variant would result in a smaller increase in employment and student populations. Overall, however, it would increase employment and student populations compared to existing employment conditions and, therefore, would result in new and greater demand for additional housing within commuting distance for workers (i.e., the Housing Study Area). Table 3.13-9 includes a summary regarding employment as well as housing supply and demand induced by the CEQA Reduced Density Alternative with the Variant.

- **Added Housing Demand**: New employees and students added by the CEQA Reduced Density Alternative with the Variant would result in a new residential population that would need housing somewhere in the Housing Study Area. Under the CEQA Reduced Density Alternative with the Variant up to approximately 3,665 net new employees and 105 net new students would work and study at NASA ARC. This analysis conservatively assumes that none of these employers or students would be existing residents of the Housing Study Area. The number of jobs is translated into an estimate of worker housing demand, based on an average of 1.4 workers per worker household, of 2,693 new households.

Table 3.13-9. Employee, Student/Faculty Housing Population, and Housing Growth under the CEQA Reduced Density Alternative with the Variant

Considered Factor	Net New Value Generated by CEQA Reduced Density Alternative with Variant	Forecast Growth (by Region)	% of Forecast Growth by CEQA Reduced Density Alternative with Variant
Employees	3,665 [a]	479,254466,891(Santa Clara County) [b]	0.76%
Students	105	-	-
Student/Faculty Housing Units	0	288,324 (Santa Clara County) [c]	0.00%
Housing Demand	2,693 [d]	345,900 (Housing Study Area) [c]	0.78%

Notes:

[a] The CEQA Reduced Density Alternative with the Variant includes a total of 3,707 employees/faculty minus existing 42 employees = net new value of 3,665 employees.

[b] From Table 3.13-4 (Table 6 in Appendix 4-1 of this joint EIR/EIS); time range is 2023–2040.

[c] "Households" from Table 3.13-3 (Table 4 in Appendix 4-1 of this joint EIR/EIS); time range is 2025–2040.

[d] The CEQA Reduced Density Alternative with the Variant includes a net new total of 3,665employees and 105 students that would work and study at NASA ARC and require housing. Considering a housing demand rate of 1.4 employees (+students) per household results in 2,693 households.

Employment Growth

While the total square footage of employment-generating uses under the CEQA Reduced Density Alternative with the Variant is within the scale of that approved under the 2002 PEIS for the NRP and exceeds the total currently undeveloped according to NASA, this employment growth is still within planning forecasts for Santa Clara County (refer to Section 3.13.6, *Methods for Analysis).* Operation of the CEQA Reduced Density Alternative with the Variant would generate up to 3,665 net

new jobs (see Table 3.13-9). This is less than the 5,955 net new employees under the CEQA Proposed Project and represents 0.76 percent of the anticipated employment growth in Santa Clara County from 2023 to 2040, which is within employment growth forecasts. Therefore, the number of employees generated by the CEQA Reduced Density Alternative with the Variant would not exceed ABAG projections.

Direct Population Growth from Proposed Student/Faculty Housing

The CEQA Reduced Density Alternative with the Variant does not provide any housing and therefore would not contribute directly to the anticipated population growth within Santa Clara County between 2025 and 2040.

Total Study Area Housing Demand and Growth

While the total square footage of employment-generating uses under the CEQA Reduced Density Alternative with the Variant is within the scale of that approved under the 2002 PEIS for the NRP and exceeds the total currently undeveloped according to NASA, the employment growth and related housing demand would still be within planning forecasts for the Santa Clara County (refer to Section 3.13.6, *Methods for Analysis)*. As shown in Table 3.13-9, the CEQA Reduced Density Alternative with the Variant would result in a demand for 2,693 households in the Housing Study Area due to proposed employment and students, which represents 0.78 percent of the forecast growth in the Housing Study Area. This is a smaller demand on housing than under the CEQA Proposed Project, (which represents a demand of 1.24 percent of planned growth) and is within forecast housing supply growth. When further considering commute patterns for the Project Site and housing demand impacts on the nearby cities of Sunnyvale and Mountain View, it is expected that of the total identified housing demand 269 housing units would be in Sunnyvale and 215 would be in Mountain View.[44] While not forecasting through 2040 (as with the Housing Study Area comparison), based on the projected 2023–2031 RHNA housing supply allocations for Sunnyvale and Mountain View, the CEQA Reduced Density Alternative with the Variant would generate a demand of 2.2 percent and 1.9 percent of housing growth in these cities, respectively, which would still be within forecast housing supply growth.[45]

Conclusion

The CEQA Reduced Density Alternative with the Variant, like the CEQA Proposed Project, is an infill development within an already developed area of NASA ARC. While the employment growth under the CEQA Reduced Density Alternative with Variant is greater than the remaining undeveloped square footage approved for the site, and less than under the CEQA Proposed Project, the overall growth is accounted for in Santa Clara County's Housing Element and regional ABAG growth plans. The Variant would result in a demand for additional housing in the Housing Study Area for employees and students (but less than required under the CEQA Proposed Project), but similar to the CEQA Proposed Project, the housing demand in the Housing Study Area can be accommodated and the anticipated housing demand in the region has been anticipated in regional growth plans.

[44] Per the methodology described under Section 3.13.6, it is anticipated that 10 percent and 8 percent of commutes to the Project Site originate in Sunnyvale and Mountain View respectively.

[45] As detailed under *Housing Estimates and Data* under Section 3.13.2.2, above, the RHNA identifies 11,966 additional units in the city of Sunnyvale, 11,135 additional units in the city of Mountain View, included in their respective housing elements.

The CEQA Reduced Density Alternative with the Variant would not induce a substantial level of unplanned population growth, either directly or indirectly, resulting in less-than-significant impacts.

Mitigation Measures

No mitigation is required for this impact.

3.13.9 Cumulative Impacts

Cumulative impacts are addressed only for those thresholds that would result in a project-related impact. If the proposed project would result in no impact with respect to a particular threshold, it would not contribute to a cumulative impact. As discussed in Section 3.13.7, *Impacts Not Evaluated in Detail*, the proposed project would result in no impact related to the displacement of existing people or housing, and no cumulative analysis is required. The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.13.8, *Impacts and Mitigation Measures*, above.

The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The geographic context for cumulative population and housing impacts includes past, present, and reasonably foreseeable development projects in NASA ARC and Santa Clara County, as well as the Housing Study Area.

Impact CEQA-C-POP-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to population and housing? (No Significant Cumulative Impact)

Cumulative projects are distributed throughout NASA ARC, Santa Clara County, and the Housing Study Area. The potential population and housing growth provided for in the Housing Study Area would conform to the ABAG RHNA Plan and would conform to each applicable zoning code and General Plan; thus, it is anticipated that the cumulative projects would constitute planned growth. In addition, Mountain View and other surrounding cities and counties implement general plans and regulations adopted to guide development and growth within their respective jurisdictions. Therefore, any additional projects beyond the scope of local or regional projects would not alter the less-than-significant cumulative impact determination.

Housing demand, beyond that accommodated by the proposed project, from employment associated with the proposed project could be accommodated in the Housing Study Area. Such demand is accounted for in the ABAG growth projections for the region. Similarly, because population growth and employment growth under the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would be within the scope of development anticipated by Santa Clara County's Housing Element along with ABAG forecasts, the proposed project would not make a cumulatively considerable contribution with respect to significant cumulative impacts related to population or housing. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to population and housing.

3.14 Public Services

3.14.1 Introduction

This section evaluates the potential impacts on public services that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to public services include a recommendation by the County of Santa Clara (County) to clarify if the project would ask the County Sheriff to provide law enforcement services for the project. This issue is addressed under Impact CEQA-PS-1.

3.14.2 Affected Environment/Environmental Setting

3.14.2.1 Fire

Fire protection services at the National Aeronautics and Space Administration Ames Research Center (NASA ARC) are provided as a contract service via the NASA/ARC Fire Services Contract. The NASA Ames Fire Department provides all fire prevention, aircraft rescue, and emergency medical and emergency preparedness services. The Office of Protective Services at NASA ARC oversees the fire prevention program, including inspections, code enforcement, and coordination with the Fire Marshal. The NASA Ames Fire Department has one fire engine and one aerial ladder (quint) for structural fire responses and one fire engine used for reserve status; all three vehicles are 5 to 10 years beyond their end of service life.[1]

The NASA Ames Fire Department responds to approximately 200 emergency medical calls per year with an average response time of 5 minutes. The NASA Ames Fire Department provides Basic Life Support emergency medical services and does not transport patients. Advanced Life Support emergency medical services and transport are provided by ambulance services through the County of Santa Clara Emergency Medical Services Agency. The average response time for the Santa Clara County Ambulance is 20 minutes to all areas of NASA ARC.

3.14.2.2 Police

Law enforcement at NASA ARC is provided as a contract service via the NASA/ARC Protective Services Contract. The Protective Services covered by the contract include physical security operations, information security, communications security, emergency management, Protective Services communication center operations, facility security assessment, identity credential access

[1] A quint (i.e., quintuple) fire truck has both an engine and ladder and provides a pump, water tank, fire hose, aerial device (i.e., the ladder), and ground ladders (California Fire Prevention Organization 2023).

management, identity management and personnel security, vehicle management, and NASA Protective Services training.[2]

The NASA ARC Office of Protective Services does not have a standard service ratio of officers to population or acreage; the approximate service population for NASA Protective Services amounts to 14,500 people.[3] In 2024, there were 61 law enforcement emergency calls and 318 law enforcement calls for service. The average response time for the NASA ARC Office of Protective Services is 5 minutes.

3.14.2.3 Schools

There are currently no K–12 schools at NASA ARC. The proposed project would include Student/Faculty Housing on-site, which would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). The proposed housing would prioritize the UC students and faculty affiliated with the proposed project, as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Use Lease requirements. Due to the nature of the proposed project, it is not anticipated that the proposed project would generate school-aged children. Nonetheless, this analysis conservatively assumes that school-aged children could be generated as a result of the proposed Student/Faculty Housing. It is anticipated that children of the residents at the proposed Student/Faculty Housing units would attend public schools in the Mountain View Whisman School District (MVWSD) for elementary and middle school, and the Mountain View–Los Altos Union High School District (MVLA) for high school.

Mountain View Whisman School District

MVWSD has an enrollment of 4,644 students across 9 elementary schools and 2 middle schools.[4] The nearest public schools to the Project Site are approximately 1 mile from the Project Site and are: Crittenden Middle School at 1701 Rock Street; Theuerkauf Elementary School at 1625 San Luis Avenue; Stevenson Elementary School at 750 San Pierre Way; and Jose Antonio Vargas Elementary at 220 N Whisman Road. Additional MVWSD schools are located throughout Mountain View, and all schools are currently under capacity.

Table 3.14-1 shows enrollment data in MVWSD between the 2020–21 academic school year and the 2024–25 academic school year. Overall enrollment has decreased over the last 5 years. Table 3.14-2 shows that elementary and middle schools in MVWSD are all currently under capacity, although Stevensen and Mistral elementaries are above 90 percent.

[2] NASA Communications. 2023. *NASA Adds Ames Requirement to Protective Services Contract*. September 26, 2023. Available: https://www.nasa.gov/news-release/nasa-adds-ames-requirements-to-protective-services-contract/. Accessed : March 16, 2026.

[3] Lynn Bala, NASA. Desire for Information: Berkeley Space Center at NASA Research Park—NASA ARC Protective Services Questionnaire. May 7, 2025.

[4] California Department of Education. 2025. *Enrollment Multi-Year Summary by Grade, Mountain View Whisman Report*. Available: https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=4369591&agglevel=district&year=2024-25. Accessed: March 16, 2026.

Table 3.14-1. Mountain View Whisman School District Enrollment Data

Academic Year	Total Enrollment
2024–2025	4,644
2023–2024	4,591
2022–2023	4,522
2021–2022	4,522
2020–2021	4,753

Source: California Department of Education. 2025. *Enrollment Multi-Year Summary by Grade, Mountain View Whisman Report*. Available: https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=4369591&agglevel=district&year=2024-25. Accessed: March 16, 2026.

Table 3.14-2. Mountain View Whisman School District Capacity

School	Capacity	Existing Enrollment	Percent of Real Capacity
Elementary Schools (K-5 Grades)			
Bubb	432	315	73%
Castro	312	251	80%
Imai (Huff)	488	388	80%
Landels	504	399	79%
Monta Loma	460	317	69%
Theuerkauf	672	314	47%
Vargas	492	364	74%
Mistral	392	360	92%
Stevensen	460	457	99%
Total	***4,212***	***3,165***	***75%***
Middle Schools (6-8th Grades)			
Crittenden	1,008	620	62%
Graham	1,176	855	73%
Total	***2,184***	***1,475***	***68%***

Source: Tara Vikjord, Chief Human Relations Officer, Mountain View Whisman School District. Personal Communication. June 18, 2025.

Mountain View–Los Altos Union High School District

MVLA serves the communities of Mountain View, Los Altos, and Los Altos Hills. MVLA has two high school campuses, a continuation high school, and an Adult Education Campus. In addition to the high school and adult campuses, MVLA also has small alternative settings, including the Freestyle Academy for Arts and Technology and the Middle College program housed at the Krauss Center for Innovation.[5] The Adult Education Campus is the closest to the Project Site, less than a mile to the southwest. Mountain View High School at 3535 Truman Avenue is about 3 miles south of the Project Site. Los Altos High School at 201 Almond Avenue is about 2 miles southwest of the Project Site. Alta Vista High School (Continuation) at 1325 Bryant Avenue is about 3.25 miles south of the Project Site.

[5] MVLA High School District. 2026. *General Information*. Available: https://www.mvla.net/About-MVLA/General-Information/index.html. Accessed : March 16, 2026.

The smaller MVLA programs are located throughout Mountain View, Los Altos, and Los Altos Hills, further from the Project Site.

Enrollment at Mountain View High School exceeds target capacity by 186 students, and MVLA is working with its teachers to negotiate contracted classroom size, prep period classroom availability, and resource spaces in order to accommodate higher-than-ideal enrollment at the school facility. Furthermore, enrollment across MVLA's comprehensive high schools exceeds total capacity at those schools.[6] Currently, the student to teacher ratio is about 20:1.

Table 3.14-3 shows enrollment data in MVLA between the 2020–21 academic school year and the 2024–25 academic school year. Overall, enrollment has decreased over the last 5 years.

Table 3.14-3. Mountain View–Los Altos Union School District Enrollment Data

Academic Year	Total Enrollment
2024–2025	4,459
2023–2024	4,406
2022–2023	4,448
2021–2022	4,539
2020–2021	4,563

Source: California Department of Education. 2026. *Enrollment Multi-Year Summary by Grade, Mountain View Los-Altos Union High Report*. Available: https://dq.cde.ca.gov/dataquest/dqcensus/EnrGrdYears.aspx?cds=4369609&agglevel=District&year=2025-26&ro=y. Accessed: April 20, 2026.

3.14.2.4 Libraries

City of Mountain View

Mountain View Public Library is located at 585 Franklin Street, approximately 1.7 miles southwest of the Project Site, and is open daily. The library is 60,000 square feet, houses 214,000 print volumes and 20,000 audio physical materials, and has 64 employees. The library has a dedicated Children's Room and a space reserved for teen use to provide services specific to those groups. The building also features the History Center, which houses a collection that is historically significant to Mountain View and Santa Clara County. Library materials and services are offered outside the facility through outreach to homebound customers and a Mobile Library Vehicle that makes stops at schools, corporate locations, senior facilities, and other community locations.[7]

3.14.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For

[6] Mike Mathiesen, Associate Superintendent – Business, Mountain View Los Altos High School District. Personal Communication. June 2, 2025.

[7] City of Mountain View Public Library. 2026. *About*. Available: https://library.mountainview.gov/visit/about. Accessed: March 16, 2026.

the purposes of CEQA, UC Berkeley has elected to use guidance from the Mountain View Whisman School District and the Mountain View-Los Altos Union High School District for the analysis of public services (schools) associated with the project.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use guidance from the Mountain View Whisman School District and the Mountain View-Los Altos Union High School District for the analysis of public services (schools) associated with the project.

This section summarizes plans, policies, and regulations considered in the analysis.

3.14.3.1 Federal Regulations

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) is the long-term master plan for NASA's federal campus at Moffett Field published in 2002. The NADP details transformation of the original 500-acre campus of ARC and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation was led by the establishment of the NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission. As discussed in the *Berkeley Space Center at NASA Research Park Socioeconomics Technical Report* (Appendix 4-1 of this joint EIR/EIS), according to the 2002 programmatic EIS (PEIS), the NRP (where the Project Site is located) is under exclusive federal jurisdiction, meaning the federal government alone has legislative jurisdiction and provides law enforcement and public safety services.

The NADP includes planning principles that help guide development throughout the entirety of NASA ARC. The planning principles include creation of a community, which calls for the provision of critical public safety services and other services, usually provided by municipal governments, to support all operations at NASA ARC. These mandatory public safety services include police emergency response, law enforcement, structural fire response, fire marshal services, medical emergency response, and hazardous materials first response. In addition, under this principle, the NADP calls for the provision of other community services, including childcare, housing, retail goods, meeting spaces, overnight accommodations, and recreational opportunities.

3.14.3.2 State Regulations

California Health and Safety Code

The California Health and Safety Code is the codification of general statutory law covering the subject areas of health and safety in the state of California. It is one of the 29 California Codes and was originally signed into law by the governor of California on April 7, 1939.

The Health and Safety Code is the section of California statutory law that addresses health, safety, health care, environmental law, and narcotics. This section of the code defines most of the crimes related to drugs and controlled substances, including possession, sale, transportation, trafficking and manufacturing.

California Building Standards Code

The California Building Standards Code is the building code for California, and Title 24 of the CCR. It is maintained by the California Building Standards Commission, which is granted the authority to oversee processes related to the California building codes by California Building Standards Law. The California building codes under Title 24 are based on several criteria: standards adopted by states, based on national model codes; national model codes adapted to meet California conditions; and standards passed by the California legislature that address concerns specific to California.

California Fire Code

The California Fire Code is a set of regulations addressing fire safety and fire prevention in buildings and structures throughout the state. The 2022 California Fire Code is based on the 2021 International Fire Code, with amendments and additions.

California Code of Regulations, Title 19 (Public Safety)

The California Code of Regulations, Title 19, administered by the Office of the State Fire Marshal, establishes minimum standards for the prevention of fire and for the protection of life and property against fire, explosion, and panic, and serves as a primary basis for state-required fire and life safety inspections.

CCR, Title 5 (Education Code)

Title 5 regulations are the working understanding of Education Code mandates established by the California legislature. The Education Code supersedes Title 5 regulations. The California Community College's Board of Governors is responsible for approving Title 5 regulations, and the California Community Colleges Chancellor's Office is responsible for implementation and compliance.

3.14.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on public services in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on public services, in accordance with the National Environmental Policy Act (NEPA), is provided separately in Section 4.5.12, *Public Services*, in Chapter 4, *Environmental Impact Statement.*

3.14.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on public services if it would result in any of the following conditions.

Would the project:

- Result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services?
- Result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services?
- Result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services?
- Result in substantial adverse physical impacts associated with the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for the provision of parks?
- Result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives for libraries?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to public services?

3.14.6 Methods for Analysis

Evaluation of potential impacts on police and fire facilities, schools, parks, and libraries is based on a review of documents pertaining to the proposed project and field review of the project study area and surroundings. Impacts on school services that would result from the proposed project were identified by comparing existing service capacity and facilities against future demand associated with the project.

To assess the potential environmental impacts of the proposed project related to public services within the vicinity of the Project Site, a questionnaire to solicit information was sent to nine contacts with knowledge of such services. Letters with project details, along with a map of the project location and the conceptual site plans, were sent out on April 30, 2025, and May 13, 2025. The letters solicited responses from each contact, including questions, comments, or concerns regarding the proposed project. The letters were sent to contacts at NASA, the City of Mountain View, and the City of Sunnyvale.

At the time of preparation of this joint EIR/EIS, responses were received from the contacts listed below. No responses were received from the City of Sunnyvale.

- City of Mountain View Public Library (May 19 and December 4, 2025)
- City of Mountain View Parks (June 3 and December 4, 2025)
- NASA Ames Fire Department (May 7 and December 17, 2025)
- NASA Ames Fire Marshal (December 17, 2025)
- NASA Protective Services (May 7 and December 17, 2025)
- NASA Parks (May 7, 2025)
- Mountain View Los Altos High School District (June 2, 2025)
- Mountain View Whisman School District (June 18 and December 2, 2025)

3.14.7 Impacts and Mitigation Measures

Impact CEQA-PS-1: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Police services are currently provided by NASA ARC through a contract service through the NASA ARC Protective Services Contract, and are expected to continue to be served by NASA ARC's Office of Protective Services while the Project Site remains under exclusive federal jurisdiction. According to the State CEQA Guidelines, CEQA is not concerned with police response levels themselves but with the physical impacts on the environment that are caused by potential construction or modification of facilities in order to maintain acceptable police service ratios and response levels.

The CEQA Proposed Project would result in approximately 200 Short-Term Lodging guests, approximately 363 Student/Faculty Housing residents, and up to 6,132 net new employees and

students on-site. The increase in employment and short-term residents and guests associated with the CEQA Proposed Project would represent a more intense use of the Project Site when compared to existing conditions. As discussed in Section 3.14.2.2, *Police*, NASA Protective Services does not have a standard service ratio of officers to population or acreage; the approximate service population for NASA Protective Services is 14,500, representing the people at NASA ARC. The average response time for the NASA ARC Protective Services is 5 minutes. NASA Protective Services stated that, to maintain current service levels, two new 24/7 law enforcement officer positions would be required.[8] To accommodate the two new officers, the current NASA Protective Services facility would require additional office space, weapon storage space, lockers, and law enforcement vehicles; however, NASA Protective Services confirmed that the existing facility could be modified internally to accommodate the additional space required without having to expand the facility itself.[9]

Given the developed nature of NASA ARC and the minor nature of these modifications that would be accommodated within the existing NASA Protective Services facility, the alteration of the existing police facilities is not expected to result in adverse physical impacts or significant environmental impacts. As stated in the NADP, NASA has its own building permit process and architectural review board. The ARC has adopted the Uniform Building Code and California Green Building Code; all developments at ARC will need to comply with these codes to receive NASA-issued permits prior to construction.[10] In addition, any future modifications would be subject to federal environmental regulations. Based on the available information it is anticipated that, given the minor nature of the interior modifications required to the existing NASA Protective Services facility, the modifications would most likely not result in significant impacts.

The CEQA Proposed Project could also indirectly result in some population growth in the city of Mountain View and city of Sunnyvale if employees choose to relocate to be closer to the Project Site. However, the increase in demand for police services resulting from relocated employees is not expected to be substantial enough to require new or altered police facilities. In addition, the Project Proponent would also compensate NASA for services provided to the proposed project through the Institutional Shared Pool (ISP). Currently, NASA charges its tenants for services provided on demand and ISP costs for common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, infrastructure maintenance and repairs, and basic environmental oversight), along with additional demand services above the common levels of service. The Project Proponent would comply with the requirements to pay ISP on an annual basis. Payment of the ISP fees would address any increased demand on protective services as a result of the CEQA Proposed Project. Therefore, because the CEQA Proposed Project would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, the impact would be less than significant.

8 Lynn Bala, NASA. Desire for Information: Space Center at NASA Research Park—NASA ARC Protective Services Questionnaire. May 7, 2025.

9 Lynn Bala, NASA. Desire for Information: Berkeley Space Center at NASA Research Park-NASA ARC Protective Services Questionnaire. December 17, 2025.

10 NASA. December 2002. NASA Ames Development Plan. Page 19.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Proposed Project No Student/Faculty Housing Variant, there would be no Student/Faculty Housing on the Project Site; however, there would be an increase in the amount of Research and Office Uses. Consequently, under the Variant, there would be a decrease in the number of Student/Faculty Housing residents but an increase in the number of employees on the Project Site. Impacts from the Short-Term Lodging guests, employees, and students on-site under the Variant would result in impacts similar to those of the CEQA Proposed Project. Therefore, and for the same reasons as stated above for the CEQA Proposed Project, the Variant would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would result in the addition of up to 3,426 new employees and students and up to 563 Short-Term Lodging guests and residents. Even with fewer new employees and students than the CEQA Proposed Project, NASA Protective Services confirmed that two new 24/7 law enforcement officer positions would be required to maintain current service levels under the CEQA Reduced Density Alternative. Therefore, impacts would be the same as the CEQA Proposed Project and would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant, there would be no increase in demand for police services from residents of Student/Faculty Housing on the Project Site. However, impacts from the 200 Short-Term Lodging guests, additional employees, and students on-site under the Variant would be the same as under the CEQA Reduced Density Alternative. Therefore, impacts would be the same as the CEQA Reduced Density Alternative and the Variant would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-PS-2: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Fire protection and emergency medical services would be provided by NASA Ames Fire Department and the County of Santa Clara Emergency Medical Services Agency. The CEQA Proposed Project would be constructed within an urban setting. According to the State CEQA Guidelines, CEQA is not concerned with fire and emergency medical response levels themselves but with the physical impacts on the environment that are caused by potential construction or modification of facilities in order to maintain acceptable service ratios and response levels.

The CEQA Proposed Project would increase the demand for fire and emergency medical services, potentially reducing service levels below existing conditions due to the anticipated increase in employees, Short-Term Lodging guests, and on-site residents. The proposed buildings would have a maximum height of approximately 80 feet, which is comparable to some of the existing tallest buildings at ARC.[11] The NASA Ames Fire Department has identified the need for a larger ladder truck to ensure safe and effective emergency response to both existing and proposed buildings. This need is based on the limitations of the current apparatus and the age of the equipment. The required reach of an aerial apparatus determined not by the height of a structure, but by the highest occupiable floor level as defined in the Fire Code. Existing buildings at NASA ARC and the proposed buildings that would be constructed as part of the proposed project have occupiable heights that cannot be reached with the existing 75-foot aerial ladder truck. To provide effective rooftop and upper-floor access for emergency operations, NASA intends to procure a minimum 100-foot aerial

[11] The highest occupied floor level would be at a height equal to or less than 75 feet; in accordance with Section 202 of the California Building Code, the proposed project would not be considered a high-rise structure.

apparatus, which would be funded by the ISP fees.[12] The existing NASA Ames Fire Station cannot accommodate the size and operational needs of a larger aerial ladder truck due to limited bay dimensions and the outdated design of the existing facility, and would need to be modified (i.e., the bay would need to be expanded) to accommodate a larger aerial ladder truck. However, according to NASA, NASA's procurement of the larger aerial ladder truck and/or modification of the existing NASA Ames Fire Station is not a precondition for occupancy of the proposed project.

According to NASA, future modifications to the existing NASA Ames Fire Station would occur at the site of the existing facility. NASA anticipates that the expanded bay would likely be at the same location but potentially taller, wider, and/or longer than the existing bay. The expanded bay would be attached to the existing facility, similar to the existing bay. The footprint of the existing facility, including foundations, adjacent paved driveways, and parking areas, is not anticipated to increase substantially as a result of the expanded bay. In addition, because the existing site of the fire station has already been disturbed and built upon, the expanded bay would most likely not require the clearing of natural habitats or open space. Existing infrastructure such as roads, utilities, and drainage systems would support the changes without major disruption. Construction of the expanded bay would be consistent with the current Uniform Building Code and the California Green Building Code. Furthermore, as stated in the NADP, NASA has its own building permit process and architectural review board. All developments at NASA ARC, including construction of the expanded bay, would need to comply with these codes in order to receive NASA-issued permits prior to construction.[13]

Under the CEQA Proposed Project, the Project Proponent would compensate NASA for fire services provided to the proposed project through payment of ISP fees, the mechanism by which NASA charges its tenants for costs for common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), along with additional demand services above the common levels of service. Payment of the ISP fees would address any increased demand on fire services or the need for new or expanded fire service equipment (e.g., a larger aerial ladder truck) and fire facilities as a result of the CEQA Proposed Project.

Although payment of the ISP fees by the CEQA Proposed Project would contribute towards new fire service equipment and the construction or expansion of fire facilities, any future construction or expansion of fire facilities proposed by NASA would not be a direct result of the CEQA Proposed Project, and would be required to undergo a separate environmental review process. Therefore, with payment of ISP fees, impacts on fire and emergency services as a result of the CEQA Proposed Project would be compensated. In conclusion, because the CEQA Proposed Project would not result in substantial adverse physical impacts associated with the need for new or physically altered fire facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, the impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

[12] Lynn Bala, and Jerry Clark, NASA. Desire for Information: Berkeley Space Center at NASA Research Park—NASA Ames Fire Department Questionnaire. December 17, 2025.

[13] NASA. December 2002. *NASA Ames Development Plan*. Page 19.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Proposed Project with the Variant, impacts would be the same as the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, impacts would be the same as the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative with the Variant, impacts would be the same as the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-PS-3: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Less than Significant*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Less than Significant*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

School services for the Project Site are provided by the Mountain View Whisman School District (MVWSD) and the Mountain View–Los Altos Union High School District (MVLA), which serve more than 9,000 students across 9 elementary schools, 2 middle schools, 2 comprehensive high schools, and an alternative high school. The CEQA Proposed Project would include Student/Faculty Housing on-site, which would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). The proposed project is not a housing development project. The proposed housing would prioritize the UC students and faculty affiliated with the proposed project, as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Use Lease requirements. Due to the nature of the proposed project, it is not anticipated that the proposed project would generate school-aged children. Nonetheless, this analysis conservatively assumes that school-aged children could be generated as a result of the Student/Faculty Housing. The CEQA Proposed Project includes Student/Faculty Housing, which could directly increase demand for school services, as shown in Table 3.14-5. The CEQA Proposed Project would generate approximately 18 new elementary and middle school students and seven new high school students. Student generation rates are based on multifamily, market rate housing units; these types of units are not proposed as part of the project. However, this is the closest generation rate for the proposed Student/Faculty Housing units. Thus, the anticipated number of students would be less than what is estimated in Table 3.14-5.

Table 3.14-4. CEQA Proposed Project Student Generation

School District	Student Generation Rate (Multifamily, Market Rate)	Proposed Student/Faculty Housing Units	New K-12 Students
Mountain View Whisman School District (K–5)	0.085	145	12.3
Mountain View Whisman School District (6–8)	0.039	145	5.7
Mountain View–Los Altos Union High School District (9–12)	0.047	145	6.8
Total	—	—	***24.8***[a]

Note:

a. Calculations: 12 elementary students= (145 x 0.085); 6 middle school students= (145 x 0.039); and 7 high school students= (145 x 0.047).

As shown in Table 3.14-2, elementary and middle schools in MVWSD are all currently under capacity, although Stevensen and Mistral elementaries are above 90 percent. Any elementary or middle school aged children associated with the additional employees from buildout of the CEQA Proposed Project who would reside on the Project Site would likely attend various schools throughout the MVWSD and would not affect one individual school. In addition, the 18 new elementary and middle school students would represent an approximately 1.0 percent increase in enrollment in MVWSD. Therefore, MVWSD could accommodate the potential increase of 18 elementary and middle school students from the CEQA Proposed Project.

In MVLA, Los Altos High School is under capacity by 199 students, but Mountain View High School exceeds capacity by 186 students. In addition, enrollment across MVLA's comprehensive high

schools exceeds total capacity at those schools.[14] As shown in Table 3.14-5, the CEQA Proposed Project could generate approximately seven new high-school students in MVLA. Therefore, it is possible that this increase in enrollment would exceed school capacity levels if any of the students enroll in Mountain View High School. Even if all seven new students attend Mountain View High School, this would represent an approximately 1.0 percent increase in enrollment at Mountain View High School. However, high-school aged students would likely attend various schools throughout MVLA and would not affect one individual school. Conservatively, the CEQA Proposed Project could result in a less than 1.0 percent increase in enrollment at Mountain View High School. In addition, the increase in employment opportunities could result in indirect impacts on schools because a small number of employees (with school-aged children) may choose to move to Mountain View to be closer to their work location. The CEQA Proposed Project would result in up to 6,132 net new employees and university students on-site. It is anticipated that that the majority of CEQA Proposed Project employees already live in the San Francisco Bay Area and that the net number of new employees that would choose to relocate to Mountain View would not be substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Furthermore, it would not be easy for families of employees who do not reside in the city of Mountain View to send their children to school at MVWSD or MVLA schools; they would be required to request an inter-district transfer from their school district to send their school-aged children to schools in Mountain View. The likelihood of a new inter-district transfer into MVWSD being approved or wait listed is low.[15] In addition, given that both high schools in MVLA are close to or exceeding capacity, there are very few slots available for inter-district transfers.[16] The CEQA Proposed Project would not result in substantial population growth, and the increases in enrollment across MVLA and MVWSD is anticipated to be 1.0 percent or less. This impact would be less than significant.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project with the Variant would not directly generate new school-aged students as there would not be any new housing units on the Project Site. However, impacts as a result of indirect increases in enrollment from employees (with school-aged children) who may choose to move to Mountain View under the Variant would be similar to those of the CEQA Proposed Project. As discussed above, this increase would not be substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Because the Variant would not result in substantial population growth, the increase in employment population associated with the proposed project would not result in a substantial increase in the demand for public school services or require the construction or expansion of educational facilities. This impact would be less than significant.

[14] Mike Mathiesen, Associate Superintendent – Business, Mountain View Los Altos High School District. Personal Communication, June 2, 2025.

[15] Mountain View Whisman School District. 2026. *Interdistrict Transfers*. Available: https://www.mvwsd.org/services_and_requests/register_a_student/interdistrict_transfers. Accessed : March 16, 2026.

[16] MVLA School District. 2026. *Transfer Process and Policies*. Available: https://www.mvla.net/Departments/Educational-Services/Policies-and-Procedures/Transfer-Process-and-Policies/. Accessed : March 16, 2026.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, the direct impacts from new housing units on MVWSD and MVLA would be the same as under the CEQA Proposed Project (i.e., 145 Student/Faculty Housing units). However, indirect increases from employees (with school-aged children) who may choose to move to Mountain View would be slightly lower than CEQA Proposed Project because the CEQA Reduced Density Alternative would result in fewer employees and students working at the Project Site. The CEQA Reduced Density Alternative would result in approximately 3,331 employees and 95 students working at the Project Site, whereas the CEQA Proposed Project would result in approximately 5,997 employees and 177 students working at the Project Site. As discussed for the CEQA Proposed Project, the CEQA Reduced Density Alternative would not result in substantial population growth, and the increases in enrollment across MVLA and MVWSD is anticipated to be 1.0 percent or less. This impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative with the Variant, the proposed project would not directly generate new students from new housing units on the Project Site because the housing units would be replaced by office and R&D space. However, impacts as a result of indirect increases in enrollment from the approximately 3,770 employees (with school-aged children) who may choose to move to Mountain View would be similar to those of the CEQA Reduced Density Alternative. This increase would not be substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Because the Variant would not result in substantial population growth, the increase in employment population associated with the proposed project would not result in a substantial increase in the demand for public school services or require the construction or expansion of educational facilities. This impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-PS-4: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for the provision of parks?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

Refer to Impact CEQA-REC-1 in Section 3.15, *Recreation*, of this joint EIR/EIS for the detailed analysis of this impact.

Impact CEQA-PS-5: In order to maintain acceptable service ratios or other performance objectives, would the project result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Library services for the Project Site are provided by the City of Mountain View. The CEQA Proposed Project would result in approximately 200 Short-Term Lodging guests, approximately 363 Student/Faculty Housing residents, and up to 6,132 net new employees and students on-site that would directly generate population growth, resulting in an increase in demand for public library services. In addition, the CEQA Proposed Project could result in indirect population growth if

employees not currently living in Mountain View decide to relocate, which could result in an increase in demand for library services. The City of Mountain View provides library services at one facility at 585 Franklin Street, approximately 1.7 miles southwest of the Project Site. The anticipated growth in population associated with the new Student/Faculty Housing, Short-Term Lodging guests, and employees is not expected to be substantial; the increase in demand for library services is expected to be minimal. Mountain View Public Library has adequate capacity to service the CEQA Proposed Project-related increase in demand. Therefore, the CEQA Proposed Project would not result in a substantial increase in library use or require the construction of new facilities. As such, the CEQA Proposed Project would not require the construction of new or expanded library facilities that could result in environmental impacts, and this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Proposed Project with the Variant, there would be no increase in Student/Faculty Housing that would directly generate population growth, and there would be no increase in demand for library services from new housing. The Variant would replace the approximately 130,000 square feet of Student/Faculty Housing with approximately 130,000 square feet of Research and Office Uses. However, the impacts from new Short-Term Lodging guests, employees, and students would remain the same as discussed for the CEQA Proposed Project. As discussed above, the anticipated growth in population associated with the new employees is not expected to be substantial and the increase in demand for library services is expected to be minimal. Both the NASA ARC Library and Mountain View Public Library have adequate capacity to service the Variant-related increase in demand. Therefore, the Variant would not result in a substantial increase in library use or require the construction of new facilities. As such, the Variant would not require the construction of new or expanded library facilities that could result in environmental impacts, and this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, the impacts on demand for library services from the increase in Student/Faculty Housing would be the same as discussed for the CEQA Proposed Project. However, the increase in demand for library services from new employees would be slightly less than the CEQA Proposed Project because the CEQA Reduced Density Alternative would result in fewer employees and students working at the Project Site. After accounting for the 42 existing employees who would no longer work at the Project Site with implementation of the proposed project, the CEQA Proposed Project would result in approximately 6,132 employees and students, whereas the CEQA Reduced Density Alternative would result in approximately 3,384 employees and students.

The anticipated growth in population associated with the new employees is not expected to be substantial and the increase in demand for library services is expected to be minimal. Both the NASA

ARC Library and Mountain View Public Library have adequate capacity to service the project-related increase in demand from new housing units and employees. Therefore, the CEQA Reduced Density Alternative would not result in a substantial increase in library use or require the construction of new facilities. As such, the CEQA Reduced Density Alternative would not require the construction of new or expanded library facilities that could result in environmental impacts, and this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative with the Variant, there would be no increase in Student/Faculty Housing that would directly generate population growth, and there would be no increase in demand for library services from new housing. However, the impacts from Short-Term Lodging guests, employees, and students under the Variant would remain the same as discussed for the CEQA Reduced Density Alternative. As discussed above, the anticipated growth in population associated with the new Short-Term Lodging guests, employees, and students is not expected to be substantial and the increase in demand for library services is expected to be minimal. Both the NASA ARC Library and Mountain View Public Library have adequate capacity to service the Variant-related increase in demand. Therefore, the Variant would not result in a substantial increase in library use or require the construction of new facilities. As such, the Variant would not require the construction of new or expanded library facilities that could result in environmental impacts, and this impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.14.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.14.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for public services resources is NASA ARC and Mountain View. Impacts on public services are generally related to increases in population; as the population increases, so does demand for public facilities and services.

Impact C-PS-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to public services? (No Significant Cumulative Impact)

Cumulative projects are distributed throughout NASA ARC and Mountain View. Cumulative projects would occur incrementally over time and would include housing developments and employee-generating uses that have the potential to increase demand for fire and emergency, police, school, and library services in NASA ARC and Mountain View. Cumulative impacts related to parks and

recreational facilities are addressed in Section 3.15, *Recreation,* of this joint EIR/EIS. Refer to Impact CEQA-C-REC-1 for a discussion of cumulative impacts on recreational resources and facilities.

Cumulative projects within NASA ARC, as part of a project approval and entitlement process, would be required to comply with existing regulations to minimize impacts related to public services, and future tenants would be subject to the payment of ISP fees. Future development projected as part of growth in the Mountain View that would use the city's services would be required to adhere to existing regulations governing the use of those services. The City of Mountain View also implements programs under its general plan that would require ongoing evaluation of the City's public services and facilities. Any environmental impacts related to increased demand on public services or the future expansion of a public service facility would require permitting and review in accordance with CEQA, as necessary, which would ensure that any environmental impact would be disclosed and mitigated to the extent feasible.

The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would not result in substantial adverse physical impacts associated with the construction or expansion of library or recreational facilities, as discussed in Impacts CEQA-PS-4 and CEQA-PS-5. As discussed in Impacts CEQA-PS-1 and CEQA-PS-2, the Project Proponent would compensate NASA for fire services provided to the proposed project through payment of ISP fees, the mechanism by which NASA charges its tenants for costs for common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), along with additional demand services above the common levels of service. Payment of the ISP fees would address any increased demand on fire services and protective services as a result of the proposed project. In addition, as discussed in Impact CEQA-PS-3, the proposed project would not result in substantial population growth, and the increases in enrollment across MVLA and MVWSD is anticipated to be 1.0 percent or less. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to public services.

3.15 Recreation

3.15.1 Introduction

This section evaluates the potential impacts on recreation that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to recreational resources include a recommendation by the City of Santa Clara to identify any proposed public facilities (i.e., parks) and which providers would service (i.e., maintain) those facilities. This issue is addressed under Impact CEQA-REC-3.

3.15.2 Affected Environment/Environmental Setting

3.15.2.1 NASA Ames Research Center Recreation Resources

There are approximately 131 acres of active recreational areas at National Aeronautics and Space Administration Ames Research Center (NASA ARC), with approximately 112 acres in the Golf Club at Moffett Field. The remaining 19 acres consist of ARC Park, informal recreation areas, playing fields, small outdoor picnic area, and natural areas that are used for walking. The approximately 1.4-acre ARC Park is accessible only to NASA badged employees, and includes a small outdoor fitness area and volleyball courts.

In addition to parks and open space areas, NASA's Bicycle Commute Trail extends from the Stevens Creek Trail to the Wright Avenue. There are also approximately 425 acres of undeveloped land in the Bay View and North of Bay View areas where NASA badged employees use perimeter roads for walking and running. The total area for recreational and open space within NASA ARC is approximately 543 acres. NASA ARC has an open space level-of-service goal of 3 acres per 1,000 residents and 1.5 acres per 1,000 employees. Currently, NASA ARC is exceeding the ratios by 9 acres.

3.15.2.2 City of Mountain View Recreation Resources

The City of Mountain View (City) has approximately 993 acres of parkland, which is distributed among 39 parks, including 18 mini parks, 18 neighborhood parks (13 school sites and five City-owned facilities), two community parks, and one regional park and open space (including Stevens Creek Trail).[1] The City has an open space level-of-service goal of 3 acres per 1,000 residents; it calculates the level-of-service ratio with and without the acreage of Shoreline at Mountain View, which is a 753-acre regional park.[2] According to the latest U.S. Census Bureau data, Mountain View

[1] City of Mountain View. 2022. *City of Mountain View Housing Element Update EIR*. July 2022. Available: https://www.mountainview.gov/home/showpublisheddocument/8434/638442210428330000. Accessed: December 23, 2025.

[2] Tim Youngberg, Parks and Open Space Manager, Community Services Department, City of Mountain View. Personal Communication. June 3, 2025.

has a population of 82,376.[3] Including Shoreline at Mountain View, the current open space level-of-service ratio is 12.05 acres per 1,000 residents. Excluding Shoreline at Mountain View, the service ratio is 2.91 acres per 1,000 residents.

The resources discussed below are in the vicinity of the Project Site.

Shoreline at Mountain View

Shoreline at Mountain View is northwest of the Project Site, adjacent to San Francisco Bay. The regional park was developed on a former landfill. It is now a 753-acre open space and wildlife preserve, consisting of wetlands, marshes, upland habitats, a golf course, sailing lake, the historic Rengstorff House, and two adjacent open space areas, Crittenden Hill and Vista Slope. The area also has trails for walking and cycling.[4]

Stevens Creek Trail

The Stevens Creek Trail is a 5.14-mile-long, north–south trail that is owned by the City of Mountain View, Santa Clara Valley Water District, and Pacific Gas and Electric Company (PG&E). The trail extends from Shoreline Park, continues south through tidal marshlands, and ends near Yuba Drive and El Camino Real.[5] A portion of the Stevens Creek Trail runs along the western edge of NASA ARC.

3.15.2.3 City of Sunnyvale Recreation Resources

The City of Sunnyvale has 772 acres of parks and open space, including picnic areas, playgrounds, and sports fields or facilities.[6] Its 27 parks cover approximately 223 acres, including 25 acres for athletic fields and 72 acres of developed parkland at Baylands Park. Nine special-use facilities, covering 355 acres, include Sunnyvale Municipal Golf Course, Sunken Gardens Nine-Hole Course, Baylands Park Wetlands, and a closed landfill property. The City of Sunnyvale also has formal agreements for use and maintenance of 118 acres of school-related open space, primarily school athletic fields.[7,8] Included in the open space acreage are 49 acres for public grounds, which include orchards as well as the open space surrounding the Sunnyvale Community Center and Civic Center. Sunnyvale has an open space level-of-service ratio of 5 acres per 1,000 residents.[9] According to the latest U.S. Census Bureau data, Sunnyvale has a population of 151,973.[10] Therefore, the current open space level-of-service ratio is 5.08 acres per 1,000 residents.

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3 U.S. Census Bureau. n.d. *QuickFacts: Mountain View*. Available: https://www.census.gov/quickfacts/fact/table/mountainviewcitycalifornia/IPE120223. Accessed: September 23, 2025.

4 City of Mountain View. 2022. *City of Mountain View Housing Element Update*. July 2022. Available: https://www.mountainview.gov/home/showpublisheddocument/8434/638442210428330000. Accessed: December 23, 2025.

5 Ibid.

6 City of Sunnyvale. n.d. *Parks and Trails* Available: https://www.sunnyvale.ca.gov/recreation-and-community/parks-and-trails. Accessed: December 23, 2025.

7 Ibid.

8 City of Sunnyvale. 2023. *Sunnyvale 2023–2031 Housing Element*. Available: https://www.sunnyvale.ca.gov/home/showpublisheddocument/4964/638923995037093762. Accessed: December 23, 2025.

9 City of Sunnyvale. 2025. *City of Sunnyvale Municipal Code*. Chapter 18.10. Available: https://ecode360.com/42728748#42728748. Accessed: December 23, 2025.

10 U.S. Census Bureau. n.d. *QuickFacts: Sunnyvale.* Available: https://www.census.gov/quickfacts/fact/table/sunnyvalecitycalifornia/INC110222.

The resources discussed below are in the vicinity of the Project Site.

Sunnyvale Municipal Golf Course

Sunnyvale Municipal Golf Course is southeast of the Project Site. The golf course has 18 holes and covers approximately 200 acres, 35 acres of which is part of NASA ARC.[11]

Baylands Park

Baylands Park is approximately 2.5 miles east of the Project Site. The regional park provides more than 70 acres of developed parkland, including play areas, picnic areas, Baylands Grove Amphitheatre, and connections to the Bay Trail. An additional 105 acres with seasonal wetlands is protected as part of a wetlands preserve.[12]

Bay Trail

The San Francisco Bay Trail spans more than 350 miles around the Bay Area. The long-term goal is to span 500 miles across 47 cities.[13] Near the Project Site, the trail connects to Shoreline at Mountain View and the Stevens Creek Trail, offering flat, scenic paths that are popular with joggers, cyclists, and bird watchers.

3.15.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. NASA's open space level of service goals for residents and employees/students were used for the analysis. City of Mountain View and City of Sunnyvale park-related policies are not the basis of the analysis, but potential impacts to the parks and recreational facilities in these cities as a result of the proposed project are considered in the analysis.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its

[11] National Aeronautics and Space Administration. 2002. *NASA Ames Development Plan Final Programmatic Environmental Impact Statement*. July.

[12] City of Sunnyvale. 2026. *Baylands Park.* Available: https://www.sunnyvale.ca.gov/recreation-and-community/parks-and-trails/baylands-park. Accessed: January 29, 2026.

[13] Metropolitan Transportation Commission. 2026. *About the Bay Trail*. Available: https://mtc.ca.gov/operations/regional-trails-parks/san-francisco-bay-trail/about-bay-trail. Accessed: January 29, 2026.

discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

This section summarizes plans, policies, and regulations considered in the analysis.

3.15.3.1 Federal Regulations

NASA Ames Development Plan

The NASA Ames Development Plan (NADP) details transformation of the original 500-acre ARC campus and 1,500 acres of the former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation will be led by establishment of NRP, a research-and-development campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

3.15.3.2 Local Regulations

Mountain View 2014 Parks and Open Space Plan

The Mountain View Parks and Open Space Plan was adopted in 1992. The 2014 version of the plan represents the sixth update since it was first adopted. The plan provides a review of open space resources within the city of Mountain View and offers a long-range vision to guide decisions to advance park and open space resources. The plan provides an evaluation of open space resources in the city and surrounding neighborhoods and prioritizes recommendations for the acquisition, improvement, and preservation of parks and open space. The plan also establishes a City goal of 3.00 acres of open space per 1,000 residents.

City of Sunnyvale General Plan

The City of Sunnyvale General Plan is the local government’s long-term blueprint for the community’s vision of future growth. It includes goals, policies, and programs that convey a long-term vision for the Sunnyvale Community and guides local decision-making to advance that vision. The general plan is the basis for determining acceptable land uses and related park, road, and other infrastructure needs. The City of Sunnyvale General Plan contains seven elements, with the Land Use and Transportation Element most recently updated in March 2024. The Land Use and Transportation Element and Community Character Element include information on recreation and open space areas, service needs, and future policies to meet demand for parks, recreation, and open space.

3.15.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on recreation in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on recreation in accordance with NEPA is provided separately in Section 4.5.13, *Recreation*, in Chapter 4, *Environmental Impact Statement*.

3.15.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on recreation if it would result in any of the conditions listed below.

Would the project:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities or the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for park services?
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to parks and recreation?

3.15.6 Methods for Analysis

The evaluation of potential impacts related to recreational resources is based on a review of documents pertaining to the proposed project and desktop review of the study area and surrounding areas. Impacts on recreational resources that would result from the proposed project were identified by comparing existing service capacities and facilities against future demands associated with project implementation.

To assess the potential environmental impacts of the proposed project related to recreational resources and facilities within the vicinity of the Project Site, a questionnaire to solicit information was sent to three contacts with knowledge of such facilities. Letters with project details, along with a map of the project location and the conceptual site plans, were sent out on April 30, 2025, and May 13, 2025. The letters solicited responses from each contact, including questions, comments, or concerns regarding the proposed project were sent to contacts at NASA ARC, the City of Mountain View, and the City of Sunnyvale. Responses were received from the contacts on the following dates; at the time of preparation of this joint EIR/EIS, no responses were received from the City of Sunnyvale:

- City of Mountain View Parks (June 3 and December 4, 2025)
- NASA ARC (May 7, 2025)

3.15.7 Impacts and Mitigation Measures

Impact CEQA-REC-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities or the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for park services?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

As described in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the Limits of Work consists of mostly vacant buildings, three of which were formerly used for recreation (e.g., recreation center, outdoor swimming pool). Many of the other buildings on the Project Site were formerly used as ancillary buildings that supported Navy operations (e.g., offices, food service, a gas station, pool, and lodging). The other existing buildings within the Limits of Work comprise industrial, storage, and utility facilities. The CEQA Proposed Project would demolish all existing buildings and construct new research and office facilities, a conference center, ground-floor retail, student/faculty housing, short-term lodging, transporation infrastructure, and open space as well as landscaped spaces. The CEQA Proposed Project would include a minimum of 10 acres of publicly accessible open space, including pathways, active uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). In addition, the CEQA Proposed Project would include up to 90,000 square feet of Active Uses that would be accessible to project guests, residents, students, and employees. Active Uses could include display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, a gym or other amenities, shared maker spaces and fabrication workshops, co-working spaces, restaurants, community-serving retail, and personal services.

As shown in Table 3.15-1, using the NASA open space level-of-service goal, the guests, residents, students, and employees generated by the CEQA Proposed Project could result in a deficit of 0.95 acre of open space.

Table 3.15-1. CEQA Proposed Project Service Ratio Calculation

	NASA ARC
Total Net New Guests and Residents	563
New Guests and Residents Open Space Demand	1.69 acres[a]
Total Net New Employees and Students	6,132
New Employees and Students Open Space Demand	9.26 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	10.95 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***-0.95 acre***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

As shown in Table 3.15-1, for NASA ARC, the new residents and employees generated by the CEQA Proposed Project would result in open space demand that would be in excess of what is provided by the Project Site alone. However, NASA ARC currently has approximately 129.6 acres of active recreational land and is exceeding its acceptable service ratio by 9 acres.[14] With the 10 additional acres of open space proposed by the project, the demand from new residents and employees would not exceed NASA ARC level-of-service ratios and would not result in the need for new or physically altered park facilities.

Although the proposed project could spur some project employees to relocate to adjacent cities (e.g., Mountain View or Sunnyvale), it is expected that many already live in the Bay Area and would continue to use park and recreational facilities closer to where they reside. Employees would have access to a minimum of 10 acres of publicly accessible open space, including pathways and a gym. In addition, as discussed above, NASA ARC has approximately 129.6 acres of active recreational areas, including a golf course, informal recreation areas, playing fields, small outdoor picnic area, and natural areas that are used for walking, which could be used by project employees. In addition, the Project Proponent would also compensate NASA for services provided to the proposed project through the Institutional Shared Pool (ISP). Currently, NASA charges its tenants for services provided on demand and ISP costs for common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, infrastructure maintenance and repairs, and basic environmental oversight), along with additional demand services above the common levels of service. The Project Proponent would comply with the requirements of the ISP on an annual basis.

However, some employees who reside outside of the adjacent cities may use Mountain View and Sunnyvale's park and recreational facilities near the Project Site. In Mountain View, the facilities include 972 acres of parkland, including nearby amenities such as Shoreline at Mountain View, Stevens Creek Trail, and the Golf Club at Moffett Field. In Sunnyvale, the facilities include 20

[14] NASA has approximately 131 acres of active recreational areas; however, approximately 1.4 acres is designated for ARC Park, which is accessible only to NASA badged employees, and includes a small outdoor fitness area and volleyball courts.

parks, covering 223 acres, including nearby amenities such as the Sunnyvale Municipal Golf Course and Encinal Park. Given the amount of existing open space and recreational facilities, City of Sunnyvale and City of Mountain View facilities would have the capacity to absorb the small increase in demand for services that would result from project employees, without the need for new or expanded park or recreational facilities in these cities.

Therefore, because the CEQA Proposed Project would not result in substantial adverse physical impacts associated with the need for new or physically altered parks or recreational facilities, the construction of which could cause significant environmental impacts, and because the Project Proponent would be subject to payment of ISP fees to compensate for any increased demand on parks and recreational facilities, the impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Proposed Project No Student/Faculty Housing Variant (Variant), there would be no increase in use of or demand for recreational facilities from residents. As shown in Table 3.15-2, the guests, students, and employees generated by the Variant could result in a deficit of 0.37 acre of open space.

As shown in Table 3.15-2, the Variant would not exceed acceptable service ratios for NASA ARC, Mountain View, or Sunnyvale. New potential users of recreational facilities associated with the Variant would not substantially increase the use of park or recreational facilities; the Variant would not require new facilities to be built. Therefore, implementation of the Variant would not result in substantial adverse physical construction-related impacts associated with the provision of or the need for new or physically altered parks. The impacts would be less than significant.

Table 3.15-2. CEQA Proposed Project No Student/Faculty Housing Variant Service Ratio Calculation

	NASA ARC
Total Net New Guests	200
New Guests Open Space Demand	0.6 acres[a]
Total Net New Employees and Students	6,518
New Employees and Students Open Space Demand	9.77 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	10.37 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***-0.37 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, there would be fewer employees and students than under the CEQA Proposed Project. As shown in Table 3.15-3, the guests, residents, students, and employees generated by the CEQA Reduced Density Alternative could result in a surplus of 3.17 acres of open space.

Table 3.15-3. CEQA Reduced Density Alternative Service Ratio Calculation

	NASA ARC
Total Net New Guests and Residents	563
New Guests and Residents Open Space Demand	1.69 acres[a]
Total Net New Employees and Students	3,384
New Employees and Students Open Space Demand	5.08 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	6.77 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***3.23 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

As shown in Table 3.15-3, the CEQA Reduced Density Alternative would not exceed acceptable service ratios for NASA ARC, Mountain View, or Sunnyvale. New potential users of recreational facilities associated with the CEQA Reduced Density Alternative would not substantially increase the use of park or recreational facilities, and the proposed project would not require new facilities to be built. Therefore, implementation of the CEQA Reduced Density Alternative would not result in substantial adverse physical construction-related impacts associated with the provision of or the need for new or physically altered parks. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant, there would be no increase in use of or demand for recreation facilities from the student/faculty housing residents. As shown in Table 3.15-4, the guests, residents, students, and employees generated by the Variant could result in a surplus of 3.74 acres of open space.

Table 3.15-4. CEQA Reduced Density Alternative No Student/Faculty Housing Variant Service Ratio Calculation

	NASA ARC
Total Net New Guests	200
New Guests Open Space Demand	0.6 acres[a]
Total Net New Employees and Students	3,770
New Employees and Students Open Space Demand	5.66 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	6.26 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus	***3.74 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

As discussed for the CEQA Proposed Project No Student/Faculty Housing Variant, the Variant would not exceed acceptable service ratios for NASA ARC, Mountain View, or Sunnyvale (Table 3.15-2). New potential users of recreational facilities associated with the proposed project would not substantially increase the use of park or recreational facilities, and the proposed project would not require new facilities to be built. Therefore, implementation of the proposed project would not result in substantial adverse physical construction-related impacts associated with the provision of or the need for new or physically altered parks. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-REC-2: Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

As described under Impact CEQA-REC-1, the proposed project would result in up to 563 Short-Term Lodging guests and residents, 5,997 new employees, and 177 new students at NASA ARC. These guests, residents, employees, and students at the Project Site could use local park and recreational facilities, resulting in a small increase in demand for these services. Project residents and employees would most likely use proposed and existing NASA ARC recreation facilities. In addition, due to the Project Site's proximity to the cities of Mountain View and Sunnyvale, it is expected that residents and new employees would use recreational facilities in these cities as well. However, any increase in demand is not expected to be concentrated on any single recreational facility such that usage from building occupants would lead to the deterioration of park and recreational facilities. Furthermore, under the CEQA Proposed Project, the Project Propnent would be subject to payment of ISP fees, which is the mechanism by which NASA charges its tenants for costs associated with common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), along with additional demand services above the common levels of service. Therefore, the CEQA Proposed would not increase the use of existing park and recreational facilities such that substantial physical deterioration would occur or be accelerated. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Proposed Project Alternative No Student/Faculty Housing Variant, there would be no increase in the use of recreation facilities from new student/faculty housing residents. Accounting for the 42 existing employees who would no longer work at the Project Site with implementation of the Variant, the CEQA Proposed Project with the Variant would result in approximately 6,518 employees and students, whereas the CEQA Proposed Project would result in 6,132 employees and students. However, similar to the CEQA Proposed Project, any increase in demand for recreational resources is not expected to be concentrated on any single recreational facility such that usage from the building occupants would lead to the deterioration of park and recreational facilities in NASA ARC, Mountain View, or Sunnyvale. Therefore, the Variant would not increase the use of existing park and recreational facilities such that substantial physical deterioration would occur or be accelerated. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, increased use of recreational resources by employees, students/faculty, and short-term lodging residents would be slightly the lower than under the CEQA Proposed Project because there would be fewer employees. Therefore, the CEQA Reduced Density Alternative would not increase the use of existing park and recreational facilities such that

substantial physical deterioration would occur or be accelerated. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant, increased use of recreational resources by employees, students/faculty, and short-term lodging residents would be slightly lower than under the CEQA Proposed Project because there would be fewer employees. Therefore, the Variant would not increase the use of existing park and recreational facilities such that substantial physical deterioration would occur or be accelerated. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-REC-3: Would the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

The CEQA Proposed Project would include a minimum of 10 acres of publicly accessible open space, including pathways, active uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). As shown in Figure 2-5, Conceptual Site Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative, in Chapter 2, *Proposed*

Project/Proposed Action and Alternatives, of this joint EIR/EIS, the proposed project would include up to four open space areas, consisting of the following:

- **Central Green:** The Central Green would include a circular field at the center point of the Project Site in Subarea 7, with additional amenity seating, landscaped areas, and walkways to connect the other Subareas. The Central Green would include a loop pathway with a shaded canopy around its perimeter. The Central Green would be used for programming and events, such as corporate or academic events, demonstration or exhibition programming, picnicking and lounging, seasonal festivals, and stargazing. The Central Green would also provide stormwater collection and treatment areas. It would convey treated water to the stormwater retention basin in Hangar Commons.
- **Hangar Commons:** Hangar Commons would be at the northernmost portion of the Project Site between Subareas 2 and 3, across from Hangar One at the intersection of Wescoat Road and Cody Road. Hangar Commons would include seating areas with direct views to Hangar One. Hangar Commons would also serve as the location for an at-grade centralized stormwater retention basin.
- **Gateway Plaza:** The Gateway Plaza would be in the western portion of the Project Site along Wescoat Road between Subareas 1 and 6. It would include seating areas and an outdoor gathering space to serve the conference center; it would be the western starting point for the Promenade.
- **Promenade:** The Promenade would be a multi-modal, car-free connection through the Project Site in the west–east direction, from the Gateway Plaza toward Cody Road.

The environmental impacts associated with construction of the open space and active use areas are evaluated throughout this joint EIR/EIS and subject to the mitigation measures described within, including, but not limited to, Section 3.3, *Air Quality*; Section 3.4, *Biological Resources*; Section 3.8, *Greenhouse Gas Emissions*; and Section 3.10, *Hydrology and Water Quality*. As analyzed in Impact CEQA-REC-1 and CEQA-REC-2, the proposed project would not require new recreational facilities to be built because future project residents, guests, students, and employees would have access to a minimum of 10 acres of publicly accessible open space, including pathways and a gym. In addition, as discussed above, NASA ARC has approximately 129.6 acres of active recreational areas, including a golf course, informal recreation areas, playing fields, small outdoor picnic area, and natural areas that are used for walking and could be used by project employees. Furthermore, under the CEQA Proposed Project, the Project Proponent would also compensate NASA for services provided at the Project Site through payment of ISP fees, which is the mechanism by which NASA charges its tenants for costs associated with common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), along with demand services above the common levels of service. Although it is possible that some project-generated employees who reside outside of the adjacent cities may choose to take advantage of Mountain View and Sunnyvale's park and recreational facilities near the Project Site, Mountain View has approximately 972 acres of parkland and Sunnyvale has approximately 223 acres of parkland. Therefore, given the amount of existing open space and recreational facilities, existing NASA ARC, Mountain View, and Sunnyvale facilities are anticipated to be able to absorb park and recreational demands resulting from the CEQA Proposed Project. The CEQA Proposed Project would not include recreational facilities or require

the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project Alternative No Student/Faculty Housing Variant would include the same amount of open space as the CEQA Proposed Project. Thus, impacts for the Variant would be the same as under the CEQA Proposed Project. The Variant would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would include the same amount of open space as the CEQA Proposed Project. Thus, impacts for the CEQA Reduced Density Alternative would be the same as under the CEQA Proposed Project. The CEQA Reduced Density Alternative would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include the same amount of open space as the CEQA Proposed Project. Thus, impacts for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant,would be the same as under the CEQA Proposed Project. The CEQA Reduced Density Alternative would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, the impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.15.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.15.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for recreational resources includes projects within NASA ARC. In addition, because a portion of project-generated employees would very likely be served by open space areas within Sunnyvale and Mountain View, projected growth in those cities is considered in the cumulative analysis for park and recreational facilities.

Impact CEQA-C-REC-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to parks and recreation? (No Significant Cumulative Impact)

Cumulative projects are distributed throughout NASA ARC and would occur incrementally over time. Cumulative projects would occur incrementally over time and would include housing developments and employee-generating uses that have the potential to increase demand for parks and recreation facilities in NASA ARC and Mountain View. Cumulative projects within NASA ARC, as part of a project approval and entitlement process, would be required to comply with existing regulations to minimize impacts related to park and recreational services and facilities, and future tenants would be subject to the payment of ISP fees. Future development projected as part of growth in Mountain View and Sunnyvale that would use the cities' parks and open spaces would be required to adhere to existing regulations governing the use of those parks. The cities would also implement programs under their general plans that would require ongoing evaluation of the cities' recreational facilities and services. Any environmental impacts related to future expansion of a city park or recreational facility would require permitting and review in accordance with CEQA, as necessary, which would ensure that any environmental impact would be disclosed and mitigated to the extent feasible.

The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would not result in substantial adverse physical impacts associated with the construction or expansion of park facilities, nor would the proposed project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. That is because the proposed project's demand for park and recreational facilities would be largely absorbed by existing NASA ARC, Mountain View, and Sunnyvale park and recreational facilities. In addition, the project would provide a minimum of 10 acres of new open space areas, which would also address the proposed project's demand for park and recreational facilities. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to parks and recreation.

3.16 Transportation and Traffic

3.16.1 Introduction

This section evaluates the potential impacts on transportation and traffic that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for the analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the project:

- *Berkeley Space Center at NASA Research Park Transportation Analysis* (Transportation Analysis), prepared by Fehr & Peers, February 2026 (Appendix 3.16-1 of this joint environmental impact report/environmental impact statement [EIR/EIS]).

The CEQA Proposed Project and CEQA Reduced Density Alternative would include a project-specific Transportation Demand Management (TDM) plan to reduce the vehicle trips and associated vehicle miles traveled (VMT) generated by the proposed project through a range of design features (e.g., mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle infrastructure, preferential carpool and vanpool parking, limited automobile parking supply, and ample bicycle parking) and ongoing operational programs (e.g., transit pass/subsidy programs, shuttles, and participation in the NASA Research Park Transportation Management Association) to achieve TDM mode-shift targets and thereby reduce the number of trips made by project-generated employees, students/faculty and visitors. Appendix 2-4 of this joint EIR/EIS includes the project-specific TDM plan.[1] The project-specific TDM plan is designed to reduce the trip generation by 22 percent as part of the CEQA Proposed Project and CEQA Reduced Density Alternative. The 22 percent TDM reduction aligns with the TDM requirements in the 2002 programmatic EIS.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to transportation and traffic include recommendations by the City of Sunnyvale and Santa Clara County to incorporate an evaluation of VMT. This issue is addressed under Impact CEQA-TRAN-1.

3.16.2 Affected Environment/Environmental Setting

Regional Setting

Existing Street System

The following freeways provide regional access to the vicinity of the Project Site: State Route (SR) 237, U.S. 101, and SR 85. Key local roadways that provide access to the vicinity of the Project Site include Moffett Boulevard, Ellis Street, Manila Avenue-Moffett Park Drive, Mathilda Avenue, and

[1] The project-specific TDM plan is tentative, as transportation-related studies may validate the approach in the TDM Plan or require adjustments to the TDM Plan.

Middlefield Road. These freeways and local roadways are described below. Figure 2-1, Project Location, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, of this joint EIR/EIS shows the Project Site and surrounding transportation system.

Freeways

- U.S. 101 is a north–south interstate highway south of the Project Site that extends between the state of Washington on the north and Los Angeles on the south. In the project vicinity, it provides four mixed-flow travel lanes in each direction, two express lanes in each direction north of Moffett Boulevard, and one express lane in each direction south of Moffett Boulevard. The express lanes operate from 5:00 a.m. to 8:00 p.m. on weekdays. The posted speed limit is 65 miles per hour. U.S. 101 provides access to the Project Site via interchanges at Ellis Street and Moffett Boulevard.
- SR 237 is a generally east–west freeway southeast of the Project Site that extends between Mountain View on the west and Interstate 880 in Milpitas on the east. It provides two travel lanes in each direction west of Mathilda Avenue and three travel lanes, including an express lane, in each direction east of Mathilda Avenue. The express lane is in effect from 5:00 a.m. to 8:00 p.m. on weekdays. SR 237 has a posted speed limit of 55 miles per hour in both directions. It provides access to the Project Site via an interchange at Mathilda Avenue.
- SR 85 is a state-operated freeway southwest of the Project Site that extends between U.S. 101 in southern San José on the south and U.S. 101 in Mountain View on the north. In the project vicinity, it provides two mixed-flow travel lanes and one high-occupancy vehicle (HOV) lane in each direction. The HOV lanes operate from 5:00 a.m. to 9:00 a.m. and from 3:00 p.m. to 7:00 p.m. on weekdays. The posted speed limit on SR 85 is 65 miles per hour. It provides access to the vicinity of the Project Site via an interchange at Moffett Boulevard.

Local Roadways

- Moffett Boulevard is a north–south arterial with two travel lanes in each direction and a posted speed limit of 40 miles per hour. It extends between the National Aeronautics and Space Administration Ames Research Center (NASA ARC) main gate on the north and Central Expressway on the south. South of Central Expressway, Moffett Boulevard continues as Castro Street. Moffett Boulevard connects the Project Site to U.S. 101 and SR 85.
- Ellis Street is a north–south arterial with two travel lanes in each direction and a posted speed limit of 40 miles per hour. It extends between the NASA ARC secondary gate on the north and Middlefield Road on the south. Ellis Street connects the Project Site to U.S. 101.
- Manila Avenue is generally an east–west roadway with one travel lane in each direction and a posted speed limit of 20 miles per hour. Running generally parallel to U.S. 101 and the Santa Clara Valley Transportation Authority (VTA) light rail line, Manila Avenue extends between Ellis Street on the west and Enterprise Way on the east. East of Enterprise Way, Manila Avenue continues as Moffett Park Drive.
- Mathilda Avenue is a north–south arterial with three travel lanes in each direction and a posted speed limit of 45 miles per hour near the Project Site. It extends between El Camino Real (SR 82) on the south and Caribbean Drive on the north. Mathilda Avenue connects to SR 237 and U.S. 101; it also connects to the Project Site via Manila Avenue-West Moffett Park Drive.

- Middlefield Road is a generally east–west arterial with two travel lanes in each direction and a posted speed limit of 35 miles per hour. It extends between Central Expressway in Mountain View on the south and Jefferson Avenue in Redwood City on the north. It connects to SR 85 and SR 237 as well as the Project Site via Ellis Street.

Existing Transit Service

VTA operates bus and light rail service in the vicinity of the Project Site. Caltrain provides commuter rail service. Two shuttle services are provided in the vicinity of the Project Site. Figure 3.16-1, Existing Transit Service, shows the publicly available transit service in the vicinity of the Project Site as of July 2025. Each service is described in more detail below.

VTA Bus Service

VTA operates the following bus routes in the project vicinity:

- **Route 21** operates with a weekday peak headway of 30 minutes between the Stanford Shopping Center in Palo Alto on the north and the Santa Clara Transit Center on the south. The nearest stops to the Project Site are on Middlefield Road at Moffett Boulevard and Ellis Street, about 1 mile south of the Project Site.
- **Route 40** operates with a weekday peak headway of 30 minutes between the Mountain View Transit Center on the north and Foothill College on the south via North Bayshore. The nearest stop to the Project Site is at the Mountain View Transit Center, about 2 miles south of the Project Site on Castro Street.
- **Route 51** operates with a weekday peak headway of 30 minutes between NASA ARC on the north and West Valley College on the south via the Mountain View Transit Center. The nearest stop to the Project Site is on Akron Road at McCord Avenue within NASA ARC, about 0.25 mile west of the Project Site.
- **Route 52** operates with a weekday peak headway of 30 minutes between the Mountain View Transit Center on the north and Foothill College on the south via El Monte Avenue. The nearest stop to the Project Site is at the Mountain View Transit Center, about 2 miles south of the Project Site on Castro Street.
- **Rapid Route 523** is a rapid bus route with a weekday peak headway of 20 minutes between the Lockheed Martin Transit Center on the north and San José State University on the south. The nearest stops to the Project Site are on Mathilda Avenue at Moffett Park Drive, about 2 miles east of the Project Site.

VTA Light Rail Service

VTA operates the Orange Line, a light rail line with a peak headway of 15 minutes. The Orange Line carries passengers between downtown Mountain View and Alum Rock. The nearest light rail station to the Project Site is the Bayshore NASA station, located north of Manila Avenue and east of Ellis Street. Most of the Project Site is within 0.5 mile of the Bayshore NASA station.

Caltrain

Caltrain provides commuter rail service between San Francisco, San Mateo, and Santa Clara Counties. The nearest Caltrain station to the Project Site is the Mountain View Caltrain station, located in downtown Mountain View and less than 2 miles south of the Project Site. Caltrain

operates 52 northbound and 52 southbound trains per day (total of 104) with stops at the Mountain View Caltrain station on a typical weekday. VTA Bus Route 51 and the Orange Line connect the Mountain View Caltrain station to the Project Site.

Shuttle Services

The following shuttle lines serve the Project Site:

- The Altamont Corridor Express (ACE) Red Shuttle: North Sunnyvale is a public route with service between the Great America station in the city of Santa Clara and Moffett Park. The four morning and four evening shuttles are timed to coincide with the station's morning and afternoon ACE train schedules.
- The NASA shuttle operates on a regular schedule in the NASA ARC area but is available only for badged NASA employees and authorized personnel; it is not available for public use. The NASA shuttle is not shown in Figure 3.16-1 because it is not a publicly available shuttle.

Bicycle and Pedestrian Network

The bicycle network serving the Project Site consists of various facilities that generally connect to each other as well as major destinations in the vicinity. Figure 3.16-2, Existing and Proposed Bicycle Infrastructure, shows the existing and proposed bicycle infrastructure within a 2-mile radius of the Project Site.

Pedestrian facilities in the study area include sidewalks, foot paths, and marked crosswalks. Most facilities are located along local roadways and separated from vehicular lanes by standard-height curbs. Major corridors with pedestrian infrastructure include Moffett Boulevard, Ellis Street, Manila Avenue-Moffett Park Drive, Mathilda Avenue, and Middlefield Road.

Most streets provide sidewalks on both sides of the roadway, with a few exceptions. The sidewalks are at least 5 feet wide and without a landscaped buffer between the sidewalk and the paved roadway, except for segments along Ellis Street between Fairchild Drive and Middlefield Road.

Project Site

The Project Site is within the NASA ARC campus. Under existing conditions, access to the Project Site is limited to employees and authorized visitors only. Regional roadways, local arterial and collector streets, public transit, and bicycle and pedestrian facilities, which were described earlier in this section, provide access to NASA ARC.

Access to NASA ARC, including the Project Site, is provided by two secured gates along the southern boundary of the campus:

- Main gate on Clark Road north of RT Jones Road
- Secondary gate on Ellis Street north of Manila Avenue

As described in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, by the time of Phase 1 occupancy, NASA anticipates implementation of operational modifications that will allow a free flow of traffic at the two gates. No physical improvements are required for the operational modifications, part of the "Open Campus," which are not part of the project. The Phase 1 construction analysis uses a typical existing-conditions baseline scenario. The Phase 1 operational analysis uses a future baseline scenario that accounts for Open Campus improvements. Both the construction and

operational analyses for Phases 2 through 4 use a future baseline scenario that accounts for Open Campus improvements. The Open Campus would not change the project's trip generation characteristics because the Project Site would be the same and access would be provided by the same access points on Clark Road and Ellis Street.

According to data collected in October 2024, NASA ARC generates 532 AM peak-hour and 604 PM peak-hour automobile trips on a typical weekday. Approximately 60 percent of the vehicles use the main gate on Clark Road; 40 percent use the secondary gate on Ellis Street.

The Project Site is bounded by Wescoat Road on the north, Cody Road on the east, Edquiba Road and Girard Road on the south. In addition, it divides an empty lot immediately west of Bailey Road. Vehicular, bicycle, and pedestrian access from the two secured gates at the Project Site is provided by Wescoat Road and Cody Road. Wescoat Road has a continuous sidewalk on the south side of the roadway that connects to Clark Road and the site; Clark Road has sidewalks on both sides of the roadway. Ellis Street, outside of the secured gates, has a sidewalk on the east side of the street leading to the secured gates. Just north of the Ellis Street gates, marked crosswalks across Ellis Street and Perimeter Road connect to a designated pedestrian path of travel on the west shoulder of the Perimeter Road and south shoulder of Cody Road that connect to the Project Site. Currently, there are no designated pedestrian facilities on Girard Road, Cody Road, or Edquiba Road. Sidewalks along Ellis Street and Manilla Avenue connect the Project Site to the Bayshore NASA VTA light rail station. Although there are no designated bicycle facilities between the Project Site and the two secured gates, bicyclists can share roadways with vehicles. The main vehicular route through the Project Site is currently limited to the edges of the site, with some smaller side streets and driveways providing access to various parcels.

3.16.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use guidance from Office of Planning and Research (OPR) revised CEQA Statute and Guidelines and the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR Technical Advisory) for the analysis of transportation and traffic associated with the proposed project. Surrounding local jurisdictions, such as the City of Mountain View and City of Sunnyvale, have also generally relied on OPR guidance for setting their CEQA local thresholds and standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations and state environmental laws) do not apply to be considered as applicable to the proposed action, at least to the extent that the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction. Absent an established policy to the contrary, any such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and

may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to use guidance from the City of Mountain View, City of Sunnyvale, the Santa Clara Valley Transportation Authority (VTA) for evaluation of intersection and freeway level of service (LOS) for the analysis of transportation and traffic associated with the proposed project.

Plans, policies, and regulations considered in the analysis of the project's potential CEQA impacts related to transportation and traffic are identified in the Transportation Analysis (Appendix 3.16-1 of this joint EIR/EIS). A list of plans, policies, and regulations considered in the CEQA analysis is provided below.

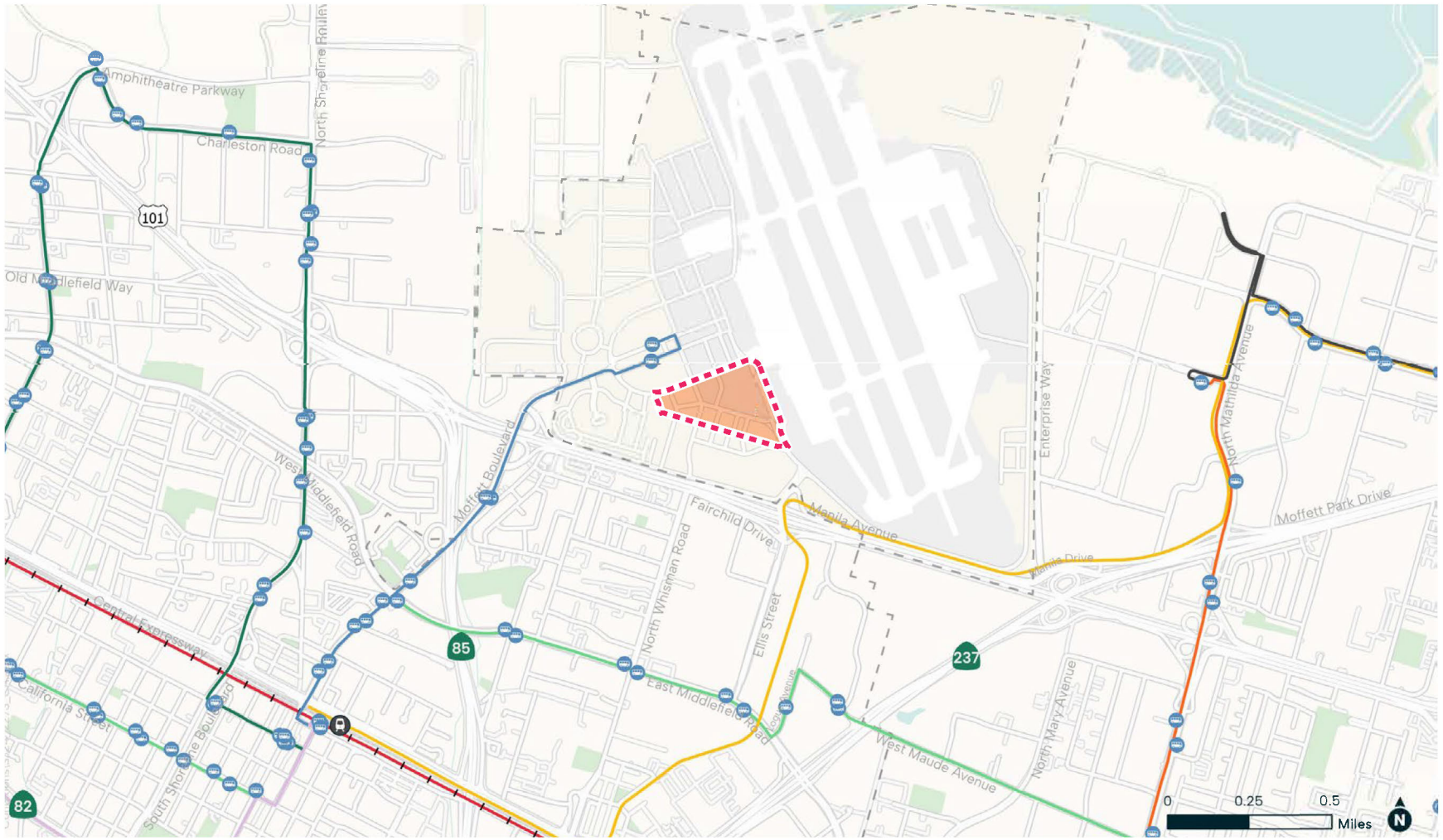
- Federal Highway Administration (FHWA) Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts (FHWA-HEP-16-055), August 2016
- Americans with Disabilities Act of 1990 (ADA)
- Executive Order 13150 (EO 13150), 2000
- Senate Bill 743, 2013
- Senate Bill 375, 2008
- NASA Ames Development Plan (NADP), 2002
- Metropolitan Transportation Commission's (MTC) Regional Transportation Plan (*Plan Bay Area 2050*), 2024
- *Santa Clara Countywide Bicycle Plan*, 2018
- *Valley Transportation Plan 2040* (VTP 2040), 2014

3.16.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on transportation and traffic in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on transportation and traffic in accordance with NEPA is provided separately in Section 4.5.15, *Transportation and Traffic*, in Chapter 4, *Environmental Impact Statement*.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

- Project Site
- City Boundaries
- Mountain View Caltrain Station
- VTA Light Rail Stations
- VTA Bus Stops
- VTA Route 21
- VTA Route 40
- VTA Route 51
- VTA Route 52
- VTA Route 53
- VTA Route 523
- VTA Orange Line
- Caltrain
- ACE Shuttle - Red Line

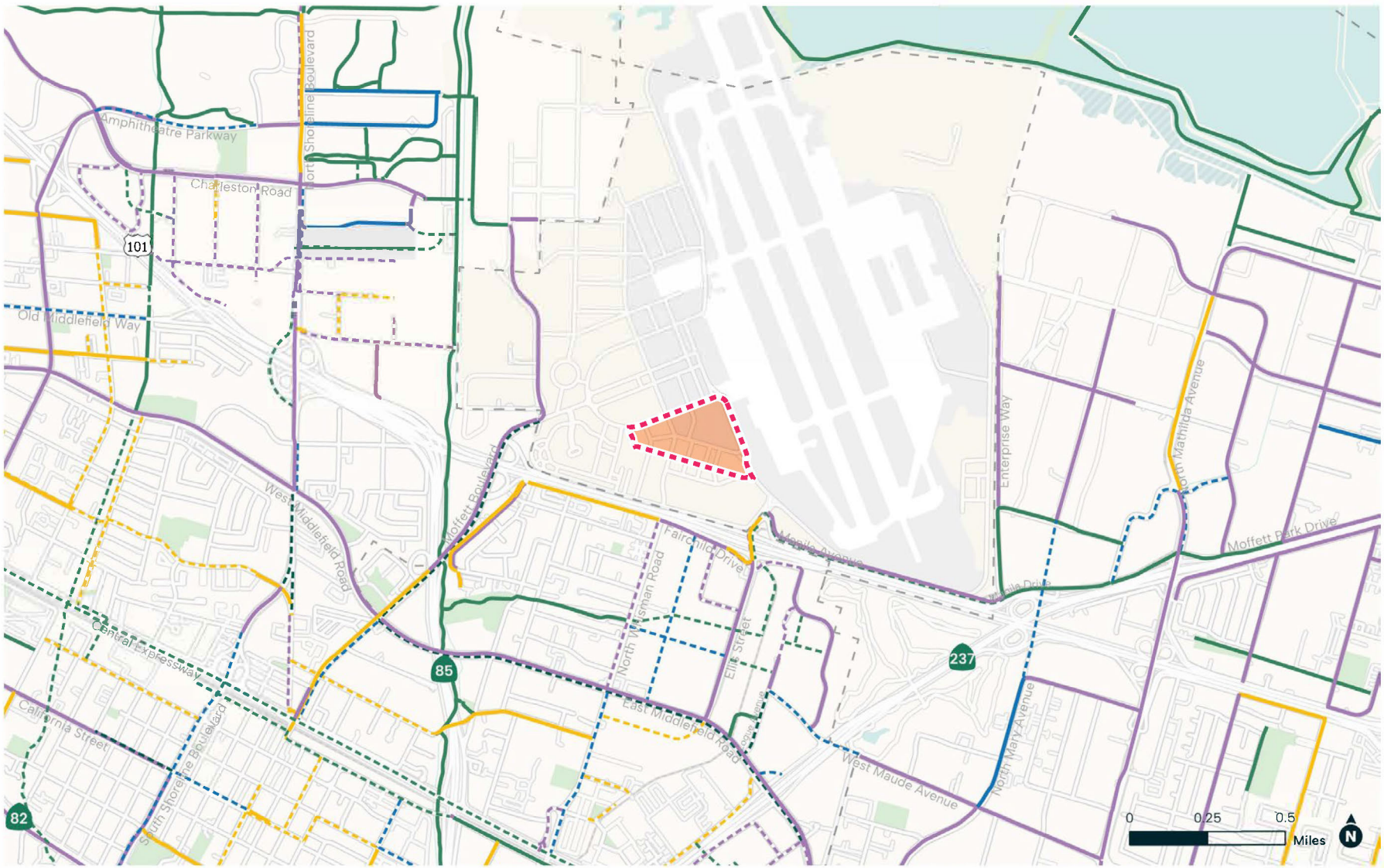
Source: Fehr & Peers 2025; ACE 2025; Caltrain 2025; Santa Clara Valley Transportation Authority 2025.

Note: The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Graphics ... 104894 (9-15-2025) TG

Figure 3.16-1
Existing Transit Service
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Source: Fehr & Peers 2025; ACE 2025; Caltrain 2025; Santa Clara Valley Transportation Authority 2025.

Note: The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Graphics ... 104894 (9-15-2025) TG

Figure 3.16-2
Existing and Proposed Bicycle Infrastructure
Berkeley Space Center at NASA Research Park

3.16.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on transportation and traffic if it would result in any of the conditions listed below.

Would the project:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?
- Conflict or be inconsistent with State CEQA Guidelines 15064.3, subdivision (b), related to vehicle miles traveled (VMT)?
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- Result in inadequate emergency access?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to transportation and traffic?

3.16.6 VMT Methods for Analysis

3.16.6.1 VMT Analysis

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. Following several years of draft proposals and related public comments, OPR selected VMT as the preferred metric for assessing passenger vehicle–related impacts and issued the revised CEQA Statute and Guidelines in December 2018, along with the OPR Technical Advisory to assist practitioners in implementing revisions to the CEQA Statute and Guidelines. Under the revised CEQA Statute and Guidelines, vehicle level of service (LOS) is no longer used as a determinant of significant environmental impacts under CEQA. Analysis of a project's impacts is now based on an assessment of VMT.

Chapter 2 of the Transportation Analysis includes additional detail and justification for the VMT analysis approach, methods, and assumptions.

VMT Screening

Project VMT screening applies to projects with characteristics that could readily lead to the conclusion that the project would not cause a VMT impact and therefore could be screened out from a detailed VMT analysis. The OPR Technical Advisory includes several screening criteria. The criterion applicable to the project is the Near Transit Stations criterion. According to this criterion,

projects within 0.5 mile of a major transit stop[2] or a stop along a high-quality transit corridor[3] can be assumed to have a less-than-significant impact on VMT if certain conditions are met.

Most of the Project Site is within 0.5 mile of the Bayshore/NASA Santa Clara Valley Transportation Authority (VTA) light rail station, part of a fixed-rail transit service and considered a major transit stop. To promote access to transit, the Project's TDM Plan includes a site wide shuttle system that would connect the Project to nearby transit hubs, including the Bayshore/NASA VTA light rail station.

In addition, the CEQA Proposed Project would have a relatively high density (floor area ratio of over 0.75; specifically 1.6 and 1.0 for the CEQA Proposed Project and CEQA Reduced Density Alternative, respectively), would not provide excessive parking (the proposed parking ratios are less than the typical parking demand for similar uses), would not demolish affordable residential units, and would be consistent with the applicable Sustainable Communities Strategy (i.e., Plan Bay Area 2050) by locating a mixed-use high-density development within 0.5 mile of a major transit stop. Although the project meets the Near Transit Stations criterion and has characteristics specified by OPR that support the presumption that a project would not generate significant levels of VMT, a detailed quantitative VMT analysis was conducted for the project to present a conservative analysis.

VMT Estimation Method

The VMT analysis uses the Metropolitan Transportation Commission (MTC) Travel Model, version 1.5, which was released in 2021 to support MTC's 2021 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), also known as Plan Bay Area 2050 (PBA 2050), consistent with SB 375 requirements.

The MTC Travel Model assigns all predicted trips within, across, to, or from the nine-county San Francisco Bay Area region on the roadway network and the transit system according to travel mode (single-driver or carpool vehicle, biking, walking, or transit) and transit carrier (bus, rail) for a given scenario. Daily VMT output from the MTC Travel Model for residential and commercial land uses comes from a tour-based analysis. The tour-based analysis examines the entire chain of trips over the course of a day, not just trips to and from a destination. Therefore, all VMT for an individual resident or worker is included, not just trips to and from the person's home or workplace.

MTC calibrated and validated the MTC Travel Model for 2015 conditions (Base Model) and provides forecasts for various future scenarios, including year 2050 (Future Model). The 2050 Future Model represents the changes in land use envisioned in PBA 2050 and the planned and funded transportation network expected by 2050. The model runs listed below were used to conduct straight-line interpolation[4] to develop 2024 and 2040 VMT estimates for the project. Consistent with SB 743, OPR Guidelines, and the State's VMT reduction goals, the project's VMT impacts are assessed against current/2024 conditions instead of future year conditions.

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2 *Major transit stop* is defined as an existing rail transit station, ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency-of-service interval of 20 minutes or less during the morning and afternoon peak commute periods (Public Resources Code, Division 13, Environmental Quality, Chapter 2.5, Definitions, Section 21064.3).

3 *High-quality transit corridor* is defined as a corridor with fixed-route bus service with service intervals no longer than 15 minutes during peak commute hours (Public Resources Code, Division 13, Environmental Quality, Chapter 4.2, Implementation of the Sustainable Communities Strategy, Section 21155).

4 A straight-line interpolation is a method for estimating unknown data points between two known data points by assuming a direct, linear relationship.

Fehr & Peers conducted the following model runs for the project:

- **MTC Year 2015 Base Model** – MTC's base year 2015 travel demand model run without any adjustments.
- **MTC Year 2015 Base Model with Project** – The land use database for the MTC Travel Model for 2015 was adjusted to reflect development of the CEQA Proposed Project, including implementation of the project-specific TDM plan to reduce project VMT and trip generation by 22 percent. Appendix 2-4 of this joint EIR/EIS includes the project-specific TDM plan.
- **MTC Year 2050 Future Model** – Fehr & Peers adjusted land use variables for the Project Site to reflect the expected development without the CEQA Proposed Project. The land use variables for the Project Site were also adjusted to assume full occupancy of currently vacant uses, which is consistent for the NEPA No-Action Alternative, but not the CEQA No-Project/Existing Conditions Alternative. Fehr & Peers' review of the land use database showed that the assumed land uses in the nearby areas outside of the Project Site correctly reflect the expected development in these areas.
- **MTC Year 2050 Future Model with Project** – The land use database for the 2050 no-project model run was adjusted to reflect development of the CEQA Proposed Project, including implementation of the project-specific TDM plan to reduce project VMT and trip generation by 22 percent.

Full buildout is assumed to occur in 2041, which is the first year following completion of construction. However, based on information available at the time of the technical analysis, VMT was quantified assuming project operations would begin in 2040. Travel conditions in 2041 are anticipated to be similar to, or slightly lower than, those in 2040 because additional regional development and increased land use density would generally reduce average trip lengths and associated VMT. Accordingly, the analysis reflects a conservative representation of VMT.

VMT Metric for Analysis

The VMT analysis uses total VMT per service population, as follows:

- Total VMT, the numerator, is defined as total VMT for all trip purposes generated by passenger vehicles and light trucks in the selected geographic area (i.e., the project traffic analysis zone [TAZ]).
- Service population, the denominator, includes all variables that generate vehicle trips in the models that estimate VMT. For this project, this consists of the total number of all residents, employees, and university students associated with the project.

The VMT analysis uses total VMT per service population to account for all VMT generated by the project and capture the interaction and trip internalization between the various project components.

VMT Threshold of Significance

Consistent with OPR guidance, the VMT analysis uses a threshold of significance to determine if the project would have a significant impact on VMT. The project's VMT impact is significant if its total VMT per service population exceeds existing average VMT per service population for the Bay Area region minus 15 percent. Existing (2024) conditions are used as the baseline, rather than a future-

year scenario, because SB 743, OPR Guidelines, and the State's VMT framework require project-level transportation impacts to be evaluated against current conditions. This approach ensures that projects are assessed based on their contribution to present-day travel behavior and their consistency with statewide goals to reduce VMT. Total VMT per service population for the Bay Area region under 2024 (existing) conditions is estimated to be 22.3. Thus, the threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0 (22.3 x (1-0.15) = 19.0).

3.16.7 Impacts and Mitigation Measures

***Impact CEQA-TRAN-1*: *Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as the CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as the CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Full Operations

As discussed in more detail in the *Berkeley Space Center at NASA Research Park Transportation Analysis* (Appendix 3.16-1 of this joint EIR/EIS), the CEQA Proposed Project would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Relevant federal regulations include those associated with the Federal Highway Administration, the ADA, and EO 13150. Relevant State of California (State) regulations include SB 743, and SB 375. Based on the analysis below, the impact to plan consistency is less than significant.

Project Operations Consistency with Federal Regulations

The CEQA Proposed Project does not conflict with the federal transportation-related goals and policies set by FHWA, ADA, EO 13150, or NADP as described in detail in this section. The CEQA Proposed Project does not conflict with the FHWA Multimodal Roadway Policy because its roadway modifications and new access routes incorporate Complete Streets principles and provide safe and convenient pedestrian and bicycle facilities consistent with FHWA guidelines.

The CEQA Proposed Project is not in conflict with ADA regulations because all modified and new pedestrian facilities adhere to accessible design standards, including sidewalk widths, curb ramps, and accessible pedestrian features consistent with ADA requirements. The CEQA Proposed Project is not in conflict with EO 13150 because it implements a comprehensive TDM Plan to reduce the vehicle trips generated by the CEQA Proposed Project through strategies, such as transit pass subsidy programs, rideshare programs, and participation in the NRP Transportation Management Association. The CEQA Proposed Project is not in conflict with the NADP because its proposed increase in research and education land use density near transit and multimodal circulation improvements support NADP sustainability goals and adhere to the NADP TDM Plan.

Project Operations Consistency with State Regulations

The CEQA Proposed Project does not conflict with the transportation-related goals and policies set by CEQA, SB 743, and SB 375 as described in detail in this section. The CEQA Proposed Project is not in conflict with SB 743 because its transportation analysis evaluates VMT in accordance with CEQA requirements and identifies feasible mitigation measures, inconsistencies with applicable transportation regulations and plans, transportation hazards, and emergency vehicle access. The CEQA Proposed Project is not in conflict with SB 375 because the CEQA Proposed Project promotes transit-oriented development, infill housing near jobs, improved transit service, and active transportation to reduce VMT and GHG emissions.

Project Operations Consistency with Transit

The CEQA Proposed Project estimated transit ridership would not exceed available capacity on surrounding transit systems. Based on 2024 data, the VTA Orange Line, which most directly serves the Project Site, has a total average daily boardings and alightings of 60 passengers for each direction. Within the cities of Mountain View and Sunnyvale, the maximum load is 46 people, with an average load of 33. Pre-pandemic data from 2020 from VTA's Next Generation High-Capacity Study (October 2021) shows that systemwide about 40 percent of Orange Lines AM peak capacity is used, indicating that there is additional capacity for over 400 passengers in the AM peak hour.

Project Operations Consistency with Bicycle and Pedestrian Facilities

The proposed project would reconfigure the existing street network to support improved multimodal circulation, parcel access and connections to the NRP and the Ames Campus. The proposed east-west promenade for pedestrian/bicycle connectivity is consistent with NADP planning goal for a linked system of parks, plazas and pathways to create a pedestrian-oriented system separate from vehicle circulation zones. The proposed Class II bicycle lane improvement on Cody Road is consistent with NADP roadway configuration for a dedicated bicycle facilities along Cody Road. The proposed Class II bicycle lane improvement on Wescoat and Girard Roads connect the bicycle network within the NASA ARC and support the NADP goal for a connected campus. The proposed bicycle and pedestrian facility improvements are consistent with NADP development goals for campus with transportation infrastructure that supports a pedestrian and bicycle-friendly environment.

Mitigation Measures

No mitigation is required for this impact.

Construction

As discussed in more detail in Appendix 3.16-1 of this joint EIR/EIS, construction activities for the CEQA Proposed Project would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Construction activities could potentially interfere with federal and State transportation-related goals and policies if temporary closures impede roadways, bikeways or pedestrian facilities in a way that prohibits the achievement of identified goals. Similarly, construction activities could have a detrimental impact on existing bicycle and pedestrian facilities if temporary closure impedes the use of these facilities.

Almost all construction activities would be within the CEQA Proposed Project Site and NASA ARC with little or no effect on the public right-of-way. Any temporary closures, if needed, would include appropriate traffic control and detours that maintain multi-modal access and would not impede movement or conflict with federal or state transportation-related goals, plans, or policies. Overall, the CEQA Proposed Project would not produce a detrimental impact on existing bicycle and pedestrian facilities during construction because construction activity would be temporary and not expected within the existing public right-of-way. Construction of the CEQA Proposed Project would not conflict with with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

The CEQA Proposed Project No Student/Faculty Housing Variant would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and the same total land use quantity under the CEQA Proposed Project. Under the Variant, there would be no Student/Faculty Housing on the Project Site; however, there would be an increase in the amount of Research and Office Uses, resulting in the same development density. In addition, the Variant would have the same circulation improvements and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, potential impacts related to plan consistency would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Full Operations and Construction

The CEQA Reduced Density Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Density Alternative's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, potential impacts related to plan consistency under the CEQA Reduced Density Alternative would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would have the same multi-modal transportation network and infrastructure, the same parking ratios, and the same TDM strategies under the CEQA Reduced Density Alternative. Under the Variant, there would be no Student/Faculty Housing on the Project Site; however, there would be an increase in the amount of Research and Office Uses, resulting in the same development density. In addition, the Variant would have the same circulation improvements and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, potential impacts related to plan consistency would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact for both full operations and construction.

Impact CEQA-TRAN-2: Would the project conflict or be inconsistent with State CEQA Guidelines 15064.3, subdivision (b), related to vehicle miles traveled (VMT)?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	TRAN-1. Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Full Operations

Table 3.16-1 summarizes total VMT per service population for the CEQA Proposed Project under 2040 conditions, which corresponds to buildout of the proposed project. Consistent with SB 743, OPR Guidelines, and the State's VMT reduction goals, the project's future (year 2040) VMT estimates are evaluated against current/2024 conditions. This approach ensures that projects are assessed based on their contribution to present-day travel behavior and their consistency with statewide goals to reduce VMT.

Table 3.16-1. CEQA Proposed Project VMT Assessment

Metric	VMT
Total Project-Generated VMT (CEQA Proposed Project) [a]	136,820
Project Service Population [b]	6,737
Total VMT per Service Population [c]	20.3
Threshold of Significance (15% below the average existing total VMT per service population for the Bay Area region)[d]	19.0
Exceed Threshold of Significance?	Yes

Source: MTC Travel Model, 2025; Fehr & Peers, 2026.

Notes:

VMT = vehicle miles traveled

a. Based on the results of the MTC Travel Model using a straight-line interpolation between forecasts for 2015 with project and 2050 with project.

b. Includes all employees, students, and residents under the CEQA Proposed Project.

c. Total VMT per Service Population = Total Project-Generated VMT divided by Project Service Population (136,820/6,737 = 20.3).

d. Total VMT per service population for the Bay Area region under 2024 (existing) conditions is estimated to be 22.3. The threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0 (22.3 x (1-0.15) = 19.0).

Total project-generated VMT by the CEQA Proposed Project is estimated to be approximately 136,820 (consisting of passenger vehicles and light trucks, not including heavy trucks). This includes implementation of the CEQA Proposed Project's TDM plan to reduce project VMT and trip generation by 22 percent under 2040 conditions. Dividing the total project-generated VMT by the CEQA Proposed Project's service population of 6,737, the total VMT per service population for the proposed project is estimated to be 20.3 under 2040 conditions (136,820/6,737 = 20.3). Because the total VMT per service population of 20.3 is greater than the threshold of significance of 19.0, the CEQA Proposed Project would have a potentially significant impact on VMT before mitigation.

Mitigation Measures

The following mitigation measure is required.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

As part of the Berkeley Space Center at NASA Research Park Transportation Demand Management Plan (project-specific TDM plan and mitigated TDM plan), the Project Proponent shall implement the Mitigated Transportation Demand Management Program (mitigated TDM plan) to reduce project-generated trip generation and associated vehicle miles traveled (VMT) by at least an additional 7 percentage points above the project-specific TDM plan (29 percent total reduction) for the CEQA Proposed Project and by at least an additional 9 percentage points above the project-specific TDM plan (31 percent total reduction) for the CEQA Proposed Project No Student/Faculty Housing Variant. The mitigated TDM plan would achieve up to a 31 percent reduction and meet the mitigation requirements of 29 percent under the CEQA Proposed Project and 31 percent under the CEQA Proposed Project No Student/Faculty Housing Variant. The Berkeley Space Center at NASA Research Park Transportation Demand Management Plan includes both project-specific TDM elements and mitigated TDM elements and specifies which TDM measures need to be completed before construction completion, before Phase 1 certificate of occupancy, and ongoing during implementation of the proposed project. The mitigated TDM plan outlines regular monitoring requirements to evaluate TDM effectiveness on a regular basis. For the purposes of monitoring, it is assumed that reductions in trip generation directly correlate with reductions in VMT (i.e., a one percent reduction in trip generation would also result in a one percent reduction in VMT). Specifically, about 1 year after Phase 1 certificate of occupancy and once every 2 years thereafter, the Project Proponent shall conduct a daily vehicle trip survey on a weekday on the Project Site. The survey will count vehicles entering and leaving the parking garages and entering and leaving the pick-up/drop-off zones. If the daily vehicle trips exceed the daily trip reduction goal, the Project Proponent shall work with the TDM Coordinator to submit a plan to NASA and the Transportation Management Association detailing modifications to the TDM Program to achieve compliance and a timeline for implementation.

Significance After Mitigation

To reduce this impact to below the threshold of significance, the CEQA Proposed Project would need to reduce vehicle trips and associated VMT per service population by an additional 7 percentage points (20.3 × [1 − 0.07] = 18.9), which would be below the threshold of 19.0). The additional 7 percentage point trip reduction would result in a total trip reduction of 29 percent (22 percent project-specific TDM + 7 percent mitigated TDM = 29 percent total TDM reduction).

The mitigated TDM plan can provide up to a 31 percent reduction, exceeding the mitigation requirement of 29 percent for the CEQA Proposed Project. The impact for the CEQA Proposed is considered less than significant with implementation of Mitigation Measure TRAN-1.

Construction

As discussed in more detail in Appendix 3.16-1 of this joint EIR/EIS, project construction would generate vehicle travel associated with construction workers commuting to and from the Project Site. Construction-related vehicle travel would be temporary in nature and limited to the duration of construction activities. The construction VMT analysis considers only construction worker commute travel; vehicle travel associated with construction trucks, material deliveries, and equipment hauling is not included in the VMT analysis for transportation.

Construction worker travel would not represent a net increase in regional VMT, as the regional construction labor force generally remains relatively constant over time, with workers shifting among job sites as individual projects begin and end. As a result, construction worker travel associated with the proposed project would primarily redistribute from existing regional construction worker travel patterns, rather than induce new long-term vehicle travel. Therefore, the construction of the CEQA Proposed Project would have a less than significant VMT impact.

Mitigation Measures

No mitigation is required for this impact

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Full Operations

The addition of employees from the research and office uses and the elimination of student/faculty housing would result in additional employees and students driving to and from the Project Site. As summarized in Table 3.16-2, the CEQA Proposed Project No Student/Faculty Housing Variant is estimated have a total VMT per service population of 20.7 under 2040 conditions, which is greater than the threshold of significance of 19.0; therefore, the CEQA Proposed Project with Variant would have a potentially significant impact on VMT before mitigation.

Table 3.16-2. CEQA Proposed Project No Student/Faculty Housing Variant VMT Assessment

Metric	VMT
Total Project-Generated VMT (CEQA Proposed Project No Student/Faculty Housing Variant) [a]	139,700
Project with Variant Service Population [b]	6,751
Total VMT per Service Population [c]	20.7
Threshold of Significance (15% below the average existing total VMT per service population for the Bay Area region) [d]	19.0
Exceed Threshold of Significance?	Yes

Source: MTC Travel Model, 2025; Fehr & Peers, 2026.

Notes:

VMT = vehicle miles traveled

a. VMT estimates for the CEQA Proposed Project No Student/Faculty Housing Variant are derived from the CEQA Proposed Project VMT results that were developed using the MTC Travel Model. A separate travel model run was

not conducted for the CEQA Proposed Project No Student/Faculty Housing Variant. VMT for the CEQA Proposed Project No Student/Faculty Housing Variant was estimated by applying the proportional change in trip generation between the CEQA Proposed Project and the No Student/Faculty Housing Variant to the modeled VMT results. Specifically, a straight-line interpolation based on the proportional difference in trip generation was used to estimate VMT for the CEQA Proposed Project Alternative No Student/Faculty Housing Variant.

b. Includes all employees, students, and residents under the CEQA Proposed Project No Student/Faculty Housing Variant.

c. Total VMT per Service Population = Total Project with Variant -Generated VMT divided by Project with Variant Service Population (139,700/6,751 = 20.7)

d Total VMT per service population for the Bay Area region under 2024 (existing) conditions is estimated to be 22.3. The threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0 (22.3 x (1-0.15) = 19.0).

Mitigation Measures

The following mitigation measure is required.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for CEQA Proposed Project under Impact CEQA-TRAN-2.

Significance After Mitigation

To reduce this impact to below the threshold of significance, the CEQA Proposed Project No Student/Faculty Housing Variant would need to reduce vehicle trips and associated VMT per service population by an additional 9 percentage points (20.7 × [1 − 0.09] = 18.8), which would be below the threshold of 19.0). The additional 9 percentage point trip reduction would result in a total trip reduction of 31 percent (22 percent project-specific TDM + 9 percent mitigated TDM = 31 percent total TDM reduction).

The mitigated TDM plan would achieve a 31 percent reduction and meets the mitigation requirements of 31 percent under the CEQA Proposed Project No Student/Faculty Housing Variant. The impact for the CEQA Proposed Project No Student/Faculty Housing Variant is considered less than significant with implementation of Mitigation Measure TRAN-1.

Construction

Because the CEQA Proposed Project No Student/Faculty Housing Variant's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, potential impacts related construction VMT would be the same as under the CEQA Proposed Project. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Full Operations

The CEQA Reduced Density Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. However, the reduction of Research and Office Use would result in fewer employees on the site, thereby reducing opportunities for trip internalization and

multimodal travel, while also increasing travel distances between land uses, leading to a greater share of trips made by vehicle over longer distances.

As summarized in Table 3.16-3. CEQA Reduced Density Alternative VMT Assessment**,** the CEQA Reduced Density Alternative is estimated to have a total VMT per service population of 22.7 under 2040 conditions, which is greater than the threshold of significance of 19.0.

Table 3.16-3. CEQA Reduced Density Alternative VMT Assessment

Metric	VMT
Total Project-Generated VMT (CEQA Reduced Density Alternative) [a]	90,540
CEQA Reduced Density Alternative Service Population [b]	3,989
Total VMT per Service Population [c]	22.7
Threshold of Significance (15% below the average existing total VMT per service population for the Bay Area region) [d]	19.0
Exceed Threshold of Significance?	Yes

Source: MTC Travel Model, 2025; Fehr & Peers, 2026.

Notes:

VMT = vehicle miles traveled

[a] VMT estimates for the CEQA Reduced Density Alternative are derived from the CEQA Proposed Project VMT results that were developed using the MTC Travel Model. A separate travel model run was not conducted for the CEQA Reduced Density Alternative. VMT for the CEQA Reduced Density Alternative was estimated by applying the proportional change in trip generation between the CEQA Proposed Project and the CEQA Reduced Density Alternative to the modeled VMT results. Specifically, a straight-line interpolation based on the proportional difference in trip generation was used to estimate VMT for the CEQA Reduced Density Alternative.

[b] Includes all employees, students, and residents under the CEQA Reduced Density Alternative.

[c] Total VMT per Service Population = Total CEQA Reduced Density Alternative -Generated VMT divided by CEQA Reduced Density Alternative Service Population (90,540/3,989 = 22.7)

[d] Total VMT per service population for the Bay Area region under 2024 (existing) conditions is estimated to be 22.3. The threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0 (22.3 x (1-0.15) = 19.0).

Mitigation Measures

The following mitigation measure is required.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for CEQA Proposed Project under Impact CEQA-TRAN-2.

Significance After Mitigation

To reduce this impact to below the threshold of significance, the CEQA Reduced Density Alternative would need to reduce vehicle trips and associated VMT per service population by an additional 17 percentage points ((22.7 × [1 − 0.17] = 18.8), which would be below the threshold of 19.0). The additional 17 percentage points trip reduction would result in a total trip reduction of 39 percent (22 percent project-specific TDM + 17 percent mitigated TDM = 39 percent total TDM reduction).

The mitigated TDM plan includes all feasible measures to reduce VMT for the proposed project (i.e., a mixed-use academic and research project) and can achieve up to a 31 percent reduction, but would not meet the mitigation requirements of 39 percent under the CEQA Reduced Density Alternative. The TDM Plan would need to achieve a TDM target of 39 percent, which is deemed infeasible because there are no additional feasible measures that would reduce VMT by 39 percent. Achieving

a 39 percent reduction would require fundamental changes to the project description to mitigate the impact. The impact for the CEQA Reduced Density Alternative is considered significant and unavoidable with implementation of Mitigation Measure TRAN-1.

Construction

The CEQA Reduced Density Alternative's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Less square footage would need to be constructed in each building under the CEQA Reduced Density Alternative; thus, the duration of some construction subphases may be reduced under the CEQA Reduced Density Alternative compared to the CEQA Proposed Project. Therefore, the potential impacts related to construction VMT would be the same or less as under the CEQA Proposed Project. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Full Operations

The addition of employees from the research and office uses and the elimination of student/faculty housing would result in additional employees and students driving to and from the site.

As summarized in Table 3.16-4, CEQA Reduced Density Alternative VMT Assessment**,** the CEQA Reduced Density Alternative is estimated to have a total VMT per service population of 22.7 under 2040 conditions, which is greater than the threshold of significance of 19.0.

Table 3.16-4. CEQA Reduced Density Alternative No Student/Faculty Housing Variant VMT Assessment

Metric	VMT
Total Project-Generated VMT (CEQA Reduced Density Alternative No Student/Faculty Housing Variant) [a]	93,560
CEQA Reduced Density Alternative with Variant Service Population [b]	4,002
Total VMT per Service Population [c]	23.4
Threshold of Significance (15% below the average existing total VMT per service population for the Bay Area region) [d]	19.0
Exceed Threshold of Significance?	Yes

Source: MTC Travel Model, 2025; Fehr & Peers, 2026.

Notes:

VMT = vehicle miles traveled

[a] VMT estimates for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant are derived from the CEQA Proposed Project VMT results that were developed using the MTC Travel Model. A separate travel model run was not conducted for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant. VMT for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant was estimated by applying the proportional change in trip generation between the CEQA Proposed Project and the CEQA Reduced Density Alternative No Student/Faculty Housing Variant to the modeled VMT results. Specifically, a straight-line interpolation based on the proportional difference in trip generation was used to estimate VMT for the CEQA Reduced Density Alternative No Student/Faculty Housing Variant.

[b] Includes all employees, students, and residents under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant.

[c] Total VMT per Service Population = Total CEQA Reduced Density Alternative with Variant -Generated VMT divided by CEQA Reduced Density Alternative with Variant Service Population (93,560/4,002 = 23.4)

[d] Total VMT per service population for the Bay Area region under 2024 (existing) conditions is estimated to be 22.3. The threshold of significance, which is 15 percent below the existing total VMT per service population for the Bay Area region, is 19.0 (22.3 x (1-0.15) = 19.0).

Mitigation Measures

The following mitigation measure is required.

Mitigation Measure TRAN-1. Mitigated TDM Plan that Further Reduces VMT

See discussion for CEQA Proposed Project under Impact CEQA-TRAN-2.

Significance After Mitigation

To reduce this impact to below the threshold of significance, the CEQA Reduced Density Alternative No Student/Faculty Housing Variant would need to reduce vehicle trips and associated VMT per service population by an additional 19 percentage points (23.4 × [1 − 0.19] = 18.9), which would be below the threshold of 19.0). The additional 19 percentage points trip reduction would result in a total trip reduction of 31 percent (22 percent project-specific TDM + 19 percent mitigated TDM = 41 percent total TDM reduction).

The mitigated TDM plan includes all feasible measures to reduce VMT for the proposed project (i.e., an academic and research project) and can achieve a 31 percent reduction, but would not meet the mitigation requirements of 41 percent under the CEQA Reduced Density Alternative No Student/Faculty Housing Variant. The TDM Plan would need to achieve a TDM target of 41 percent, which is deemed infeasible because there are no additional feasible measures that would reduce VMT by 41 percent. Achieving a 41 percent reduction would require fundamental changes to the project description to mitigate the impact. The impact for the CEQA Reduced Density Alternative is considered significant and unavoidable with implementation of Mitigation Measure TRAN-1.

Construction

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Less square footage would need to be constructed in each building under the CEQA Reduced Density Alternative; thus, the duration of some construction subphases may be reduced under the CEQA Reduced Density Alternative compared to the CEQA Proposed Project. Therefore, the potential impacts related to construction VMT would be the same or less as under the CEQA Proposed Project. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-TRAN-3: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as the CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as the CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Full Operations

The CEQA Proposed Project would not modify public streets outside the Limits of Work. The CEQA Proposed Project would modify the existing roadways on and bordering the Project Site. The new roadways would be constructed to provide access to new buildings and to improve shuttle, bicycle, and pedestrian circulation. On the interior perimeter of the Project Site, Girard Road would be realigned south of the Project Site and a new roadway would connect Wescoat Road and Edquiba Road west of the Project Site. The project would also modify the existing roadways on the interior perimeter of the Project Site to primarily improve the pedestrian and bicycle infrastructure.

Designs for modified or new roadways on NASA ARC under the proposed project would be based on applicable design standards, such as those from the California Department of Transportation Highway Design Manual, California Manual on Uniform Traffic Control Devices (MUTCD), National Association of City Transportation Officials, and the proposed Development Guidelines, in effect at the time of project design and would not substantially increase hazards due to geometric design features. In addition, the proposed project would adhere to the NADP for an integrated, dynamic research and education community including a research and development campus in the NRP area; therefore, it would not introduce an incompatible use with the potential to create a transportation hazard. Therefore, implementation of the CEQA Proposed Project would not result in increased hazards due to geometric design features or incompatible uses. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact.

Construction

As discussed in more detail in Appendix 3.16-1 of this joint EIR/EIS, construction of the CEQA Proposed Project would not result in increased hazards due to geometric design features or incompatible uses. The haul route for demolition materials would be U.S. 101. Trucks traveling to the Limits of Work would exit U.S. 101 at Ellis Street, go through the applicable access control points along Ellis Street, and continue to their destination. Trucks traveling from the Limits of Work would exit via Cody Road, then continue to Ellis Street, and through the applicable access control points and onto the U.S. 101 on-ramp.

The CEQA Proposed Project would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption. There are no specific details about the specific temporary roadway closures anticipated to be required for the CEQA Proposed Project. However, the construction traffic control plan will address temporary roadway closures and detours to ensure access and circulation for all travel modes, consistent with all applicable standards, during construction. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

Because the CEQA Proposed Project No Student/Faculty Housing Variant has the same circulation improvements and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, the potential impacts related to transportation hazards would be the same as those under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Full Operations and Construction

The CEQA Reduced Density Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Density Alternative's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, the potential impacts related to transportation hazards under the CEQA Reduced Density

Alternative would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant has the same circulation improvements, and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, the potential impacts related to transportation hazards would be the same as those under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-TRAN-4: Would the project result in inadequate emergency access?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project No Student/Faculty Housing Variant	*Same as the CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative No Student/Faculty Housing Variant	*Same as the CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Full Operations

As discussed in Section 3.14, *Public Services*, of this joint EIR/EIS, fire protection and emergency medical services would be provided by NASA Ames Fire Department and the County of Santa Clara Emergency Medical Services Agency. The NASA Ames Fire Department would continue to provide services as it does now, and the existing vehicular circulation network within NASA ARC would continue accommodating emergency vehicle access. The CEQA Proposed Project would modify the existing roadways within and bordering the Project Site. All public streets outside the Project Site

would continue to accommodate emergency vehicles, similar to existing conditions. As required by the California Vehicle Code, non-emergency vehicles would continue to yield the right-of-way to emergency vehicles on both the internal NASA ARC and project roadway network as well as external public streets serving the NASA ARC campus.

The CEQA Proposed Project would not make any changes to public streets or include elements that would conflict with adopted codes regarding street widths and turning movements. The CEQA Proposed Project would not include any design features that would hinder or preclude emergency vehicle access. Therefore, implementation of the CEQA Proposed Project would result in a less-than-significant impact on emergency access.

Mitigation Measures

No mitigation is required for this impact.

Construction

As discussed in more detail in Appendix 3.16-1 of this joint EIR/EIS, construction of the CEQA Proposed Project would result in a less-than-significant impact on emergency access. Emergency access is defined as the ability for emergency vehicles to move into, out of, and throughout the construction area. Part 6 of the CA MUTCD outlines guidance and standards for accommodating emergency vehicles in construction areas. While some traffic incidents might be anticipated and planned for, emergencies and disasters might pose more severe and unpredictable problems. The ability to quickly install proper temporary traffic controls might greatly reduce the effects of an incident, such as secondary crashes or excessive traffic delays. An essential part of fire, rescue, spill clean-up, highway agency, and enforcement activities is the proper control of road users through the traffic incident management area to protect responders, victims, and other personnel at the site.[5]

The CEQA Proposed Project would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction that comply with CA MUTCD guidance and standards pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption. The construction traffic control plan will address emergency access to and from the Project Site throughout construction. The construction traffic control plan will include coordination with local emergency agencies. If temporary roadway closures are needed during the construction period, the construction traffic control plan will also identify alternative emergency vehicle routes. The impact is less than significant.

Mitigation Measures

No mitigation is required for this impact.

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5 These operations might need corroborating legislative authority for the implementation and enforcement of appropriate road user regulations, parking controls, and speed zoning. It is desirable for these statutes to provide enough flexibility in the authority for, and implementation of, temporary traffic control to respond to the needs of changing conditions found in traffic incident management areas. *Manual on Uniform Traffic Control Devices for Streets and Highways*, 2023 Edition (pg. 726). Available: https://mutcd.fhwa.dot.gov/. Accessed: February 12, 2026.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

Because the CEQA Proposed Project No Student/Faculty Housing Variant has the same circulation improvements and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, the potential impacts on emergency access would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Full Operations and Construction

The CEQA Reduced Density Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Density Alternative's construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, the potential impacts on emergency access under the CEQA Reduced Density Alternative would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Full Operations and Construction

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant has the same circulation improvements and construction would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project, the potential impacts on emergency access would be the same as under the CEQA Proposed Project. The impact is less than significant for both full operations and construction.

Mitigation Measures

No mitigation is required for this impact.

3.16.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.16.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. Cumulative projects within two miles of the Project Site are described in Section 3.6, *Approach to Cumulative Impact Analysis,* in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for transportation considers the vicinity of the Project Site, NASA ARC, Mountain View, and Sunnyvale.

Impact CEQA-C-TRAN-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact related to a conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities? (Less than Significant Cumulative Impact)

Cumulative projects in NASA ARC, Mountain View, and Sunnyvale would be required to comply with existing regulations, including policies and zoning regulations that have been enacted to minimize impacts related to transportation and circulation. The CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Relevant federal regulations include those associated with the Federal Highway Administration, the ADA, and EO 13150. Relevant Stat) regulations include SB 743, and SB 375. During construction and operation, the proposed project's consistency with applicable programs, plans, ordinances, and policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, under reasonably cumulative conditions would be the same as under existing conditions, as discussed in Impact CEQA-TRAN-1. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to conflict with programs, plans, ordinances, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Impact CEQA-C-TRAN-2: Would the project result in a cumulatively considerable contribution to significant cumulative impacts related to a conflict or inconsistency with State CEQA Guidelines Section 15064.3, subdivision (b)? (Less than Cumulatively Considerable with Mitigation for CEQA Proposed Project; Cumulatively Considerable Contribution with Mitigation for CEQA Reduced Density Alternative)

VMT generated is estimated to be about 136,820 (consisting of passenger vehicles and light trucks, not including heavy trucks) under the CEQA Proposed Project and 90,540 under the CEQA Reduced Density Alternative. This includes implementation of the project-specific TDM plan to reduce project VMT and trip generation by 22 percent under 2040 conditions. Total VMT per service population for the CEQA Proposed Project is estimated to be 20.3 under 2040 conditions and 22.7 for the CEQA Reduced Density Alternative; both are above the threshold of significance of 19.0.

Before mitigation, the CEQA Proposed Project and the CEQA Reduced Density Alternative could contribute to cumulatively significant VMT impacts, as described under Impact CEQA-TRAN-2. However, with implementation of Mitigation Measure TRAN-1, VMT would be reduced so that the CEQA Proposed Project would not contribute considerably to cumulatively significant VMT impacts,

while the CEQA Reduced Density would continue to contribute considerably to cumulatively significant VMT impacts, even with implementation of Mitigation Measure TRAN-1. Therefore, the contribution of the CEQA Proposed Project to cumulative impacts on VMT would be less than cumulatively considerable with mitigation and contribution of the CEQA Reduced Density Alternative to cumulative impacts on VMT would be cumulative considerable.

Impact CEQA-C-TRAN-3: In combination with past, present, and reasonably foreseeable projects in the vicinity, would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)? (No Significant Cumulative Impact)

Several transportation network modifications are currently proposed or planned (described in Chapter 1 in Appendix 3.16-1 of this joint EIR/EIS) that would enhance multi-modal travel in the vicinity of the Project Site. These modification projects would be designed to meet applicable design standards. Designs for modified or new roadways on NASA ARC as part of the cumulative projects would be based on applicable design standards, such as those from the California Department of Transportation Highway Design Manual, MUTCD, National Association of City Transportation Officials, similar to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant). In addition, the proposed project would adhere to the NADP for an integrated, dynamic research and education community including a research and development campus in the NRP area; therefore, it would not introduce an incompatible use with the potential to create a transportation hazard. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to hazards due to a geometric design or incompatible uses.

Impact CEQA-C-TRAN-4: In combination with past, present, and reasonably foreseeable projects in the vicinity, would the project result in inadequate emergency access? (No Significant Cumulative Impact)

Cumulative projects in NASA ARC, Mountain View, and Sunnyvale would be required to comply with existing regulations, including policies and zoning regulations that have been enacted to minimize impacts related to emergency access. Furthermore, implementation of the zoning regulations in Mountain View and Sunnyvale would help minimize traffic congestion that could affect emergency access. Emergency access for the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) under reasonably foreseeable conditions would be similar to emergency access under existing conditions, as described under Impact CEQA-TRAN-4. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to inadequate emergency access.

3.17 Tribal Cultural Resources

3.17.1 Introduction

This section evaluates the potential impacts on Tribal Cultural Resources (TCRs) that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section describes existing conditions at the Project Site as well as the regulatory framework for the analysis.

Relevant technical documentation used in this analysis includes the following technical study prepared for the project:

- *Cultural Resource Inventory Report for the Berkeley Space Center at NASA Research Park Project* (Cultural Resource Inventory Report) prepared by Albion and Architectural Resources Group, April 2026 (Appendix 3.5-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to TCRs include guidance from the National Trust for Historic Preservation to follow the Section 106 review process outlined in the National Historic Preservation Act (NHPA). Furthermore, the National Trust for Historic Preservation recommended that the National Environmental Policy Act (NEPA) process consider potential impacts on historic properties, including cumulative impacts. The National Trust for Historic Preservation stated that resources of concern could include archaeological resources and resources of significance to tribes and indigenous people. In addition, the Native American Heritage Commission (NAHC) provided a summary of requirements related to the California Environmental Quality Act (CEQA), including Assembly Bill (AB) 52. These issues are addressed in this section under Impact CEQA-TCR-1.

3.17.2 Affected Environment/Environmental Setting

Refer to Section 3.5.2, *Cultural Resources,* of this joint EIR/EIS and Chapter 5 of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS) for the precolonial background and ethnohistory of the Project Site, a discussion of the Ohlone and land use history of the Project Site, and a discussion of Native American consultation methodology.

3.17.2.1 Resource Identification Methodology

Native American Consultation

On June 26, 2024, Albion, on behalf of NASA and the University of California, Berkeley (UC Berkeley) (on behalf of the Regents of the University of California), contacted NAHC requesting a Sacred Lands File (SLF) search and to obtain a list of Native American tribes and their representatives that may have important information on the project's Area of Potential Effects (APE) per Section 106 of the NHPA and AB 52. In April 2025, NASA sent a second SLF request to NAHC. No additional tribal stakeholders were identified in the second request. No federally recognized Tribes were identified as associated with the Project Site.

The following list of tribal stakeholders was provided:

- Ed Ketchum and Valentin Lopez of the Amah Mutsun Tribal Band
- Irene Zwierlein of the Amah Mutsun Tribal Band of Mission San Juan Bautista
- Carla Muñoz, Samuel Rodriguez, Henry Muñoz of the Costanoan Rumsen Carmel Tribe
- Kanyon Sayers-Roods and Ann Marie Sayers of the Indian Canyon Mutsun Band of Costanoan
- Charlene Nijmeh and Richard Massiatt of the Muwekma Ohlone Tribe of the San Francisco Bay Area
- Katherine Perez, Timothy Perez of the Northern Valley Yokut/Ohlone Tribe
- Lilian Camarena, Jonathan Wasaka, and Quirina Luna Geary of the Tamien Nation
- Vincent Medina, Desiree Vigil, and Andrew Galvan of the Ohlone Indian Tribe
- Kenneth Woodrow of the Wuksache Indian Tribe/Eshom Valley Band

UC Berkeley sent AB 52 Consultation letters on August 16, 2024. NASA as the lead federal agency invited the non-federally recognized tribes to participate in the Section 106 process as "additional consulting parties" due to their demonstrated interests and knowledge of potential historic properties in the APE that should be considered in the Section 106 process. NASA sent Section 106 letters to the tribes on August 22, 2024. The letters included project location information (including a location map), project description with project alternatives, NOP information, and a request to consult with tribal representatives.

On behalf of NASA and UC Berkeley, Albion sent follow-up emails on August 30, 2024, and April 18, 2025. Additionally, Albion, on behalf of NASA and UC Berkeley, made phone calls to representatives who did not respond by email or letter.

Three California Native American tribes, the Muwekma Ohlone Tribe of the San Francisco Bay Area, Costanoan Rumsen Carmel Tribe, and the Tamien Nation responded to the request to consult.

Initial consultation meetings were held with all three tribes between May 14, 2025, and May 29, 2025. Project representatives present at the meetings included Trina Meiser (NASA), Shraddha Navalli Patil (UC Berkeley), James Sarmento (Albion), and Tim Smith (Project Proponent). The consultation meetings included a PowerPoint presentation with the following agenda:

1. Introductions
2. Cultural Resources Management at NASA Ames Research Center
3. Project Overview
4. Research and Findings
5. Known Sites within the ADI
6. Discussion, Questions, and Next Steps

Tribal representatives did not request specific topics for this consultation meeting. The draft slide deck was provided to the tribes prior to the consultation meeting. Discussion items 1, 2, and 6 of the agenda were presented by Trina Meiser of NASA; item 3 was presented by Shraddha Navalli Patil of

UC Berkeley and Tim Smith from the Project Proponent team; and items 4 and 5 were presented by James Sarmento of Albion.

Following the first consultation meeting, NASA provided the tribes with periodic project updates, and UC Berkeley provided each tribe with the September 2025 Draft Cultural Resources Technical Report for review and comment. Between September and November 2025, UC Berkeley sent several emails (on September 30, 2025, October 17, 2025, and November 3, 2025) to each of the consulting tribes requesting their review and comments on the September 2025 Draft Cultural Resources Technical Report. None of the tribes responded via email to these requests to provide comments on the September 2025 Draft Cultural Resource Inventory Report. On December 9, 2025, NASA sent an email to the tribes requesting a meeting to discuss the September 2025 Draft Cultural Resources Report and the proposed Mitigation. Albion sent several emails in December and January to schedule the second consultation meeting with the tribes.

A second consultation meeting was held with each of these three tribes in January and February of 2026 (January 21, 2026 – Costanoan Rumsen Carmel Tribe; January 30, 2026 – The Tamien Nation; February 17, 2026 – Muwekma Ohlone Tribe of the SF Bay Area). Project representatives present at the meetings included Trina Meiser (NASA), Shraddha Navalli Patil (UC Berkeley), James Sarmento and Sarah Peelo (Albion), and Tim Smith and Kristina Covall (Project Proponent). The consultation meetings included a PowerPoint presentation with the following agenda:

1. Introductions
2. Summary of Consultation
3. Cultural Resources
4. Recommendations from the Tribes
5. Draft Cultural Resources Mitigation
6. Discussion, Questions, and Next Steps

Tribal representatives did not request specific topics for this consultation meeting. The draft slide deck was provided to the tribes prior to the consultation meeting. Discussion items 1 and 2 of the agenda were presented by Trina Meiser of NASA, items 3 and 4 were presented by Sarah Peelo and James Sarmento of Albion. Shraddha Navalli Patil of UC Berkeley presented items 5 and 6. Trina Meiser of NASA also discussed the NASA-Wide Programmatic Agreement (NPA) with the tribes during this consultation meeting.

In February and March 2026, the lead agencies made concerted efforts to schedule site visits with each of the tribes, and to also schedule the Canine Forensic Survey. In March 2026, one tribe re-requested the September 2025 Draft Cultural Resources Technical Report, which the lead agencies provided, noting that the September 2025 draft report did not yet incorporate information provided by the tribes after September 2025. In March 2026, the lead agencies were revising the Cultural Resources Technical Report to incorporate information provided by the tribes after September 2025.

Following the second consultation meeting, all three of the consulting tribes were given the opportunity to participate in a site visit of the Project Site. The Tamien Nation participated in a site visit on March 20, 2026, the Muwekma Ohlone Tribe of the SF Bay Area participated in a site visit on March 25, 2026, and the Costanoan Rumsen Carmel Tribe participated in a site visit on March 31,

2026. In addition, the Tamien Nation monitored the Canine Forensic Survey, conducted on March 16, and March 17, 2026.

A third consultation meeting was held with each of the three tribes in April 2026 (April 6, 2026 - The Tamien Nation and Costanoan Rumsen Carmel Tribe; April 7, 2026 – Muwekma Ohlone Tribe of the SF Bay Area). Project representatives present at the meetings included Trina Meiser (NASA), Shraddha Navalli Patil (UC Berkeley), and James Sarmento and Sarah Peelo (Albion), and Tim Smith (Project Proponent). Consultation meetings were held including a PowerPoint presentation that followed the below agenda:

1. Introductions
2. Summary of Consultation
3. Cultural Resources
4. Tribal Cultural Resources
5. Canine Forensic Survey Results
6. Draft Cultural Resources Mitigation
7. Draft Tribal Cultural Resources Mitigation
8. Discussion, Questions, and Next Steps

Tribal representatives did not request specific topics for this consultation meeting. The draft slide deck was provided to the tribes prior to the consultation meeting. Discussion items 1, 2, and 8 of the agenda were presented by Trina Meiser of NASA, items 3, 4, and 5 were presented by Sarah Peelo and James Sarmento of Albion. Shraddha Navalli Patil of UC Berkeley presented items 6 and 7, emphasizing that these draft mitigation measures were preliminary and would continue to evolve during tribal consultation. Trina Meiser of NASA also discussed the NPA with the tribes during this consultation meeting.

Following the third consultation meeting, the Tamien Nation provided two documents: 1) The Tamien Nation Position Statement and Formal Comments on the Draft Cultural Resource Inventory Report and Proposed TCR Mitigation Measures, and 2) The Tamien Nation Formal Tribal Comments on the Institute for Canine Forensics, Historic and Pre-Contact Human Remains Detection Dog Services, Canine Field Survey. Both documents were provided by the Tamien Nation via email on April 13, 2026. On April 14, 2026, the Tamien Nation provided the Tamien Nation Position Statement with minor edits and signature and provided the following appendices to the Position Statement: a formal boundary map for the proposed cultural landscape and Resolution # 2025-04-13-001 of the Tamien Nation. Copies of these documents are in the confidential appendix for the Tamien Nation in Appendix M of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

A Communications Log summarizing correspondence with Native American tribes, as well as all correspondence and meeting notes, are available in Appendices E through O of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

3.17.2.2 Results for Tribal Cultural Resource Identification

Andrew Green of the NAHC provided the results of a SLF search and list of tribal stakeholders on July 17, 2024. According to the NAHC, the SLF search was negative. NASA sent a second SLF request to the NAHC and on April 15, 2025, the NAHC responded that the SLF search was negative, and again provided a list of tribal stakeholders.

Through consultation with the tribes, multiple tribes identified the twelve known tribal archaeological sites in the APE as potential Tribal Cultural Resources (TCRs) (i.e., P-43-000034 (CA-SCL-14), P-43-000035 (CA-SCL-15), P-43-000036 (CA-SCL-16), P-43-000037 (CA-SCL-17), P-43-000038 (CA-SCL-18), P-43-000039 (CA-SCL-19), P-43-000040 (CA-SCL-20), P-43-000041 (CA-SCL-21), P-43-000044 (CA-SCL-24), P-43-001825 (CA-SCL-864/H), CA-SCL-1145, and CA-SCL-1146).

The Tamien Nation also identified a cultural landscape and its multiple contributing components as potential TCRs. The cultural landscape identified by the Tamien Nation encompasses a vast area of approximately 22 square miles, or 14,000 acres. Additional information about this cultural landscape is discussed in the Cultural Resource Inventory Report and the confidential appendix for the Tamien Nation in Appendix M of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

Based on this information, it is possible that additional tribal resources, including new archaeological discoveries, which the tribes would identify as TCRs/TCPs, may be identified within the Limits of Work.

Under PRC Section 21074(a)(1)(2), the archaeological resources located within the APE/ADI, have been determined by the CEQA lead agency, in its discretion and supported by substantial evidence, to be significant. Further, the cultural landscape and its contributing components identified by the Tamien Nation that are located within the APE/ADI, have been determined by the CEQA lead agency, in its discretion and supported by substantial evidence, to be significant.

The tribes provided several recommendations for the proposed project. For example, tribal representatives recommended developing an ethnography in partnership with each of the tribes that incorporates tribal realities. In addition, tribal representatives recommended that the lead agencies work collaboratively with the tribes to develop public interpretation for the proposed project. All recommendations provided by the tribes are detailed in the confidential Appendices I, K, and M of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS) and were considered by the lead agencies when developing the mitigation measures.

3.17.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal

jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies.

Plans, policies, and regulations considered in the analysis of the project's impacts on TCRs are identified in the Cultural Resource Inventory Report (Appendix 3.5-1 to this joint EIR/EIS). A list of plans, policies, and regulations considered in the analysis is provided below:

- California Register of Historical Resources
- California Environmental Quality Act
- AB 52

3.17.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on TCRs in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and the methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

3.17.5 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on TCRs if it would result in any of the conditions listed below.

Would the project:

- Cause a substantial adverse change in the significance of a Tribal Cultural Resource, defined in Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and:
    - Listed in or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to tribal cultural resources.

3.17.6 Methods for Analysis

The analysis of TCRs provided in this section is based on a cultural resources records search through the California Historical Resources Information System – Northwest Information Center (CHRIS-NWIC), a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC), and a pedestrian survey of the area of direct impact (ADI). In addition, UC Berkeley submitted notification and request-to-consult letters to 23 Native American individuals and organizations and conducted follow-up Native American consultation pursuant to AB 52. Documentation of this consultation is included as appendices to the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

3.17.7 Impacts and Mitigation Measures

Impact CEQA-TCR-1: Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe and:

A) Listed in or eligible for listing in the California Register of Historical Resources or a local register of historical resources, as defined in Public Resources Code Section 5020.1(k), or

B) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? The lead agency shall consider the significance of the resource to a California Native American tribe.

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	CUL-4. Cultural Resources Treatment and Monitoring Plan CUL-5. Cultural Resources Monitoring and Sensitivity Training CUL-6. Cultural Resources Inadvertent Discoveries Protocols CUL-7. Human Remains Discovery Protocols	Significant and Unavoidable with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

Under Public Resources Code Section 21074(a)(1)(2), the CEQA lead agency has determined, in its discretion and supported by substantial evidence, the archaeological resources located within the APE/ADI are significant for the purpose of CEQA. In addition, the CEQA lead agency has determined that the cultural landscape and its contributing components identified by the Tamien Nation that are located within the APE/ADI are significant for the purpose of CEQA. The entire ADI also has the potential to contain as yet unidentified TCRs. The proposed project would result in impacts on the two assumed eligible archaeological sites identified within the Project Site (CA-SCL-1145 and CA-SCL-1146) and identified as TCRs by the tribes. The proposed project would also result impacts on the cultural landscape identified as a TCR by the Tamien Nation.

Appendix A: Figure A-37 in the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS) identifies the CEQA Proposed Project elements affecting archaeological resources, also identified as TCRs, identified within the Project Site. Project elements affecting CA-SCL-1145 include excavations for building foundations (depth of impact is 5 feet) and open space and landscaping (depth of impact is up to 4 feet). Resource CA-SCL-1146 is mapped in areas affected by open space and landscaping activities (depth of impact up to 4 feet). The archaeological sensitivity assessment shows that the CEQA Proposed Project also has a high sensitivity for previously unidentified TCRs within the ADI (Appendix A: Figures A-34 and A-35 in the Cultural Resource Inventory Report [Appendix 3.5-1 of this joint EIR/EIS]), and data from known sites indicate that deposits associated with any unidentified sites could exist at depths as shallow as the top 60 centimeters (2 feet) below surface.

The CEQA Proposed Project has the potential to cause physical damage to TCRs which may alter characteristics that qualify them as TCRs. Therefore, the CEQA Proposed Project would result in a potentially significant impact on TCRs before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction (AHJ), NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the National Register of Historical Places (NRHP) compared to the California Register of Historical Resources (CRHR) and associated mitigation protocols for cultural resources and TCPs and TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 include recommendations from the tribes to mitigate potential impacts to TCRs to the extent feasible. The designation of TCRs is specific to CEQA. Any mitigation measures exclusively addressing TCRs are considered infeasible, as the Project Site falls under NASA's jurisdiction, and UC

Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains. Implementation of Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would reduce the impacts to TCRs. However, there is no feasible mitigation beyond these measures to prevent destruction of the subsurface deposits, which the tribes have identified as TCRs, or the cultural landscape, which the Tamien Nation has identified as a TCR. Therefore, the impact on TCRs would remain significant and unavoidable with the implementation of mitigation.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Proposed Project No Student/Faculty Housing Variant's construction would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to TCRs would be the same as under the CEQA Proposed Project. Therefore, the Variant would result in a potentially significant impact on TCRs before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and TCPs and TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 include recommendations from the tribes to mitigate potential impacts to TCRs to the extent feasible. The designation of TCRs is specific to CEQA. Any mitigation measures exclusively addressing TCRs are considered infeasible, as the Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains. Implementation of Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would reduce the impacts to TCRs. However, there is no feasible mitigation beyond these measures to prevent destruction of the subsurface deposits, which the tribes have identified as TCRs, or the cultural landscape, which the Tamien Nation has identified as a TCR. Therefore, the impact on TCRs would remain significant and unavoidable with the implementation of mitigation.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Because the CEQA Reduced Density Alternative proposes the same land uses, site plan, and roadway infrastructure as the CEQA Proposed Project, the construction activities caused by new development would be the same. Like the CEQA Proposed Project, the CEQA Reduced Density Alternative would have a potentially significant impact on TCRs.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and TCPs and TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 include recommendations from the tribes to mitigate potential impacts to TCRs to the extent feasible. The designation of TCRs is specific to CEQA. Any mitigation measures exclusively addressing TCRs are considered infeasible, as the Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains. Implementation of Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would reduce the impacts to TCRs. However, there is no feasible mitigation beyond these measures to prevent destruction of the subsurface deposits, which the tribes have identified as TCRs, or the cultural landscape, which the Tamien Nation has identified as a TCR. Therefore, the impact on TCRs would remain significant and unavoidable with the implementation of mitigation.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

Because the CEQA Reduced Density Alternative No Student/Faculty Housing Variant proposes the same land uses, site plan, and roadway infrastructure as the CEQA Reduced Density Alternative without the variant, the construction activities caused by new development would be the same. Like the CEQA Reduced Density Alternative, the Variant would result in a potentially significant impact on TCRs before mitigation.

Mitigation Measures

Most of NASA ARC, including the area where the proposed project would be built and operated, is an area of exclusive federal jurisdiction. NASA is the NEPA Lead Agency for the proposed action and, as the AHJ, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. There are differences between the evaluation of eligibility under the NRHP compared to the CRHR and associated mitigation protocols for cultural resources and TCPs and TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 include recommendations from the tribes to mitigate potential impacts to TCRs to the extent feasible. The designation of TCRs is specific to CEQA. Any mitigation measures exclusively addressing TCRs are considered infeasible, as the Project Site falls under NASA's jurisdiction, and UC Berkeley is not the AHJ. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction.

The following mitigation measure(s) are required:

Mitigation Measure CUL-4. Cultural Resources Treatment and Monitoring Plan

Mitigation Measure CUL-5. Cultural Resources Monitoring and Sensitivity Training

Mitigation Measure CUL-6. Cultural Resources Inadvertent Discoveries Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-2 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Mitigation Measure CUL-7. Human Remains Discovery Protocols

See discussion for the CEQA Proposed Project under Impact CEQA-CUL-3 in Section 3.5, *Cultural Resources*, of this joint EIR/EIS.

Significance After Mitigation

Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains. Implementation of Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would reduce the impacts to TCRs. However, there is no feasible mitigation beyond these measures and the project design features to prevent destruction of the subsurface deposits, which the tribes have identified as TCRs, or the cultural landscape, which the Tamien Nation has identified as a TCR. Therefore, the impact on TCRs would remain significant and unavoidable with the implementation of mitigation.

3.17.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.17.7, *Impacts and Mitigation Measures*. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1. The cumulative geographic context for other evaluated TCRs is the immediate vicinity of the Project Site.

Impact CEQA-C-TCR-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to tribal cultural resources? (Significant and Unavoidable with Mitigation)

Cumulative projects within the vicinity of the APE and ADI would include construction excavations at parcels that have been developed historically. Therefore, there is potential to affect TCRs. Moreover, other related projects performing similar construction excavations on parcels with a similar land use history could constitute a cumulatively considerable impact. As with the proposed project, all cumulative projects would be required to implement best management practices, policies, regulations, and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of a TCR. Nonetheless, cumulative impacts on TCRs are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown TCRs, similar to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant). Therefore, the

impacts of the cumulative projects, combined with the proposed project, would result in a significant cumulative impact on TCRs.

The cumulative projects would undergo separate environmental review and, depending on the depth of exavation and sensitivity of respective sites, mitigation measures could be identified for projects that have the potential to cause significant impacts on undiscovered resources. As described under Impact CEQA-TCR-1, implementation of Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7, as well as the compliance with the regulations cited above in the event resources are found, would ensure proper identification, treatment, and preservation of any resources, thereby minimizing significant impacts on TCRs. These regulations require development and implementation of a CRTMP, tribal cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of cultural resources per the CRTMP. However, because damage to TCRs is irrepaceable, past projects, the effects of other current projects, and the effects of probable future projects will have a significant unavoidable impact on known and potentially unknown TCRs. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on TCRs.

3.18 Utility and Service Systems

3.18.1 Introduction

This section evaluates the potential impacts on utility and service systems that could result from construction and operation of the Berkeley Space Center at NASA Research Park (proposed project/proposed action). This section also describes existing conditions at the Project Site as well as the regulatory framework for this analysis.

Relevant technical documentation used in this analysis includes the following technical studies prepared for the project:

- *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park* (Water Supply Evaluation) prepared by EKI Environment and Water, April 2026 (Appendix 3.18-1 of this joint environmental impact report/environmental impact statement [EIR/EIS])
- *Berkeley Space Center Project, Moffett Field, NASA Research Park, Potable Water System Master Plan* prepared by BKF, Spring 2026.
- *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026.
- *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026.
- *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

Issues identified in response to the Notice of Preparation (NOP) and Notice of Intent (NOI) (Appendix 1-1, *Scoping Report*) were considered in preparing this analysis. The NOP/NOI comments pertaining to utilities include input from the County of Santa Clara (County) and the City of Sunnyvale related to capacity, connections, and service areas. The County stated that it does not have the capacity to serve the project and that the document should identify which providers would service the Project Site. The City of Sunnyvale identified the following:

- Stated that the water pollution control plant does not have adequate capacity to serve the project;
- Requested a sanitary sewer analysis for the CEQA Proposed Project and the CEQA Reduced Density Alternative;
- Requested clarity on proposed sewer connections, flow estimates for both alternatives to evaluate sewer impacts, and proposed recycle water connections and use; and
- Clarified that the City of Sunnyvale does not provide water or stormwater service to the Project Site.

These issues are addressed under Impacts CEQA-UTIL-1 through CEQA-UTIL-8. Additional feedback from the City of Mountain View is included in this analysis.[1]

[1] Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division), March 3, 2023, Public Works Department, City of Mountain View, CA.

3.18.2 Affected Environment/Environmental Setting

Project Site

Section 2.3.6, *Utilities*, in Chapter 2, *Proposed Project/Project Action and Alternatives*, of this joint EIR/EIS provides a description of the existing utilities at the Project Site.

Water Supply

Water Supply System

The Project Site, as part of NASA Ames Research Center (NASA ARC), is within the San Francisco Public Utilities Commission (SFPUC) suburban retail service area.[2] Therefore, SFPUC would be the potable water supplier for the proposed project. NASA obtains potable water from SFPUC and owns and operates the potable water distribution system for all occupants on federal property and will continue to be the potable water service provider for the Project Site. NASA has ultimate responsibility for the water supply as well as the maintenance and safety of the drinking water system at NASA ARC. NASA is the owner and responsible party for all potable drinking water delivered to and distributed from the NASA ARC community water system, which is permitted by the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). Specifically, NASA ARC and NRP, including the Project Site, are served by the 18-inch Tyrella Feed, one of three feeds that connect directly to the SFPUC Hetch Hetchy Aqueduct. The NASA-owned Tyrella Feed starts immediately north of U.S. 101, crosses under it to the south where the flow is read by an SFPUC master meter at the corner of Tyrella Avenue and Hetch Hetchy Trail, and then enters NASA ARC at South Perimeter Road in Wescoat Village.

Existing NASA water mains in the roadways adjacent to the Project Site include the 12-inch mains along Wescoat Road. These mains connect to the larger NRP water system at Wescoat Road and Cody Road, which interconnects to the larger NASA ARC community water system that serves the Ames Campus and Moffett Federal Airfield areas. The NASA ARC water system is additionally served by the 20-inch Stevens Creek Feed and the 24-inch P500 line, which connect directly to the Hetch Hetchy Aqueduct; all three NASA-owned and -operated main lines (Stevens Creek, Tyrella, P500) connect to the SFPUC two transmission lines that run east–west south of U.S. 101. Moffett Federal Airfield is fed from the west, from the NASA-owned and -operated Stevens Creek and Tyrella main lines, which travel through 1.1-million-gallon tanks and the west side distribution system, as well as partially through the east side, from the NASA-owned and -operated P500 main line. The eastern and western halves of the distribution system are connected at three different locations. Two lines travel under Moffett Federal Airfield; one line extends along Macon Road on the south side of Moffett Federal Airfield. The two lines under Moffett Federal Airfield are normally closed in order to maintain good water quality on the northeast side of the distribution system.

[2] There are various types of customers for SFPUC: 1) wholesale customers such as Alameda, San Mateo, and Santa Clara Counties, with their own separate water supply agreements, and 2) retail customers which includes *in-city* and *suburban retail*. The SFPUC *in-city system* serves a residential population of nearly 844,000 in addition to San Francisco–based businesses; and *suburban retail customers* include a residential population of approximately 2,000, as well as businesses and institutions, in San Mateo, Santa Clara, Alameda, Tuolumne, and San Joaquin Counties. San Francisco Public Utilities Commission. 2026. *Draft 2025 UWMP and WSCP.* Available: https://www.sfpuc.gov/sites/default/files/documents/2025-UWMP-Public-Draft.pdf. Accessed: March 27, 2026.

Water Supply Variability and Drought Management

SFPUC owns and operates the San Francisco Regional Water System (RWS), which delivers high-quality drinking water to more than 2.7 million residents and businesses in the San Francisco Bay Area. The RWS collects water from the Tuolumne River in the Sierra Nevada and from protected local watersheds in the East Bay and San Francisco Peninsula (Peninsula). The RWS draws an average of 85 percent of its supply from the Tuolumne River watershed, which is collected in Hetch Hetchy Reservoir in Yosemite National Park. This water feeds into an aqueduct system, moving water 167 miles by gravity to Bay Area reservoirs and customers. The remaining 15 percent of the RWS supply is drawn from local surface waters in the Alameda and Peninsula watersheds. In addition, some retail customers are supplied with local groundwater and recycled water supplies. The split between these resources varies from year to year, depending on the water year hydrology and operational circumstances.[3]

Adoption of the Bay-Delta Plan Amendment is anticipated to affect the reliability of the RWS supplies in the future. According to SFPUC's 2020 Urban Water Management Plan (UWMP), if the current Bay-Delta Plan Amendment (July 2018) is implemented, the proposed unimpaired flow requirements would significantly reduce the available water supply by as much as 49 percent during drought years.[4] At this time, implementation remains uncertain, and although the State Water Resources Control Board (State Water Board) will work to implement the plan, SFPUC, in partnership with other key stakeholders, has proposed an alternative to implementing the Bay-Delta Plan Amendment. This alternative, established as a framework agreement in 2022, advances a term sheet for voluntary agreements to update and implement the Bay-Delta Plan and other related actions. It has been "designed to safeguard drinking water supply while also providing more water and habitat improvements to benefit native species."[5]

Approximately two thirds of SFPUC's water supply is delivered to wholesale customers; the remaining one third is delivered to retail customers, including NASA ARC. During normal hydrologic years, SFPUC will have adequate supplies and meet its projected retail water demands. During single dry years, there would be an anticipated retail supply shortfall of 11 to 20 million gallons per day (mgd). During multiple dry years, there would be an anticipated retail supply shortfall of up to 29 mgd by the fifth dry year. During a declared water shortage emergency, SFPUC could implement either voluntary or mandatory demand reductions, depending on the retail water shortage condition.[6] Specifically, as detailed in SFPUC's 2020 UWMP and included in the draft 2025 update, SFPUC has a Water Shortage Contingency Plan (WSCP), as discussed in Section 3.18.3, under *San Francisco Public Utilities Commission Water Shortage Contingency Plan.* The WSCP defines the six distinct shortage levels that the RWS could be in and the corresponding actions SFPUC would take to address the water shortage, ranging from use of dry-year water supplies (when available) to

[3] San Francisco Public Utilities Commission. 2021. *2020 Urban Water Management Plan for the City and County of San Francisco.* June 2021. Available: https://www.sfpuc.gov/sites/default/files/programs/UWMP_2020.pdf. Accessed: March 17, 2026.

[4] Ibid.

[5] San Francisco Public Utilities Commission. 2022. *SFPUC Press Release: SFPUC Reaches Pivotal Water Deal with State*, dated November 10, 2022. Available: https://www.sfpuc.gov/about-us/news/sfpuc-reaches-landmark-water-deal-state. Accessed: March 17, 2026.

[6] San Francisco Public Utilities Commission. 2021. *2020 Urban Water Management Plan for the City and County of San Francisco.* Appendix K. June 2021. Available: https://www.sfpuc.gov/sites/default/files/programs/UWMP_2020.pdf. Accessed: March 17, 2026.

voluntary water-use reductions and mandatory water-use reductions.[7] Procedures to allocate RWS supplies between retail and wholesale customers during system shortages are further specified in the SFPUC's Water Shortage Allocation Plan (WSAP), also known as the Tier 1 Shortage Plan, which is an appendix to the Water Supply Agreement and defines the method for allocating RWS supplies between the retail customers collectively and the wholesale customers collectively. Additional detail is provided under *San Francisco Public Utilities Commission Water Shortage Contingency Plan* in Section 3.18.3, *Plans, Policies, and Regulations*.

Recycled Water

Although the City of Sunnyvale and City of Mountain View both have recycled water systems adjacent to NASA ARC, non-potable water demands of the proposed project (e.g., landscape irrigation, cooling, indoor flushing, cleaning of parking structures) would be supplied by the City of Mountain View through a new NASA service connection to that city's recycled water distribution system. The City of Sunnyvale's recycled water system runs along the east side of NASA ARC; the City of Mountain View recycled water system extends to NASA ARC at the northwest corner of the Bay View area. It is anticipated that the existing City of Mountain View's service system would be extended (i.e., the flow of recycled water would be extended) to the south along RT Jones Road via an existing line to the main gate on Clark Road, providing a recycled water connection to the NRP once the connection is extended. The existing main line is owned and operated by NASA; this service extension, which would load the existing main line with recycled water and involve minimal ground work (e.g., turning a valve), is not part of the CEQA Proposed Project or the CEQA Reduced Density Alternative. NASA would be the recycled water distribution administrator, with water purchases from the City of Mountain View at the north-western meter box, and responsible for the safe use and extension of recycled water into the NRP, including the Project Site. Mountain View's recycled water is sourced from the Palo Alto Regional Water Quality Control Plant (PARWQCP), which delivers about 460,000 gallons per day (gpd), accounting for 4 percent of Mountain View's total water use.[8] The historical recycled water supply from 2010[9] to 2020[10] for Mountain View averaged 425 acre-feet per year (afy), which is below the contractual limit available from the PARWQCP (3.0 mgd peak flow rate, or approximately 988 afy).[11] The City of Mountain View's 2020 UWMP projects recycled water demands of 448 afy for 2025 through 2045.

Wastewater Collection and Conveyance

The Project Site's existing sanitary sewer flow currently goes to the City of Sunnyvale's system. However, the Project Site is also within City of Mountain View's service area; therefore, the City of

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7 San Francisco Public Utilities Commission. 2026. *Public Review Draft 2025 Urban Water Management Plan* and *Water Shortage Contingency Plan*. Available: https://www.sfpuc.gov/sites/default/files/documents/2025-UWMP-Public-Draft.pdf. Accessed: March 27, 2026.

8 Mountain View Voice. 2022. *Mountain View Seeks to Triple Its Recycled Water Use over the Next Decade Amid statewide Droughts*." March 21, 2022. Available: https://www.mv-voice.com/news/2022/03/21/mountain-view-seeks-to-triple-its-recycled-water-use-over-the-next-decade-amid-statewide-droughts/. Accessed: March 17, 2026.

9 City of Mountain View. 2016. *2015 Urban Water Management Plan for the City of Mountain View*. June 24, 2016.

10 City of Mountain View. 2021. *2020 Urban Water Management Plan for the City of Mountain View.* June 8, 2021.

11 A peaking factor of 3.4 (City of Mountain View **Error! Reference source not found.**) was applied to the contractual recycled water supply limit of 3.0 mgd for the peak flow rate to estimate the annualized availability of recycled water, a value of 988 afy. City of Mountain View. 2022. *Recycled Water Feasibility Study*. Prepared by Carollo for Mountain View. March 2022.

Mountain View would be the wastewater service provider for the proposed project. The Project Site is located between the PARWQCP, which serves Mountain View, and the City of Sunnyvale Water Pollution Control Plant, which serves Sunnyvale. The existing sewer system at the Project Site collects and conveys all sewer discharges to the City of Sunnyvale point of compliance, located in the golf course east of Moffett Federal Airfield, then ultimately discharges to the City of Sunnyvale Water Pollution Control Plant. The Project Site is currently served by an 8-inch main in Cody Road and a 10-inch main in Wescoat Road. These mains discharge into three larger sewer mains that serve Shenandoah Plaza, then discharge farther north into an 18-inch NASA main sewer trunk line.

The proposed project would convey the sanitary sewer flow through the site to an off-site sewer main along Wescoat Road and Clark Road to the City of Mountain View trunk main in RT Jones Road. A new point of connection to the City of Mountain View trunk main would be made and a new meter installed at this location north of the main gate. Details regarding proposed new lines are presented and analyzed in Section 3.18.7. Any unused lines from the City of Sunnyvale system within the Project Site would be removed up to the sewer main.

Stormwater

The NASA ARC campus has two on-site stormwater drainage systems, a western drainage system and an eastern drainage system. The majority of the Project Site is within the western drainage system; only a portion on the southeast edge of the Project Site is within the eastern drainage system. The western drainage system comprises five subsystems that drain to the western diked marsh or eastern diked marsh, both of which are approximately 1 mile north of the Project Site. The diked marshes ultimately discharge to an area farther north and into NASA ARC's stormwater retention pond. The stormwater retention pond does not have an outfall and loses water through evaporation.

Solid Waste Collection

NASA ARC, including the Project Site, contracts with Recology for solid waste disposal and recycling. Once collected, solid waste and recyclables are transported to Recology's Sunnyvale Materials Recovery and Transfer (SMaRT) station for sorting.[12] Recology has more than 26 collection companies that provide integrated services to more than 2.5 million individuals and more than 100,000 commercial customers in California, Oregon, and Washington.[13]

The SMaRT station receives, separates, and processes recyclables from Sunnyvale and Mountain View residents and Sunnyvale businesses. In the 2023–2024 fiscal year, SMaRT processed 183,911 tons of material and diverted about 50 percent of incoming material from landfills.[14] Nonrecyclable waste from the SMaRT station is sent to the Kirby Canyon Landfill in San José. The 743-acre Kirby Canyon Landfill will support a planned 311-acre recycling and landfill operation. The site also acts as a 250-acre butterfly trust habitat, which is protected under the 1986 Kirby Canyon Conservation Agreement. An additional 184 acres in the North Canyon area is also being established as a conservation area. Kirby Canyon Landfill operates under a solid waste facility permit from the California Department of Resources Recycling and Recovery (CalRecycle), a Title V air permit from

[12] Michelle [no last name] (employee at Recology), personal communication, March 31, 2026.

[13] Recology. n.d. *About Us.* Available: https://www.recology.com/about-us/?cookie-consent-set=true. Accessed: March 17, 2026.

[14] City of Sunnyvale. n.d. *SMaRT Station Annual Report, FY 2023–2024.* Available: https://www.sunnyvale.ca.gov/home/showpublisheddocument/2996/638755545599670000.

the Bay Area Air District, and waste discharge requirements from the California Regional Water Quality Control Board. The solid waste landfill is permitted to accept 2,600 tons of material per day. The City of San José Department of Planning and Code Enforcement is the designated local enforcement agency. Based on current disposal volume rates, Kirby Canyon Landfill is estimated to be in operation until 2059 and beyond.[15]

Electricity, Natural Gas, and Telecommunications

This section provides an overview of electricity, natural gas, and telecommunications as they relate to the CEQA thresholds below; additional detail regarding energy is available in Section 3.6, *Energy,* of this joint EIR/EIS.

Pacific Gas and Electric Company (PG&E) provides electricity to NASA ARC, including the Project Site. Its power comes from various sources, including solar, wind, geothermal, biomass and biowaste, nuclear, and hydroelectric. The company allows customers to choose between four different electricity products: the "Base Plan," which includes a variety of energy resources for electricity; "50% Solar Choice," with at least 50 percent of electricity provided by solar resources; "100% Solar Choice," with 100 percent of electricity provided by solar resources; and "Green Saver," which provides 100 percent solar electricity to income-qualified residential customers.

PG&E intends to achieve net-zero greenhouse gas (GHG) emissions by 2040 and be climate positive by 2050. Table 3.6-1 shows PG&E's power mix in 2023 compared to the power mix for the state and identifies the renewable and nonrenewable energy sources. Note that some GHG-free sources are not considered renewable (e.g., nuclear is GHG free but not renewable).

Existing 2.4-kilovolt (kV) switchgear in Building 104 currently serves infrastructure adjacent to the Project Site. In addition, a gas main runs south to north through the Project Site, within Dailey Road, then continues from the east side of Building 104 to Shenandoah Plaza. There is also an existing gas main along the north side of Wescoat Road near Building 509 and an existing PG&E natural gas meter on the south side of the Project Site.

Existing NASA telecommunication lines run under roadways throughout the Project Site, including Dailey Road, Edquiba Road, and Wescoat Road. NASA's critical telecommunications infrastructure, which is subsurface, would remain in place within the Project Site.

3.18.3 Plans, Policies, and Regulations

UC Berkeley is constitutionally exempt from local governments' regulations, such as city and county general plans, land use policies, and zoning regulations, whenever using property under its control in furtherance of its educational purposes. As such, UC Berkeley will not consider local policies and regulations in its evaluation of the environmental effects of the proposed project unless UC Berkeley expressly decides to use a local policy or regulation as a threshold or standard of significance. For the purposes of CEQA, UC Berkeley has elected to use the SFPUC WSCP, County of Santa Clara Sustainable Landscape Ordinance Nos. NS-1200.328 and NS-1200-361, Santa Clara County Integrated Waste Management Plan, City of Mountain View 2022 Water System Master Plan, and City of Mountain View 2022 Sewer System Management Plan for the analysis of utilities and service systems associated with the proposed project.

[15] Waste Management. 2026. *Kirby Canyon Landfill – About Us.* Available: https://www.wm.com/us/en/facilities/kirby-canyon-recycling-disposal/about. Accessed: March 17, 2026.

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For the purposes of NEPA, NASA has elected to apply the standards identified in the SFPUC WSCP, County of Santa Clara Sustainable Landscape Ordinance Nos. NS-1200.328 and NS-1200-361, Santa Clara County Integrated Waste Management Plan, City of Mountain View 2022 Water System Master Plan, and the City of Mountain View 2022 Sewer System Management Plan for the analysis of utilities and service systems associated with the proposed project.

This section summarizes the plans, policies, and regulations considered in the analysis.

3.18.3.1 Federal Regulations

Safe Drinking Water Act

The Safe Drinking Water Act is the principal federal law in the United States for ensuring safe drinking water for the public.

Clean Water Act

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. It recognizes the responsibilities of the states in addressing pollution and provides assistance to states to do so, including funding publicly owned treatment works to improve wastewater treatment and maintaining the integrity of wetlands.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program addresses water pollution by regulating point sources that discharge pollutants to waters of the United States. Created in 1972 by the CWA, the NPDES permit program is authorized by the U.S. Environmental Protection Agency (EPA) for state governments to perform many of the permitting, administrative, and enforcement aspects of the program.

Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from cradle to grave. This includes the generation, transport, treatment, storage, and disposal

of hazardous waste. The RCRA also sets forth a framework for managing non-hazardous solid wastes.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 required the U.S. Department of Transportation (DOT) to develop and enforce minimum safety regulations for the transport of gases by pipeline. These regulations became effective in 1970. The Materials Transportation Bureau of DOT is charged with their enforcement.

Pipeline Inspection, Enforcement, and Protection Act of 2020

The Protecting Our Infrastructure of Pipelines and Enhancing Safety (PIPES) Act of 2020 was signed on December 27, 2020. This bipartisan law strengthens the Pipeline and Hazardous Materials Safety Administration's (PHMSA's) safety authority and includes many provisions to help PHMSA fulfill its mission of protecting people and the environment by advancing the safe transport of energy and other hazardous materials.

Executive Order 12873

Executive Order (EO) 12873, Federal Acquisition, Recycling, and Waste Prevention, addresses issues regarding the government's purchasing power, incorporates environmental considerations into decision-making, and encourages waste prevention and recycling in daily operations. Specifically, federal agencies must set goals for waste reduction and increase the procurement of recycled and other environmentally preferable products. They can also retain some of the proceeds from the sale of materials resulting from recycling or waste-prevention programs.

EO 13101

EO 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition, directs federal agencies to use recycled content and environmentally preferable products. The EO directs agencies to consider a broad range of environmental factors in developing plans, drawings, work statements, specifications, or other product descriptions. These factors include waste prevention; recyclability; the use of recycled content; environmentally preferable, bio-based products; life-cycle cost; and ultimate disposal.

NASA Ames Development Plan

The NADP details transformation of the original 500-acre Ames Campus and the 1,500-acre former Naval Air Station Moffett Field into an integrated, dynamic research and education community. The transformation will be led by establishment of NRP, a research-and-development (R&D) campus for partners from academia, industry, and non-profit organizations with shared goals in support of NASA's mission.

NASA Ames Procedural Requirement 8829.1

The NASA Ames Procedural Requirement (APR) 8829.1 establishes relevant codes and standards, the construction permit process, and requirements for all construction activities at NASA ARC.

Specifically, APR 8829.1 requires compliance with relevant codes and standards, including, but not limited to, the following:

- California Code of Regulations (CCR) Title 24, Part 11 – California Green Building Standards Code;
- CCR Title 24, Part 5 – California Plumbing Code;
- CCR Titles 17 and 22 – Potable and Non-Potable Water;
- CCR Title 17 – Protection of Water Systems;
- CCR Title 22 – Water Recycling Criteria;
- County of Santa Clara Sustainable Landscape Ordinance Nos. NS-1200.328 and NS-1200-361;
- NASA Procedural Requirement (NPR) 8570.1A – Energy Efficiency and Water Conservation;
- NPR 8580.1A – NASA National Environmental Policy Act Requirements; and
- NPR 8570.1 – Energy Efficiency and Water Conservation Federal Directive.

Regulatory Review Procedures, On-Site Blackwater Treatment and Reuse for NASA Ames Research Center and Tenants

This document provides the regulatory and administrative procedures necessary to permit and regulate on-site blackwater (wastewater) treatment and recycled water systems for NASA ARC and its tenants. The procedures provide a framework for permitting and regulating systems that provide alternative water sources for non-potable uses such as toilet flushing and irrigation at new buildings on the Project Site. Buildings are required to be designed with dual plumbing systems to deliver recycled water for beneficial non-potable uses.

3.18.3.2 State Regulations

Porter-Cologne Water Quality Control Act

The State Water Board works in coordination with the nine Regional Water Quality Control Boards (RWQCBs) to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region and may approve, with or without conditions, or deny projects that could affect waters of the state. The RWQCB's authority comes from the CWA and Porter-Cologne Water Quality Control Act (Porter-Cologne), which broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach may overlap and exceed the boundaries of waters of the United States, pursuant to the CWA. Under Porter-Cologne, the State Water Board and the nine RWQCBs are responsible for granting CWA NPDES permits and waste discharge requirements for certain point-source and nonpoint-source discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Senate Bills 610 and 221

Senate Bill (SB) 610 (Chapter 643, Statutes of 2001) and SB 221 (Chapter 642, Statutes of 2001) amended California law, effective January 1, 2002, to improve the connection between information on water supply availability and certain land use decisions made by cities and counties.

As codified in California Water Code (CWC) Sections 10910 through 10915, the statute requires detailed information regarding water supply availability to be documented in a Water Supply Assessment (WSA) and provided to land use decision-makers (typically cities and counties) prior to approval of large development projects, as defined by specific thresholds in CWC Section10912(a). A WSA must evaluate whether the water supplier has adequate supplies available to meet the anticipated demand of a proposed project over a 20-year period, including during normal, dry, and multiple dry years, in addition to its existing demands and planned demands for approved projects and tentative maps, based on the respective water supplier's UWMP. The statute requires the respective water supplier to adopt the WSA. Under CEQA, the UC Regents are the "lead agency" for development projects related to its campuses rather than the city or county where a campus is located. Thus, the requirements for a WSA do not apply to the proposed project.

Although SB 610 requirements do not apply to this project specifically, UC Berkeley has voluntarily elected to prepare a WSA-like document, a Water Supply Evaluation (Appendix 3.18-1 of this joint EIR/EIS), to determine and demonstrate the adequacy of SFPUC's potable water supply and the City of Mountain View's available recycled water supply for the proposed project. Therefore, the Water Supply Evaluation was prepared to be parallel to and consistent with WSA[16] requirements per CWC Sections 10910 through 10915 and the California Department of Water Resources (DWR) *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: To Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, dated October 8, 2003.

SB X7-7

The Water Conservation Act of 2009 (Senate Bill X7-7) was enacted in November 2009. It requires all water suppliers to increase water use efficiency. The Department of Water Resources (DWR) is responsible for 18 actions in this bill that affect urban water suppliers, agricultural water suppliers, or both. A few pertain to DWR's reporting responsibilities.

SB 1383

In 2016, SB 1383 was signed into law to combat climate change and reduce landfill methane emissions. Methane is a climate "super pollutant," 84 times more potent than carbon dioxide. Organics like food scraps, yard trimmings, paper, and cardboard currently make up 50 percent of what Californians dump in landfills.

[16] The Water Supply Evaluation assesses supply reliability in drought periods lasting 5 consecutive years, consistent with current UWMP requirements. Though the corresponding WSA regulations have not been updated from a supply reliability assessment for a 3-year drought, it is best practice to assess supply reliability for a 5-year drought in the Water Supply Evaluation (consistent with UWMP requirements).

SB 1374

SB 1374 will allow multi-meter customers, including schools, to generate electricity on one meter to offset usage on another meter, thereby giving them credit for consuming solar power that they generate on their property—equivalent to what is provided for single-family homes.

SB 606 and Assembly Bill 1668

SB 606 and Assembly Bill (AB) 1668 build on Governor Brown's previous efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought planning. SB 606 and AB 1668 established guidelines for efficient water use and required a framework for implementation and oversight of the new standards. The two bills strengthen the state's water resiliency in the face of future droughts, with provisions that include the items outlined below.

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers. This includes indoor residential water use; outdoor residential water use; commercial, industrial, and institutional (CII) irrigation with dedicated meters; water loss; and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and provide recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

AB 939 and SB 1322

AB 939 established the California Integrated Waste Management Act (IWMA) of 1989; repealed the majority of Title 7.3 of the Government Code, regulating solid waste management; and codified the new act in the Public Resources Code (PRC). It also repealed provisions of the Health and Safety Code related to garbage and refuse disposal and codified them in the PRC. It established an integrated waste management hierarchy to guide local agencies in implementation, in order of priority:

1. Source reduction,
2. Recycling and composting, and
3. Environmentally safe transformation and land disposal.

SB 1322 was enacted in conjunction with AB 939 to form the California IWMA. It made legislative declarations regarding the high priority associated with implementing State programs to change manufacturing and consumption habits, increase the procurement of recycled materials by the State, improve markets for recyclable materials, conduct R&D to improve manufacturing processes for recycled materials, and inform and educate the public about integrated waste management hierarchy.

AB 1572

AB 1572 was signed into law in October 2023; it took effect in January 2024. This regulation prohibits the use of potable water for the irrigation of nonfunctional turf[17] located on commercial, industrial, and institutional properties, other than cemeteries, as well as properties associated with homeowners associations, common interest developments,[18] and community service organizations or similar entities. AB 1572, however, does not prohibit the use of potable water for irrigation of other types of landscaping, such as drought-tolerant landscaping, nor does it limit the amount of non-potable water for irrigation of more water-intensive landscapes. Because the proposed project anticipates using non-potable water for all associated irrigation, the proposed project is not subject to AB 1572 requirements.

AB 341

With adoption of AB 341, California now requires commercial enterprises and public entities that generate 4 cubic yards per week, or more, of waste and multi-family housing facilities with five or more units to adopt recycling practices.

AB 1826

AB 1826, Mandatory Commercial Organics Recycling, requires businesses in California to participate in an organics recycling program; required compliance is based on a tiered system of how much waste a business generates.

California Building Standards Code

The California Building Standards Code is the building code for California and Title 24 of the California Code of Regulations (CCR). It is maintained by the California Building Standards Commission, which is granted the authority to oversee processes related to California building codes by California Building Standards Law. The California building codes under Title 24 are based on several criteria: standards adopted by states, based on national model codes; national model codes adapted to meet California conditions; and standards passed by the California Legislature that address concerns specific to California.

California Building Standards Code: CALGreen (24 CCR Part 11)

The California Green Building Standards Code, Part 11, Title 24, CCR, known as CALGreen, is the first-in-the-nation mandatory green building standards code. In 2007, the California Building Standards Commission developed green building standards in an effort to meet the goals of California's landmark initiative, AB 32, which established a comprehensive program to cost effectively reduce GHG emissions to 1990 levels by 2020. Between 2010 and 2022, continuous updates and additions were made to CALGreen involving water conservation, recycling, and electric-vehicle infrastructure and charging, along with changes to eliminate conflicts with the California

[17] Nonfunctional turf is defined as any turf that is not functional, including turf located within street rights-of-way and parking lots. Nonfunctional turf excludes recreational areas and areas designated by a property owner or a governmental agency to accommodate human foot traffic for recreation, including, but not limited to, sports fields, golf courses, playgrounds, picnic grounds, or pet exercise areas.

[18] A common interest development is defined as a community apartment project, a condominium project, a planned development, or a stock cooperative.

Energy Code (Part 6 of Title 24). Overall, this code is intended to be adaptable and will continue to be updated regularly.

California Plumbing Code (24 CCR Part 5)

The California Plumbing Code protects against hazards that may arise from the use of plumbing piping and systems by regulating and controlling the design, construction, installation, quality of materials, location, and operation of plumbing piping systems within California.

California Health and Safety Code

The California Health and Safety Code is the codification of general statutory law covering the areas of health and safety in the state of California. It is one of 29 California codes and was originally signed into law by the governor of California on April 7, 1939.

The health and safety code is the section of California statutory law that addresses health, safety, health care, environmental law, and narcotics. This section of the code defines most of the crimes related to drugs and controlled substances, including possession, sale, transport, trafficking, and manufacturing.

California Water Code

The California Water Code defines waters of the state and regulates the discharge of waste or fill into such waters. Defined waters of the state include:

- Any surface water or groundwater (including saline waters) within the boundaries of the state,
- Various wetlands, and
- All waters considered to be waters of the United States.

Sanitary District Act of 1923

As part of California Health and Safety Code Section 6400 et seq., the Sanitary District Act of 1923 was created so that any area in a county or in two or more counties within the same natural watershed area could acquire, construct, and operate garbage dumps and garbage disposal systems, sewerage systems, drainage works, and water reclamation and distribution systems.

California Government Code: Capital Facilities Fee

Under AB 1600, the Mitigation Fee Act, the State created a framework for jurisdictions to assign fees that would be proportional to the impacts of development projects on public services. A *capital facilities fee* is a nondiscriminatory connection fee, a nondiscriminatory capacity charge, or both. It does not include any other rate, charge, or surcharge or any capital component thereof.

State Water Board Trash Amendments

The State Water Board Trash Amendments apply to all municipal separate storm sewer systems (MS4s) as well as industrial and construction NPDES permittees. The executive director of the State Water Board sent separate Water Code 13383 orders to traditional and non-traditional small MS4 permittees as well as the California Department of Transportation on June 1, 2017. RWQCBs, as the permitting authorities, issued Water Code 13383 orders to their Phase I permittees that contained region-specific requirements, which, in some cases, differed from State Water Board orders.

Upon reissuance or amendment, State Water Board and RWQCB MS4 permits will contain trash control–related implementation requirements and compliance milestones to demonstrate progress toward 100 percent compliance with the trash provisions. On June 22, 2022, the State Water Board reissued the Statewide Department of Transportation General Permit. On September 8, 2022, the State Water Board reissued the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. These reissued permits implement the trash provisions for the California Department of Transportation and construction dischargers. The General Permits for Stormwater Discharges Associated with Industrial Activities and the Small MS4 General Permit will implement the trash provisions when reissued.

3.18.3.3 Local Regulations

San Francisco Public Utilities Commission Water Shortage Contingency Plan

SFPUC's WSCP defines the six distinct shortage levels that the RWS could be in and the corresponding actions SFPUC would take to address the water shortage, ranging from use of dry-year water supplies (when available) to voluntary water-use reductions and mandatory water-use reductions.[19] Additional procedures to allocate RWS supplies between retail and wholesale customers during system shortages are specified in the SFPUC's WSAP, which is an appendix to the Water Supply Agreement. Per Figure 1-1 of the WSCP, NASA ARC is also classified as a retail customer governed by the WSCP during dry years.

The WSAP defines a percentage split between retail and wholesale customers at different system-wide shortage levels. For example, at a 10 percent RWS shortage, 36 percent of the available RWS supply is allocated to retail customers and 64 percent to wholesale customers. SFPUC's WSCP presents the percentage splits between wholesale and retail customers at different shortage levels. Per the WSAP, if the retail share of the available water supply results in customers having a positive allocation (i.e., a supply of additional water rather than a reduction), the share of the available water supply for retail customers would be reduced to eliminate any positive allocation, with a corresponding increase in the share of the available water allocated to wholesale customers. In addition, as amended in 2018, the WSAP requires retail customers to conserve a minimum of 5 percent during droughts. If retail demand on the RWS is lower than the retail allocation in a dry year, it is assumed that the retail customers would achieve a 5 percent demand reduction. The escalated measures are based on the severity of the systemwide shortage and may include:

- Restrictions on discretionary uses
- Mandatory rationing or water allotments by customer class
- Differentiated impacts by customer type (e.g., commercial, institutional, residential)

SFPUC prioritizes health, safety, and critical business functions and minimizes impacts on essential users where possible. Facilities with dual plumbing (e.g., recycled water use) and high efficiency may experience less stringent rationing compared to facilities with older, less efficient systems.

[19] San Francisco Public Utilities Commission. 2026. *Public Review Draft 2025 Urban Water Management Plan* and *Water Shortage Contingency Plan*. Available: https://www.sfpuc.gov/sites/default/files/documents/2025-UWMP-Public-Draft.pdf. Accessed: March 27, 2026.

County of Santa Clara Sustainable Landscape Ordinance No. NS-1200.328 and No. NS-1200-36

The County of Santa Clara Sustainable Landscape Ordinances, Nos. NS-1200.328 and NS-1200.361, mandate water-efficient landscaping for new or modified projects of more than 500 square feet in unincorporated areas to meet state standards. Key requirements include native plant usage, high-efficiency irrigation systems, and specific turf limits, with Ordinance No. NS-1200.361 providing further refinements and local amendments to initial regulations.

City of Mountain View 2022 Water System Master Plan

The City of Mountain View 2022 Water System Master Plan is a vital tool used by City of Mountain View staff members to understand and address deficiencies in the water system and plan for the future. Since adoption of the 2010 Water System Master Plan, growth projections within the city have been updated through several planning efforts, such as the general plan update, the North Bayshore Precise Plan (and its subsequent update), and various specific plans, including the East Whisman Precise Plan. To evaluate growth and its impact on the water system, the City of Mountain View recently completed a comprehensive update of its water master plans. Through the use of computer modeling and field data, the master plan covers the entire water distribution system, provides a comprehensive overview of system functions, and notes where improvements are needed, based on assessments of system capacity and reliability. City of Mountain View staff members will use these documents to determine where there are concerns with hydraulic performance and capacity, evaluate the City of Mountain View's water storage and supply, and recommend a proactive and manageable utility capital improvement program for the next 10 years. NASA and NASA ARC are not required to comply with the City of Mountain View 2022 Water System Master Plan.

Santa Clara County Integrated Waste Management Plan

Santa Clara County charges an AB 939 implementation fee in order to meet its requirements under the IWMA, as enacted by AB 939. This bill enabled local governments to impose solid waste fees, which are to be used to pay costs associated with preparing, adopting, and implementing an IWMA.

City of Mountain View 2022 Sewer System Management Plan

The City of Mountain View 2022 Sewer System Master Plan is a vital tool used by City of Mountain View staff members to understand and address the deficiencies in the sewer system and plan for the future. Since adoption of the 2010 Sewer System Master Plan, growth projections within the city have been updated through several planning efforts, such as the general plan update, the North Bayshore Precise Plan (and its subsequent update), and various specific plans, including the East Whisman Precise Plan. To evaluate growth and its impact on the sewer system, the City of Mountain View recently completed a comprehensive update to its sewer master plan. Through the use of computer modeling and field data, the master plan covers the entire wastewater collection system, provides a comprehensive overview of system functions, and notes where improvements are needed, based on assessments of system capacity and reliability. City of Mountain View staff members will use these documents to determine where there are concerns with hydraulic performance and capacity and recommend a proactive and manageable utility capital improvement program for the next 10 years. NASA and NASA ARC are not required to comply with the City of Mountain View 2022 Sewer System Master Plan.

3.18.4 CEQA Findings

The following sections describe the environmental impacts of the proposed project on utility and service systems in accordance with CEQA. The sections describe the thresholds used to determine whether an impact would be significant and methods used to evaluate the impacts. Measures to mitigate significant impacts are provided, where appropriate.

A discussion of project impacts on utility and service systems, in accordance with NEPA, is provided separately in Section 4.5.16, *Utility and Service Systems*, in Chapter 4, *Environmental Impact Statement.*

3.18.5 Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, the project would have the potential to have a significant effect on utility and service systems if it would result in any of the conditions outlined below.

Would the project:

- Require or result in the relocation of existing or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects?
- Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to water supply?
- Require or result in the relocation of existing or construction of new or expanded wastewater treatment or facilities, the construction or relocation of which could cause significant environmental effects?
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity available to serve the project's projected demand in addition to the provider's existing commitments?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to wastewater service?
- Require or result in the relocation of existing or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to stormwater infrastructure?
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
- Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to solid waste?

- Require or result in the relocation of existing or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
- Result in a cumulatively considerable contribution to a significant environmental impact with respect to electric power, natural gas, or telecommunication facilities?

3.18.6 Methods for Analysis

3.18.6.1 Water Demand and Supply

Impacts on water demand are assessed by comparing existing water supplies against the increase in water demand associated with implementation of the proposed project. The methodology that follows is a summary of the water demand and supply methodology detailed in the Water Supply Evaluation included in Appendix 3.18-1 of this of this joint EIR/EIS. According to the Water Supply Evaluation, the CEQA Proposed Project (i.e., without the Variant, without the Central Utility Plant Option, and without the Water Reuse Facility Option) would result in the greatest water demand, compared to the proposed project alternatives. The evaluation provides a comprehensive and conservative analysis of the water demand associated with the other scenarios (i.e., the CEQA Proposed Project with the Variant, the Central Utility Plant Option, the Water Reuse Facility Option, the CEQA Reduced Density Alternative, and the CEQA Reduced Density Alternative with the Variant). Water demand for the CEQA Proposed Project considers commercial indoor uses, cooling water uses, residential indoor uses, and outdoor water uses as well as distribution system losses. Projected water usage under the proposed project was calculated using the water demand factors in Table 3.18-1. The water demand factors do not account for stricter water conservation measures that are likely to be implemented in the future.

Table 3.18-1. Increase in Water Demand at Full Buildout: CEQA Proposed Project

Water Use	Land Use at Full Buildout	Land Use Units	Adjusted Water Demand Factor (gpd) [a]
Office	350,000	Square feet	0.056
Lab and R&D	1,390,000	Square feet	0.056
Academic	260,000	Square feet	0.056
Conference Uses	25,000	Square feet	0.056
Active Uses: Kitchen	9,000	Square feet	0.060
Active Uses: Retail	81,000	Square feet	0.026
Student/Faculty Housing	145	Rooms	225
Short-term Lodging	100	Rooms	100
Parking	1,080,000	Square feet	0.020
Landscape Irrigation	5.8	Acres	800
Cooling [b]	n/a	n/a	n/a
Distribution System Loss	—	—	7.1%

Source: Water Supply Evaluation included in Appendix 3.18-1 of this joint EIR/EIS.
Notes:
a. The adjusted water demand factor provides gpd per the land use unit in the column to the left (i.e., square feet, rooms, and acres), and accounts for embedded cooling demand.
b. Per Table 4 in Appendix 3.18-1, a cooling demand estimate for towers has been factored into water demand calculations.
gpd = gallons per day

The analysis then considers current and projected future water supplies for the SFPUC and Mountain View service areas through 2045 (a 24-year planning horizon) and evaluates whether SFPUC and Mountain View have a sufficient potable and non-potable water supply, respectively, to meet current and planned water demands within their respective service areas, including the demands associated with the proposed project during normal, dry, and multiple dry years over a 20-year horizon. As noted in Section 3.18.2, under *Water Supply Sources,* given the ongoing proceedings surrounding the Bay-Delta Plan Amendment, per the standard SFPUC scenarios used by SFPUC in WSAs and the UWMP (i.e., SFPUC guidance about planning urban supplies, etc.), the following water supply scenarios[20] are also used to analyze water supply and demand:

- Scenario 1: Implementation of the Bay-Delta Plan Amendment
- Scenario 2: Without Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement
- Scenario 3: Implementation of the Proposed Voluntary Agreement

3.18.6.2 Wastewater

Impacts related to wastewater generation and associated infrastructure are identified by determining the adequacy of existing infrastructure and comparing existing service capacity against future demand from project implementation. The methodology that follows is a summary of the wastewater generation and capacity analysis methodology detailed in the *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, spring 2026. The City of Mountain View 2018 Sewer System Management Plan (Appendix A) was used to determine design flows for the proposed project. These standards include procedures for determining average dry-weather flow, peak dry-weather flow, and peak wet-weather flow for commercial, office/research-and-development, mixed-use, industrial, public, employment, restaurant, residential, and parking uses.

Because the wastewater generation modeled for the CEQA Proposed Project provides the greatest generation volumes and system demand, using the same rational detailed under *Water Demand*, the analysis modeled for the CEQA Proposed Project provides a comprehensive and conservative analysis of wastewater generation associated with the other scenarios.

3.18.6.3 Solid Waste

This analysis evaluates the capacity of existing solid waste infrastructure to accommodate the change in solid waste generation from project implementation compared to baseline conditions. Baseline solid waste generation is estimated using standard waste generation rates, as categorized by land use, from a CalRecycle waste generation analysis carried out in 2014. Daily waste generation forecasts have been estimated for each building on-site. Separation rates, based on CalRecycle data, have been used to identify the corresponding volume of other waste streams (e.g., compost, recycling, cardboard, landfill). Estimates of solid waste generated by the proposed project are based on the disposal rates in Table 3.18-2.

[20] Although Scenario 2 is unrealistic for future planning, it continues to be used by SFPUC as a point of reference.

Table 3.18-2. Waste Generation Rates for the Project Site

Land Use	Waste Generation Rate	Unit
Academic & Educational	2.74	Pounds/employee/day
Conference Center	1.77	Pounds/employee/day
Hotel	11.91	Pounds/employee/day
Housing (Students + Faculty)	4.77	Pounds/multi-family residence/day
Lab and R&D	0.04	Pounds/square foot/day
Office	1.73	Pounds/employee/day
Retail (Food and Beverage)	10.52	Pounds/employee/day
Retail (Other)	10.74	Pounds/employee/day
Short-term Stay	4.81	Pounds/employee/day

Sources: Conference center and lab and R&D generation rates are from prior confidential Arup projects. All other generation rates are from CalRecycle. California Department of Resources Recycling and Recovery. 2015. *2014 Generator-based Characterization of Commercial Sector Disposal and Diversion in California.* September 10, 2015. Available: https://www2.calrecycle.ca.gov/WasteCharacterization/PubExtracts/2014/GenSummary.pdf. Accessed: March 17, 2026.

3.18.6.4 Electricity, Natural Gas and Telecommunications

The project would not require natural gas for operation. Impacts related to electricity and telecommunications were evaluated by determining whether any new facilities would need to be constructed to serve the proposed project, whether service providers (e.g., PG&E) would be able to serve the proposed project, and whether the construction of necessary improvements would adversely affect service-provider capacity or infrastructure.

The focus of this section is on the environmental effects of constructing new infrastructure to serve the proposed project or connecting to existing infrastructure. Section 3.6, *Energy*, focuses on the consumption of energy resources, consistent with Appendix G of the State CEQA Guidelines.

3.18.7 Impacts and Mitigation Measures

***Impact CEQA-UTIL-1*: *Would the project require or result in the relocation of existing or construction of new or expanded water facilities, the construction of which could cause significant environmental effects*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

As discussed under *Water Supply System* in Section 3.18.2, *Affected Environment, Environmental Setting,* the Project Site is currently served by the NASA-owned 18-inch Tyrella Feed, one of three feeds that connects directly to the SFPUC Hetch Hetchy Aqueduct. Existing NASA water mains in the roadways adjacent to the Project Site include the 12-inch mains along Wescoat Road. These mains connect to the larger NRP water system at Wescoat Road and Cody Road.

The CEQA Proposed Project would include both 10-inch and 12-inch water mains on-site. These would be routed from a connection on the southwest side of the site to the proposed buildings through a looped system that would extend east–west along Girard Road and north from the center of the Project Site (see Figure 2-15a in Chapter 2, *Proposed Project/Project Action and Alternatives*). Backflow preventors, meters, and pressure regulators would be installed on water supply lines. Three sampling ports would also be installed near representative population areas. In addition, dead-end mains would be provided along all building shared-use roads for building services and fire hydrants.

The Tyrella Feed would provide potable water and fire-flow water to the Project Site with adequate water presure for fire-flow requirements. The proposed water system would provide a fire flow of 3,500 gpm to each building. Hydrant spacing is based on California Fire Code hydrant spacing requirements and the proposed project's fire-flow rate. According to California Fire Code requirements for a fire-flow rate of 3,500 gpm, proposed street fire hydrants would be located so as to have a maximum 200-foot hose pull length (i.e., a 375-foot separation between hydrants). In addition, building fire department connections would be located within 100 feet of a fire hydrant.[21] As discussed in Section 2.3.6, *Utilities*, in Chapter 2, the CEQA Proposed Project could include two possible routings for the off-site water mains and connection to the Tyrella Feed: Tyrella Feed Water Main Connection Option 1 and Tyrella Feed Water Main Connection Option 2 (Figure 2-15b in Chapter 2).

Tyrella Feed Water Main Connection Option 1: The CEQA Proposed Project could connect to the existing 18-inch Tyrella Feed at the parking lot near the main gate on Clark Road. A dedicated 12-inch water main line could be installed along Clark Road, Wescoat Road, and the Girard Connector, entering the Project Site in Subarea 6 at the intersection of Wescoat Road and the Girard Connector. Under Water Main Connection Option 1, the proposed project's off-site water improvements would remain within NASA ARC.

[21] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Potable Water System Master Plan.* Spring 2026. As discussed therein, per the City of Mountain View, the minimum fire flow allowed for the Project Site is 3,500 gpm because all buildings within the Project Site would have an automatic sprinkler system. See Section 3.1.4 and Section 3.1.5 in the *Potable Water System Master Plan* for additional information.

Tyrella Feed Water Main Connection Option 2: The CEQA Proposed Project could connect to the Tyrella Feed through a new master meter connection near the intersection of South Perimeter Road and Wescoat Court. A dedicated 12-inch water main line could be installed along South Perimeter Road and east of Bailey Road, entering the Project Site in Subarea 6 east of the intersection of the Girard Connector and Girard Road. Under Water Main Connection Option 2, the proposed project's off-site water improvements (along South Perimeter Road and Baily Road) would cross over United States Army–controlled land, requiring approval by the Army for an easement. Connections to the Tyrella Feed would occur within existing roadways in areas that have previously been disturbed.

Only the CEQA Proposed Project includes the Water Reuse Facility (WRF) Option. The WRF Option would include an approximately 15,000-gross-square-foot (gsf) water reuse facility that would produce recycled water to serve the proposed buildings and irrigated areas (see Figure 2-17 in Chapter 2). The WRF Option would incorporate the facility on the ground floor of the parking structure located in Subarea 6 near Girard Road. It would also include an approximately 300-foot pressurized main along the Girard Connector that would connect the water reuse facility to the recycled water distribution infrastructure within the rest of the Project Site. The WRF Option would be constructed on previously disturbed land and would not require excavation to depths greater than those required for the CEQA Proposed Project.

Construction impacts associated with temporary connections and the proposed project's main connection options, in addition to impacts from the WRF Option, are analyzed in other sections of this joint EIR/EIS. For example, Section 3.3, *Air Quality*; Section 3.8, *Greenhouse Gas Emissions and Climate Change*; and Section 3.12, *Noise*, evaluate increases in air pollutants, GHG emissions, and noise levels associated with construction activities, including any ground disturbance needed for tie-ins to existing utility infrastructure as well as increases in emissions associated with the prposed project's utility demands. Section 3.5, *Cultural Resources*, and Section 3.17, *Tribal Cultural Resources*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have on buried resources. Section 3.7, *Geology, Soils, and Paleontological Resources*; Section 3.9, *Hazards and Hazardous Materials*; and Section 3.10, *Hydrology and Water Quality*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have related to erosion and siltation, degradation of water quality, and the release of contamination into the environment.

As discussed in Section 3.18.2, *Affected Environment/Environmental Setting,* the Mountain View recycled water system extends to NASA ARC at the northwest corner of the Bay View area. It is anticipated that the exisitng City of Mountain View's service system would be extended (i.e., the flow of recycled water would be extended) to the south along RT Jones Road via an existing line to the main gate on Clark Road to provide a recycled water connection to the NRP (once the flow is extended). The existing main line is owned and operated by NASA; this service extension, which would load the existing main line with recycled water and involve minimal ground work (e.g., turning a valve), is not part of the CEQA Proposed Project or the CEQA Reduced Density Alternative. Apart from the new recycled water service from the Project Site to NASA's recycled water line in RT Jones Road, included in the Limits of Work, no additional physical improvements are anticipated to service the proposed project with recyceled water. NASA would be the recycled water distribution administrator, with water purchases from the City of Mountain View at the north-western meter box, and be responsible for safe use and extension of recycled water use into the NRP including the Project Site. Detail regarding recycled water supply is provided below under Impact CEQA-UTIL-2.

As discussed in Section 3.18.3, *Plans, Policies and Regulations*, utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's water demand. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. As also noted in Chapter 2, the design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[22] The specifics regarding utility connections and designs will be evaluated through NASA's NRP Design Review Board process in connection with NASA's approval of the proposed project pursuant to APR 8822.1, and through NASA's Construction Permit Review Process, established by APD 8829.1. During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project. All required studies will be prepared consistent with the Project Proponent's Enhanced Use Lease requirements. In addition, tenants/sub-tenants may need to execute a Reimbursable Space Act Agreement with NASA that allows NASA to convey certain utilities and for the tenants to reimburse NASA for consumption and conveyance**.** The Project Proponent would compensate NASA for services provided to the proposed project via the Institutional Shared Pool (ISP). The ISP is the mechanism by which NASA charges its tenants for costs for common levels of services provided throughout its Property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), and additional demand services above the common levels of service. The Project Proponent would comply with the requirements of its Enhanced Use Lease to pay ISP on an annual basis.

Any necessary improvements for project buildings to receive recycled water, such as dual plumbing systems for recycled water and potable water, would be constructed prior to building occupancy in a manner that would minimize the potential for utility disruptions for existing users when the utility service is available.

Given the above discussion, project impacts related to construction of the water infrastructure needed to serve the proposed project would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty

[22] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Without Student/Faculty Housing, impacts related to the relocation of existing or construction of new or expanded water facilities would be the same as under the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, impacts related to the relocation of existing or construction of new or expanded water facilities would be similar to those under the CEQA Proposed Project, except that there is no WRF Option for this alternative. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Without Student/Faculty Housing, impacts related to the relocation of existing or construction of new or expanded water facilities would be the same as under the CEQA Reduced Density Alternative. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact CEQA-UTIL-2: Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	UTIL-1. Water Demand Reduction Measures UTIL-2. Recycled Water Service	Significant and Unavoidable with Mitigation

		Agreements and Approvals	
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Significant and Unavoidable with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The criteria for the water infrastructure of the CEQA Proposed Project are based on relevant design criteria from applicable agencies and other relevant standards (e.g., the California Waterworks Standards, as outlined in Title 22 of the California Code of Regulations).[23] The CEQA Proposed Project would achieve, at a minimum, a Leadership in Energy and Environmental Design (LEED) Silver rating, indicating a moderate to high level of sustainability, with significantly improved energy efficiency, greater water conservation, and healthier indoor environments compared to the general standard. The CEQA Proposed Project would also incorporate potable water conservation features within buildings. This would include low-flow fixtures for indoor water use, dual plumbing to allow recycled water usage for flushing, a drip irrigation system, and drought-friendly and ecologically appropriate plantings. The non-potable water demands of the proposed project (e.g., for landscape irrigation, cooling, indoor flushing, and cleaning of parking structures) are to be met by the City of Mountain View through a new NASA service connection to Mountain View's recycled water distribution system. The breakdown of potable versus non-potable/recycled water demand is detailed under *Projected Water Demand*; more than 50 percent of the demand would be for recycled water.

The CEQA Proposed Project would also be designed to conserve resources and protect water quality through the management of stormwater runoff with use of low-impact development (LID) methods, where feasible. With the WRF Option, portions of the non-potable demand would be met by using the on-site reuse supply rather than recycled water from the City of Mountain View. The facility would produce approximately 37,000 to 44,000 gpd (or 41.5 to 49.3 afy) of recycled water. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems and would not alter the water demand or supply calculations by the proposed project.

Projected Water Demand

According to the Water Supply Evaluation (Appendix 3.18-1), existing potable water demand at the Project Site is estimated at 0.6 afy; this is less than 0.1 percent of total historical NASA ARC demand, which averaged 574 afy from 2019 to 2023. Under the CEQA Proposed Project, water demand would

[23] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

increase because of the increases in employees and students, short-term residents, and building square footage. As shown in Table 3.18-3, total water demand at full occupancy (2041) under the CEQA Proposed Project would be 284 afy, comprising the demand for 124 afy of potable water and 160 afy of non-potable/recycled water.[24]

Table 3.18-3. Increase in Water Demand at Full Buildout: CEQA Proposed Project

Water Use	Land Use at Full Buildout	Land Use Units	Water Demand (afy)
Office	350,000	Square feet	22
Lab and R&D	1,390,000	Square feet	87
Academic	260,000	Square feet	16
Conference Uses	25,000	Square feet	1.6
Active Uses: Kitchen	9,000	Square feet	0.61
Active Uses: Retail	81,000	Square feet	2.3
Student/Faculty Housing	145	Rooms	37
Short-term Lodging	100	Rooms	11
Parking	1,080,000	Square feet	0.8
Landscape Irrigation	5.6	Acres	20
Cooling[a]	n/a	n/a	80
Distribution System Losses	7.1%	n/a	20
Net Annual Water Demand	—	—	**284**

Source: Water Supply Evaluation included in Appendix 3.18-1 of this joint EIR/EIS.

Notes:

[a] Per Table 4 in Appendix 3.18-1, a cooling demand estimate for towers has been factored into water demand calculations.

afy = acre-feet per year; n/a = not available

Comparison of Projected Water Demand to Water Supply

The proposed project's water supply would be provided by SFPUC and the City of Mountain View using the NASA conveyance system discussed under Impact CEQA-UTIL-1. The following sections compare demand and supply associated with potable water from SFPUC under normal-year, single-dry-year, and multiple-dry-year hydrologic scenarios. As discussed in Section 3.18.6, *Methods for Analysis*, given the ongoing proceedings surrounding the Bay-Delta Plan Amendment, the following three scenarios[25] are used to analyze water supply and demand:

- Scenario 1: Implementation of the Bay-Delta Plan Amendment,
- Scenario 2: Without Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement, or
- Scenario 3: Implementation of the Proposed Voluntary Agreement.

Because the recycled water supply originates from indoor water use, the supply of recycled water is less affected by local hydrology and assumed to not vary significantly with hydrologic conditions. The supply of recycled water is, therefore, considered "drought-resilient" and reliable in dry years.

[24] For reference, the 2002 programmatic EIS considered water demand for the entire NRP, as shown in its Table 4.5-1, which calculated that development in the NRP would generate 98.2 mgd of demand.

[25] Although Scenario 2 is unrealistic for future planning, it continues to be used by SFPUC as a point of reference.

The availability of Mountain View's supply of recycled water is assumed to not vary in the scenario analysis provided below. As shown, the City of Mountain View's projected recycled water demand, inclusive of the proposed project, is well below Mountain View's contractual supply; therefore, for normal, single dry, and multiple dry years, the City of Mountain View's recycled water supply is able to accommodate all projected non-potable demands of the proposed project.

The City of Mountain View's 2022 Recycled Water Feasibility Study identifies planned upgrades for when the system is expanded to include a new tank for recycled water to improve operational flexibility and manage peak demands for recycled water for short durations.[26] This planned upgrade would occur with or without the proposed project, as it is tied to overall system expansion. No other new City of Mountain View recycled water treatment facilities would be needed to serve the proposed project. With respect to infrastructure, the proposed project could include two possible routings for the off-site recycled water mains to one point of connection to the existing recycled water main in RT Jones Road near the main gate; other than this proposed infrastructure (that is included as part of the proposed project), no new recycled water infrastructure would be needed to serve the proposed project.

Discussions between NASA and the City of Mountain View regarding a utility service agreement for recycled water to NASA ARC are ongoing. This agreement, once finalized, would allow NASA to obtain recycled water directly from the City of Mountain View and deliver non-potable water past the meter (located on the east side of Stevens Creek) to fill the existing NASA 12-inch recycled water main that runs along RT Jones Road. In addition, NASA is applying for a Title 22 recycled water distribution administrator permit directly from the RWQCB to administer recycled water purchased from the City of Mountain View throughout NASA's infrastructure at NASA ARC. NASA anticipates finalizing the agreement and obtaining required permits by 2027. After the agreement is finalized, the City of Mountain View will construct a 10-foot connection to enable recycled water flow to NASA ARC; this connection is not part of the proposed project.

As detailed in Section 3.18.2, *Recycled Water*, the historical recycled water supply for Mountain View averaged 425 afy but is forecast to increase to 448 afy by 2045, which is below the contractual limit available from the PARWQCP. At full occupancy (2041), the proposed project is estimated to generate a recycled water demand of 160 afy, increasing Mountain View's projected recycled water demand to 608 afy. Mountain View's projected recycled water demand, inclusive of the proposed project, is well below Mountain View's contractual supply; therefore, for normal, single dry, and multiple dry years, Mountain View's recycled water supply would be able to meet all projected non-potable demands of the proposed project, assuming NASA and the City of Mountain View execute an agreement and infrastructure improvements are made as planned to address operational constraints.

With the WRF Option, portions of the non-potable demand would be met using the on-site reuse supply rather than recycled water from the City of Mountain View. The facility would produce approximately 37,000 to 44,000 gpd (or 41.5 to 49.3 afy) of recycled water, reducing the CEQA Proposed Project's demand for recycled water from the City of Mountain View by the operational amount generated. The non-potable demand that cannot be met by the WRF Option would require the use of non-potable water from Mountain View.

[26] City of Mountain View. 2022. *Recycled Water Feasibility Study, Final.* Prepared by Carollo. March 2022.

Scenario 1: Implementation of the Bay-Delta Plan Amendment

This scenario is most likely a worst-case scenario in which the Bay-Delta Plan is implemented as written. In 2045, potable demand from the proposed project would be about 0.14 percent of total potable water demand from SFPUC (Table 3.18-4) and within SFPUC's supply (i.e., 124 afy vs. 95,660 afy). Therefore, SFPUC would be able to accommodate demand from the proposed project in normal years. However, as shown in Table 3.18-4, SFPUC supply shortfalls relative to total demand are estimated to range from 27 to 37 percent during single to multiple dry years. If supply shortfalls occur, it is anticipated that SFPUC will meet those shortfalls through implementation of its WSCP. The WSCP, as described in Section 3.18.3.3, *Local Regulations*, systematically identifies voluntary and mandatory measures for SFPUC to reduce water demand during dry years. The overall reduction goals in the WSCP are established for six drought stages to address water demand reductions of more than 50 percent.

Table 3.18-4. Scenario 1: Potable Water Demand vs Supply (2045)

Scenario	Water Demand (afy)
CEQA Proposed Project Demand	124
SFPUC Service Area Demand in 2045 – Normal Year	88,167
SFPUC Service Area Demand in 2045 – Single Dry Year	88,167
SFPUC Service Area Demand in 2045 – Second Dry Year	88,167
SFPUC Service Area Demand in 2045 – Third Dry Year	88,167
SFPUC Service Area Demand in 2045 – Fourth Dry Year	88,167
SFPUC Service Area Demand in 2045 – Fifth Dry Year	88,167
Scenario	**Water Supply (afy)**
SFPUC Service Area Supply in 2045 – Normal Year	95,660
SFPUC Service Area Supply in 2045 – Single Dry Year	64,520
SFPUC Service Area Supply in 2045 – Second Dry Year	64,520
SFPUC Service Area Supply in 2045 – Third Dry Year	64,520
SFPUC Service Area Supply in 2045 – Fourth Dry Year	55,559
SFPUC Service Area Supply in 2045 – Fifth Dry Year	55,559

Source: Source: Water Supply Evaluation included in Appendix 3.18-1 of this joint EIR/EIS.
Notes:
afy = acre-feet per year

Overall, it is anticipated that, under Scenario 1, SFPUC would have adequate water supplies available to meet all projected demand in normal years, including demand associated with the proposed project. If necessary, in single and multiple dry years, SFPUC would enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all retail customers, including NASA and by extension, the proposed project.

Scenario 2: Without Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement

As shown in Table 3.18-5, SFPUC is expected to meet all projected demands, inclusive of the proposed project, during single dry years. During multiple dry years without implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement, SFPUC is expected to have an adequate supply and be able to meet projected demand through the third year of a multi-year drought. During the fourth and fifth years of a multi-year drought, supplies would be reduced to 88,043 afy, resulting in slight supply shortfalls relative to demand amounting to 0.14 percent

(Table 3.18-5). As discussed for Scenario 1, shortfalls would be addressed through implementation of SFPUC's WSCP. With the WSCP, SFPUC should be able to accommodate water demand in normal years, single dry years, and multiple dry years.

Table 3.18-5. Scenario 2: Potable Water Demand vs Supply (2045)

Scenario	Water Demand (afy)
CEQA Proposed Project Potable Water Demand	124
SFPUC Service Area Demand in 2045 – Normal Year	88,167
SFPUC Service Area Demand in 2045 – Single Dry Year	88, 167
SFPUC Service Area Demand in 2045 – Second Dry Year	88, 167
SFPUC Service Area Demand in 2045 – Third Dry Year	88, 167
SFPUC Service Area Demand in 2045 – Fourth Dry Year	88, 167
SFPUC Service Area Demand in 2045 – Fifth Dry Year	88, 167
SFPUC Service Area Supply in 2045 – Normal Year	95,660
SFPUC Service Area Supply in 2045 – Single Dry Year	95,660
SFPUC Service Area Supply in 2045 – Second Dry Year	95,660
SFPUC Service Area Supply in 2045 – Third Dry Year	95,660
SFPUC Service Area Supply in 2045 – Fourth Dry Year	88,043
SFPUC Service Area Supply in 2045 – Fifth Dry Year	88,043

Source: Source: Water Supply Evaluation included in Appendix 3.18-1 of this joint EIR/EIS.
Notes:
afy = acre-feet per year

Scenario 3: Implementation of the Proposed Voluntary Agreement

The Proposed Voluntary Agreement has yet to be accepted by the State Water Board as an alternative to the Bay-Delta Plan Amendment; therefore, the shortages that would occur with its implementation are not known with certainty. However, given that the objective of the Proposed Voluntary Agreement is to provide fishery improvements while protecting the water supply through flow and non-flow measures, RWS supply shortfalls under the Proposed Voluntary Agreement would be less than those projected under the Bay-Delta Plan Amendment and, therefore, would require less stringent water use reductions than those under Scenario 1. Because negotiations for the Proposed Voluntary Agreement are not yet complete, no values are available to model this scenario. It is anticipated that, under this scenario, SFPUC would have adequate water supplies available to meet all projected demand in normal years, including demand associated with the proposed project. If necessary, in single and multiple dry years, SFPUC would enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all retail customers, including NASA and by extension, the proposed project.

Conclusion

As mentioned above, Mountain View has enough recycled water to meet the proposed project's recycled water demand of 160 afy. Discussions between NASA and the City of Mountain View regarding a utility service agreement for recycled water to NASA ARC are ongoing and are expected to be finalized in 2027. The proposed project's forecasted potable water demand of 124 afy represents only 0.14 percent of the total SFPUC Retail Service Area Demand through 2045. Overall, when considering water supply in the three scenarios related to the Bay-Delta Plan Amendment above, and in six different water supply/drought year scenarios, the Water Supply Evaluation identifies that under Scenario 1 (Implementation of the Bay-Delta Plan Amendment) current SFPUC potable water demand exceeds supply in single dry through multiple dry year scenarios, with supply

shortfall relative to demand ranging from 27 to 37 percent. This shortfall would occur with or without the proposed project. Because the WSCP systematically identifies the ways in which SFPUC can reduce water demand under the six drought stages and address water demand reductions of more than 50 percent, it is anticipated that, in single and multiple dry years, SFPUC would enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all retail customers, including NASA, and by extension the proposed project. SFPUC retains authority over total water supply availability and may impose restrictions at the master meter/account level. NASA retains sole authority over internal distribution and allocation of water supply across all users within NASA ARC. Because the proposed project is not directly subject to the reduction measures of the WSCP, and because recycled water supply agreement is in process, the CEQA Proposed Project could result in a potentially significant impact related to water supply before mitigation. The following project-specific mitigation would be necessary to support the water supplier's reduction intent.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-1. Water Demand Reduction Measures

If San Francisco Public Utilities Commission (SFPUC) implements potable water demand reduction measures in the Water Shortage Contingency Plan (WSCP) during dry years, the Project Proponent shall comply with those measures. Water demand reduction measures in the WSCP escalate based on systemwide shortage severity and may include:

- Restrictions on discretionary uses
- Mandatory rationing or water allotments by customer class
- Differentiated impacts by customer type (e.g., commercial, institutional, residential)

Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals

To ensure recycled water is available to the proposed project, the Project Proponent and NASA shall implement the following measures.

- The Project Proponent or its contractor(s) shall connect the proposed project to the existing recycled water main in RT Jones Road near the main gate prior to occupancy of Phase 1 of the proposed project.
- Prior to occupancy of Phase 1 of the proposed project, NASA shall coordinate with the City of Mountain View to execute a recycled water utility service agreement to allow the City of Mountain View to deliver recycled water to NASA's existing recycled water main in RT Jones Road. NASA shall also coordinate with the California Regional Water Quality Control Board to obtain a Title 22 Recycled Water Distribution Administrator permit to administer recycled water purchased from the City of Mountain View throughout NASA's infrastructure at NASA ARC.

Significance after Mitigation

Mitigation Measure UTIL-1 would require the Project Proponent to implement measures to reduce potable water use during single-dry and multiple-dry years to achieve reduction levels consistent with those in SFPUC's WSCP. Mitigation Measure UTIL-2 ensures the availability of the proposed

project's recycled water supply. These mitigation measures would reduce effects related to water supply in drought conditions. However, conservatively, because the Water Supply Evaluation and SFPUC identify a water supply shortfall relative to demand in dry year conditions under Scenario 1 and Scenario 3, even with implementation of Mitigation Measure UTIL-1 and Mitigation Measure UTIL-2, the proposed project may not have sufficient water supplies available during dry and multiple dry years, and the impact on potable water supply would be significant and unavoidable.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Without Student/Faculty Housing, water demand would be lower than under the CEQA Proposed Project due to the reduction in the number of short-term residents on the Project Site. As mentioned above, discussions between NASA and the City of Mountain View regarding a utility service agreement for recycled water to NASA ARC are ongoing and are expected to be completed by 2027. The proposed project is not directly subject to the reduction measures of the WSCP; for this reason, and because recycled water supply agreement is in process, the CEQA Proposed Project No Student/Faculty Housing Variant could result in a potentially significant impact related to water supply before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-1. Water Demand Reduction Measures

Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-2.

Significance after Mitigation

Mitigation Measure UTIL-1 would require the Project Proponent to implement measures to reduce potable water use during single-dry and multiple-dry years to achieve reduction levels consistent with those in SFPUC's WSCP. Mitigation Measure UTIL-2 ensures the availability of the proposed project's recycled water supply. These mitigation measures would reduce effects related to water supply in drought conditions. However, conservatively, because the Water Supply Evaluation and SFPUC identify a water supply shortfall relative to demand in dry year conditions under Scenario 1 and Scenario 3, even with implementation of Mitigation Measure UTIL-1 and Mitigation Measure UTIL-2 the CEQA Proposed Project No Student/Faculty Housing Variant may not have sufficient water supplies available during dry and multiple dry years, and the impact on potable water supply would be significant and unavoidable.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, water demand would be lower than under the CEQA Proposed Project due to the reduction in the number of employees on the Project Site. However, as mentioned above, discussions between NASA and the City of Mountain View regarding a utility

service agreement for recycled water are ongoing and are expected to be completed in 2027. The proposed project is not directly subject to the reduction measures of the WSCP; for this reason, and because recycled water supply agreement is in process, the CEQA Reduced Density Alternative could result in a potentially significant impact related to water supply before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-1. Water Demand Reduction Measures

Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-2.

Significance after Mitigation

Mitigation Measure UTIL-1 would require the Project Proponent to implement measures to reduce potable water use during single-dry and multiple-dry years to achieve reduction levels consistent with those in SFPUC's WSCP. Mitigation Measure UTIL-2 ensures the availability of the proposed project's recycled water supply. These mitigation measures would reduce effects related to water supply in drought conditions. However, conservatively, because the Water Supply Evaluation and SFPUC identify a water supply shortfall relative to demand in dry year conditions under Scenario 1 and Scenario 3, even with implementation of Mitigation Measure UTIL-1 and Mitigation Measure UTIL-2 the CEQA Reduced Density Alternative may not have sufficient water supplies available during dry and multiple dry years, and the impact on potable water supply would be significant and unavoidable.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Without Student/Faculty Housing, water demand would be lower than under the CEQA Reduced Density Alternative due to the reduction in the number of short-term residents on the Project Site. However, as mentioned above, discussions between NASA and the City of Mountain View regarding a utility service agreement for recycled water are ongoing and are expected to be complete in 2027. The proposed project is not directly subject to the reduction measures of the WSCP; for this reason, and because recycled water supply agreement is in process, the CEQA Reduced Density No Student/Faculty Housing Variant Alternative could result in a potentially significant impact related to water supply before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-1. Water Demand Reduction Measures

Mitigation Measure UTIL-2. Recycled Water Service Agreements and Approvals

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-2.

Significance after Mitigation

Mitigation Measure UTIL-1 would require the Project Proponent to implement measures to reduce potable water use during single-dry and multiple-dry years to achieve reduction levels consistent with those in SFPUC's WSCP. Mitigation Measure UTIL-2 ensures the availability of the proposed project's recycled water supply. These mitigation measures would reduce effects related to water supply in drought conditions. However, conservatively, because the Water Supply Evaluation and SFPUC identify a water supply shortfall relative to demand in dry year conditions under Scenario 1 and Scenario 3, even with implementation of Mitigation Measure UTIL-1 and Mitigation Measure UTIL-2 the CEQA Reduced Density No Student/Faculty Housing Variant Alternative may not have sufficient water supplies available during dry and multiple dry years, and the impact on potable water supply would be significant and unavoidable.

***Impact CEQA-UTIL-3*: *Would the project require or result in the relocation of existing or construction of new or expanded wastewater treatment or facilities, the construction or relocation of which could cause significant environmental effects*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

The Project Site is currently served by a collection of small 6-inch and 8-inch sewer mains that extend from south to north along Dailey Road, Bailey Road, Gorsky Road, Kaiser Road, Betio Road, and Cody Road. These mains discharge into three larger sewer mains that serve Shenandoah Plaza, then discharge farther north into an 18-inch NASA main sewer trunk line. The Project Site's existing sewer flow to the City of Sunnyvale system is not separately metered from NRP flow. According to NASA, based on the square footage of existing buildings, the current wastewater generation at the Project Site is approximately 32,366 gpd. Because the project proposes to route new sanitary sewer flows to the City of Mountain View sewer system, as opposed to the City of Sunnyvale sewer system, the proposed project would no longer discharge approximately 32,366 gpd of sewer flow to the City of Sunnyvale system.[27] Any unused lines from the Sunnyvale system within the Project Site would be removed up to the sewer main.

[27] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan.* Spring 2026.

The CEQA Proposed Project would include new 8-inch, 10-inch, and 12-inch sewer lines throughout the Project Site to serve the proposed buildings. Wastewater generated from the Project Site would be routed off-site through an on-site sewer lift station, which would be appropriately sized to ensure the discharge flows needed to prevent surcharging of the upstream gravity pipe. Tthe sewer lift station would be in the southwest corner of the Project Site, near Girard Road and the Girard Connector. As part of the CEQA Proposed Project, a new connection and a new meter would be installed at the point of connection to the City of Mountain View's wastewater main in RT Jones Road at the Girard Connector. Wastewater would ultimately be treated at the PARWQCP. Based on the generation rates used by BKF, the average dry-weather flow and peak wet-weather flow increase in wastewater generation at the Project Site, which would go to the City of Mountain View's system, is estimated at approximately 440,279 gpd and 837,529 gpd, respectively, under the CEQA Proposed Project. According to the Public Works Department, the City of Mountain is able to accommodate the projected flows.[28] Similarly, modeling of the existing Mountain View sewer system demonstrates initially that the system has capacity to accept new flows without new infrastructure.[29] Based on this volume, the proposed on- and off-site sanitary sewer system would be adequately sized to convey project flows and designed, constructed, and operated in accordance with the City of Mountain View's design criteria for sewer pipe performance during peak dry-weather flows and peak wet-weather flows.

Under the WRF Option, (which could be implemented in addition to the recycled water main connection options discussed under Impact UTIL-1), an approximately 15,000-square-foot WRF would be constructed on the ground floor of the parking structure in Subarea 6 near Girard Road. The WRF Option would also include an approximately 300-foot pressurized main along the Girard Connector that would connect the WRF to the recycled water distribution infrastructure within the rest of the Project Site. The WRF Option would include a sewer lift station (with capacity for approximately 0.25 mgd) in the southwest corner of the Project Site, near Girard Road and the Girard Connector.

Utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's wastewater. As discussed under Impact CEQA-UTIL-1, any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[30] During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project.

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[28] Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division), March 3, 2023, Public Works Department, City of Mountain View, CA.

[29] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan.* Spring 2026.

[30] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

The types of impacts anticipated from the construction of wastewater infrastructure, including the possible WRF Option and temporary access points, are analyzed in other sections of this joint EIR/EIS. For example, Section 3.3, *Air Quality*; Section 3.8, *Greenhouse Gas Emissions and Climate Change*; and Section 3.12, *Noise*, evaluate increases in air pollutants, greenhouse gas emissions, and noise levels associated with construction activities, including any ground disturbance needed for wastewater infrastructure construction. Section 3.5, *Cultural Resources*, and Section 3.17, *Tribal Cultural Resources*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for wastewater infrastructure, may have on buried resources. Section 3.7, *Geology, Soils, and Paleontological Resources*; Section 3.9, *Hazards and Hazardous Materials*; and Section 3.10, *Hydrology and Water Quality*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for wastewater infrastructure, may have related to erosion and siltation, degradation of water quality, and the release of contamination into the environment. In addition, as required by law, utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system. Any necessary connections would be constructed prior to building occupancy in a manner that would minimize the potential for utility service disruptions for existing users.

Based on the above, project impacts related to construction of the wastewater infrastructure needed to serve the proposed project would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The proposed wastewater infrastructure would be the same as under the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Proposed wastewater infrastructure would be the same as under the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Proposed wastewater infrastructure is the same as the CEQA Proposed Project. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

***Impact CEQA-UTIL-4*: *Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Potentially Significant	UTIL-3. Wastewater Connection Requirements	Less than Significant with Mitigation
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*	*Same as CEQA Proposed Project*
CEQA Reduced Density Alternative	Potentially Significant	Same as CEQA Proposed Project	Less than Significant with Mitigation
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	*Same as CEQA Proposed Project*	*Same as CEQA Reduced Density Alternative*

CEQA Proposed Project (NEPA Build Alternative 1)

The Project Site's existing sanitary sewer flow currently goes to the City of Sunnyvale's system. The City of Mountain View will be the wastewater service provider for the proposed project. Given that no wastewater currently flows to the City of Mountain View's sanitary system from the Project Site, the increased water demand associated with the proposed project would result in a new increase in the volume of wastewater conveyed through the existing sanitary sewer system and treated at the PARWQCP. The CEQA Proposed Project is expected to generate approximately 440,279 gpd and 837,529 gpd of average dry-weather flow and peak wet-weather flows, respectively. The project's average dry-weather and peak wet-weather flows would represent a 2.2 percent and 4.1 percent increase in the PARWQCP's average daily wastewater flow, respectively. The PARWQCP currently has a

hydraulic capacity of 80 mgd, with a daily flow rate of 20.22 mgd.[31] Therefore, the plant has a remaining capacity of 59.78 mgd. The PARWCP has the capacity to accommodate the increase in wastewater from the CEQA Proposed Project. As addressed under Impact CEQA-UTIL-4, according to the Public Works Department, the City of Mountain View is able to accommodate the projected flows. City of Mountain View also indicated that review and approval of a Sanitary Sewer Service Application that is based on a Utility Impact Study (UIS) would ensure there are no flow capacity impacts.[32] With the WRF Option, the WRF would process all of the proposed project's wastewater. Under the WRF Option, the CEQA Proposed Project would not have an impact on the PARWQCP's or the City of Mountain View's capacity. Therefore, the impacts of the CEQA Proposed Project could be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-3. Wastewater Connection Requirements

NASA ARC, on behalf of the Project Proponent or its contractor(s), shall submit an Excavation Permit Application and a Sanitary Sewer Service Application to the City of Mountain View for review prior to accepting new wastewater flow. The Project Proponent or its contractor(s) shall obtain an approved Excavation Permit Application, fund the preparation of any required Utility Impact Study (UIS) and pay any associated fees prior to occupancy of Phase 1 of the proposed project.

Significance after Mitigation

With implementation of Mitigation Measure UTIL-3, which requires the submittal of an Excavation Permit Application, the preparation of a Sanitary Sewer Service Application, and payment of a UIS and associated fees for the City of Mountain View, impacts related to a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments would be less than significant.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. The proposed wastewater generation under the CEQA Proposed Project No Student/Faculty Housing Variant would be similar to the CEQA Proposed Project. According to the Public Works Department, the City of Mountain View is able to accommodate the projected flows after review and approval of a Sanitary

[31] City of Palo Alto. 2025. *Regional Water Quality Control Plant 2024 Pretreatment Program Annual Report.* Available: https://www.paloalto.gov/files/assets/public/v/1/public-works/water-quality-control-plant/annual-reports/pretreatment-program-annual-report-2024.pdf. Accessed: March 17, 2026.

[32] Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division), March 3, 2023, Public Works Department, City of Mountain View, CA.

Sewer Service Application.[33] Therefore, the impacts of the CEQA Proposed Project No Student/Faculty Housing Variant could be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-3. Wastewater Connection Requirements

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-4.

Significance after Mitigation

With implementation of Mitigation Measure UTIL-3, which requires the submittal of an Excavation Permit Application, the preparation of a Sanitary Sewer Service Application, funding of a UIS, and payment of any associated fees for the City of Mountain View, impacts related to a determination by the wastewater treatment provider that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments would be less than significant.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

The CEQA Reduced Density Alternative would generate less wastewater than under the CEQA Proposed Project due to the reduced size of the proposed project, although there would be an increase over existing conditions. According to the Public Works Department, the City of Mountain View is able to accommodate the projected flows after review and approval of a Sanitary Sewer Service Application.[34] Therefore, the impacts of the CEQA Reduced Density Alternative could be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-3. Wastewater Connection Requirements

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-4.

Significance after Mitigation

With implementation of Mitigation Measure UTIL-3, which requires the submittal of an Excavation Permit Application, the preparation of a Sanitary Sewer Service Application, funding of a UIS, and payment of any associated fees for the City of Mountain View, impacts related to a determination by the wastewater treatment provider that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments would be less than significant.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory

[33] Ibid.

[34] Ibid.

and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would generate less wastewater than under the CEQA Proposed Project due to the reduced size of the proposed project, although there would be an increase over existing conditions. According to the Public Works Department, the City of Mountain View is able to accommodate the projected flows after review and approval of a Sanitary Sewer Service Application.[35] Therefore, the impacts of the CEQA Reduced Density Alternative No Student/Faculty Housing Variant could be potentially significant before mitigation.

Mitigation Measures

The following mitigation measure(s) are required:

Mitigation Measure UTIL-3. Wastewater Connection Requirements

See discussion for the CEQA Proposed Project under Impact CEQA-UTIL-4.

Significance after Mitigation

With implementation of Mitigation Measure UTIL-3, which requires the submittal of an Excavation Permit Application, the preparation of a Sanitary Sewer Service Application, funding of a UIS, and payment any associated fees for the City of Mountain View, impacts related to a determination by the wastewater treatment provider that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments would be less than significant.

***Impact CEQA-UTIL-5*: *Would the project require or result in the relocation of existing or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

The CEQA Proposed Project would increase the impervious surface area on the Project Site from 70 percent to approximately 79 percent, or a 9 percent increase from existing conditions. The increase in impervious surface area would result in a 10-year peak stormwater discharge rate of

[35] Ibid.

approximately 18.0 cubic feet per second (cfs) and a peak volume of approximately 263,338 cubic feet (cf). The CEQA Proposed Project would meter flows leaving the Project Site so that the peak discharge rate would not exceed the combined existing discharge rate of 18.29 cfs. This would be accomplished through detention involving the oversized pipes upstream of the eastern diked marsh trunk main as well as an orifice and weir to meter flows leaving the Project Site. In addition, the CEQA Proposed Project would incorporate a retention pond to treat the approximately 60,600-cubic-foot increase in stormwater volume compared with existing conditions. The retention basin in the northern corner of the Project Site, within Hangar Commons, would be approximately 0.5 acre in size and approximately 3 feet deep.

As an option, per the Project Proponent's enhanced-use lease, the CEQA Proposed Project and the CEQA Reduced Density Alternative could connect to three existing NASA storm drain mains along the northern boundary of the Project Site or construct a new off-site storm drain main, which would connect directly to the eastern diked marsh. The proposed on-site stormwater drainage system would consist of two subsystems. Subsystem 1 would make up approximately 23.5 acres on the interior of the Project Site. All stormwater from Subsystem 1 would drain to the northeast corner of the Project Site and then be discharged into the 0.50-acre retention pond and the eastern diked marsh trunk main. As mentioned above, flows would be metered upstream of the connection to the trunk main, ensuring that the proposed project's flow rate would not exceed the existing flow rate. Subsystem 2 would make up approximately 15.1 acres on the perimeter of the Project Site, along Girard Road, and the portion of Wescoat Road and Cody Road within the lease boundary. Subsystem 2 would discharge to the eastern diked marsh trunk main.

In addition, the proposed project would be subject to NPDES C.3 requirements, which require stormwater to be treated prior to being discharged to San Francisco Bay. During operation to treat stormwater discharges from the Project Site, the proposed project would incorporate a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. Other treatments by the proposed project include an open space would incorporate bioretention areas along the Promenade within the Central Green and a self-treating lawn area within the center point, and street stormwater runoff would be treated with flow-through planters.

Utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's stormwater. As discussed under Impact CEQA-UTIL-1, any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[36] During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit

[36] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project.

As discussed in Impact CEQA-UTIL-1, construction impacts associated with the proposed project's stormwater drainage infrastructure are analyzed throughout this joint EIR/EIS. For example, Section 3.3, Air Quality, Section 3.8, Greenhouse Gas Emissions and Climate Change, and Section 3.12, Noise, evaluate increases in air pollutants, greenhouse gas emissions, and noise levels associated with all construction activities, including any ground disturbance needed for tie-ins to existing utility infrastructure, as well as increases in emissions associated with the proposed project's utility demands. Section 3.5, *Cultural Resources*, and Section 3.17, *Tribal Cultural Resources*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have on buried resources. Section 3.7, *Geology, Soils, and Paleontological Resources;* Section 3.9, *Hazards and Hazardous Materials*; and Section 3.10, *Hydrology and Water Quality*; evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have related to erosion and siltation, degradation of water quality, and the release of contamination into the environment. As detailed therein, the proposed project's construction of stormwater drainage facilities would not cause significant adverse environmental effects. Therefore, the impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project.

Without Student/Faculty Housing, impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of the 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Without Student/Faculty Housing, impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

***Impact CEQA-UTIL-6*: *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

During construction of the project, a total of approximately 369,000 square feet of building area and paving would be demolished. It is anticipated that apprximately 19,600 cubic yards of demolition material would be transported off-site for disposal, and approximately 11,600 cubic yards of demolition materials would be recycled to be used as fill at the Project Site. Solid waste from demolition would be transported from the Project Site to various disposal destinations, including the Kirby Canyon Landfill, which would be the primary waste disposal site serving the project during construction and operation. The Kirby Canyon Landfill had a permitted throughput of 2,600 tons per day. Based on current disposal volume rates, Kirby Canyon Landfill is estimated to be in operation until at least 2059. Assuming the landfill has been receiving the maximum permitted throughput of 2,600 tons per day (949,000 tons per year) since the last capacity inspection in 2011, the landfill will have received approximately 17,082,000 tons (approximately 12,201,428 cubic yards) of solid waste by 2029. Based on this calculation, the estimated remaining capacity of the

landfill would be 20,335,714 cubic yards by the start of Phase 1 construction in 2029. Therefore, the landfill would have adequate capacity to accommodate the approximately 19,600 cubic yards of construction debris and solid waste generated from project-related construction activities. In addition, the project would be required to comply with the procedures and contingency actions described in the Environmental Issues Management Plan (Appendix 2-2 of this joint EIR/EIS). Throughout construction, waste would be source separated and tracked to divert it away from landfills, with a target of recycling more than 50 percent of construction and demolition waste.

Utilizing the waste generation rates provided in Table 3.18-2, the CEQA Proposed Project would generate approximately 64,920.8 pounds (120.4 cubic yards) of waste per day. A comprehensive set of waste management strategies (e.g., plastic packaging substitution, smart waste bins, a fabrics separation program, and a cardboard take-back scheme) would be required to ensure that diversion gets as close as possible to zero (85 percent diversion). With these strategies in place, waste generation would decrease to approximately 9,738.1 pounds (18.1 cubic feet) per day, with approximately 55,182.7 pounds (102.2 cubic feet) per day being diverted away from landfills.

The CEQA Proposed Project would contract with Recology for solid waste disposal and recycling. Once collected, solid waste and recyclables would be transported to the SMaRT station for sorting. Nonrecyclable waste from the SMaRT station would be transported to the Kirby Canyon Landfill in San José. As discussed above, the Kirby Canyon Landfill has a remaining capacity of 20,335,714 cubic yards, which would be able to support the proposed project's operational waste generation of 6,606.5 cubic yards per year.

Given the discussion above, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Without Student/Faculty Housing, impacts would be the same as under the CEQA Proposed Project. Operational waste generation would be slightly lower than under the CEQA Reduced Density Alternative because there would be fewer short-term residents on-site. Therefore, the landfill would have adequate capacity to accommodate solid waste generated from project-related construction activities. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, construction impacts would be the same as the CEQA Proposed Project. During operation, the CEQA Reduced Density Alternative would generate less waste than the CEQA Proposed Project. Utilizing the waste generation rates provided in Table 3.18-2, the CEQA Reduced Density Alternative would generate approximately 36,699.2 pounds (67.8 cubic yards) of waste per day, with an 85 percent waste diversion rate. After implementing the same waste management strategies as the CEQA Proposed Project (e.g., plastic packaging substitution, smart waste bins, a fabrics separation program, a cardboard take-back scheme), waste generation would decrease to approximately 5,504.9 pounds (10.4 cubic yards) per day, with approximately 31,194.3 pounds (57.4 cubic yards) per day being diverted away from landfills. As discussed above, the Kirby Canyon Landfill has available capacity to support the proposed project's operational waste generation.

Given the discussion above, the proposed project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Without Student/Faculty Housing, construction impacts would be the same as under the CEQA Proposed Project. Operational waste generation would be slightly lower than under the CEQA Reduced Density Alternative because there would be fewer short-term residents on-site. Therefore, the landfill would have adequate capacity to accommodate solid waste generated from project-related construction activities. Impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

***Impact CEQA-UTIL-7*: *Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

All development associated with the proposed project would be in compliance with the 2025 California Green Building Standards Code, which requires at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations to be recycled and/or salvaged for reuse. Development would also comply with the requirements of AB 341, which mandates recycling for commercial and multi-family residential land uses. Businesses and housing with five or more units must arrange for organic waste recycling services if they generate 2 cubic yards per week, or more, of solid waste, including recycling and organic waste, in accordance with AB 1826. Organic waste generation would be reduced in line with the targets set by SB 1383. Therefore, development associated with the proposed project would comply with all applicable federal, State, and local solid waste regulations, and impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative.

Impacts would be the same as under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

***Impact CEQA-UTIL-8*: *Would the project require or result in the relocation of existing or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects*?**

Impact Summary

	Level of Significance before Mitigation	Mitigation Measures Required	Level of Significance after Mitigation
CEQA Proposed Project	Less than Significant	—	—
CEQA Proposed Project with the Variant	*Same as CEQA Proposed Project*	—	—
CEQA Reduced Density Alternative	Less than Significant	—	—
CEQA Reduced Density Alternative with the Variant	*Same as CEQA Reduced Density Alternative*	—	—

CEQA Proposed Project (NEPA Build Alternative 1)

Electric Power and Natural Gas Facilities

The CEQA Proposed Project would require the installation of new connections to the surrounding PG&E electric grid to provide service to future buildings throughout the Project Site. The 2.4 kV switchgear in Building 104, which currently serves infrastructure adjacent to the Project Site, would be relocated as part of the proposed project. The project would connect directly to the existing PG&E system and route an electrical duct back to the Project Site. Electrical lines would then be routed under the interior streets on the Project Site to the proposed buildings.

Under the CEQA Proposed Project, all new building systems (e.g., HVAC, mechanical systems) would be supplied by electricity, eliminating the need for connections to PG&E's natural gas infrastructure for building operations. However, gases (e.g. oxygen, CO_2, nitrogen, natural gas) may be used by tenants for research purposes in laboratories within the Research and Office Uses. The proposed laboratories would be supported through gas tanks, either within the laboratories or at a central location within the building. The CEQA Proposed Project would require the relocation and replacement of existing gas infrastructure; however, none of the proposed gas infrastructure would serve the CEQA Proposed Project. An existing gas main runs south to north through the Project Site within Dailey Road, then continues from the east side of Building 104 to Shenandoah Plaza. The gas main would be relocated to follow the alignment of Dailey Road to the intersection of Wescoat Road. It would then follow Wescoat Road east and ultimately connect to the NASA natural gas main near Building 509. In addition, the existing PG&E natural gas meter and manifold would be relocated to the connection to the existing NASA gas main along the north side of Wescoat Road near Building 509.

Twelve diesel emergency generators with Tier 4 engines would be installed at the Project Site to provide emergency power, offering a maximum power capacity of more than 670 brake horsepower per generator, for a total of 6 megawatts in back-up generation capacity. The emergency generators would be installed within enclosures and screened from view from interior streets and surrounding areas, minimizing their impact on visual quality. For the purposes of this joint EIR/EIS, it is assumed each of the generators would run 150 hours per year, consisting of 50 hours for testing and 100 hours for emergency power, consistent with Bay Area Air District–required assumptions. In addition, the CEQA Proposed Project and the CEQA Reduced Density Alternative would include construction and operation of photovoltaic (PV) systems and battery storage systems that meet or exceed minimum Energy Code compliance requirements through the prescriptive or performance-based designs provided in the proposed Development Guidelines and as required in the proposed standards included in Appendix 2-1 of this joint EIR/EIS. Preliminary plans indicate that individual battery storage systems would range in size (i.e., storage capacity) from approximately 6 kilowatt hours (kWh) to 940 kWh. The battery storage systems would be distributed throughout the buildings within each subarea. In addition, the CEQA Proposed Project and CEQA Reduced Density Alternative would install PV systems on the roofs of the proposed buildings to generate on-site renewable energy. The PV systems would connect to the battery storage system.

Only the CEQA Proposed Project includes the Central Utility Plant (CUP) Option. The CUP Option would provide an all-electric centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems. The CUP would be incorporated within the parking garage in Subarea 4 and require excavation to 11 feet below ground surface for the distribution pipes, which would exceed the excavation for the typical utility improvements that would otherwise be required for the CEQA Proposed Project.

Construction of the temporary and permanent energy infrastructure improvements and associated ground-disturbing activities have the potential to cause significant adverse environmental impacts such as fugitive dust, noise, sedimentation, and erosion. As with the water and wastewater infrastructure described in Impacts CEQA-UTIL-1 and CEQA-UTIL-3, the potential impacts resulting from tie-ins to PG&E's existing electrical infrastructure, relocation of gas and electricity infrastructure, and the installation of generators, PV systems, and battery storage systems are evaluated throughout this joint EIR/EIS. In addition, as required by law, utility connections would be constructed in accordance with all applicable building codes and standards, ensuring an adequately sized and properly constructed transmission and conveyance system. Any necessary connections

would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruptions for existing users. Impacts would be less than significant.

Telecommunications

Existing NASA critical telecommunications infrastructure, which is subsurface, would remain in place within the Project Site. New telecommunication services to the Project Site would connect to the existing infrastructure east of the site at Ellis Street and run along Cody Road to the southeast corner. The on-site telecommunication system would be built as a joint trench with electrical services and located either in the roadway or under the sidewalk. As discussed above, potential impacts from trenching are evaluated throughout this joint EIR/EIS. Given the nature of the existing telecommunications infrastructure, these modifications would not result in significant environmental impacts. The impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Proposed Project No Student/Faculty Housing Variant (NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative)

The CEQA Proposed Project No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Proposed Project. Impacts related to the relocation of existing or construction of new gas, electrical, or telecommunications facilities would be the same as those under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Under the CEQA Reduced Density Alternative, impacts related to the relocation of exisitng or construction of new gas, electrical, or telecommunications facilities would be similar to those under the CEQA Proposed Project, except that, under the CEQA Reduced Density Alternative, there would be no CUP Option. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CEQA Reduced Density Alternative No Student/Faculty Housing Variant (NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative)

The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include an additional 130,000 square feet of Research and Office Uses instead of 130,000 square feet of Student/Faculty Housing in Subarea 6. The Variant would include 90,000 square feet of laboratory

and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses and otherwise generally include the same type of land uses and site plan as the CEQA Reduced Density Alternative. Impacts related to the relocation of existing or construction of new gas, electrical, or telecommunications facilities would be the same as those under the CEQA Proposed Project. The impacts would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

3.18.8 Cumulative Impacts

The discussion of cumulative impacts addresses the topics evaluated in the corresponding project impacts in Section 3.18.7, *Impacts and Mitigation Measures*, above. The cumulative projects within NASA ARC are described in Section 3.6, *Approach to Cumulative Impact Analysis*, in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, and shown in Figure 3.1-1.

The cumulative geographic context for the cumulative assessment of utilities and service systems impacts is broader than NASA ARC; it includes the utility infrastructure in Sunnyvale and Mountain View. Major utilities (e.g., communications lines, electrical lines, water and sewer lines) either cross or run parallel to the right-of-way near cumulative projects and the Project Site. Past, present, and reasonably foreseeable future cumulative development within this geographic context assumes the development envisioned in the NADP.

Impact CEQA-C-UTIL-1: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to water supply? (Significant and Unavoidable with Mitigation)

Cumulative projects would be required to comply with applicable regulations, plans, and policies that pertain to water conservation, including the California Green Building Standards Code and the California Plumbing Code, the SFPUC WSCP, and County of Santa Clara Sustainable Landscape Ordinance Nos. NS-1200.328 and NS-1200-361 The impacts on water supply and infrastructure under the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), described in Impacts CEQA-UTIL-1 and CEQA-UTIL-2, are cumulative in nature because the analysis evaluates whether SFPUC has adequate water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. As discussed in Impact CEQA-UTIL-2, SFPUC can meet customer demand through 2045 during normal years; however, during single-year and multi-year droughts, SFPUC will need to implement the WSCP to meet supply shortfalls. Mitigation Measure UTIL-1 would require the Project Proponent to implement measures to reduce potable water use during single-dry and multiple-dry years to achieve reduction levels consistent with those in SFPUC's WSCP. Mitigation Measure UTIL-2 ensures the availability of the proposed project's recycled water supply. These mitigation measures would reduce effects related to water supply in drought conditions. However, because the Water Supply Evaluation and SFPUC identify a water supply shortfall relative to demand in dry year conditions under Scenario 1 and Scenario 3, even with implementation of Mitigation Measure UTIL-1 and Mitigation Measure UTIL-2 the proposed project may not have sufficient water supplies available during dry and multiple dry years, and the impact on potable water supply would be significant and unavoidable. Given the cumulative nature of this

analysis for the SFPUC service area, this is also a significant and unavoidable cumulative impact related to water supply.

Impact CEQA-C-UTIL-2*: *Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to wastewater service? (No Significant Cumulative Impact)

The proposed project, in combination with cumulative projects, would contribute wastewater flows to Mountain View's sewer system and the PARWQCP. Mountain View and the PARWQCP would be responsible for evaluating the environmental effects of any new or expanded infrastructure within their service areas at the time such improvements are proposed. The impacts on wastewater treatment capacity under the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), described in Impact CEQA-UTIL-3 and Impact CEQA-UTIL-4, are cumulative in nature because the PARWQCP collects wastewater from the East Palo Alto Sanitary District, Los Altos, Los Altos Hills, Mountain View, Palo Alto, and Stanford University. As discussed in Impact CEQA-UTIL-4, the City of Mountain is able to accommodate the projected flows after review and approval of a Sanitary Sewer Service Application.[37] Therefore, the impacts of the CEQA Proposed Project could be significant without the preparation of a Sanitary Sewer Service Application. With implementation of Mitigation Measure UTIL-3, which requires the submittal of an Excavation Permit Application, the preparation of a Sanitary Sewer Service Application, and payment of a USI and associated fees for the City of Mountain View, impacts related to a determination by the wastewater treatment provider that it has inadequate capacity to serve the proposed project's projected demand in addition to the provider's existing commitments would be less than significant. The PARWQCP has adequate capacity to accommodate existing wastewater flows, including increases associated with the proposed project. The PARWQCP would have adequate capacity to treat wastewater flows from the proposed project and other reasonably foreseeable future development. Therefore, the impacts of the cumulative projects, combined with the proposed project with mitigation, would not result in a significant cumulative impact related to wastewater service.

Impact CEQA-C-UTIL-3*: *Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to stormwater infrastructure? (No Significant Cumulative Impact)

Generally, cumulative projects would occur in developed areas with existing impervious surfaces and would not be expected to substantially increase the amount of new impervious surface area, potentially leading to an increase in the volume of stormwater runoff that enters NASA ARC's stormwater drainage system. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in a net increase in impervious surface area. However, the project proposes bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells to treat and manage stormwater runoff before it enters the stormwater system. In addition, a retention pond would be incorporated into the site design to manage any increase in runoff volumes. The Project Site would meter flows leaving the site so that the peak discharge would not exceed the existing discharge rate. Runoff flows are required to be detained and retained. Volumes would match the existing flow rates and volumes leaving the site;

[37] Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division), March 3, 2023, Public Works Department, City of Mountain View, CA.

the proposed project would comply with Provision C.3 requirements in the MRP. Therefore, because cumulative projects would generally occur in developed areas, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to stormwater infrastructure.

Impact CEQA-C-UTIL-4: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to solid waste? (No Significant Cumulative Impact)

The cumulative context for the cumulative assessment related to solid waste is the Kirby Canyon Landfill in San José. Cumulative projects would result in an increase in the amount of solid waste sent to Kirby Canyon Landfill. As discussed under Impact CEQA-UTIL-9, Kirby Canyon Landfill had a permitted throughput of 2,600 tons per day. Based on current disposal volume rates, Kirby Canyon Landfill is estimated to be in operation until at least 2059. Similar to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), cumulative projects would be required to comply with applicable regulations, plans, and policies that pertain to reducing solid waste generation, including California's IWMA, the California Green Building Standards Code, and AB 341 and AB 1826 (mandatory commercial recycling and organics recycling). Given the above discussion, the proposed project, in combination with the cumulative projects, would not generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure. The project, similar to the cumulative projects, would not impair attainment of solid waste reduction goals or requirements. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to solid waste.

Impact CEQA-C-UTIL-5: Would the project result in a cumulatively considerable contribution to a significant environmental impact with respect to electrical power, natural gas, or telecommunication facilities? (No Significant Cumulative Impact)

Cumulative projects within PG&E's service area would result in an increase in electricity demand. Future projects would be required to comply with applicable regulations, plans, and policies that pertain to energy efficiency, including the State Building Energy Efficiency Standards and Energy Efficiency Strategic Plan. As new development occurs, PG&E would periodically consider the need to purchase more resources and upgrade and expand existing infrastructure, at which time PG&E would be responsible for evaluating the environmental effects of any proposed infrastructure. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to electrical power facilities.

The project, in combination with cumulative projects, would result in increased demand for communication and data services on existing networks. As new development occurs, telecommunications providers would periodically consider the need to purchase more resources and upgrade and expand existing infrastructure, at which time the providers would be responsible for evaluating the environmental effects of any proposed infrastructure. The project, in combination with other projects, would not result in significant environmental effects from the construction of telecommunications infrastructure. Therefore, the impacts of the cumulative projects, combined with the proposed project, would not result in a significant cumulative impact related to natural gas, or telecommunication facilities.

3.19 Effects Not Found to Be Significant

This section describes the possible significant effects of the Berkeley Space Center at NASA Research Park (proposed project/proposed action) that were determined not to be significant and are, therefore, not discussed in detail. Section 15128 of the California Environmental Quality Act (CEQA) Guidelines states that an "EIR shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR." This section describes the basis for the determination of The Regents of the University of California (the CEQA Lead Agency for the proposed project) with regard to each environmental topic, pursuant to CEQA Guidelines Section 15128. This section also describes requirements related to the evaluation of aesthetics and parking impacts.

In the course of evaluating the potential impacts of the proposed project with respect to the environmental topics included in Appendix G of the CEQA Guidelines, it was found that the proposed project would have no impact related to the following environmental topics: agriculture and forestry resources, mineral resources, and wildfire. Therefore, these issues are not discussed in detail in this joint EIR/EIS for the reasons set forth below. In addition, as further described below, the proposed project does not require the analysis of impacts related to aesthetics or vehicular parking.

3.19.1 Aesthetics and Vehicular Parking Analysis

Senate Bill (SB) 743, which was signed into law in 2013 and is codified in Section 21099 of the California Public Resources Code, establishes that aesthetics and parking shall not be considered in determining if a project has the potential to result in significant environmental effects, provided the project meets the qualifying criteria established under Public Resources Code Section 21099. As discussed in Section 3.2, *Aesthetics and Visual Resources*, of this joint EIR/EIS, the CEQA Proposed Project and CEQA Reduced Density Alternative meet the qualifying criteria; thus, the EIR portion of this joint Draft EIR/EIS does not consider aesthetics or vehicular parking in determining the significance of impacts under CEQA. Appendix 3.2-1 of this joint EIR/EIS includes a discussion of the proposed project's potential CEQA impacts related to aesthetics for informational purposes only.

3.19.2 Agriculture and Forestry Resources

The proposed project would be located within an urban area at National Aeronautics and Space Administration Ames Research Center (NASA ARC). According to the NASA Ames Development Plan, the Project Site has been designated as University Reserve. The California Department of Conservation, Division of Land Resource Protection, maps important farmland, including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land. The Project Site is classified as Urban and Built-Up Land by the California Department of Conservation.[1,2] The Project Site is not used for agricultural production and does not contain any

[1] Urban and Built-Up Land is occupied by buildings with a density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential, industrial, and commercial uses; institutional facilities; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; and water control structures.

[2] California Resources Agency, Farmland Mapping and Monitoring Program. 2022. *Santa Clara County Important Farmland* 2025 https://maps.conservation.ca.gov/DLRP/CIFF.Accessed: March 17, 2026.

designated farmland. There are no Williamson Act contracts for land within Project Site. There is no timberland or timberland zoned Timberland Production on the Project Site.[3] None of the trees currently growing on or adjacent to Project Site are managed for a public benefit and, therefore, the Project Site is not "forestland."[4] Therefore, the CEQA Proposed Project and CEQA Reduced Density Alternative would not convert Farmland to non-agricultural use, conflict with existing zoning for agricultural use, conflict with existing zoning for forestland, result in the loss or conversion of forestland, or involve any changes to the existing environment that could result in the conversion of Farmland or forestland to non-agricultural use. The CEQA Proposed Project and CEQA Reduced Density Alternative would result in no impact related to agricultural and forestry resources, and no further analysis is required.

3.19.3 Mineral Resources

The proposed project would be located within an urban area at NASA ARC. The California Geological Survey classifies lands into mineral resource zones based on guidelines adopted by the California State Mining and Geology Board, as mandated by the Surface Mining and Reclamation Act of 1974.[5] The Project Site does not include any areas with development potential that contain mineral resources where there is adequate information indicating significant mineral deposits or the high likelihood of significant mineral deposits.[6] In addition, there are no mineral resource recovery operations within NASA ARC. Therefore, the CEQA Proposed Project and the CEQA Reduced Density Alternative would not result in the loss of availability of known mineral resources or the loss of a locally-important mineral resource recovery site. The CEQA Proposed Project and CEQA Reduced Density Alternative would result in no impact related to mineral resources, and no further analysis is required.

3.19.4 Wildfire

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped Very High Fire Hazard Severity Zones in Santa Clara County to help responsible local agencies identify measures to reduce the potential for loss of life, property, and resources from wildland fire. The Project Site is located on federal land within NASA ARC; thus, the Project Site is designated as a Federal Responsible Area and contains no State Responsibility Areas. In addition, according to CAL FIRE mapping, no land adjacent to the Project Site is designated as a Very High Fire Hazard Zone.[7]

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3 According to Public Resources Code Section 4526 and California Government Code Section 51104(g), "timberland" is defined as land, other than that owned by the federal government or designated by the State Board of Forestry and Fire Protection as Experimental Forestland, that is available for and capable of growing a crop of trees of any commercial species to produce lumber and other forest products, including Christmas trees.

4 According to Public Resources Code Section 12220[g], "forestland" is land that can support a 10 percent native tree cover of any species, including hardwoods, under natural conditions and allow management of one or more forest resources, including resources with timber, aesthetic, fish and wildlife, biodiversity, water quality, recreational, or other public benefits.

5 California Geological Survey. 2018. *Map Sheet 52-Aggregate Sustainability in California*. Available: https://www.conservation.ca.gov/cgs/Documents/Publications/Map-Sheets/MS_052_California_Aggregates_Report_201807.pdf. Accessed: December 23, 2025.

6 California Department of Conservation. 2016. *Mines Online*. Available: https://maps.conservation.ca.gov/mol/index.html. Accessed: December 23, 2025.

7 CAL FIRE. 2026. *Fire Hazard Severity Zones*. Available: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones. Accessed: March 17, 2026.

Additional CAL FIRE mapping does not designate the Project Site as a wildland urban interface area, which is an area defined as a "Fire Hazard Severity Zone" or at a significant risk from wildfires.[8] The vicinity of the Project Site is composed of a variety of uses, such as open space, commercial and residential. Therefore, the CEQA Proposed Project and the CEQA Reduced Density Alternative would not be located in a Very High Fire Hazard Zone or in a wildland urban interface area. The CEQA Proposed Project and CEQA Reduced Density Alternative would result in no impact related to wildfire, and no further analysis is required.

8 CAL FIRE. 2025. Wildland Urban Interface. Available: https://gis.data.ca.gov/datasets/CALFIRE-Forestry::wildland-urban-interface/explore. Accessed: March 17, 2026.

Chapter 4
Environmental Impact Statement

4.1 Introduction

Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California (UC Regents) and SKSP NRP, LLC, is proposing a master-planned mixed-use academic and research project, referred to as the Berkeley Space Center at the NASA Research Park (proposed project/proposed action).[1] The Project Proponent will require authorization from the UC Regents to proceed with the proposed project under the California Environmental Quality Act (CEQA) and NASA's approval to proceed following analysis consistent with the National Environmental Policy Act (NEPA). NASA is the NEPA Lead Agency for the proposed action and, as the Authority Having Jurisdiction, NASA would issue building permits and monitor applicable mitigation measures related to development and operation of the proposed project. The UC Regents is the CEQA Lead Agency for the proposed project and would provide authorization before the proposed action is submitted for NASA's approval.[2] This environmental impact statement (EIS) has been prepared for NASA.

The primary purpose of an EIS is to ensure that federal agencies consider the environmental impacts of their actions and inform decision-makers and the public of reasonably foreseeable environmental effects and a reasonable range of project alternatives. This EIS has been prepared in accordance with NEPA, as amended (42 United States Code Section 4321 et seq.). NASA's NEPA regulations are codified in 12 CFR subpart 1216 *et seq*. In accordance with the provisions of NEPA, this EIS provides information regarding the purpose and need for the proposed action, describes the affected environment, significant effects and reasonable alternatives that are technically and economically feasible and meet the purpose and need of the proposed action.

4.1.1 Project Site and Vicinity

The proposed project would be located at National Aeronautics and Space Administration Ames Research Center (NASA ARC), as depicted in Figure 4-1, Project Location, on an approximately 39-acre project site (Project Site), along with approximately 6 acres of off-site areas (Off-Site Areas) where utility improvements and building demolition would take place. Together, the Project Site and Off-Site Areas comprise the approximate 45-acre limits of work (Limits of Work), as depicted in Figure 4-2, Limits of Work, and as more fully described below.[3]

The Limits of Work are located primarily on federal land within NASA ARC, an approximately 2,000-acre facility in unincorporated Santa Clara County, California, between U.S. 101 and the southwest edge of San Francisco Bay. A small portion of the Off-Site Areas is on federal land owned by the United States Army (Army). The City of Mountain View borders NASA ARC to the north and

[1] Throughout this joint environmental impact report/environmental impact statement (EIR/EIS), *proposed project* refers to both the proposed project (under the California Environmental Quality Act) and the proposed action (under the National Environmental Policy Act).

[2] UC Regents is a legal entity that includes all of the University of California campuses.

[3] Wescoat Village is not part of the Limits of Work; rather, the Limits of Work follow the roadways surrounding Wescoat Village, as shown in Figure 2-2.

southwest, and the City of Sunnyvale borders NASA ARC to the southeast and east. NASA ARC is approximately 33 miles south of the City of San Francisco and 8 miles north of the City of San José.

The Project Site is within the City of Mountain View Sphere of Influence but outside of any city's jurisdictional limits. Most of the Off-Site Areas are also within the City of Mountain View Sphere of Influence and outside of any city's jurisdictional limits, with the exception of the northern portion and the southwestern portion, which are within the City of Mountain View. The Project Site is bounded by Wescoat Road to the north and Cody Road to the east,[4] as depicted in Figure 4-3, Existing Conditions (Project Site). The western boundary of the Project Site is within an empty lot immediately west of Bailey Road. The Project Site is a portion of Santa Clara County Assessor's Parcel Number 116-18-012.

Refer to Chapter 2, *Proposed Project/Proposed Action and Alternatives*, for a detailed description of the Project Site and the vicinity of the Project Site.

4.1.2 Project Overview

The proposed project under consideration by NASA (i.e., the proposed action) would include academic and research facilities, consisting of offices, laboratories, R&D uses, and related amenities[5] (collectively, "Research and Office Uses"); conference center and related amenities[6] ("Conference Uses"); ground-floor retail, food and beverage, maker spaces (i.e., collaborative work spaces for using various tools and materials), and other complementary accessory uses that would be publicly accessible[7] (collectively, "Active Uses"); student/faculty housing, including associated amenities ("Student/Faculty Housing"); short-term lodging, including associated amenities[9] ("Short-Term Lodging"); transportation networks; and open spaces, as well as landscaped spaces, to create a state-of-the-art research and education hub that shapes the future of technology and innovation and advance the UC Regents educational, scientific research, charitable, and other exempt purposes (within the meaning of Section 501(c)(3) of the United States Internal Revenue Code). The proposed open space would include pathways, activated uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios).

[4] Cody Road would be realigned to the east as part of the proposed project and would be the eastern boundary of the Project Site.

[5] Research and Office Uses could include the following amenities: a commercial kitchen, meeting/collaboration space, training space, private open space areas, and other facilities supporting the Research and Office Uses. These amenities would support the users of the Research and Office Uses.

[6] Conference Uses could include the following amenities: pre-function space, collaboration areas, meeting/event rooms, business center, gathering terraces and private open space, and other facilities supporting the Conference Uses.

[7] Active Uses would be publicly accessible and could include the following types of uses and spaces: co-working space; restaurants, including on-sale alcohol, community-serving retail, personal services (including, but not limited to, dry cleaning pickup/drop-off, ATM, salons, bicycle repair); and maker space. Active Uses could occur throughout the Project Site.

[8] Student/Faculty Housing could include the following amenities: fitness center, game rooms, shared entertainment space with shared kitchen, business center, leasing/administrative office space, and other facilities supporting the Student/Faculty Housing.

[9] Short-Term Lodging could include the following amenities: fitness center, game rooms, shared entertainment space, business center, leasing/administrative office space, and other facilities supporting the Short-Term Lodging.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

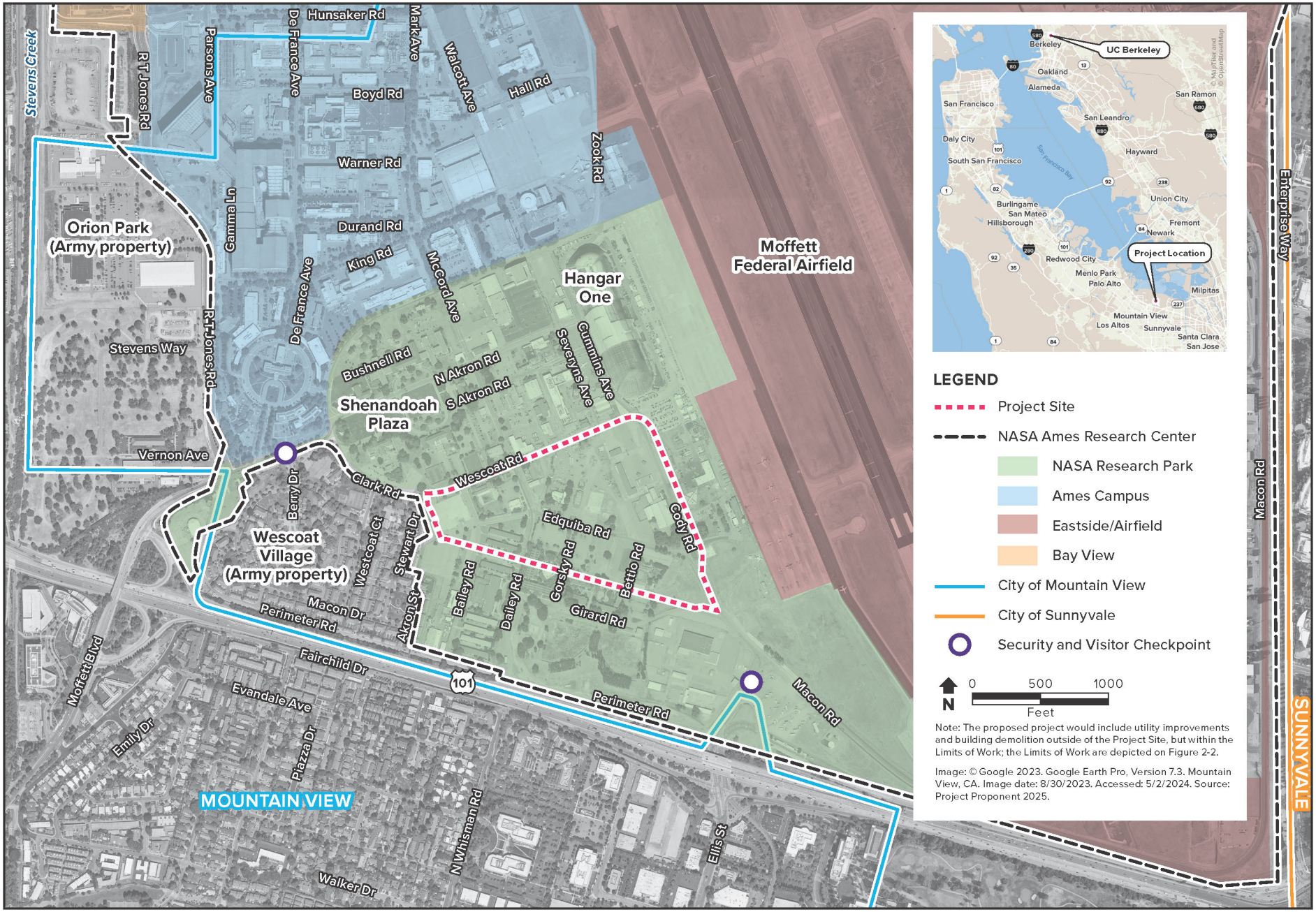


Figure 4-1
Project Location
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*

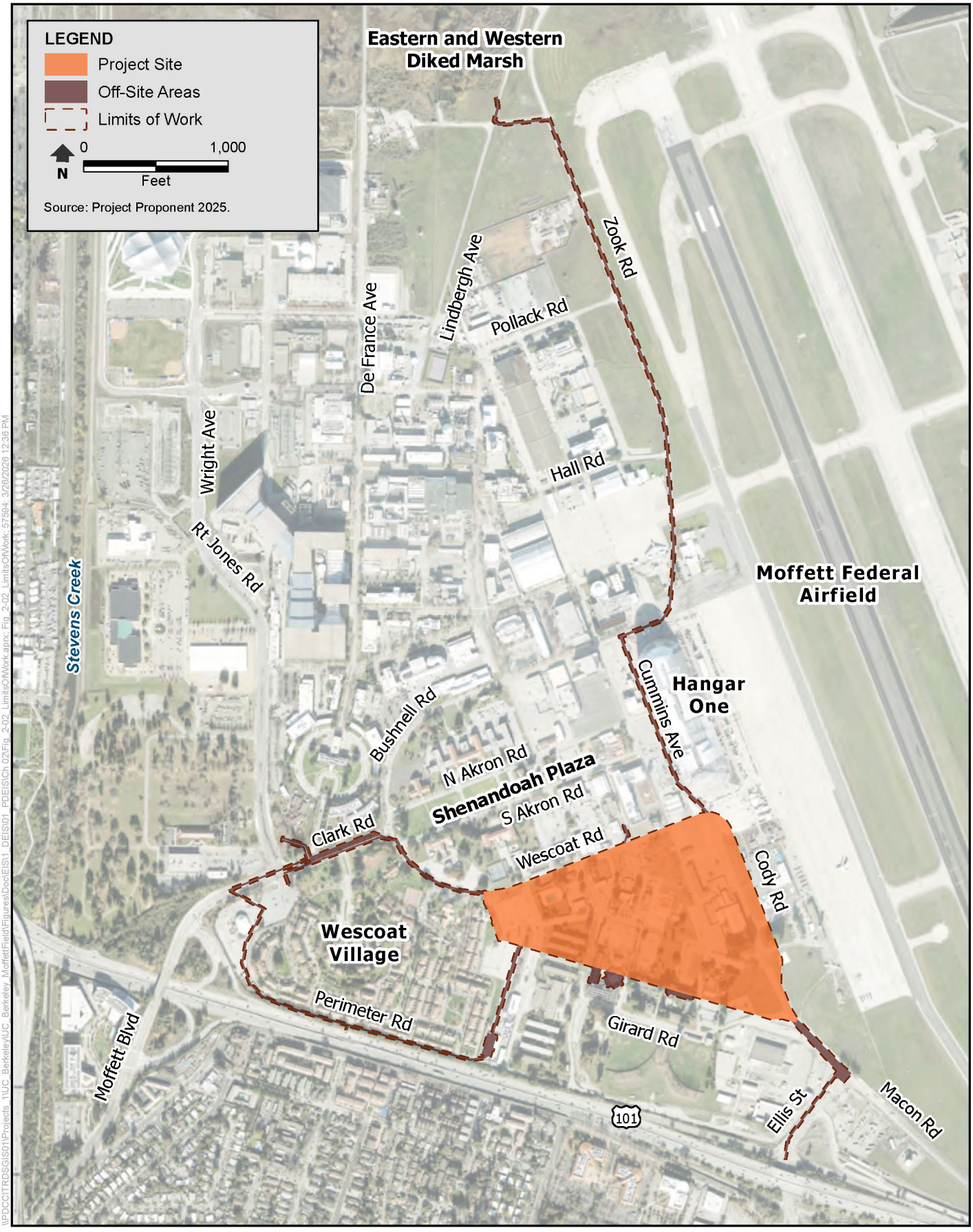
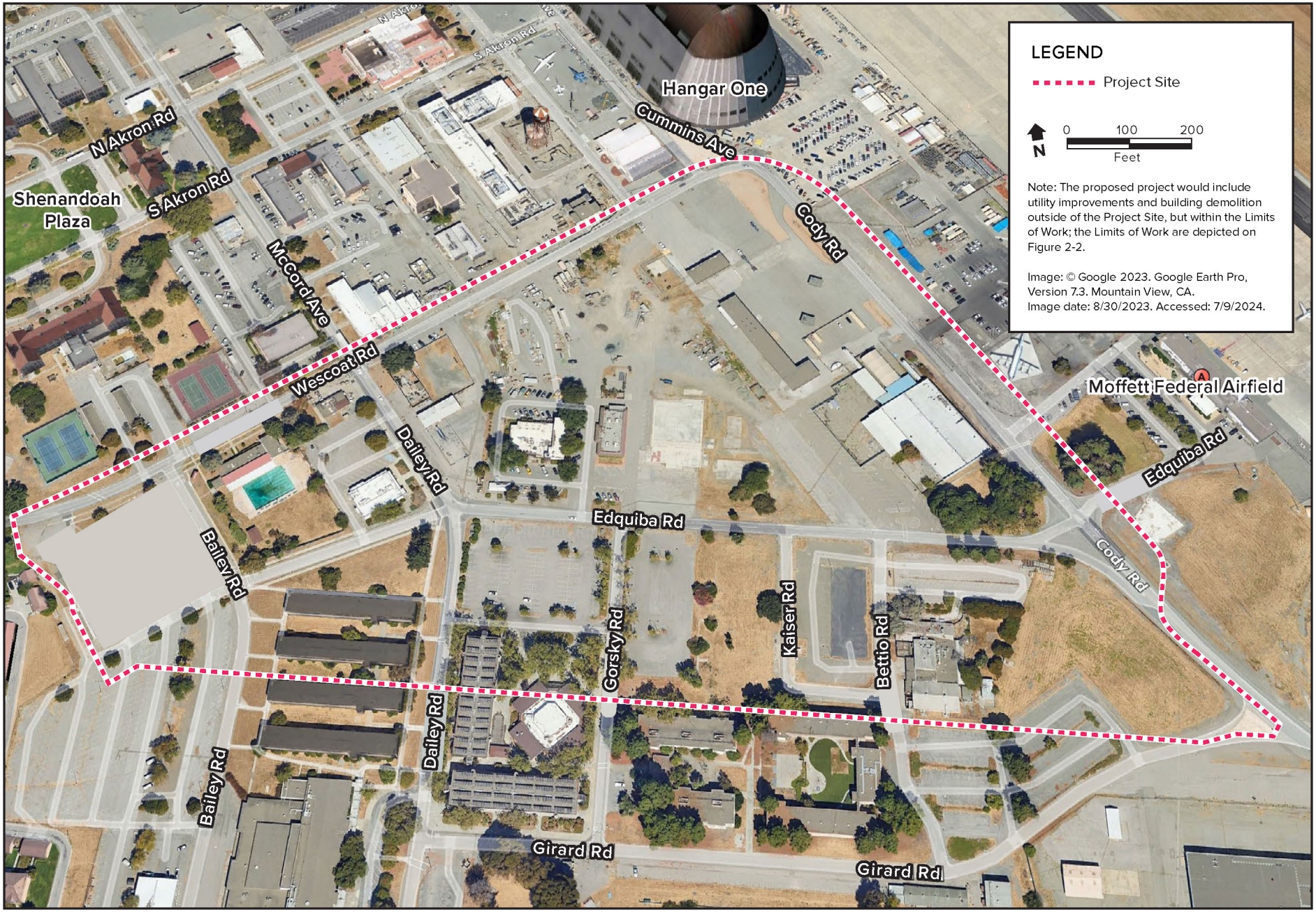


Figure 4-2
Limits of Work
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



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Figure 4-3
Existing Conditions (Project Site)
Berkeley Space Center at NASA Research Park

Implementation of the proposed project would include demolition of all existing buildings within the Limits of Work. In addition, as discussed above, the proposed project also includes Off-Site Areas, consisting of areas where utility improvements and building demolition would take place (see Section 2.3.7, *Off-Site Utility Improvements and Demolition*). Together, the Project Site and the Off-Site Areas make up the Limits of Work.

Refer to Chapter 2, *Proposed Project/Proposed Action and Alternatives*, for a detailed description of the proposed action.

4.2 Purpose and Need

The purpose of the proposed project is to:

- Facilitate the development and long-term operation of a collaborative research environment at NASA ARC as contemplated in the NASA Ames Development Plan (NADP).
- Create a research development that combines the University of California, Berkeley's (UC Berkeley's) mission to accelerate scientific discovery, create innovative technologies, and advance knowledge for the benefit of humanity with NASA's mission to enable exploration, innovative technologies, and interdisciplinary scientific discovery through the integration of public and private research and development efforts.
- Strengthen and expand NASA ARC's global profile, attracting and retaining new research talent as well as generating innovative ideas for use throughout the world and the cosmos.
- Promote collaborative research and development activities among NASA ARC, UC Berkeley, private industry, and non-profit organizations.
- Provide lodging options or on-site short-term housing, or both, to primarily support faculty, students, and visitors.
- Enable more efficient use of land at NASA ARC by demolishing older underutilized buildings and infrastructure and constructing new facilities and associated infrastructure involved in the creation of the new research space.

The need for the proposed project is as follows:

- To maintain NASA's position at the forefront of technological innovation and as a catalyst for space and aeronautical research and technology transfer.
- To strengthen the United States' ability to address the research challenges of tomorrow by combining NASA's unique ability to focus on high-risk long-term research; the industry's ability to react quickly with applied technology; and UC Berkeley's expertise in educating and providing a vibrant workforce for the future.

4.3 NEPA Scope and Review Process

Because the proposed action is a major federal action located on federal land, it must comply with NEPA, and because the proposed action may have a reasonably foreseeable significant effect on the quality of the human environment, an EIS must be prepared.

The scoping process for the EIS was initiated when the notice of intent (NOI) was released for the proposed action from June 25, 2024 for a 30-day public review period through July 26, 2024. Public scoping meetings were held via Zoom on July 10, 2024, and July 15, 2024. In addition, the NOI was published in the *Federal Register* on June 26, 2024, under Docket Number NASA-24-039. Scoping allowed various private and public entities to transmit their concerns and comments on the scope and content of this EIS, identify significant issues, and provide input on alternatives.

After the public scoping period, this Draft EIS was prepared. The primary purpose of an EIS is to ensure that federal agencies consider the environmental impacts of their actions and inform decision-makers and the public of reasonably foreseeable environmental effects and a reasonable range of project alternatives in accordance with NEPA. An EIS provides information regarding the purpose and need for the proposed action, describes the affected environment, and discusses significant effects and reasonable alternatives that are technically and economically feasible and meet the purpose and need of the proposed action.

NASA provided a public notice of availability of this Draft EIS to interested individuals, agencies, and organizations to review and comment on the alternatives or impacts prior to being finalized. This Draft EIS document will be distributed for a 45-day public review and comment period. Readers are invited to submit written comments and are encouraged to be as specific as possible about the alternatives presented or the range of the analysis considered. In addition, the document's availability will be posted on the *Federal Register* and will be accessible via NASA ARC's NEPA website: https://environment.arc.nasa.gov/.

Following the close of the 45-day public review period, NASA will prepare responses to all substantive comments related to potential environmental effects and alternatives. A Final EIS will be prepared and consist of the (1) the Draft EIS, (2) a list of individuals, organizations, or agencies that provided comments on the Draft EIS, (3) comments received on the Draft EIS during the public comment period, (4) responses to the comments provided on the Draft EIS, and (5) and clarification of errors, omissions, or misinterpretation of the discussion in the findings in the Draft EIS by NASA. The Final EIS will be published on NASA's project website and accessible to the public.

After the Final EIS is published NASA will prepare a written record explaining why NASA has chosen to undertake a proposed action, identifying what the proposed action is, and any mitigation identified in the EIS that NASA is committing to. The Mitigation Monitoring and Reporting Program details the mitigation and assigns responsibility for their implementation; the final Mitigation Implementation and Monitoring Plan will also be prepared by NASA.

4.3.1 Scope of the EIS

This EIS focuses on the resource areas within the Project Site potentially subject to significant effects. Based on scoping efforts conducted, the NOI concluded that the following environmental resource areas would be addressed as separate sections in this Draft EIS:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Public Services
- Recreation
- Socioeconomics
- Transportation and Traffic
- Utility and Service Systems

The proposed action would not result in impacts on agricultural and forestry resources or mineral resources because none of these resources exist at the Project Site; there would also be no impacts related to wildfire. A detailed analysis of these topics is therefore not included in this Draft EIS; however, these topics are briefly discussed in Section 4.5.17, *Resource Topics Dismissed from Analysis*.

4.3.2 Agency Roles and Responsibilities and Decisions to Be Made

Most of NASA ARC, including the area where the proposed action would be built and operated, is an area of exclusive federal jurisdiction. In the absence of an explicit waiver of sovereign immunity by Congress, state and local government regulations (e.g., city and county general plans, land use policies, zoning regulations, and state environmental laws) do not apply to areas of exclusive federal jurisdiction. Therefore, state and local government requirements will not be considered as applicable to the proposed action, when the proposed action and environmental effects are located on ARC jurisdictional property. This includes mitigation measures proposed in accordance with those state and local government regulations that are not applicable in areas of federal jurisdiction; such proposed mitigation measures are optional on the part of NASA. However, NASA may, at its discretion, expressly apply a state or local requirement for purposes of establishing a threshold or standard of significance and may elect to apply mitigation measures established by state or local governmental agencies. For these reasons, the local land use regulations discussed in Section 2.2.3, *Land Use Designations*, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, are presented for informational purposes only.

Permits and other approvals related to state and federal requirements anticipated to be required for the proposed action include, but are not limited to, the following:

- Bay Area Air District permit for stationary sources;
- San Francisco Bay RWQCB Clean Water Act Section 401 water quality certification;
- U.S. Army Corps of Engineers permit under Section 404 of the Clean Water Act;

- Army approval of easements for utility infrastructure;
- Consultation pursuant to Section 7 of the federal Endangered Species Act with the U.S. Fish and Wildlife Service;
- Consultation pursuant to Section 106 of the National Historic Preservation Act and CEQA;
- Approval of the EPA and San Francisco Bay RWQCB for relocation or removal of any remediation system components;
- Approval of the EPA and San Francisco Bay RWQCB for the Spring 2026 project-specific EIMP;
- State Water Resources Control Board Division of Drinking Water (DDW) Application and Report of Waste Discharge (ROWD) for coverage under Order WQ 2014-0153-DWQ, and Compliance with the California Code of Regulations (CCR) Title 22 for production, distribution and use of recycled water;
- Reviews and permits associated with services to be provided by local service providers, such as the City of Mountain View, for utilities;
- Encroachment permit or similar for any roadway in City of Mountain View, City of Sunnyvale, Valley Transportation Authority (VTA), or California Department of Transportation (Caltrans) rights-of-way;
- Completion of a Settlement Agreement and Covenant Not to Sue with the U.S. Environmental Protection Agency;
- Design review by NASA pursuant to APR 8822.1; and
- Construction Permitting by NASA pursuant to APD 8829.1.

As defined by NEPA (42 U.S.C. 4336e), an agency with jurisdiction by law and/or with special expertise with respect to any environmental impact involved in a proposal may be a cooperating agency. NASA worked closely with a number of other federal, state, and local agencies throughout this NEPA process. During the public scoping period, NASA invited several state and local agencies with special expertise and potential jurisdiction over an aspect of the proposed project to participate as cooperating agencies. Of the notified agencies, the California Department of Transportation (Caltrans), the City of Mountain View, and VTA agreed to be cooperating agencies and are considered as such under NEPA.

4.3.3 Public Participation

NASA has taken steps to provide opportunities for participation in the environmental review process in accordance with NEPA requirements. During preparation of this EIS, an effort was made to engage the public; stakeholders; Native American tribes; federal, state, and local agencies; and other interested parties in the environmental review process to help define the range of potential alternatives to be evaluated, methodologies for analysis, probable environmental effects, and possible mitigation measures to be considered in the environmental document.

Efforts to engage the public and agencies throughout the NEPA process are described in Chapter 1, Subsection 1.3.2, *National Environmental Policy Act Process*, of this joint EIR/EIS.

4.4 Project Alternatives

4.4.1 Introduction

NASA has identified the following alternatives:

- NEPA Build Alternative 1 (CEQA Proposed Project)
- NEPA Build Alternative 2 (CEQA Reduced Density Alternative)
- NEPA No-Action Alternative

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of NEPA Build Alternative 1 and NEPA Build Alternative 2: the No Student/Faculty Housing Variant/Sub-Alternative (Sub-Alternative).[10]

As described in Chapter 5, *Other CEQA Information and Alternatives*, of this joint EIR/EIS, seven alternatives were considered but eliminated, including the Off-Site Alternative, the Further Reduced Project Massing to Avoid Visual Impacts on Historical Resources Alternative, the Thirty-Foot Tall Buildings Alternative, the Cultural Resource High-Sensitivity Zones Avoidance Alternative, the Clustered Development/Reduced Density Alternative, the Tribal Cultural Stewardship Preserve Alternative, and the Infrastructure Realignment Alternative. The discussion below describes the alternatives that were considered during preparation and scoping of this EIS and gives the rationale for eliminating them from detailed consideration.

Regarding the Off-Site Alternative, the Project Proponent does not control, nor is it aware of, a site within either the cities of Mountain View or Sunnyvale that could accommodate the proposed project. In addition, the Off-Site Alternative would not meet the purpose and need of the proposed project (i.e., those that are primarily concerned with redevelopment of the Project Site as well as the benefits of the proposed project's location at NASA ARC). The Further Reduced Project Massing to Avoid Visual Impacts on Historical Resources Alternative would be technically and economically infeasible. The Thirty-Foot-Tall Buildings Alternative would be technically and economically infeasible. In addition, the Thirty-Foot-Tall Buildings Alternative would not meet the purpose and need of the proposed project related to providing space for proposed uses to the same extent as the NEPA Build Alternatives, including the purpose providing lodging options or on-site short-term housing or enabling more efficient use of land. The Cultural Resource High-Sensitivity Zones Avoidance Alternative, the Clustered Development/Reduced Density Alternative, the Tribal Cultural Stewardship Preserve Alternative, and the Infrastructure Realignment Alternative would all be infeasible due to site constraints, technical constraints, and economic constraints. In addition, these alternatives would not meet the purpose and need of the proposed project related to providing space for proposed uses to the same extent as the NEPA Build Alternatives, including the purpose providing lodging options or on-site short-term housing or enabling more efficient use of land.

Additionally, as described in Chapter 5, *Other CEQA Information and Alternatives*, for purposes of the CEQA analysis only, an additional alternative was evaluated, the CEQA Reduced Height Alternative, in accordance with CEQA Guidelines Section 15126.6[a]. Thus, analysis of the CEQA Reduced Height

[10] Throughout this joint EIR/EIS, *Variant* refers to both the Variant (under CEQA) and the Sub-Alternative (under NEPA).

Alternative is only included in Chapter 5, and is not considered for purposes of the NEPA analysis within Chapter 4, *Environmental Impact Statement*.

4.4.2 Description of Alternatives

4.4.2.1 Proposed Berkeley Space Center Master Plan and Proposed Berkeley Space Center Development Guidelines

The proposed project will include the proposed Berkeley Space Center Master Plan (Master Plan), which establishes the overall project vision, conceptual plans, and illustrative renderings, and the proposed Berkeley Space Center Development Guidelines (Development Guidelines), which provide Maximum and Minimum Development Parameters and Standards for the proposed project buildings and open space. The Maximum and Minimum Development Parameters are a conceptual layout depicting the horizontal and vertical dimensions of the proposed project. Standards are mandatory requirements that would be required to be implemented for the proposed project. Together, the Master Plan and the Development Guidelines will be included as part of the project application submitted by the Project Proponent to NASA. The analysis of the environmental impacts of the NEPA Build Alternatives is based on the proposed Maximum and Minimum Development Parameters and the Standards established in the Development Guidelines. Appendix 2-1 of this joint EIR/EIS includes the proposed Master Plan, Development Guidelines, and Standards.

4.4.2.2 Characteristics of Alternatives

Pursuant to NEPA, NASA identified two Build Alternatives that meet the purpose and need for the proposed action including the majority of the project's objectives (see Chapter 1, Subsection 1.8, *CEQA Project Objectives*). In addition, although the NEPA No-Action Alternative would not satisfy the purpose and need for the proposed action, this alternative is carried forward to provide a comparative baseline to which the potential environmental consequences of the Build Alternatives can be analyzed against.

Pursuant to NEPA, this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- **NEPA Build Alternative 1 (CEQA Proposed Project)**, which would create approximately 2.3 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. The NEPA Build Alternative 1 would include approximately 2 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. Only the NEPA Build Alternative 1 includes the Water Reuse Facility (WRF) Option (see Section 2.3.6.2, *Recycled Water, in Chapter 2,* Proposed Project/Project Action and Alternatives.) and the Central Utility Plant (CUP) Option (see Section 2.3.6.8, *Heating, Ventilation, and Air-Conditioning Systems,* in Chapter 2).
- **NEPA Build Alternative 2 (CEQA Reduced Density Alternative)**, which would create approximately 1.4 million square feet of Research and Office Uses, Conference Uses, Active Uses, Student/Faculty Housing, and Short-Term Lodging for visitors and conference attendees. Compared to the NEPA Build Alternative 1, the NEPA Build Alternative 2 would provide less space for Research and Office Uses. The NEPA Build Alternative 2 would include approximately 1.1 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses,

90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.

- **NEPA No-Action Alternative**, under which the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings (e.g., ancillary buildings that supported Navy operations as well as industrial, storage, and utility facilities); reoccupying the vacant buildings would not require construction activity. The NADP, which established NASA's vision for long-term development of NASA ARC, also allows other types of uses at the Project Site. The NEPA No-Action Alternative could result in approximately 185,600 square feet of mixed uses, resulting in approximately 668 employees.[11] The NEPA No-Action Alternative would not result in the reoccupation of any buildings formerly used for lodging; thus, the NEPA No-Action Alternative would not generate any new full-time residents or short term occupants (e.g., summer interns) within the Limits of Work.

Table 4.4.2-1 summarizes the similarities and differences between the NEPA Build Alternative 1 and the NEPA Build Alternative 2. Figure 4-4 shows the conceptual land use plan for the proposed project.[12]

No Student/Faculty Housing Variant/Sub-Alternative

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of the NEPA Build Alternative 1 and NEPA Build Alternative 2: the No Student/Faculty Housing Variant/Sub-Alternative (Sub-Alternative).[13] Both the NEPA Build Alternative 1 and the NEPA Build Alternative 2 include the Sub-Alternative. The Sub-Alternative would replace the 130,000 square feet of Student/Faculty Housing in Subarea 6 with 130,000 square feet of Research and Office Uses under both the NEPA Build Alternative 1 and NEPA Build Alternative 2. Specifically, the Sub-Alternative would include 90,000 square feet of laboratory and R&D uses, 25,000 square feet of office uses, and 15,000 square feet of academic uses. The Sub-Alternative would have the same type of land uses; the same general site plan; the same maximum building height; the same amount of Conference Uses, Active Uses, Short-Term Lodging, and open space; the same number of guests; the same roadway infrastructure; the same utility infrastructure; the same parking ratio; and the same construction activities proposed and evaluated under the NEPA Build Alternative 1 and the NEPA Build Alternative 2. Because the amount of Research and Office Uses and the number of Student/Faculty Housing units would be different under the Sub-Alternative, the number of bicycle parking spaces, and the number of residents, employees, and students would likewise change. This potential difference in proposed land use is identified as a sub-alternative because it may or may not be included as part of the proposed project during implementation. Figure 4-5 shows the conceptual land use plan for the Sub-Alternative.

Refer to Chapter 2, *Proposed Project/Proposed Action and Alternatives*, for a detailed description of the proposed action.

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[11] This is based on a generation rate of 3.6 employees per 1,000 square feet.

[12] Both the parcel boundary and the Project Site boundary are shown in the conceptual plans. The parcel boundary includes the leased premises; it is provided for informational purposes only. The Project Site boundary includes the area that would be redeveloped as part of the proposed project.

[13] Throughout this joint EIR/EIS, *Sub-Alternative* refers to both the Variant (under CEQA) and the Sub-Alternative (under NEPA).

Table 4.4.2-1. Summary of Similarities and Differences between NEPA Build Alternative 1 and NEPA Build Alternative 2

Characteristic	NEPA Build Alternative 1 (CEQA Proposed Project)	NEPA Build Alternative 2 (CEQA Reduced Density Alternative)
Similarities		
Types of Land Uses	Same	
Location of Land Uses	Same (see Figure 4-4)	
Site Plan	Same (see Figure 4-4)	
Limits of Work (i.e., Project Footprint)	Same (45 acres, including 39-acre Project Site and 6 acres of Off-Site Areas)	
Maximum Building Height[a]	Same (Approximately 80 feet, with an exceedance of up to 25 feet for mechanical equipment and screens)	
Amount of Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, and Open Space	Same (25,000-square-foot conference center, 90,000 square feet of Active Uses, 145 Student/Faculty Housing units, 100 Short-Term Lodging units, and a minimum of 10 acres of open space)	
Number of Residents and Guests	Same (200 guests and 363 residents)	
Utility Infrastructure and Roadways[b]	Same	
Parking Ratio	Same	
Construction Start and End Dates	Same (begin in 2027 and end in 2040)	
No Student/Faculty Housing Variant/Sub-Alternative	Same (Sub-Alternative included)	
Differences		
Number of Internal Floors[a]	Greater to accommodate increased square footage and building height restriction	Less given reduced overall square footage
Internal Floor-to-Floor Heights[a]	Lower to accommodate increased square footage and building height restriction	Higher given reduced overall square footage
Amount of Square Footage for Research and Office Uses	Greater (2,000,000 square feet)	Less (1,080,000 square feet)
Number of Employees and Students[c]	Greater (5,997 employees and 177 students)	Less (3,331 employees and 95 students)
Number of Parking Spaces[c]	Greater	Less
WRF Option and CUP Option[d]	Yes	No

Source: Proposed Berkeley Space Center Development Guidelines, Spring 2026.

Notes:

WRF = Water Reuse Facility; CUP = Central Utility Plant

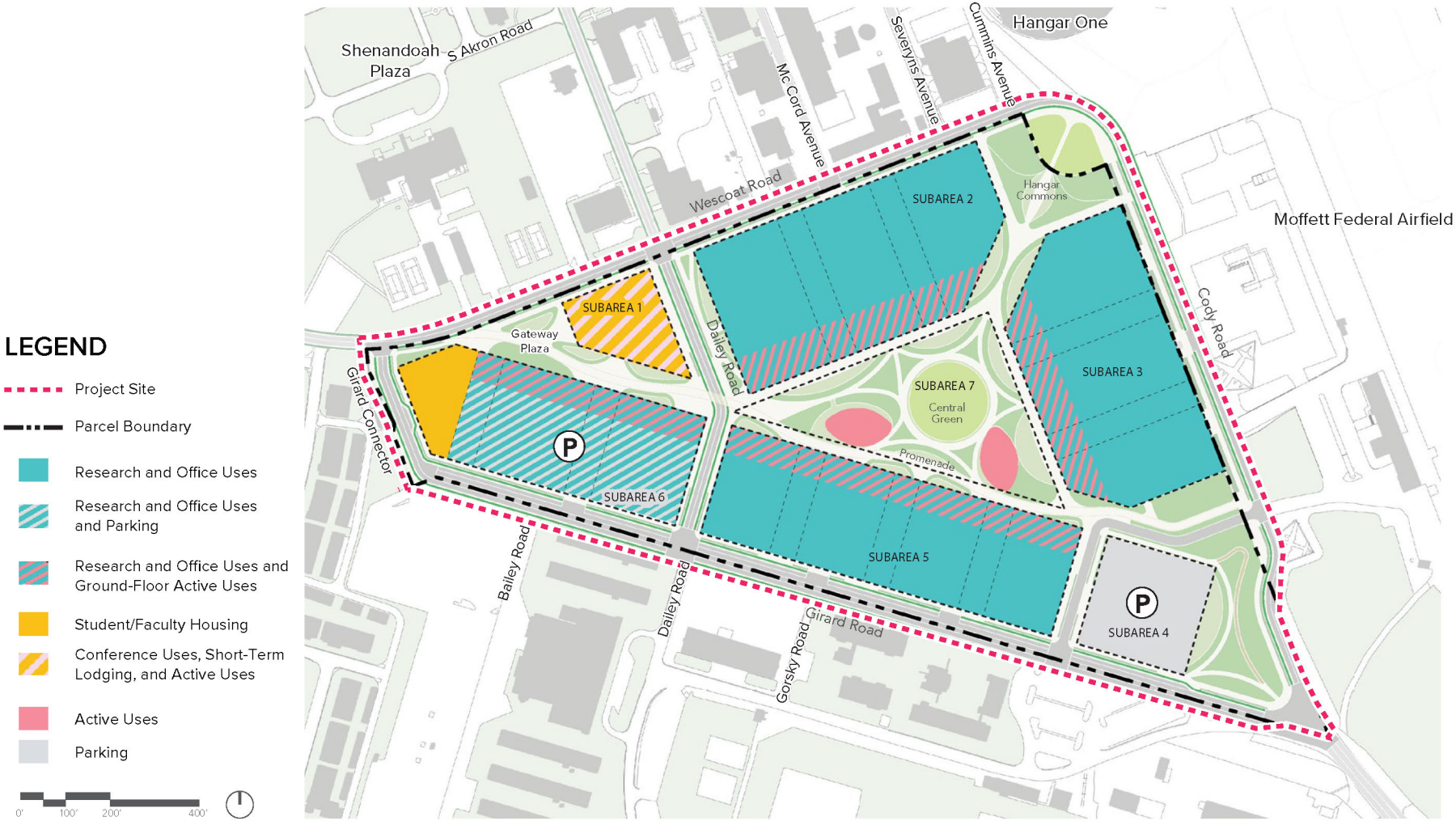
a. The internal floor-to-floor heights could be lower under the NEPA Build Alternative 1 to accommodate more square footage in each building, whereas the internal floor-to-floor heights under the NEPA Build Alternative 2 could be higher because less square footage would need to be accommodated in each building.

b. Only the NEPA Build Alternative 1 includes the Water Reuse Facility Option and the Central Utility Plant Option; see footnote "d" for more information regarding these options. The proposed roadways would be the same.

c. The difference in the number of employees, students, and parking is due to the greater amount of Research and Office Uses that would be included in the NEPA Build Alternative 1.

d Under the WRF Option, portions of the non-potable demand would be met using on-site reuse supply rather than recycled water from Mountain View. The non-potable demand that cannot be met by the WRF Option would require the use of potable water. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



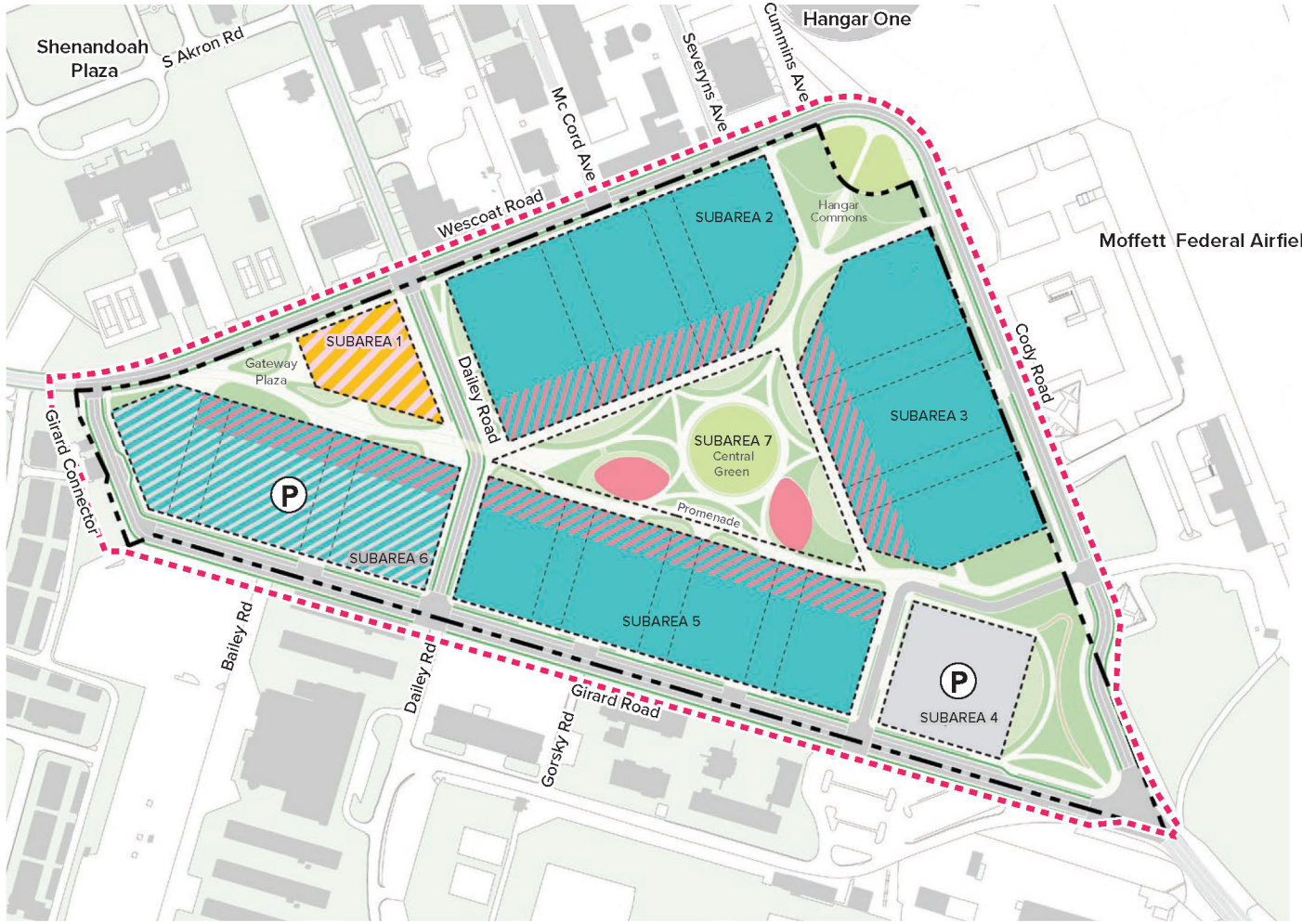
Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

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Figure 4-4
Conceptual Land Use Plan for the NEPA Build Alternatives
Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



LEGEND

- Project Site
- Parcel Boundary
- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground-Floor Active Uses
- Conference Uses, Short-Term Lodging, and Active Uses
- Active Uses
- Parking

0' 100' 200' 400'

Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2025.

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Figure 4-5

Conceptual Land Use Plan (No Student/Faculty Housing Sub-Alternative)

Berkeley Space Center at NASA Research Park

4.5 Affected Environment and Environmental Consequences

4.5.1 Introduction

This section provides the environmental analysis of potential impacts from NEPA Build Alternative 1, NEPA Build Alternative 2, the NEPA No-Action Alternative, and the Sub-Alternative. Each section covers a potential area of impact addressed in detail in Chapter 3, *Affected Environment/Environmental Setting*, such as cultural resources or noise. Each section discusses the affected environment, thresholds of significance and methodology, and the environmental consequences of each alternative considered.

4.5.1.1 Approach to the Analysis

NEPA requires the analysis of potential environmental impacts in the evaluation of any proposed federal action, including direct and indirect impacts that are reasonably connected to the proposed project at hand and not separated in time and space. Impacts include ecological (e.g., the impacts on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic (such as the impacts on employment), social, or health impacts. Impacts appropriate for analysis under NEPA may be either beneficial or adverse, or both, with respect to these values.

NEPA does not prescribe a single set of standards against which proposed actions must be evaluated. Therefore, criteria for evaluating the significance of impacts for each section in this chapter were based NASA's past environmental analyses, State CEQA Guidelines Appendix G, and professional standards. For each impact identified, a level of significance is determined by using the classifications listed below. Significance determinations are indicated in ***bold, italicized*** text.

- ***No Impact***. No impact denotes situations in which there is no possibility of an adverse effect on the environment.
- ***Less than Significant***. Less-than-significant impacts are those that are noticeable but not a level that would exceed defined thresholds and do not depend on the implementation of mitigation.
- ***Less than Significant with Mitigation***. Less than significant with mitigation is the conclusion when impacts would or potentially would exceed defined thresholds without the implementation of project-specific mitigation measures.
- ***Significant and Unavoidable***. Significant and unavoidable is the conclusion if impacts would or potentially would exceed defined thresholds and mitigation measures would not diminish the effects to less-than-significant levels.
- ***Beneficial***— Beneficial is the conclusion if there would be a positive effect on the resource topic.

In this chapter, impacts are identified with an alphanumeric system that signifies the environmental topic associated with the impact. For example, LU-1 denotes the first impact in Section 4.5.11, *Land*

Use and Planning. The abbreviated codes used to identify the environmental issues discussed in this chapter are listed below.

- AES – Aesthetics
- AQ – Air Quality
- BIO – Biological Resources
- CUL – Cultural Resources
- ENE – Energy
- GEO – Geology, Soils, and Paleontology
- GHG – Greenhouse Gases
- HAZ – Hazards and Hazardous Materials
- HYD – Hydrology and Water Quality
- LU – Land Use and Planning
- NOI – Noise and Vibration
- PS – Public Services
- REC – Recreation
- SOCIO-Socioeconomics
- TRAN – Transportation and Traffic
- UTIL – Utility and Service Systems

4.5.1.2 Mitigation Measures

For each impact identified, mitigation measures that could be implemented to lessen impacts are described. The full text of the mitigation measures is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

4.5.1.3 Comparison of the Impacts of the Alternatives

The anticipated environmental impacts of the NEPA Build Alternatives and NEPA No-Action Alternative, as well as the Sub-Alternative are summarized and compared in Table 4.5.1-1.

Table 4.5.1-1. NEPA Impact Summary and Conclusions

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Aesthetics and Visual Resources					
Impact NEPA-AES-1: The project would not substantially degrade the visual character or quality of ARC or its surroundings, or obstruct significant public views or view corridors.	—	LTS	Same	Same	Same
Impact NEPA-AES-2: The project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	—	LTS	Same	Same	Same
Air Quality					
Impact NEPA-AIR-1: The project would conflict with or obstruct implementation of the applicable air quality plan.	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction	SU	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
	GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Mitigated TDM Plan that Further Reduces VMT				
Impact NEPA-AIR-2: The project would not result in a substantial increase of any criteria pollutant for which the project region is non-attainment under an applicable federal ambient air quality standard.	—	LTS	Same	Same	Same
Impact NEPA-AIR-3: The project would expose sensitive receptors to substantial pollutant concentrations.	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control	SU	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
	AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan				
Impact NEPA-AIR-4: The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	—	LTS	Same	Same	Same
Impact NEPA-AIR-5: The project would result in a significant impact on regional or local air quality (including receptor exposure to pollution and odors) when quantified along with other reasonably foreseeable environmental trends and other planned actions in the region.	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emissions On-Road Vehicles during Construction AQ-3. Fugitive Dust Controls AQ-8. Enhanced Dust Control	SU	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
	AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Mitigated TDM Plan that Further Reduces VMT				
Impact NEPA-AIR-6: The project could generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	GHG-1. Best Management Practices for Construction-Related GHG Emissions AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction TRAN-1. Mitigated TDM Plan that Further Reduces VMT	LTS	LTS	SU	SU

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-AIR-7: The project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	TRAN-1. Mitigated TDM Plan that Further Reduces VMT	LTS	LTS	SU	SU
Biological Resources					
Impact NEPA-BIO-1: The project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations or by CDFW or USFWS.	BIO-1. Environmental Resources Worker Awareness Training BIO-2. Preconstruction Surveys for Special-Status Species BIO-3. Exclusion Fencing BIO-4. Alkali Milk-Vetch and Congdon's Tarplant BIO-5. Monarch Butterfly Breeding Habitat BIO-6. Crotch's Bumble Bee BIO-7. Herbicide and Pesticide Use BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat BIO-12. Nesting Birds BIO-13. Roosting Bats	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-BIO-2: The project could have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS.	BIO-1. Environmental Resources Worker Awareness Training BIO-3. Exclusion Fencing	LTS	Same	Same	Same
Impact NEPA-BIO-3: The project could have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marshes, vernal pools, coastal areas) through direct removal, filling, hydrological interruption, or other means.	BIO-1. Environmental Resources Worker Awareness Training BIO-3. Exclusion Fencing BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State	LTS	Same	Same	Same
Impact NEPA-BIO-4: The project could interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	BIO-1. Environmental Resources Worker Awareness Training BIO-12. Nesting Birds BIO-13. Roosting Bats	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-BIO-5: The project would not violate a law, code, or ordinance protecting or regulating special-status species.	—	NI	Same	Same	Same
Impact NEPA-BIO-6: The project could conflict with the provisions of an applicable adopted HCP, NCCP, or other approved local, regional or State HCP.	BIO-1. Environmental Resources Worker Awareness Training BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat	LTS	Same	Same	Same
Cultural Resources					
Impact NEPA-CUL-1: The project would cause an adverse effect on a historic property pursuant to 36 CFR 800.5(a)(1).	CUL-1. Protect and Reinstall Shenandoah Plaza Streetlights CUL-2. Review Project Design for Architectural Compatibility CUL-3. Develop and Implement an Interpretive Program CUL-4. Cultural Resources Treatment and Monitoring Plan CUL-5. Cultural Resources Monitoring and Sensitivity Training CUL-6. Cultural Resources Inadvertent Discovery Protocols	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
	CUL-7. Human Remains Discovery Protocols NOI-5. Construction Vibration Control Plan for Vibratory Rollers				
Energy					
Impact NEPA-ENE-1: The project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	—	LTS	Same	Same	Same
Impact NEPA-ENE-2: The project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	—	LTS	Same	Same	Same
Geology, Soils and Paleontology					
Impact NEPA-GEO-1: The project could directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: A) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for an area or based on other substantial evidence of a known fault. B) Strong seismic ground shaking.	GEO-1. Design-Level Geotechnical Investigation	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
C) Seismic-related ground failure, including liquefaction. D) Landslides.					
Impact NEPA-GEO-2: The project would not result in substantial soil erosion or the loss of topsoil.	—	LTS	Same	Same	Same
Impact NEPA-GEO-3: The project could be located on a geologic unit or soil that is unstable, or that would become unstable, as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	GEO-1. Design-Level Geotechnical Investigation HAZ-1. Implement the Environmental Issues Management Plan	LTS	Same	Same	Same
Impact NEPA-GEO-4: The project would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.	—	NI	Same	Same	Same
Impact NEPA-GEO-5: The project could be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	GEO-1. Design-Level Geotechnical Investigation	LTS	Same	Same	Same
Impact NEPA-GEO-6: The project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	GEO-2. Paleontological Resources Discovery Protocols	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Hazardous Materials					
Impact NEPA-HAZ-1: The project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	HAZ-1. Implement the Environmental Issues Management Plan	LTS	Same	Same	Same
Impact NEPA-HAZ-2: The project could create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	HAZ-1. Implement the Environmental Issues Management Plan	LTS	Same	Same	Same
Impact NEPA-HAZ-3: The project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	—	NI	Same	Same	Same
Impact NEPA-HAZ-4: The project could be located on a site which is included on a local, state, or federal environmental database with a history of hazardous materials/waste release (including hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the Comprehensive Environmental Response, Compensation, and Liability Act) and,	HAZ-1. Implement the Environmental Issues Management Plan	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

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Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
as a result, could create a significant hazard to the public or the environment.					
Impact NEPA-HAZ-5: For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would not result in a safety hazard or excessive noise for people living or working in the project area.	—	LTS	Same	Same	Same
Impact NEPA-HAZ-6: The project would not impair implementation of or physically interfere with emergency response or emergency evacuation requirements.	—	LTS	Same	Same	Same
Impact NEPA-HAZ-7: The project could hinder or conflict with on-going, planned, or required remediation at Ames Research Center.	HAZ-1. Implement the Environmental Issues Management Plan	LTS	Same	Same	Same
Hydrology and Water Quality					
Impact NEPA-HYD-1: The project could violate a water quality standard or waste discharge requirements or otherwise substantially degrade surface water or ground water quality.	HYD-1. Require Groundwater Monitoring and Sampling Prior to Dewatering Activity	LTS	Same	Same	Same
Impact NEPA-HYD-2: The project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project would impede	—	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
sustainable groundwater management of the basin.					
Impact NEPA-HYD-3: The project would not result in storm runoff that would exceed the capacity of existing receiving bodies or drainage systems.	—	LTS	Same	Same	Same
Impact NEPA-HYD-4: The project would not place structures or other improvements susceptible to flooding within a 100-year flood hazard zone as mapped on a Flood Insurance Rate Map or other flood hazard map in a manner that would impede or redirect floodflows.	—	NI	Same	Same	Same
Impact NEPA-HYD-5: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	—	LTS	Same	Same	Same
Land Use and Planning					
Impact NEPA-LU-1: The project would not introduce new land uses incompatible with established uses at or surrounding Ames Research Center.	—	LTS	Same	Same	Same
Noise					
Impact NEPA-NOI-1a: The project would generate a substantial temporary or permanent	NOI-1. Construction Noise Control Plan	SU	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project construction.	NOI-2. Temporary Noise Barriers				
Impact NEPA-NOI-1b: The project could generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards or other agencies, from project operation.	NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards NOI-4. Design and Install Emergency Generators to Comply with Noise Standards	LTS	Same	Same	Same
Impact NEPA-NOI-2: The project would generate excessive groundborne vibration or groundborne noise levels.	NOI-5. Construction Vibration Control Plan for Vibratory Rollers NOI-6. Vibration Control Plan for Sensitive Equipment	SU	Same	Same	Same
Impact NEPA-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, the project would not expose people residing or working in the project area to excessive noise levels.	—	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Public Services					
Impact NEPA-PS-1: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services.	—	LTS	Same	Same	Same
Impact NEPA-PS-2: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.	—	LTS	Same	Same	Same
Impact NEPA-PS-3: The project would not result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for school services.	—	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-PS-4: The project would not result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts in order to maintain acceptable service ratios or other performance objectives.	—	LTS	Same	Same	Same
Recreation					
Impact NEPA-REC-1: The project would not result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities or the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for park services.	—	LTS	Same	Same	Same
Impact NEPA-REC-2: The project would not substantially reduce the amount of active recreation or passive recreation within Ames Research Center, thus, leading to an increase in use of surrounding recreational areas by people living or working at the center.	—	NI	Same	Same	Same
Impact NEPA-REC-3: The project would not include recreational facilities or require the	—	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
construction or expansion of recreational facilities that might have an adverse physical effect on the environment.					
Socioeconomics					
Impact NEPA-SOCIO-1: The project would create a benefit to the local economy.	—	Minor Benefit	Same	Same	Same
Impact NEPA-SOCIO-2: The project would generate workers who would not be able to find on-site housing or would represent more than 1 percent of the predicted new households in the identified HIA between 2026 and 2040.	None Available	SU	Same	LTS	LTS
Impact NEPA-SOCIO-3: The project would not create a cost impact on a local government or school district that amounts to more than 0.5 percent of that jurisdiction's general fund or revenue limit**.**	—	LTS	Same	Same	Same
Transportation and Traffic					
Impact NEPA-TRAN-1: The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.	—	LTS	Same	Same	Same
Impact NEPA-TRAN-2: The project would not increase vehicle parking demand without	TRAN-1. Mitigated TDM Plan that Further Reduces VMT	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
providing for either adequate vehicle parking capacity or sufficient alternative modes of transportation.					
Impact NEPA-TRAN-3: The project would substantially increase vehicle trips that result in traffic congestion that degrades the level of service of intersections to below locally adopted LOS thresholds (generally LOS D for local intersections and LOS E for Congestion Management [CMP] intersections).	TRAN-1. Mitigated TDM Plan that Further Reduces VMT TRAN-2 (NEPA-only). Signalize Ellis Street/Manila Avenue Intersection	SU	Same	Same	Same
Impact NEPA-TRAN-4: The project would not substantially increase hazard due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	—	LTS	Same	Same	Same
Impact NEPA-TRAN-5: The project would not result in inadequate emergency access.	—	LTS	Same	Same	Same
Utility and Service Systems					
Impact NEPA-UTIL-1: The project would not place a demand on existing water distribution facilities that exceeds available conveyance to Ames Research Center.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-2: The project would exceed baseline water demand projected to occur under baseline conditions to the extent that this	UTIL-1. Water Demand Reduction Measures	SU	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
exceedance would interfere with the ability of the service provider to meet the reasonably foreseeable needs of existing users.					
Impact NEPA-UTIL-3: The project would create a demand for water service that exceeds existing water supply capacity to Ames Research Center.	UTIL-1. Water Demand Reduction Measures	SU	Same	Same	Same
Impact NEPA-UTIL-4: The project could place a demand on existing recycled water distribution facilities that exceeds available water conveyance.	UTIL-2. Recycled Water Service Agreements and Approvals	LTS	Same	Same	Same
Impact NEPA-UTIL-5: The project would not create a demand for recycled water service that exceeds existing supply capacity.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-6: The project would not interfere with the provision of recycled water service to existing land uses.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-7: The project could interfere with provision of recycled water service for future, planned development.	UTIL-2. Recycled Water Service Agreements and Approvals	LTS	Same	Same	Same
Impact NEPA-UTIL-8: The project could place a demand on existing wastewater collection facilities that exceeds the available conveyance capacity.	UTIL-3. Wastewater Connection Requirements	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-UTIL-9: The project would not create a demand for wastewater treatment that exceeds existing treatment capacity.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-10: The project would not place a demand on existing wastewater distribution facilities that exceeds available conveyance capacity.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-11: The project would not interfere with the provision of wastewater service to existing land uses.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-12: The project could utilize wastewater treatment or conveyance capacity intended for identified future projects.	UTIL-3. Wastewater Connection Requirements	LTS	Same	Same	Same
Impact NEPA-UTIL-13: The project would not require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which would cause a significant environmental effect.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-14: The project would not create a demand for solid waste disposal that exceeds the capacity of the landfill site currently used for Ames Research Center's waste products.	—	LTS	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

Impacts [a]	Applicable Mitigation [b]	Significance [c]			
		NEPA Build Alternative 1	NEPA Build Alternative 1 with the Sub-Alternative	NEPA Build Alternative 2	NEPA Build Alternative 2 with the Sub-Alternative
Impact NEPA-UTIL-15: The project would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-16: The project would note create a demonstrable need for new or enlarged energy facilities with respect to electrical and natural gas service.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-17: The project would not place a demand on existing electrical distribution facilities that exceed available conveyance capacity to Ames Research Center.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-18: The project would not place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity.	—	LTS	Same	Same	Same
Impact NEPA-UTIL-19: The project would not interfere with provision of electrical and natural gas service to existing off-site land uses.	—	LTS	Same	Same	Same
Resource Topics Dismissed from Analysis					
Agriculture and Forestry Resources	—	NI	Same	Same	Same
Mineral Resources	—	NI	Same	Same	Same
Wildfire	—	NI	Same	Same	Same

Notes:

[a] The summary of impacts, impact statements, and mitigation measures for the NEPA Build Alternative 1 also applies to the NEPA Build Alternative 1 with the Sub-Alternative, NEPA Build Alternative 2, and the NEPA Build Alternative 2 with Sub-Alternative.

[b] The full text of mitigation measures applicable for both NEPA and CEQA is included in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*; if a mitigation measure is only applicable for NEPA, the full text of the mitigation measure is included in this chapter. In addition, the full text of all mitigation measures will be included in the Mitigation Monitoring and Reporting Program.

[c] Levels of significance are categorized as follows: NI = No Impact; LTS = Less than Significant; and SU = Significant and Unavoidable. If applicable mitigation is identified, the Significance column indicates the level of significance after implementation of mitigation.

4.5.2 Aesthetics and Visual Resources

Refer to Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.2.1 Affected Environment

Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, provides details regarding the affected environment, including the existing conditions in the project vicinity and Limits of Work. The description of the existing setting includes visual character, vegetation, visibility, public view corridors, and light and glare.

4.5.2.2 Regulatory Setting

The plans, policies, and regulations applicable to aesthetics and visual resources, which are also applicable to the NEPA analysis, are discussed in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation,* under Plans, Policies, and Regulations.

4.5.2.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on aesthetics and visual resources if it would result in any of the following conditions:

- Substantially degrade the visual character or quality of ARC or its surroundings or obstruct significant public views or view corridors.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

The analysis of visual quality within an area considers the physical appearance and characteristics of the built environment, the proximity of man-made structures to open space or landscaping, and views of public open space or more distant landscape features such as hills, water bodies, or built landmarks. These elements help define a sense of place as well as the physical orientation in a larger visual setting. To illustrate the general appearance of the development proposed at the Project Site, illustrative renderings (i.e., massing studies or photomontages) from 11 vantage points were prepared, as shown in Figure 1 in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation.* The photomontages, as provided in Figures 2 through 12 of Appendix 3.2-1, depict views of the proposed project from Wescoat Road, Cody Road, Shenandoah Plaza, and areas east of the airfield and south of the Project Site. The visual simulations in Appendix 3.2-1 are applicable to the NEPA Build Alternatives as well.

The analysis of the environmental impacts of the NEPA Build Alternatives is based on the proposed maximum and minimum development parameters and the standards established in the Development Guidelines. The photomontages show the maximum development that could occur, representing a worst-case scenario. Although the NEPA Build Alternatives would result in different square footages, the building heights, building layouts, lighting plans, and building materials would be the same under all proposed buildouts. Therefore, as discussed in more detail below, visual and aesthetic impacts would be the same regardless of buildout for purposes of this discussion.

As discussed in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*, access to the Project Site and the surrounding area is currently controlled through security and visitor checkpoints located at the main gate on Clark Road or at the gate located on Ellis Street. Therefore, public view corridors are accessible only once through the controlled gates; however, separate from the NEPA Build Alternatives, NASA anticipates operational modifications to allow a free flow of traffic at these two checkpoints. Although the surrounding streets are not currently considered public view corridors, by the time the project is fully developed, these streets will be open to the public. Therefore, views from the surrounding streets and open space areas are discussed below, but referred to as "view corridors" since these areas are not public under existing conditions.

4.5.2.4 Environmental Consequences

Impact NEPA-AES-1: Would the project substantially degrade the visual character or quality of ARC or its surroundings; or obstruct significant public views or view corridors?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. It is assumed that the visual conditions of the Project Site would not significantly change, other than some minor site improvements such as landscaping and new paint schemes. No adverse effect to visual character or quality of NASA ARC or its surroundings would occur. In addition, the NEPA No-Action Alternative would not obstruct significant public views or view corridors. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The analysis of potential visual changes as a result of the CEQA Proposed Project is included in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*. The section provides details of the proposed building heights and step-down zones, building design, open space and landscaping, and streetscape improvements. In addition, Appendix 3.2-1 discusses changes to view corridors and specific viewpoints in the vicinity of the Project Site (e.g., Wescoat Road, Cody Road, Shenandoah Plaza, areas east of the airfield, and areas south of the Project Site) as a result of the CEQA Proposed Project. This analysis would also apply to NEPA Build Alternative 1. Please refer to Appendix 3.2-1 for a detailed description of changes to the Project Site and the surroundings.

As outlined in APR 8822.1 (NASA Research Park Design Review Program [DRP]), all proposed development projects within the jurisdiction of NASA ARC must comply with the DRP, ensuring that development projects will be properly coordinated. Proposed developments are reviewed for compliance with all NASA and NADP planning principles. Upon completion of the NEPA process, the specifics regarding each building's architectural design and configuration within the Project Site will be reviewed for conformance and approval through NASA's NRP Design Review Board process (pursuant to by Ames Procedural Requirement [APR] 8822.1). The Design Review Program is typically a two-stage process: Pre-Conceptual Design Review, to adequately define the scope of a project, determine the level of environmental review needed for site approval, and ensure that an applicant conforms to applicable requirements, and Preliminary Design Review, which includes submission for the Concept Design Phase. The NEPA process for the proposed project would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site-specific NEPA documents, including the Maximum and Minimum Development Parameters and Standards, as documented in the ROD. Overall project approval consistent with the procedures outlined in APR 8829.1 is required before NASA will issue any permits for construction for the proposed project.

The following proposed Standards in the Development Guidelines are intended to promote architectural compatibility with the historic district:[14]

- The architectural character of Berkeley Space Center shall reflect its own time and the unique purposes of the research buildings, conveying a keen sense of place and identity, both for the immediate Berkeley Space Center area and within the broader NASA ARC, complementing the historic buildings and avoiding simulacrum.
- Architectural character shall both complement the historic character of Shenandoah Plaza and provide a contemporary response to the new development as an urban research district. Façades shall be articulated to convey a sense of human scale, denote building entries and reinforce the design of the streetwall.

The intention of the Standards is to support the architectural compatibility of new development in relation to the NAS Sunnyvale Historic District, consequently lessening the impact of the proposed project's scale and visual bulk. However, the design of the CEQA Proposed Project has not been developed to the extent that it can be demonstrated whether project-specific interpretation of the

[14] The proposed Development Guidelines refer to the Shenandoah Plaza Historic District and the NAS Sunnyvale Historic District interchangeably.

Standards will successfully achieve architectural compatibility with the historic district. Even with an architecturally compatible design, the CEQA Proposed Project design would introduce visually distracting and out-of-scale facilities into the immediate setting of the historic district. As stated in Section 3.5, *Cultural Resources*, the CEQA Proposed Project may result in physical damage (associated with vibration) to contributors to the NAS Sunnyvale Historic District, and new development would introduce new facilities into the setting of the NAS Sunnyvale Historic District that materially impair the district's significance. Implementation of Mitigation Measures CUL-1, CUL-2, and NOI-5 would protect historical resources during construction and operation. However, there is no feasible mitigation beyond these measures and the project design features to prevent material impairment of the historic district's setting.

Regardless, with implementation of the proposed Master Plan and the Development Guidelines, the architectural character of NEPA Build Alternative 1 would adhere to the guiding principles and Standards by reflecting a sense of place and the identity unique to the Project Site. The buildings at the Project Site would provide the contemporary feel of a new development in an urban research district, with façades that would be articulated to convey a sense of human scale. Building massing, materials, and colors would be designed and selected to minimize the appearance of building bulk and mass and to avoid visual clutter. In addition, with implementation of the Development Guidelines, mechanical equipment and rooftop appurtenances would be screened from view from public streets. In addition, NEPA Build Alternative 1 would meet the standards of the Santa Clara County Tree Ordinance, which NASA has elected to apply to the proposed action. NASA endeavors to apply the standards of the County with respect to trees that would qualify as protected trees, but is not required to comply and does not issue tree removal permits. Therefore, NEPA Build Alternative 1 would not substantially degrade the visual character or quality of ARC or its surroundings or obstruct significant public views or view corridors. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 2 would provide the same amount of publicly accessible open space (a minimum of 10 acres) and result in the same number of trees at the Project Site (approximately 1,301 trees) as under NEPA Build Alternative 1. In addition, the same Development Guidelines would apply. NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-AES-2: Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. It is assumed that the visual conditions of the Project Site would not significantly change and the NEPA No-Action Alternative would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The analysis of the creation of a new source of substantial light or glare as a result of the CEQA Proposed Project is included in Appendix 3.2-1, *Aesthetics and Visual Resources CEQA Evaluation*. The section provides details of the proposed lighting plan and building façade designs. The specifics regarding each building's architectural design and configuration within the Project Site would be determined as part of NASA's Design Review Board process per the APR 8822.1 process. The Development Guidelines also include requirements for site light, as summarized in Table 2-4 in

Chapter 2, *Proposed Project/Proposed Action and Alternatives.* In order to reduce lighting on the Project Site, the lighting performance standards set by Leadership in Energy and Environmental Design (LEED) Silver rating could be followed through a combination of adherence to lighting specifications, shielding techniques, automatic lighting controls, and light pollution considerations. Energy-efficient site lighting and designs that meet Illumination Engineering Society of North America lighting density and control standards would attempt to minimize light pollution.

Furthermore, the proposed buildings within each of the subareas would incorporate light spill-out zones along the building frontages. Building façades would be designed with depth-of-shading elements, fritted glass, and solid materials, as outlined in the standards set forth in the Development Guidelines, and comply with California Green Building Standards Code (CALGreen) Non-Residential Voluntary Measure A5.107, Bird-Friendly Building Design. As part of the approval process, NASA would conduct project design review and evaluate the proposed lighting and the potential light and glare impacts on the surrounding areas. Therefore, with implementation of the Development Guidelines and other requirements, as well as NASA's design review, the NEPA Building Alternative 1 would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area, resulting in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Thus, the NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.3 Air Quality

Refer to Sections 3.3, *Air Quality*, and 3.8, *Greenhouse Gases*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives on air quality and greenhouse gas (GHG) emissions, respectively. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report* (Air Quality, Health Risk, and GHG Technical Report) prepared by ICF, April 2026 (Appendix 3.3-1 of this joint EIR/EIS)

4.5.3.1 Affected Environment

Section 3.3.2, *Affected Environment/Environmental Setting*, includes details regarding the air quality affected environment, discusses air quality fundamentals, defines the relevant air quality terminology, and identifies sensitive receptors within and near the Project Site. The air quality study area encompasses the areas directly and indirectly affected by construction and operation of the proposed action. Two geographic scales define the study area consistent with Bay Area Air District (Air District) guidance.[15] The *regional* study area is the San Francisco Bay Area Air Basin (SFBAAB) ("Regional Air Quality Study Area"); the *local* study area is the Project Site plus areas within 1,000 feet of the Project Site ("Local Air Quality Study Area").

Section 3.8.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses GHG emissions fundamentals, and defines the relevant GHG terminology. The study area for the analysis of GHG emissions effects includes the entire state and global atmosphere.

4.5.3.2 Regulatory Setting

The plans, policies, and regulations applicable to air quality and GHG emissions, which are also applicable to the NEPA analysis, are discussed in the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS.

4.5.3.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on air quality if it would result in any of the following conditions:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a substantial net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

[15] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

- Result in a significant impact on regional or local air quality (including receptor exposure to pollution and odors) when quantified along with other reasonably foreseeable environmental trends and other planned actions in the region.

The project could result in effects related to GHG emissions if it would result in any of the following conditions:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

The significance of air quality impacts is based on compliance with federal air quality regulations, as well as with standards, plans, and guidance developed by the Air District. Specifically, the Air District's recommended analysis thresholds are used to evaluate significant impacts to plan consistency and exposure of receptors to substantial localized pollutant concentrations (including odors). These thresholds are described in Section 3.3.5, *Thresholds of Significance*, in Chapter 3.3, *Air Quality*. This analysis evaluates a substantial net increase in criteria pollutant emissions against the General Conformity Rule *de minimis* levels.[16] A net increase in emissions under NEPA is defined as predicted project emissions minus predicted emissions under the NEPA No Action-Alternative. Net emissions more than the *de minimis* levels indicate that the proposed project could impede regional attainment of the federal national ambient air quality standards (NAAQS) and result in a significant impact.

The applicable *de minimis* levels are summarized in Table 4.5.3-1. Because the proposed project is in a federal nonattainment area for ozone and $PM_{2.5}$, to fulfill general conformity requirements, a General Conformity evaluation must be undertaken to identify whether the ozone and $PM_{2.5}$ emissions require a General Conformity determination. The evaluation includes comparison of emissions to the applicable General Conformity *de minimis* levels shown in Table 4.5.3-1. The evaluation must consider both direct and indirect sources of emissions for all nonattainment pollutants, which include regulated precursor emissions. Regulated precursor emissions for ozone include reactive organic gases (ROG) and nitrogen oxides (NO_X). Regulated precursor emissions for particulates 2.5 microns in diameter or less ($PM_{2.5}$) include sulfur dioxide (SO_2), NO_X, and ROG. Therefore, the General Conformity analysis for the proposed action evaluates each of these direct and indirect (precursor) emissions.

There are no applicable federal plans or policies for the reduction of GHG emissions. Thus, this analysis discusses the proposed project's compliance with state and local regulatory programs designed to reduce GHG emissions. Applicable plans adopted for the purpose of reducing GHG emissions are the CARB's *2022 Scoping Plan*, MTC's *Plan Bay Area 2050*, and the Air District's' *2017 Clean Air Plan*. Refer to Section 3.8.5, *Thresholds of Significance*, in Section 3.8, *Greenhouse Gas Emissions*, for additional information.

16 United States Environmental Protection Agency. 2025. De Minimis Tables. Last Revised: June 9, 2025. Available: https://www.epa.gov/general-conformity/de-minimis-tables. Accessed: April 20, 2026.

Table 4.5.3-1. Applicable Federal *de minimis* Levels (tons per year)[a, b]

Air Basin	ROG[c]	NO_X	$PM_{2.5}$	SO_2
SFBAAB	100	100	100	100

Source: United States Environmental Protection Agency. 2025. De Minimis Tables. Last Revised: June 9, 2025. Available: https://www.epa.gov/general-conformity/de-minimis-tables. Accessed: April 20, 2026.

[a] The project area is in a federal nonattainment (marginal) area for ozone and a federal nonattainment (moderate) for $PM_{2.5}$. Thus, *de minimis* levels are identified for ozone precursors (ROG and NOx) and $PM_{2.5}$. Although the project area is in attainment for SO_2, because SO_2 is a precursor of $PM_{2.5}$, the $PM_{2.5}$ general conformity *de minimis* level applies to SO_2.

[b] The project area is in a federal attainment area for PM_{10} and CO. Thus, there are no applicable *de minimis* levels.

[c] The General Conformity *de minimis* level is identified for volatile organic compounds (VOC), which is synonymous with ROG.

NO_X = nitrogen oxide; $PM_{2.5}$ = particulate matter that is 2.5 microns in diameter and smaller; ROG = reactive organic gases; SFBAAB = San Francisco Bay Area Air Basin; SO_2 = sulfur dioxide.

NASA has not adopted GHG emissions thresholds and has elected to use thresholds recommended by the Air District[17] for the purposes of this analysis. Specifically, GHG emissions generated by the proposed action would not be considered adverse under NEPA if the following criteria were met:

- Incorporates best management practices (BMPs) to reduce construction emissions.
- Consistent with the Air District land use design elements (Threshold Option A in Table 3.8-3 in Section 3.8, *Greenhouse Gas Emissions*).

Criteria pollutant and GHG emissions generated by construction and operation of the proposed project were quantified using the California Emissions Estimator Model (CalEEMod), version 2022, and supporting industry tools.[18, 19] Potential health risks resulting from public exposure to TAC and localized $PM_{2.5}$ exhaust during construction and operation of the proposed action were quantified using the American Meteorological Society/EPA Regulatory Model (AERMOD), the California Air Resources Board's Hotspots Analysis and Reporting Program Version 2 (HARP2) software, and

17 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

18 As discussed in the Air Quality, Health Risk, and GHG Technical Report, the air quality and GHG analysis uses mobile source emission rates from EMFAC2021 with CARB's off-model adjustments. While CARB has released EMAFC2025 version 2.1.0, the tool was not available at the time the Notice of Preparation was issued for the environmental document. EMFAC2025 also has not yet been approved by EPA and cannot be used for NEPA analysis. The off-model adjustment factors for EMFAC2021 address Congressional Resolutions that disapproved EPA's decisions to grant California waivers for several regulations, including Advanced Clean Trucks (ACT), Zero-Emission Airport Shuttle, Heavy-Duty Vehicle and Engine Emission Warranty and Maintenance Provisions (Warranty Phase 1), and Heavy-Duty Omnibus (Omnibus). While the action is currently being litigated, no injunction has been issued to block the revocation, and California can no longer enforce the regulations. Emissions of NOx, ROG, PM_{10}, and $PM_{2.5}$ from construction and operational mobile sources have been adjusted based on CARB guidance to remove the estimated emissions benefits attributed to the regulations. The Air Quality, Health Risk, and GHG Technical Report provides criteria pollutant emission results without the regulatory adjustments for informational purposes.

19 Based on current information, it is anticipated construction would begin at the earliest in 2027 and full project operations would begin in 2041. However, based on information available at the time of the technical analysis, emissions were quantified assuming construction would begin in 2026 and the first full year of project operations would be 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions, and likewise lower in 2041 compared to 2040, because of improvements in engine technology and regulations to reduce combustion emissions. Accordingly, the construction and operations analyses reflect a conservative representation of emissions.

guidance from the Office of Environmental Health Hazard Assessment[20] and Air District.[21] Refer to Section 3.3.6, *Methods of Analysis* and 3.8.6, *Methods of Analysis*, for additional description of the methods used to analyze potential air quality and GHG impacts, respectively. The Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS, provides more technical detail on the analysis, including specific modeling assumptions and outputs.

4.5.3.4 Environmental Consequences

Impact NEPA-AIR-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Significant and Unavoidable
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*

20 Office of Environmental Health Hazard Assessment. 2015. *The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments.* February. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed: July 15, 2024.

21 Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. Appendix E Recommended Methods for Screening and Modeling Local Risks and Hazards. August.

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Significant and Unavoidable
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

The CAA requires a SIP or an air quality control plan to be prepared for areas where air quality violates the NAAQS. The most recently adopted air quality control plan for the SFBAAB is the Air District's 2017 Clean Air Plan. Impact CEQA-AIR-1 in Section 3.3, *Air Quality*, of this joint EIR/EIS presents additional context and information on the plan consistency analysis.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Without the proposed action, the existing Project Site would remain underutilized and underdeveloped. The Plan Bay Area 2050 Final Blueprint Growth Geographies identifies the Project Site within a Transit-Rich Area and High Resource Area. These areas are intended to improve the region's ability to meet challenging emission reduction, housing, and equity requirements. Failing to develop the Project Site consistent with this development potential would conflict with the transportation goals of 2017 Clean Air Plan, which target investment in transit priority sites, such as the Project Site. Thus, the NEPA No-Action Alternative would result in a ***significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The proposed action would incorporate all applicable control measures of the 2017 Clean Air Plan and would not disrupt or hinder implementation of any control measures. Table 3.3-8 in Section 3.3, *Air Quality*, details the sustainability strategies that will be implemented by the proposed action and identifies how these project attributes are consistent with applicable control measures of the 2017 Clean Air Plan. The CUP Option would further support the 2017 Clean Air Plan Energy Sector goals by optimizing local energy generation and distribution, which in turn improves overall system generation and energy conservation. The WRF Option would further support the 2017 Clean Air Plan Water Sector goals by reusing water on-site, which in turn reduces the need to transport water over long distances and conserves energy.

The proposed action would support the primary goals of the 2017 Clean Air Plan with respect to protecting air quality and climate, but would conflict with the plan's goal to improve community health. Under NEPA, substantial increases in criteria air pollution that could conflict with regional attainment of the NAAQS at the air basin level are assessed relative to the federal *de minimis* levels. Impact NEPA-AIR-2 indicates that neither construction nor long-term operation of the proposed action would exceed these levels. Likewise, Impact NEPA-AIR-6 demonstrates that the proposed action would not result in a substantial increase in GHG emissions. While the proposed action would support attainment of the NAAQS and regional GHG goals, it would result in new sources of TACs and $PM_{2.5}$ that could expose receptors to additional health risks during

construction and long-term operation. Accordingly, the NEPA analysis finds that implementation of the proposed action (with or without the WRF Option or CUP Option) would not support the community health goals of the 2017 Clean Air Plan.

Mitigation Measures AQ-1, AQ-2, AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1 would reduce TACs and $PM_{2.5}$ emissions directly generated by the proposed project and associated receptor exposure and health risks. However, as discussed under Impact NEPA-AIR-3, implementation of these mitigation measures would not reduce the $PM_{2.5}$ impact to a less-than-significant level. Thus, the NEPA Build Alternative 1 could obstruct implementation of the 2017 Clean Air Plan with respect to attainment of community health goals and would result in a ***significant and unavoidable*** impact.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Overall, there would be no difference in the impact mechanism or conclusion between the NEPA Build Alternative 1 and NEPA Build Alternative 1 with the Sub-Alternative. The same sustainability strategies identified for NEPA Build Alternative 1 in Table 3.3-8 would be implemented under the Sub-Alternative. The Sub-Alternative would support the primary air quality and climate goals of the 2017 Clean Air Plan, incorporate all applicable control measures, and would not disrupt or hinder implementation of any control measures. However, like the NEPA Build Alternative 1, the Sub-Alternative would result in cancer and $PM_{2.5}$ health risks above analysis thresholds (see Impact NEPA-AIR-3).

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under the Sub-Alternative; however, like NEPA Build Alternative 1, implementation of these mitigation measures would not reduce the $PM_{2.5}$ risk impact to a less-than-significant level. Thus, the Sub-Alternative could obstruct implementation of the 2017 Clean Air Plan with respect to attainment of community health goals and would result in a ***significant and unavoidable*** impact***.***

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same sustainability strategies identified for NEPA Build Alternative 1 in Table 3.3-8 would be implemented under NEPA Build Alternative 2. NEPA Build Alternative 2 would support the primary air quality goals of the 2017 Clean Air Plan, incorporate all applicable control measures, and would not disrupt or hinder implementation of any control measures. However, like the NEPA Build Alternative 1, NEPA Build Alternative 2 would result in cancer and $PM_{2.5}$ health risks above analysis thresholds (see Impact NEPA-AIR-3). In addition, as discussed under Impact NEPA-AIR-6, the NEPA Build Alternative 2 will result in a GHG impact from mobile sources.

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under the NEPA Build Alternative 2; however, like NEPA Build Alternative 1, implementation of these mitigation measures would not reduce the $PM_{2.5}$ risk impact to a less-than-significant level, and the alternative would not meet regional VMT goals for the purposes of GHG reduction. Thus, the

NEPA Build Alternative 2 could obstruct implementation of the 2017 Clean Air Plan with respect to attainment of GHG and community health goals and would result in a ***significant and unavoidable*** impact***.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Overall, there would be no difference in the impact mechanism or conclusion between the NEPA Build Alternative 2 and NEPA Build Alternative 2 with the Sub-Alternative. The same sustainability strategies identified for NEPA Build Alternative 1 in Table 3.3-8 would be implemented under the Sub-Alternative. The Sub-Alternative would support the primary air quality goals of the 2017 Clean Air Plan, incorporate all applicable control measures, and would not disrupt or hinder implementation of any control measures. However, like the NEPA Build Alternative 2, the Sub-Alternative would result in cancer and $PM_{2.5}$ health risks above analysis thresholds (see Impact NEPA-AIR-3). In addition, as discussed under Impact NEPA-AIR-6, the Sub-Alternative will result in a GHG impact from mobile sources.

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under the Sub-Alternative; however, like NEPA Build Alternative 1, implementation of these mitigation measures would not reduce the $PM_{2.5}$ risk impact to a less-than-significant level, and the Sub-Alternative would not meet regional VMT goals for the purposes of GHG reduction. Thus, the Sub-Alternative could obstruct implementation of the 2017 Clean Air Plan with respect to attainment of GHG and community health goals and would result in a ***significant and unavoidable*** impact.

Impact NEPA-AIR-2: Would the project result in a substantial net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal ambient air quality standard?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

As discussed in Section 4.5.3.1, *Affected Environment*, the project area does not currently attain the NAAQS for ozone and $PM_{2.5}$. The impact analysis focuses on these pollutants or their precursors during construction and operation. It evaluates regional air quality impacts under NEPA using the federal *de minimis* levels shown in Table 4.5.3-1 in Section 4.5.3.3, *Thresholds of Significance and Methodology*. Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS presents additional context and information on emission sources and quantification methods; however, please note that Impact CEQA-AIR-2 uses other thresholds specific to the CEQA impact analysis and, as such, the impact findings are not applicable to the analysis of this impact under NEPA.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no changes to criteria pollutant emissions in the study area beyond those from already planned construction and development. Because the proposed project would not be implemented, no construction activity or emissions would occur; however, the on-site buildings that are currently operational would continue to be operational, and the on-site buildings that are currently vacant could be reoccupied. This analysis assumes that reoccupying the existing buildings would not require construction activity.

Table 4.5.3-2 shows NEPA No-Action Alternative emissions under future analysis year conditions. For the purposes of analysis, the future analysis year is 2041, which would be the first year following completion of construction, should the proposed action be implemented. As shown in Table 4.5.3-2, operational emissions under the NEPA No-Action Alternative would not exceed the federal *de minimis* levels. Thus, the NEPA No-Action Alternative would result in a ***less-than-significant*** impact.

Table 4.5.3-2. Estimated Annual Criteria Pollutant Emissions under NEPA No-Action Alternative

	Annual (tons per year)			
Source	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[a]**	**SO_2**
NEPA No-Action Alternative (2041)				
Mobile	0.5	0.4	0.3	< 0.1
Area	0.9	< 0.1	< 0.1	< 0.1
Energy	< 0.1	0.2	< 0.1	< 0.1
Total	1.4	0.6	0.3	< 0.1
de minimis Levels[b]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all operational analyses for the project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or $PM_{2.5}$). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Total emissions consist of exhaust and fugitive dust emissions.

[b.] The *de minimis* levels drawn are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor to $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.
NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction

Construction of NEPA Build Alternative 1 (with or without the WRF Option or CUP Option) has the potential to create short-term air quality impacts through the use of heavy-duty construction equipment, construction workers' vehicle trips, on-road truck trips, paving operations, and the application of architectural coatings. In addition, fugitive dust emissions would result from removal of the existing structures and earthmoving activities. Emissions may vary substantially, depending on the level of activity, length of the individual construction activity, the types of equipment, number of personnel, and soil moisture content.

Construction-related emissions for NEPA Build Alternative 1 (with and without the WRF Option or CUP Option) have been calculated using the methods described in Section 3.3.6.1, *Mass Emissions Modeling*, in Section 3.3, *Air Quality*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 4.5.3-3 summarizes estimated annual unmitigated construction emissions for NEPA Build Alternative 1. Emissions are compared to the federal *de minimis* levels to determine the significance under NEPA.

Table 4.5.3-3. Estimated Annual Unmitigated Criteria Pollutant Emissions from Construction of NEPA Build Alternative 1[a]

	Annual (tons per year)[b]			
Year	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[c]**	**SO_2**
2027	1	6	<1	< 1
2028	2	16	1	< 1
2029	2	15	1	< 1
2030	2	14	1	< 1
2031	4	9	1	< 1
2032	3	25	1	< 1
2033	4	33	1	< 1
2034	6	18	1	< 1
2035	2	15	1	< 1
2036	5	16	1	< 1
2037	3	9	1	< 1
2038	2	19	1	< 1
2039	5	20	1	< 1
2040	3	9	<1	< 1
de minimis Level[d]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative

representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Presents the total emissions estimate during each year of construction.

[c.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[d.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Construction of the WRF in 2038 and 2039 or the CUP in 2035 and 2036 would require additional off-road equipment and on-road vehicles beyond what is required for construction of the NEPA Build Alternative 1, resulting in additional short-term emissions during these years. Table 4.5.3-4 summarizes estimated unmitigated emissions for the NEPA Build Alternative 1 in 2038 and 2039 with construction of the WRF Option. Table 4.5.3-5 summarizes estimated unmitigated emissions for the NEPA Build Alternative 1 in 2035 and 2036 with construction of the CUP Option. Emissions during all other construction years would be the same as presented in Tables 4.5.3-3 for NEPA Build Alternative 1.

Table 4.5.3-4. Estimated Annual Unmitigated Criteria Pollutant Emissions from Construction of NEPA Build Alternative 1 with the WRF Option [a]

	Annual (tons per year) [c]			
Construction Years [b]	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[d]**	**SO_2**
2038	2	22	1	< 1
2039	5	21	1	< 1
de minimis Level [e]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The WRF would be constructed in 2038 and 2039. Emissions during all other construction years would be the same as presented in Table 4.5.3-3 for NEPA Build Alternative 1.

[c.] Presents the total emissions estimate during each year of construction.

[d.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[e.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-5. Estimated Annual Unmitigated Criteria Pollutant Emissions from Construction of NEPA Build Alternative 1 with the CUP Option[a]

	Annual (tons per year) [c]			
Construction Years [b]	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [d]**	**SO_2**
2035	2	19	1	< 1
2036	5	18	1	< 1
de minimis Level [e]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The CUP would be constructed in 2035 and 2036. Emissions during all other construction years would be the same as presented in Table 4.5.3-3 for NEPA Build Alternative 1.

[c.] Presents the total emissions estimate during each year of construction.

[d.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[e.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Tables 4.5.3-3 through 4.5.3-5 indicate that annual unmitigated construction emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-4, HAZ-1, and GHG-1, which are required to address construction impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for construction is not required and this would be a ***less-than-significant*** impact.

Full Operations

Operation of NEPA Build Alternative 1 (with and without the WRF Option or CUP Option) has the potential to create long-term air quality impacts through the generation of emissions from mobile, area, fugitive, and stationary sources. Except for stationary sources, operational emissions under NEPA Build Alternative 1 with the WRF Option or CUP Option would be the same as for NEPA Build Alternative 1. One additional emergency generator would be maintained to support the WRF or CUP. The CUP would also only operate eight cooling towers instead of twelve.

Emissions resulting from project operations were quantified according to the methods summarized in Section 3.3.6.1, *Mass Emissions Modeling*, in Section 3.3, *Air Quality*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 4.5.3-6 summarizes the results of the modeling for NEPA Build Alternative 1 (with and without the WRF Option or CUP Option). Refer to Tables 3.3-12 through 3.3-14 in Section 3.3, *Air Quality*, for emissions estimates by source category. Emissions are presented under full-build conditions, which

assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the project under NEPA is determined by subtracting emissions generated by the NEPA No-Action Alternative (Table 4.5.3-2) and comparing the net change to the federal *de minimis* levels.

Table 4.5.3-6. Estimated Total Annual Unmitigated Criteria Pollutant Emissions from Operation of NEPA Build Alternative 1 (with and without the WRF Option or CUP Option)[a]

	Annual (tons per year)			
Alternative	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[b]**	**SO_2**
NEPA Build Alternative 1[c]	21.5	7.0	8.1	0.2
NEPA Build Alternative 1 with WRF Option[d]	21.5	7.0	8.1	0.2
NEPA Build Alternative 1 with CUP Option[e]	21.5	7.0	7.3	0.2
NEPA No-Action Alternative[f]	1.4	0.6	0.3	< 0.1
Net Change[g]				
NEPA Build Alternative 1	20.1	6.4	7.8	0.2
NEPA Build Alternative 1 with WRF Option	20.1	6.4	7.8	0.2
NEPA Build Alternative 1 with CUP Option	20.1	6.4	6.9	0.2
de minimis Level[h]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a] Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[c] Refer to Table 3.3-12 in Section 3.3, *Air Quality*, for emissions by source.

[d] Refer to Table 3.3-13 in Section 3.3, *Air Quality*, for emissions by source.

[e] Refer to Table 3.3-14 in Section 3.3, *Air Quality*, for emissions by source.

[f] Refer to Table 4.5.3-2 for emissions by source.

[e] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions. Values may not total subtracted value due rounding.

[f] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-6 indicates that net annual unmitigated operational emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-5, AQ-6, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for operations is not required and this would be a ***less-than-significant*** impact.

Concurrent Construction and Partial Operations

The buildout of the proposed action would occur over four phases, spanning a total of approximately 14 years. Occupancy of buildings constructed during Phase 1 could begin as early as 2032. Accordingly, concurrent construction and partial operational activities would occur from 2032 through 2040, resulting in higher average daily and annual emissions than either component when analyzed separately. Partial operational emissions were quantified according to the methods summarized in Section 3.3.6.1, *Mass Emissions Modeling*, in Section 3.3, *Air Quality*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS.

Table 4.5.3-7 summarizes the results of the unmitigated modeling for the NEPA Build Alternative 1. Emissions generated by existing land uses under analysis year conditions (i.e., emissions from the NEPA No-Action Alternative during each of the future years) are subtracted from the operational results. Total net emissions are compared to the federal *de minimis* levels to determine significance under NEPA.

Table 4.5.3-7. Estimated Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 1[a]

	Annual (tons per year)			
Year	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[b]**	**SO_2**
2032[c]	7	27	3	< 1
2033[c]	8	35	3	< 1
2034[c]	10	20	2	< 1
2035[d]	13	19	6	< 1
2036[d]	16	20	5	< 1
2037[d]	15	13	5	< 1
2038[e]	18	24	7	< 1
2039[e]	21	25	7	< 1
2040[e]	19	14	6	< 1
de minimis Level[f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected construction emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. Application of the adjustment factors across all operational analyses for the project resulted in a less than 1 percent to 22 percent increase in mobile source operational emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

a. Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

b. Total emissions consist of exhaust and fugitive dust emissions.

c. Unmitigated construction emissions (Table 4.5.3-3) plus unmitigated operational emissions from buildings constructed during phase one. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses under 2032 conditions are subtracted from the operational results.

[d.] Unmitigated construction emissions (Table 4.5.3-3) plus unmitigated operational emissions from buildings constructed during phases one and two. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses under 2035 conditions are subtracted from the operational results.

[e.] Unmitigated construction emissions (Table 4.5.3-3) plus unmitigated operational emissions from buildings constructed during phases one through three. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

The WRF would be constructed in 2038 and 2039 and begin operation in 2041. Prior to 2038, concurrent construction and net partial operational activities under NEPA Build Alternative 1 with the WRF Option would be the same as analyzed for NEPA Build Alternative 1 (Table 4.5.3-7). Table 4.5.3-8 presents concurrent unmitigated construction and net partial operational emissions for NEPA Build Alternative 1 with the WRF Option for those years in which emissions would differ from NEPA Build Alternative 1 (i.e., 2038 through 2040).

The CUP would be constructed in 2035 and 2036 and would begin operation in 2038. Prior to 2035, concurrent construction and net partial operational activities under NEPA Build Alternative 1 with the CUP Option would be the same as analyzed for NEPA Build Alternative 1 (Table 4.5.3-7).[22] Table 4.5.3-9 presents concurrent unmitigated construction and net partial operational emissions for NEPA Build Alternative 1 with the CUP Option for those years in which emissions would differ from NEPA Build Alternative 1 (i.e., 2035 through 2040).

In Tables 4.5.3-8 and 4.5.3-9, emissions generated by existing land uses under analysis year conditions (i.e., emissions from the NEPA No-Action Alternative during each of the future years) are subtracted from the operational results. Total net emissions are compared to the federal *de minimis* levels to determine significance under NEPA.

[22] Without the CUP Option, two cooling towers would operate during phase 1 and five cooling towers during phases 1 and 2. These towers would generate minor amounts of PM_{10} and $PM_{2.5}$ that would not occur prior to 2035 with the CUP Option. Although these emissions would be reduced with the CUP Option, the reduction would be negligible compared to NEPA Build Alternative 1.

Table 4.5.3-8. Estimated Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 1 with the WRF Option [a]

	Annual (tons per year)			
Construction Years [b]	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [c]**	**SO_2**
2038[d]	18	27	7	< 1
2039[d]	21	26	7	< 1
2040[d]	19	14	6	< 1
de minimis Level [e]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected construction emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source operational emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

a. Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

b. The WRF would be constructed in 2038 and 2039 and begin operation in 2041. Emissions during years prior to 2038 would be the same as presented in Table 4.5.3-7 for NEPA Build Alternative 1.

c. Total emissions consist of exhaust and fugitive dust emissions.

d. Unmitigated construction emissions (Table 4.5.3-4 for 2038 and 2039; Table 4.5.3-3 for 2040) plus unmitigated operational emissions from buildings constructed during phase one. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

e. The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-9. Estimated Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 1 with the CUP Option [a]

	Annual (tons per year)			
Construction Years [b]	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [c]**	**SO_2**
2035[d]	14	23	4	< 1
2036[d]	17	22	4	< 1
2037[d]	15	13	4	< 1
2038[e]	18	23	6	< 1
2039[e]	21	25	6	< 1
2040[e]	19	14	5	< 1
de minimis Level [f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected construction emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source operational emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The CUP would be constructed in 2035 and 2036 and begin operation in 2038. Emissions during years prior to 2035 would be the same as presented in Table 4.5.3-7 for NEPA Build Alternative 1.

[c.] Total emissions consist of exhaust and fugitive dust emissions.

[d.] Unmitigated construction emissions (Table 4.5.3-5 for 2035 and 2036; Table 4.5.3-3 for 2037) plus unmitigated operational emissions from buildings constructed during phases one and two. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses under 2035 conditions are subtracted from the operational results.

[e.] Unmitigated construction emissions (Table 4.5.3-3) plus unmitigated operational emissions from buildings constructed during phases one through three. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Tables 4.5.3-7 through 4.5.3-9 indicate that annual unmitigated concurrent construction and net partial operational emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for concurrent construction and net partial operations is not required and there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1.

Construction

The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur under the Sub-Alternative. The intensity of construction for NEPA Build Alternative 1 with or without the Sub-Alternative would therefore be the same, except for architectural coatings. Because the Sub-Alternative does not include residential construction during Phase 4, the total coated area from architectural coatings, which generate ROG emission, would be lower under the Sub-Alternative.

Table 4.5.3-10 summarizes estimated ROG emissions from construction of Phase 4 under the Sub-Alternative. Emissions are compared to the federal *de minimis* levels to determine the significance under NEPA. Emissions of all other pollutants during all other construction years would be the same as presented in Table 4.5.3-3 for NEPA Build Alternative 1.

Table 4.5.3-10. Estimated Annual Unmitigated ROG Emissions from Construction of NEPA Build Alternative 1 with the Sub-Alternative [a]

	Annual (tons per year) [c]
Construction Years [b]	**ROG**
2037	3
2038	2
2039	5
2040	3
de minimis Level [d]	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The intensity of construction for NEPA Build Alternative 1 with or without the with the Sub-Alternative would be the same, except for architectural coatings during Phase Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 4.5.3-3 for NEPA Build Alternative 1.

[c.] Presents the total emissions estimate during each year of construction.

[d.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

ROG = reactive organic gases.

Table 4.5.3-10 indicates ROG emissions would be comparable to those generated under NEPA Build Alternative 1, albeit slightly reduced in 2039 and increased (as rounded) in 2040. Emissions of all other pollutants during all construction years would be the same as the NEPA Build Alternative 1 (see Table 4.5.3-3). As shown in Tables 4.5.3-3 and 4.5.3-10, annual unmitigated construction

emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-4, HAZ-1, and GHG-1, which are required to address construction impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for construction is not required and there would be a ***less-than-significant*** impact.

Full Operations

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the Sub-Alternative. Table 4.5.3-11 summarizes total annual unmitigated operational emissions for NEPA Build Alternative 1 with the Sub-Alternative. Refer to Table 3.3-28 in Section 3.3, *Air Quality*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the proposed project under NEPA is determined by subtracting emissions generated by the NEPA No-Action Alternative (Table 4.5.3-2) and comparing the net change to the federal *de minimis* levels.

Table 4.5.3-11. Estimated Total Annual Unmitigated Criteria Pollutant Emissions from Operation of NEPA Build Alternative 1 with the Sub-Alternative [a]

	Annual (tons per year)			
Alternative	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[b]**	**SO_2**
NEPA Build Alternative 1 with the Sub-Alternative [c]	21.7	7.1	8.2	0.2
NEPA No-Action Alternative [d]	1.4	0.6	0.3	< 0.1
Net Change [e]	20.3	6.5	7.9	0.2
de minimis Level [f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[c.] Refer to Table 3.3-28 in Section 3.3, *Air Quality*, for emissions by source.

[d.] Refer to Table 4.5.3-2 for emissions by source.

[e.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide; — = no threshold.

Table 4.5.3-11 indicates that net annual unmitigated operational emissions would not exceed the federal *de minimis* levels. Compared to NEPA Build Alternative 1, the Sub-Alternative would result in slightly greater net emissions due primarily to increased VMT and trip generation. Mitigation Measures AQ-5, AQ-6, and TRAN-1, which are required to address operational impacts under CEQA

(see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for operations is not required and there would be ***less-than-significant*** impact.

Concurrent Construction and Partial Operations

The intensity of concurrent construction and net partial operational emissions for NEPA Build Alternative 1 with or without the Sub-Alternative would be the same, except for ROG emissions during Phase 4. Table 4.5.3-12 summarizes estimated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Sub-Alternative. Emissions of all other pollutants during all other construction years would be the same as presented in Table 4.5.3-7 for NEPA Build Alternative 1. Emissions generated by existing land uses under analysis year conditions (i.e., emissions from the NEPA No-Action Alternative during each of the future years) are subtracted from the operational results. Total net emissions are compared to the federal *de minimis* levels to determine significance under NEPA.

Table 4.5.3-12. Estimated Annual Unmitigated ROG Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 1 with the Sub-Alternative [a]

	Annual (tons per year)
Construction Years [b]	**ROG**
2037	15
2038	18
2039	20
2040	19
de minimis Level [c]	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The intensity of construction for NEPA Build Alternative 1 with or without the Sub-Alternative would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 4.5.3-7 for NEPA Build Alternative 1. For Phase 4 (2037–2040), construction emissions (Table 4.5.3-10) plus operational emissions from buildings constructed during phases one through three. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

[c.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

ROG = reactive organic gases.

Table 4.5.3-12 indicates that annual unmitigated concurrent construction and net partial operational emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination

for concurrent construction and net partial operations is not required and this would be a ***less-than-significant*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Construction

The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. The intensity of construction for NEPA Build Alternative 1 and NEPA Build Alternative 2 would be the same except for a slight reduction in the duration of the "core and shell" and "architectural coating" sub-phases for research buildings under NEPA Build Alternative 2. The interior coated area of research buildings under NEPA Build Alternative 2 would likewise be slightly reduced from NEPA Build Alternative 1.

Table 4.5.3-13 summarizes estimated annual unmitigated construction emissions for NEPA Build Alternative 2. Emissions are compared to the federal *de minimis* levels to determine the significance under NEPA.

Table 4.5.3-13. Estimated Annual Unmitigated Criteria Pollutant Emissions from Construction of NEPA Build Alternative 2[a]

	Annual (tons per year)[b]			
Year	**ROG**	**NO_X**	**$PM_{2.5}$ (total)[c]**	**SO_2**
2027	1	6	< 1	< 1
2028	2	16	1	< 1
2029	2	15	1	< 1
2030	2	13	1	< 1
2031	3	8	1	< 1
2032	3	25	1	< 1
2033	4	33	1	< 1
2034	5	17	1	< 1
2035	2	15	1	< 1
2036	4	16	1	< 1
2037	2	7	< 1	< 1
2038	2	19	1	< 1
2039	5	19	1	< 1
2040	3	7	< 1	< 1
de minimis Level[d]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative

representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Presents the total emissions estimate during each year of construction.

[c.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[d.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-13 indicates that annual unmitigated construction emissions would not exceed the federal *de minimis* levels. Compared to NEPA Build Alternative 1, the intensity of emissions would be slightly reduced during some construction years under NEPA Build Alternative 2 due to reduced construction durations, as discussed above. Mitigation Measures AQ-1 through AQ-4, HAZ-1, and GHG-1, which are required to address construction impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for construction is not required and there would be ***less-than-significant*** impact.

Full Operations

The same operational sources proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. Table 4.5.3-14 summarizes total annual unmitigated operational emissions for NEPA Build Alternative 2 under full-build conditions. Refer to Table 3.3-33 in Section 3.3, *Air Quality*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the proposed project under NEPA is determined by subtracting emissions generated by the NEPA No-Action Alternative (Table 4.5.3-2) and comparing the net change to the federal *de minimis* levels.

Table 4.5.3-14. Estimated Total Annual Unmitigated Criteria Pollutant Emissions from Operation of Build Alternative 2 [a]

	Annual (tons per year)			
Alternative	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [b]**	**SO_2**
NEPA Build Alternative 2 [c]	14.8	4.9	6.3	0.1
NEPA No-Action Alternative [d]	1.4	0.6	0.3	< 0.1
Net Change [e]	13.4	4.3	6.0	0.1
de minimis Level [f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021

adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[c.] Refer to Table 3.3-33 in Section 3.3, *Air Quality*, for emissions by source.

[d.] Refer to Table 4.5.3-2 for emissions by source.

[e.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-14 indicates that net annual unmitigated operational emissions would not exceed the federal *de minimis* levels. Compared to NEPA Build Alternative 1, NEPA Build Alternative 2 would result in slightly lower net emissions due to reduced VMT and trip generation (mobile sources), consumer products (area sources), and lab space (fugitive sources). Mitigation Measures AQ-5, AQ-6, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for operations is not required and there would be ***less-than-significant*** impact.

Concurrent Construction and Partial Operations

Table 4.5.3-15 summarizes annual unmitigated concurrent construction and net partial operational emissions from 2032 through 2040 under NEPA Build Alternative 2. Emissions generated by existing land uses under analysis year conditions (i.e., emissions from the NEPA No-Action Alternative during each of the future years) are subtracted from the operational results. Total net emissions are compared to the federal *de minimis* levels to determine significance under NEPA.

Table 4.5.3-15. Estimated Annual Unmitigated Criteria Pollutant Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 2 [a]

	Annual (tons per year)			
Year	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [b]**	**SO_2**
2032[c]	5	26	2	< 1
2033[c]	6	33	2	< 1
2034[c]	8	17	2	< 1
2035[d]	9	18	4	< 1
2036[d]	12	18	4	< 1
2037[d]	10	9	4	< 1
2038[e]	12	22	6	< 1
2039[e]	15	22	5	< 1
2040[e]	13	10	5	< 1
de minimis Level [f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of

equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all construction years resulted in a less than 1 percent increase in affected construction emissions, due largely to the fact that construction emissions are primarily generated by off-road equipment. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source operational emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Total emissions consist of exhaust and fugitive dust emissions.

[c.] Unmitigated construction emissions (Table 4.5.3-13) plus unmitigated operational emissions from buildings constructed during phase one. Operational emissions were quantified under 2032 opening conditions and held constant in 2033 and 2034. Emissions from existing land uses under 2032 conditions are subtracted from the operational results.

[d.] Unmitigated construction emissions (Table 4.5.3-13) plus unmitigated operational emissions from buildings constructed during phases one and two. Operational emissions were quantified under 2035 opening conditions and held constant in 2036 and 2037. Emissions from existing land uses under 2035 conditions are subtracted from the operational results.

[e.] Unmitigated construction emissions (Table 4.5.3-13) plus unmitigated operational emissions from buildings constructed during phases one through three. Operational emissions were quantified under 2038 opening conditions and held constant in 2039 and 2040. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-15 indicates that annual unmitigated concurrent construction and net partial operational emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for concurrent construction and net partial operations is not required and there would be ***less-than-significant*** impact.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2.

Construction

The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur with the Sub-Alternative. The intensity of construction for NEPA Build Alternative 1 with or without the Sub-Alternative would therefore be the same, except for architectural coatings. Because the Sub-Alternative does not include residential construction during Phase 4, the total coated area from architectural coatings, which generate ROG emissions, would be lower with the Sub-Alternative.

Table 4.5.3-16 summarizes estimated total annual unmitigated ROG emissions from construction of Phase 4 under the Sub-Alternative. Emissions are compared to the federal *de minimis* levels to

determine the significance under NEPA. Emissions of all other pollutants during all other construction years would be the same as presented in Table 4.5.3-13 for NEPA Build Alternative 2.

Table 4.5.3-16. Estimated Annual Unmitigated ROG Emissions from Construction of NEPA Build Alternative 2 with the Sub-Alternative [a]

	Annual (tons per year)[c]
Construction Years [b]	**ROG**
2037	2
2038	2
2039	5
2040	3
de minimis Level [d]	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026. It is projected that the emissions intensity of equipment and vehicle operation in 2027 would be lower than under 2026 conditions. Accordingly, the construction analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The intensity of construction for NEPA Build Alternative 2 with or without the with Sub-Alternative would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 4.5.3-13 for NEPA Build Alternative 2.

[c.] Presents the total emissions estimate during each year of construction.

[d.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

ROG = reactive organic gases.

Table 4.5.3-16 indicates ROG emissions would be comparable to those generated under NEPA Build Alternative 1, albeit slightly reduced in 2039 and increased (as rounded) in 2040. Emissions of all other pollutants during all construction years would be the same the NEPA Build Alternative 2 (see Table 4.5.3-13). As shown in Tables 4.5.3-13 and 4.5.3-16, annual unmitigated construction emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-4, HAZ-1, and GHG-1, which are required to address construction impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for construction is not required and there would be ***less-than-significant*** impact.

Full Operations

The same operational sources proposed and evaluated under NEPA Build Alternative 1 would occur with the Sub-Alternative. Table 4.5.3-17 summarizes total annual unmitigated operational emissions for NEPA Build Alternative 2 with the Sub-Alternative under full-build conditions. Refer to Table 3.3-39 in Section 3.3, *Air Quality*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the proposed project under NEPA is determined by subtracting emissions generated by

the NEPA No-Action Alternative (Table 4.5.3-2) and comparing the net change to the federal *de minimis* levels.

Table 4.5.3-17. Estimated Total Annual Unmitigated Criteria Pollutant Emissions from Operation of NEPA Build Alternative 2 with the Sub-Alternative

	Annual (tons per year)			
Alternative	**ROG**	**NO_X**	**$PM_{2.5}$ (total) [b]**	**SO_2**
NEPA Build Alternative 2 with the Sub-Alternative [c]	15.1	5.1	6.4	0.1
NEPA No-Action Alternative[d]	1.4	0.6	0.3	<0.1
Net Change[e]	13.6	4.5	6.1	0.1
de minimis Level[f]	100	100	100	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in 2041 would be lower than under 2040 conditions. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG, NOx, and $PM_{2.5}$ have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. CARB has not developed EMFAC2021 adjustment factors SO_2, and emissions of this pollutant may be greater than presented in this table. Application of the adjustment factors across all operational analyses for the proposed project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated SO_2 emissions by the same magnitude.

[a.] Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] Total $PM_{2.5}$ emissions consist of exhaust and fugitive dust emissions.

[c.] Refer to Table 3.3-39 in Section 3.3, *Air Quality*, for emissions by source.

[d.] Refer to Table 4.5.3-3 for emissions by source.

[e.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions.

[f.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gases; SO_2 = sulfur dioxide.

Table 4.5.3-17 indicates that annual unmitigated operational emissions would not exceed the federal *de minimis* levels. Compared to NEPA Build Alternative 2, the Sub-Alternative would result in greater net emissions due primarily to increased VMT and trip generation. Mitigation Measures AQ-5, AQ-6, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for operations is not required and there would be ***less-than-significant*** impact.

Concurrent Construction and Partial Operations

The intensity of concurrent construction and net partial operational emissions for NEPA Build Alternative 1 with or without the Sub-Alternative would be the same, except for ROG emissions during Phase 4. Table 4.5.3-18 summarizes estimated ROG emissions from concurrent construction and net partial operational emissions during Phase 4 under the Sub-Alternative. Emissions of all other pollutants during all other construction years would be the same as presented in Table 4.5.3-15 for NEPA Build Alternative 2. Emissions generated by existing land uses under analysis year conditions (i.e., emissions from the NEPA No-Action Alternative during each of the future years) are

subtracted from the operational results. Total net emissions are compared to the federal *de minimis* levels to determine significance under NEPA.

Table 4.5.3-18. Estimated Annual Unmitigated ROG Emissions from Concurrent Construction and Net Partial Operation of NEPA Build Alternative 2 with the Sub-Alternative[a]

	Annual (tons per year)
Construction Years[b]	**ROG**
2037	10
2038	12
2039	15
2040	13
de minimis Level[c]	100

Source: Appendix 3.3-1.

Note: As noted in Section 4.5.3.3, *Thresholds of Significance and Methodology*, based on information available at the time the Air Quality, Health Risk, and GHG Technical Report was prepared, emissions were quantified by assuming construction would begin in 2026 and operation would begin in 2040. It is projected that the emissions intensity of equipment and vehicle operation in future years would be lower than the years modeled. Accordingly, the analysis reflects a conservative representation of emissions. Mobile source emissions of ROG have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

[a.] Values are rounded to the nearest whole number. Exceedances of *de minimis* levels (if any) are shown in **bold** with underline.

[b.] The intensity of construction for NEPA Build Alternative 2 with or without the Sub-Alternative would be the same, except for architectural coatings during Phase 4. Emissions of all pollutants except ROG during Phase 4 (2037–2040) would be the same as presented in Table 4.5.3-15 for NEPA Build Alternative 2. For Phase 4 (2037–2040), construction emissions (Table 4.5.3-16) plus operational emissions from buildings constructed during phases one through three. Operational emissions were quantified under 2038 opening conditions and held constant in future years. Emissions from existing land uses under 2038 conditions are subtracted from the operational results.

[c.] The *de minimis* levels are based on the project area attainment status for the NAAQS (see Table 3.3-3 in Section 3.3, *Air Quality*). Although the project area is in attainment for SO_2, because SO_2 is a precursor for $PM_{2.5}$, the $PM_{2.5}$ *de minimis* level applies. Exceedances of the *de minimis* levels would be adverse under NEPA.

ROG = reactive organic gases.

Table 4.5.3-18 indicates that annual unmitigated concurrent construction and net partial operational emissions would not exceed the federal *de minimis* levels. Mitigation Measures AQ-1 through AQ-7, HAZ-1, GHG-1, and TRAN-1, which are required to address operational impacts under CEQA (see Impact CEQA-AIR-2 in Section 3.3, *Air Quality*, of this joint EIR/EIS) would further reduce emissions. Because emissions do not exceed *de minimis* levels, a general conformity determination for concurrent construction and net partial operations is not required and there would be ***less-than-significant*** impact.

Impact NEPA-AIR-3: Would the project expose sensitive receptors to substantial pollutant concentrations?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant (expose receptors to substantial localized carbon monoxide) Significant (expose receptors to substantial toxic air contaminants and localized particulate matter)	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant (expose receptors to substantial toxic air contaminants) Significant and Unavoidable (expose receptors to substantial localized particulate matter)
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant (expose receptors to substantial localized carbon monoxide) Significant (expose receptors to substantial toxic air contaminants and localized particulate matter)	Same as NEPA Build Alternative 1	Less than Significant (expose receptors to substantial toxic air contaminants) Significant and Unavoidable (expose receptors to substantial localized particulate matter)
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

This impact evaluates receptor exposure to localized CO, TAC, and $PM_{2.5}$. Sensitive receptors in the vicinity of the Project Site include land uses where children, the elderly, and individuals with existing health conditions may experience continuous exposure, with residential areas representing the predominant sensitive receptor type within 1,000 feet. Additional sensitive receptors include recreational and childcare/educational uses, while no senior centers, nursing homes, preschools, K–12 schools, medical facilities, or institutional uses occur in the study area. Worker receptors—commercial, office, retail, and industrial locations where people work—are also present and NASA elected to include worker receptors (including future employees of the proposed project) in the analysis.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no changes to localized emissions in the study area beyond those from already planned construction and development. Because the proposed project would not be implemented, no construction activity or emissions would occur, and there would be no construction impacts to existing receptors. Operation of the on-site buildings would generate localized pollutant emissions, including those for mobile sources (although most of these would occur offsite from commute vehicles). The on-site buildings do not include any major sources of air pollution, and as such, operational health risks from existing on-site buildings would not be substantial. Thus, the NEPA No-Acton Alternative would result in a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Engine exhaust from mobile sources associated with operation of the proposed action may elevate CO concentrations at local intersections, resulting in hotspots. Receptors exposed to CO hotspots may have a greater likelihood of developing health effects such as fatigue, headaches, confusion, dizziness, and chest pain. The analysis presented on Impact CEQA-AIR-3 in Section 3.3, *Air Quality*, demonstrates that NEPA Build Alternative 1 (with or without the WRF Option or CUP Option) meets the Air District's CO screening criteria. Projects that meet these criteria would not cause localized violations of the California ambient air quality standards (which are equivalent to the NAAQS) for CO.[23] Accordingly, NEPA Build Alternative 1 (with or without the WRF Option or CUP Option) would not expose sensitive receptors to substantial CO concentrations under federal standards. There would be ***less-than-significant*** impact.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

Diesel particulate matter (DPM) is a carcinogen contained in the exhaust of diesel internal-combustion engines. Project-related construction activities would generate DPM (i.e., PM_{10} exhaust from diesel vehicles)[24] from the use of off-road equipment and heavy-duty trucks. PM_{10} exhaust and $PM_{2.5}$ exhaust and fugitive dust emissions would be generated from the use of off-road equipment,

[23] Bay Area Air District. 2023. *California Environmental Quality Act Air Quality Guidelines*. April.

[24] Per Air District guidance, PM_{10} exhaust is used as a surrogate for DPM.

on-site soil movement, and heavy-duty trucks and worker vehicles traveling on paved and unpaved roads.

Operational activities would generate DPM from the use of delivery trucks and other heavy vehicles traveling to and from the site, and the testing and use of emergency generators. $PM_{2.5}$ emissions would be generated by all vehicles traveling to and from the site, the testing and operation of emergency generators and cooling towers. Laboratories would generate ROG-based TACs. All these activities could expose receptors to incremental increases in TACs or result in incremental increases in health risks.

Impact CEQA-AIR-3 in Section 3.3, *Air Quality*, presents the results of the health risk assessment (HRA) that analyzes receptor exposure to DPM and ROG-based TACs. Health impacts from exposure to DPM include cancer risks and chronic non-cancer risks. Health impacts from exposure to ROG-based TACs include cancer risks, chronic non-cancer risks, and acute non-cancer risks. In addition, the HRA includes an evaluation of annual concentrations of $PM_{2.5}$.

The HRA was conducted for on-site receptors (future residents and employees associated with the proposed project within the Project Site) and off-site receptors (existing and future residents and employees outside of the Project Site, but within the Local Air Quality Study Area) under the five exposure scenarios. Scenarios 1 through 4 consider different exposure durations during construction. Scenario 5 considers exposure during operations. Refer to Section 3.3.6.2, *Health Risk Assessment*, for additional information on these scenarios and characterization of on-site and off-site receptors. Although NAAQS have been established for criteria pollutants, no federal standards exist for TACs. Accordingly, this EIS uses the Air District's recommended health risk thresholds to determine the significance under NEPA.

Tables 3.3-43 through 3.3-45 in Section 3.3, *Air Quality*, present the maximum unmitigated health risks for NEPA Build Alternative 1, NEPA Build Alternative 1with the WRF Option, and NEPA Build Alternative 1 with the CUP Option, respectively, for off-site and on-site receptors under the five scenarios. The tables indicate the following exceedances of Air District thresholds, which could result in a significant impact:

- Cancer risk exceeds threshold in Scenarios 1, 2, and 4 for existing off-site residential receptors located adjacent to the Project Site due to project construction and operational activities.
- $PM_{2.5}$ threshold is exceeded in Scenarios 1 through 4 for existing off-site residential receptors located adjacent to the Project Site due to project construction and operational activities.
- Cancer risk exceeds threshold in Scenarios 2 and 4 for future on-site worker receptors due to project construction and operational activities.
- $PM_{2.5}$ threshold is exceeded in Scenarios 2 through 4 for future on-site worker receptors due to project construction and operational activities.

Mitigation Measures AQ-1, AQ-2, AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 would minimize construction cancer risks through reducing the use of diesel for construction equipment and $PM_{2.5}$ risks through dust control. Mitigation Measure TRAN-1 would reduce operations $PM_{2.5}$ risks through reducing trips. Collectively, these measures would reduce emissions directly generated by the proposed project and associated receptor exposure and health risks. Table 3.3-46 in Section 3.3, *Air Quality*, presents the maximum mitigated cancer risk and annual $PM_{2.5}$ concentrations for the NEPA Build Alternative 1 (with and without the WRF Option or CUP Option) for off-site and on-site receptors under the five scenarios (refer to Figure 4-2 in the Air Quality, Health Risk, and GHG Technical

Report for the locations of modeled receptors). The tables indicate that while mitigation would reduce cancer risks to less than significant, $PM_{2.5}$ concentrations would remain above the Air District $PM_{2.5}$ threshold during Scenarios 2 through 4 at the maximally exposed individual receptor (MEIR) location, mainly due to $PM_{2.5}$ emissions associated with construction of the Project. The MEIR is a future on-site worker located along the southern project border (refer to Figure 4-5 in the Air Quality, Health Risk, and GHG Technical Report). Buildings constructed as part of the proposed project are required to install Minimum Efficiency Reporting Value (MERV) 13 air filters, pursuant to the California Building Code. MERV 13 air filters may reduce indoor particulate matter and associated health risks by 60 percent, as discussed in Section 3.3; however, their actual efficacy may differ depending on proper use and receptor actions (e.g., opening of windows). Mitigation Measure AQ-9 requires safe work practices during construction to maximize the efficiency of the MERV 13 filters and limit exposure of future employees of the proposed project to $PM_{2.5}$ exposure during construction. Even with implementation of Mitigation Measure AQ-9, the efficacy of the MERV 13 filters cannot be guaranteed, and as such, the health risk analysis conservatively does not account for MERV-13 benefits.

Given that the full efficacy of project mitigation is not quantified, and benefits of MERV 13 air filters are not included in the analysis, $PM_{2.5}$ concentrations are likely to be lower than presented in Table 3.3-46. Nevertheless, to ensure risks are not underestimated under the most conservative exposure scenario, this analysis concludes that $PM_{2.5}$ exposure would exceed the Air District's threshold even after incorporation of Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, GHG-1, and TRAN-1. These measures collectively represent best-available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. Implementation of these mitigation measures may not reduce the impact of annual $PM_{2.5}$ exposure during construction (Scenarios 2 through 4) to a less-than-significant level; thus, NEPA Build Alternative 1 would result in impacts that would be ***significant and unavoidable.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1.

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 1 with the Sub-Alternative. While eliminating residential land uses under the Sub-Alternative would increase VMT by about 2 percent compared to theNEPA Build Alternative 1, the Sub-Alternative would meet the Air District's screening criteria. Thus, it would not contribute to any new CO hot spots. There would be ***less-than-significant*** impact.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

NEPA Build Alternative 1 with the Sub-Alternative would include the same TAC and $PM_{2.5}$ sources as the NEPA Build Alternative 1, with no appreciable difference in maximum emissions during construction (Scenarios 1 through 4), although the locations of some emission sources and receptors would differ. Operational (Scenario 5) TAC and $PM_{2.5}$ emissions associated with the Sub-Alternative are similar to NEPA Build Alternative 1, although NEPA Build Alternative 1 with the Sub-Alternative would result in slightly less $PM_{2.5}$ concentrations mainly because truck deliveries are no longer concentrated at the Building 12 loading dock; however, there would be no difference in analysis

conclusions compared to NEPA Build Alternative 1, and the same exceedances of Air District thresholds described above for NEPA Build Alternative 1 would occur under the Sub-Alternative (see Tables 3.3-43 and 3.3-47 in Section 3.3), which could result in a significant impact.

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under the Sub-Alternative, and these would reduce the cancer risk impact to less than significant (refer to Table 3.3-46 in Section 3.3, *Air Quality*); however, like NEPA Build Alternative 1, implementation of these mitigation measures may not reduce the $PM_{2.5}$ impact to a less-than-significant level (refer to Table 3.3-48 in Section 3.3, *Air Quality*); thus, NEPA Build Alternative 1 with the Sub-Alternative would result in a ***significant and unavoidable*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2. Vehicle traffic and associated mobile-source emissions would be lower under NEPA Build Alternative 2. NEPA Build Alternative 2 would meet the Air District's screening criteria and thus would not contribute to any new CO hot spots. There would be ***less-than-significant*** impact.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

NEPA Build Alternative 2 would include the same TAC and $PM_{2.5}$ sources as NEPA Build Alternative 1, with a decrease in construction emissions during each phase of construction. Operational TAC and $PM_{2.5}$ emissions associated with NEPA Build Alternative 2 are likewise slightly lower than under NEPA Build Alternative 1 due to reduced truck deliveries.

Table 3.3-49 in Section 3.3, *Air Quality*, presents the maximum unmitigated health risks for NEPA Build Alternative 2 for off-site and on-site receptors under the five scenarios. The table indicates that there would be no difference in analysis conclusions compared to NEPA Build Alternative 1, and the same exceedances of Air District thresholds described above for NEPA Build Alternative 1 would occur under NEPA Build Alternative 2, which could result in a significant impact.

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under NEPA Build Alternative 2, and these would reduce the cancer risk impact to less than significant (refer to Table 3.3-50 in Section 3.3, *Air Quality*); however, like NEPA Build Alternative 1, implementation of these mitigation measures would not reduce the $PM_{2.5}$ impact to a less-than-significant level refer to Table 3.3-50 in Section 3.3, *Air Quality*; thus, NEPA Build Alternative 2 would result in a ***significant and unavoidable*** impact.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2.

Expose Sensitive Receptors to Substantial Localized Carbon Monoxide Concentrations

Overall, there would be no difference in the impact conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2 and NEPA Build Alternative 2 with the Sub-Alternative. Vehicle traffic and associated mobile-source emissions would be lower under the Sub-Alternative relative to NEPA Build Alternative 1. The Sub-Alternative would meet the Air District's screening criteria and thus would not contribute to any new CO hot spots. There would be ***less-than-significant*** impact.

Expose Sensitive Receptors to Substantial Toxic Air Contaminants and Localized Particulate Matter

NEPA Build Alternative 2 with the Sub-Alternative would include the same TAC and $PM_{2.5}$ sources as the NEPA Build Alternative 2, with no appreciable difference in maximum emissions during construction (Scenarios 1 through 4). Operational (Scenario 5) TAC and $PM_{2.5}$ emissions associated with the Sub-Alternative are similar to NEPA Build Alternative 2, although NEPA Build Alternative 2 with the Sub-Alternative would result in slightly greater $PM_{2.5}$ emissions; however, there would be no difference in analysis conclusions compared to NEPA Build Alternative 1, and the same exceedances of Air District thresholds described above for NEPA Build Alternative 1 would occur under NEPA Build Alternative 2 with the Sub-Alternative, which could result in a significant impact.

The same mitigation measures identified under NEPA Build Alternative 1 could be implemented under NEPA Build Alternative 2 with the Sub-Alternative, and these would reduce the cancer risk impact to less than significant (refer to Table 3.3-50 in Section 3.3, *Air Quality*); however, like NEPA Build Alternative 1, implementation of these mitigation measures may not reduce the $PM_{2.5}$ impact to a less-than-significant level (refer to Table 3.3-52 in Section 3.3, *Air Quality)*; thus, NEPA Build Alternative 2 with the Sub-Alternative would result in a ***significant and unavoidable*** impact***.***

Impact NEPA-AIR-4: Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Thus, no construction activity or odors would occur. The on-site buildings would continue to be operational, although these buildings are not considered a source of substantial odor emissions (including the on-site buildings that would be reoccupied). Thus, the NEPA No-Action Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 1 (CEQA Proposed Project)

Sources of odor during construction include diesel exhaust from construction equipment, asphalt paving, and application of architectural coatings. As discussed under Impact CEQA-AIR-4 in Section 3.3, *Air Quality*, any odors generated by these sources during construction limited and controlled through adherence to Air District rules. None of the proposed land uses are associated with long-term sources of substantial odors, as identified by the Air District or CARB. As a result, neither construction nor operation of NEPA Build Alternative 1 (with or within the WRF Option or CUP Option) would result in substantial odor impacts to existing or future receptors that would lead to violations of the Air District's odor compliance threshold or adversely impact a substantial number of people. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The potential for odor exposure may be reduced under the Sub-Alternative because there would be no on-site residential receptors. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

Alternative 1. The potential for odor exposure may be reduced under NEPA Build Alternative 2 because there would be less construction. The NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2 compared to NEPA Build Alternative 2 with the Sub-Alternative. The potential for odor exposure may be reduced under the Sub-Alternative because there would be no on-site residential receptors. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-AIR-5: Would the project result in a significant impact on regional or local air quality (including receptor exposure to pollution and odors) when quantified along with other reasonably foreseeable environmental trends and other planned actions in the region?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant (regional air quality) Significant (localized air quality)	AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction AQ-3. Fugitive Dust Control AQ-8. Enhanced Dust Control AQ-9. Promote Safe Work Practices to Limit Emissions Exposure During Construction GHG-1. Best Management Practices for Construction-Related GHG Emissions HAZ-1. Implement the Environmental Issues Management Plan TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Significant and Unavoidable (localized air quality)

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant (regional air quality) Significant (localized air quality)	Same as NEPA Build Alternative 1	Significant and Unavoidable (localized air quality)
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

Once emitted, criteria pollutants mix into the atmosphere and affect a larger area than any individual Project Site. Thus, the regional air quality analysis does not consider reasonably foreseeable environmental trends and other planned actions in the region. Rather, it uses the same federal *de minimis* levels as the project-level analysis, which are based on regional attainment of the NAAQS resulting from emission sources throughout the nonattainment area. The evaluation of localized air quality impacts from receptor exposure to CO hot-spots and odors likewise considers project-level thresholds. The evaluation of localized air quality impacts from receptor exposure to TACs considers the proposed project's incremental TAC risk and total TAC risks from sources within 1,000 feet of the proposed project.

Refer to Section 3.3.8, *Cumulative*, in Section 3.3, *Air Quality,* for additional discussion. Impact CEQA-C-AIR-1 also presents additional context and analysis.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. No construction activity or emissions would occur. Operational emissions under the NEPA No-Action Alternative would not exceed the federal *de minimis* levels (see Table 4.5.3-2). Accordingly, the NEPA No-Action Alternative would not contribute to regional air quality impacts. The NEPA No-Action Alternative would not generate substantial vehicle traffic that could contribute to localized CO spots nor are the building uses associated with odors. On-site buildings operated under the NEPA No-Action Alternative do not include any major sources of air pollution, and as such, operational health risks from existing on-site buildings would not be substantial. Thus, the NEPA No-Action Alternative would result in a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Regional Air Quality

Santa Clara County does not currently attain the NAAQS for ozone and $PM_{2.5}$, reflecting an existing adverse impact. The analysis and conclusions presented above in Impact NEPA-AIR-2 characterize the regional air quality impacts of the proposed action. Emissions analysis presented above under Impact NEPA-AIR-2 demonstrates that neither construction nor operations (including concurrent construction and partial operations) would generate criteria pollutant emissions above the *de minimis* levels. Accordingly, buildout of NEPA Build Alternative 1 would not contribute to regional air quality impacts. Thus, the NEPA Build Alternative 1 would result in a ***less-than-significant*** impact.

Localized Air Quality

As discussed in Impact C-AIR-1 in Section 3.3, *Air Quality*, NEPA Build Alternative 1 is not expected to contribute to any new localized CO hot-spots. Likewise, neither construction nor operation of NEPA Build Alternative 1 would result in new or worsened odors that would affect a substantial number of people. Background TAC sources in combination with the proposed project would exceed the Air District's $PM_{2.5}$ risk threshold at the maximally affected receptor location, which could result in a significant impact and conflict with the community health goals of the 2017 Clean Air Plan. Mitigation Measures AQ-1, AQ-2, and GHG-1 (which would reduce use of diesel in construction equipment); AQ-3, AQ-8, and HAZ-1 (which would require dust control); AQ-9 (which provides worker training to reduce exposure to emissions), and TRAN-1 (which would reduce operational trips) would reduce impacts. As discussed under Impact NEPA-AIR-3, the proposed buildings are required to install MERV-13 air filters. However, for the reasons discussed above, this analysis does not account for MERV-13 benefits. As shown in Table 3.3-46 in Section 3.3, *Air Quality*, maximum $PM_{2.5}$ risk is concluded to remain above the Air District's threshold even after mitigation. For informational purposes, even with consideration of MERV 13 filtration, and an assumed 60 percent reduction in indoor particulate matter and associated health risks, total $PM_{2.5}$ concentrations at the maximally affected receptor location would remain significant even after mitigation. Thus, the NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1.

Regional Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 1 with the Sub-Alternative. The emissions analysis presented above under Impact NEPA-AIR-2 demonstrates that neither construction nor operations (including concurrent construction and partial operations) would generate criteria pollutant emissions above the *de minimis* levels. Accordingly, buildout of the Sub-Alternative would not contribute to regional air quality impacts. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Localized Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 1 with the Sub-Alternative. The Sub-Alternative would not expose receptors to localized CO hot-spots or substantial odors; however, total $PM_{2.5}$ concentration at the maximally affected receptor location would exceed the Air District's risk threshold, which could be a significant impact and conflict with the community health goals of the 2017 Clean Air Plan. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the $PM_{2.5}$ impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Regional Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2. The emissions analysis presented above under Impact NEPA-AIR-2 demonstrates that neither construction nor operations (including concurrent construction and partial operations) would generate criteria pollutant emissions above the *de minimis* levels. Accordingly, buildout of NEPA Build Alternative 2 would not contribute to regional air quality impacts. Thus, the NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

Localized Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2. NEPA Build Alternative 2 would not expose receptors to localized CO hot-spots or substantial odors; however, total $PM_{2.5}$ concentration at the maximally affected receptor location would exceed the Air District's risk threshold, which could be a significant impact and conflict with the community health goals of the 2017 Clean Air Plan. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the $PM_{2.5}$ impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2.

Regional Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2 with the Sub-Alternative. The emissions analysis presented above under Impact NEPA-AIR-2 demonstrates that neither construction nor operations (including concurrent construction and partial operations) would generate criteria pollutant emissions above the *de minimis* levels. Accordingly, buildout of the Sub-Alternative would not contribute to regional air quality impacts. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Localized Air Quality

Overall, there would be no difference in the impact mechanism or conclusion between NEPA Build Alternative 1 and NEPA Build Alternative 2 with the Sub-Alternative. The Sub-Alternative would not expose receptors to localized CO hot-spots or substantial odors; however, total $PM_{2.5}$ concentration at the maximally affected receptor location would exceed the Air District's risk threshold, which could be a significant impact and conflict with the community health goals of the 2017 Clean Air Plan. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the $PM_{2.5}$ impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

Impact NEPA-AIR-6: Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	GHG-1. Best Management Practices for Construction-Related GHG Emissions AQ-1. Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction AQ-2. Zero-Emission On-Road Vehicles during Construction TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Potentially Significant	Same as NEPA Build Alternative 1	Significant and Unavoidable
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no changes to GHG emissions in the study area beyond those from already planned construction and development.

Table 4.5.3-19 shows NEPA No-Action Alternative emissions under future analysis year conditions. For the purposes of analysis, the future analysis year is 2041, which would be the first year following completion of construction, should the proposed action be implemented.

Table 4.5.3-19. Estimated Annual GHG Emissions under NEPA No-Action Alternative

Source	CO_2	CH_4	N_2O	HFC	CO_2e
NEPA No-Action Alternative (2041)					
Mobile	955	< 1	< 1	< 1	968
Area	3	< 1	< 1	0	3
Energy	251	< 1	< 1	0	251
Water	7	1	< 1	0	30
Waste	20	2	0	0	71
Fugitive	0	0	0	186	186
Vegetation[b]	-17	0	0	0	-17
Total	**1,219**	**3**	**< 1**	**186**	**1,492**

Source: Appendix 3.3-1.

[a.] Values are rounded to the nearest whole number.

[b.] Sequestration benefits from 227 trees. These trees would be removed under the proposed project, but under the NEPA No-Action Alternative, they would remain and continue to sequester GHGs. Emissions results are annualized over a 40-year tree lifetime.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide.

Without the proposed action, the existing Project Site would remain underutilized and underdeveloped. The Plan Bay Area 2050 Final Blueprint Growth Geographies identifies the Project Site within a Transit-Rich Area and High Resource Area. These areas are intended to improve the region's ability to meet challenging emission reduction, housing, and equity requirements. Failing to develop the Project Site consistent with this development potential would conflict with the transportation goals of MTC's *Plan Bay Area 2050* and the Air District's' *2017 Clean Air Plan*, which target investment in transit priority sites, such as the Project Site. Existing buildings would also continue to use natural gas and investment in EV charging infrastructure would not be made. Thus, the NEPA No-Action Alternative would not meet the Air District's land use design elements and would result in a ***significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction of NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) would generate GHG emissions through the use of heavy-duty construction equipment, construction workers' vehicle trips, on-road truck trips, and electricity consumption. Emissions from these sources are presented in Tables 3.8-4 through 3.8-6 in Section 3.8, *Greenhouse Gas Emissions*. Construction of the CUP Option or WRF Option would generate slightly more emissions than the CEQA Proposed Project due to additional equipment and vehicles.

Operation of NEPA Build Alternative 1 would generate GHG emissions from mobile, energy, area, water, waste, stationary, and fugitive sources. Tree removal and planting would result in emissions changes from carbon sequestration and storage. Except for stationary and water sources, operational emissions under NEPA Build Alternative 1 with the WRF Option would be the same as for NEPA Build Alternative 1. One additional emergency generator would be maintained to support the WRF. The WRF would also consume a small amount of water for system backwashing/flushing. Operation of the CUP Option would reduce emissions from energy, water consumption, and fugitive sources, relative to NEPA Build Alternative 1, but increase emissions from stationary (i.e., generators) sources.

Emissions resulting from project operations were quantified according to the methods summarized in Section 3.8.6.2, *Operations*, in Section 3.8, *Greenhouse Gas Emissions*, and the Air Quality, Health Risk, and GHG Technical Report, included as Appendix 3.3-1 of this joint EIR/EIS. Table 4.5.3-20 summarizes the results of the modeling for NEPA Build Alternative 1 (with and without the WRF Option or CUP Option). Refer to Tables 3.8-7 and 3.8-8 in Section 3.8, *Greenhouse Gas Emissions*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of NEPA Build Alternative 1 is determined by subtracting emissions generated by the NEPA No-Action Alternative (see Table 4.5.3-19).

Table 4.5.3-20. Estimated Total Annual Unmitigated GHG Emissions from Operation of NEPA Build Alternative 1 (with and without the WRF Option or CUP Option)

	Annual (metric tons per year)				
Alternative	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
NEPA Build Alternative 1[a]	17,975	68	1	183	20,072
NEPA Build Alternative 1 with WRF Option [b]	18,014	68	1	183	20,111
NEPA Build Alternative 1 with CUP Option [c]	18,007	68	1	166	20,088
NEPA No-Action Alternative [d]	1,219	3	< 1	186	1,492
Net Change [e]					
NEPA Build Alternative 1	16,757	65	1	-3	18,581
NEPA Build Alternative 1 with WRF Option	16,795	65	1	-3	18,619
NEPA Build Alternative 1 with CUP Option	16,789	65	1	-20	18,596

Source: Appendix 3.3-1.

[a.] Refer to Table 3.8-7 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source.

[b.] Refer to Table 3.8-7 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source for NEPA Build Alternative 1. The generator and additional water consumption would result in an additional 38 metric tons CO_2e per year for the WRF Option, as shown in the total presented in this table.

[c.] Refer to Table 3.8-8 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source.

[d.] Refer to Table 4.5.3-19 for emissions by source.

[e.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions. Values may not total subtracted value due rounding.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide.

As discussed in Section 4.5.3.3, *Thresholds of Significance and Methodology*, the significance of construction-generated GHG emissions is qualitatively assessed based on implementation of BMPs. Likewise, the significance of operations-generated GHG emissions is qualitatively assessed based on consistency with the Air District's land use design elements.

Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs to reduce construction generated emissions. Table 3.8-9 in Section 3.8, *Greenhouse Gas Emissions*, analyzes the consistency of NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) with the Air District's land use design elements. The table demonstrates that NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) meets all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation, which could result in a significant impact. Mitigation Measures GHG-1, AQ-1, and AQ-2 would reduce construction-generated GHG emissions, consistent with the Air District's recommended BMPs. Mitigation Measure TRAN-1 would reduce operational VMT and associated emissions. With these measures, NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) would be consistent with the Air District's construction BMPs and VMT criteria for transportation, as discussed further in Impact CEQA-GHG-1. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The same construction activities proposed and evaluated under NEPA

Build Alternative 1 would occur under the Sub-Alternative. The intensity of construction for NEPA Build Alternative 1 with or without the Sub-Alternative would therefore be the same, and the emissions presented in Table 3.8-4 in Section 3.8, *Greenhouse Gas Emissions*, for NEPA Build Alternative 1 would also occur under the Sub-Alternative. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs to reduce GHG emissions.

The same operational sources proposed and evaluated under NEPA Build Alternative 1 would occur under the Sub-Alternative. Table 4.5.3-21 summarizes the results of the modeling for the Sub-Alternative. Refer to Table 3.8-10 in Section 3.8, *Greenhouse Gas Emissions*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the Sub-Alternative is determined by subtracting emissions generated by the NEPA No-Action Alternative (see Table 4.5.3-19).

Table 4.5.3-21. Estimated Total Annual Unmitigated GHG Emissions from Operation of NEPA Build Alternative 1 with the Sub-Alternative

	Annual (metric tons per year)				
Alternative	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
NEPA Build Alternative 1 with Sub-Alternative[a]	18,344	68	1	183	20,436
NEPA No-Action Alternative[b]	1,219	3	< 1	186	1,492
Net Change[c]	17,126	65	1	-3	18,944

Source: Appendix 3.3-1.

[a.] Refer to Table 3.8-10 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source.

[b.] Refer to Table 4.5.3-19 for emissions by source.

[c.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions. Values may not total subtracted value due rounding.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide.

Compared to NEPA Build Alternative 1, the Sub-Alternative would increase net operational emissions due primarily to greater VMT and trip generation; however, implementation of the Sub-Alternative would not change the consistency findings of NEPA Build Alternative 1 with respect to the Air District's land use design elements (see Table 3.8-9 in Section 3.8, *Greenhouse Gas Emissions*). The Sub-Alternative would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation, which could result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 would be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. Table 3.8-11 in Section 3.8, *Greenhouse*

Gas Emissions, presents estimated construction emissions for NEPA Build Alternative 2. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs to reduce GHG emissions.

The same operational sources proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. Table 4.5.3-24 summarizes the results of the modeling for NEPA Build Alternative 2. Refer to Table 3.8-12 in Section 3.8, *Greenhouse Gas Emissions*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of NEPA Build Alternative 2 is determined by subtracting emissions generated by the NEPA No-Action Alternative (see Table 4.5.3-19).

Table 4.5.3-22. Estimated Total Annual Unmitigated GHG Emissions from Operation of NEPA Build Alternative 2

	Annual (metric tons per year)				
Alternative	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
NEPA Build Alternative 2[a]	12,078	18	< 1	179	12,840
NEPA No-Action Alternative[b]	1,219	3	< 1	186	1,492
Net Change[c]	**10,859**	**15**	**< 1**	**-7**	**11,348**

Source: Appendix 3.3-1.

[a.] Refer to Table 3.8-12 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source.

[b.] Refer to Table 4.5.3-19 for emissions by source.

[c.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions. Values may not total subtracted value due rounding.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide.

Compared to NEPA Build Alternative 1, NEPA Build Alternative 2 would reduce net operational emissions due primarily to reduced VMT and trip and waste generation; however, implementation of NEPA Build Alternative 2 would not change the consistency findings of NEPA Build Alternative 1 with respect to the Air District's land use design elements (see Table 3.8-9 in Section 3.8, *Greenhouse Gas Emissions*). NEPA Build Alternative 2 would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation because total VMT per service population would exceed 19.0, which could result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 would be implemented to lessen impacts. As discussed in Section 3.16, *Transportation*, attainment of the Air District's VMT criteria would require a 39 percent reduction in VMT. implementation of Mitigation Measure TRAN-1 can achieve up to a 31 percent reduction, which does not meet the mitigation requirements of 39 percent under NEPA Build Alternative 2. The mitigated TDM plan includes all feasible measures to reduce VMT for the NEPA Build Alternative 2 (i.e., a mixed-use academic and research project). Additional VMT reductions would not be considered feasible for NEPA Build Alternative 2, as achieving such a reduction would require fundamental changes to the project description to mitigate the impact. Accordingly, implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The same construction activities proposed and evaluated under NEPA Build Alternative 2 would occur under the Sub-Alternative. The intensity of construction for NEPA Build Alternative 2 with or without the Sub-Alternative would therefore be the same, and the emissions presented in Table 3.8-11 in Section 3.8, *Greenhouse Gas Emissions*, for NEPA Build Alternative 2 would also occur under the Sub-Alternative. Uncontrolled construction GHG emissions would be inconsistent with the Air District's recommendation to implement BMPs to reduce GHG emissions.

The same operational sources proposed and evaluated under NEPA Build Alternative 2 would occur under NEPA Build Alternative 2 with the Sub-Alternative. Table 4.5.3-25 summarizes the results of the modeling for the Sub-Alternative. Refer to Table 3.8-13 in Section 3.8, *Greenhouse Gas Emissions*, for emissions estimates by source category. Emissions are presented under full-build conditions, which assumes all buildings developed under the proposed project would be fully occupied immediately following construction. The net increase in operational emissions of the Sub-Alternative is determined by subtracting emissions generated by the NEPA No-Action Alternative (see Table 4.5.3-19).

Table 4.5.3-23. Estimated Total Annual Unmitigated GHG Emissions from Operation of NEPA Build Alternative 2 with the Sub-Alternative

	Annual (metric tons per year)				
Alternative	**CO_2**	**CH_4**	**N_2O**	**HFC**	**CO_2e**
NEPA Build Alternative 2 with Sub-Alternative [a]	12,462	17	< 1	179	13,219
NEPA No-Action Alternative[b]	1,219	3	< 1	186	1,492
Net Change[c]	**11,243**	**15**	**< 1**	**-7**	**11,727**

Source: Appendix 3.3-1.

[a.] Refer to Table 3.8-13 in Section 3.8, *Greenhouse Gas Emissions*, for emissions by source.

[b.] Refer to Table 4.5.3-19 for emissions by source.

[c.] Total project (2041) emissions minus NEPA No-Action Alternative (2041) emissions. Values may not total subtracted value due rounding.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide.

Compared to NEPA Build Alternative 2, the Sub-Alternative would increase net operational emissions due primarily to greater VMT and trip generation; however, implementation of the Sub-Alternative would not change the consistency findings of NEPA Build Alternative 1 with respect to the Air District's land use design elements (see Table 3.8-9 in Section 3.8, *Greenhouse Gas Emissions*). The Sub-Alternative would meet all Air District operational land use design elements for buildings but would be inconsistent with the Air District's VMT criteria for transportation because total VMT per service population would exceed 19.0, which could result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 would be implemented to lessen impacts. As discussed in Section 3.16, *Transportation*, attainment of the Air District's VMT criteria would require a 41 percent reduction in VMT. Mitigation Measure TRAN-1 can achieve up to a 31 percent reduction, which does not meet the mitigation requirements of 41 percent under the Sub-Alternative. The mitigated TDM plan includes all feasible measures to reduce VMT for the Sub-Alternative (i.e., an academic and research project). Additional VMT reductions would not be

considered feasible for the Sub-Alternative, as achieving such a reduction would require fundamental changes to the project description to mitigate the impact. Accordingly, implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

Impact NEPA-AIR-7: Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	TRAN-1. Require a Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	*Same as NEPA Build Alternative 2*	Significant and Unavoidable
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Without the proposed action, the existing Project Site would remain underutilized and underdeveloped. Failing to develop the Project Site consistent with this development potential would conflict with the transportation goals of MTC's *Plan Bay Area 2050* and the Air District's' *2017 Clean Air Plan*, which target investment in transit priority sites, such as the Project Site. Thus, NEPA No-Action Alternative would conflict with State and regional GHG reduction plans and would not contribute to long-term emission reduction goals. There would be ***significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project (see

Table 3.8-14 in Section 3.8, *Greenhouse Gas Emissions)*; however, while the proposed project's sustainable design features support emission reduction, VMT estimated for NEPA Build Alternative 1 (with or without the CUP Option or WRF Option) exceeds the per service population VMT target for the Bay Area. Accordingly, the proposed project would conflict with *Plan Bay Area*, the applicable regional plan for reducing mobile-source emissions in the San Francisco Bay Area, and the overall emission reduction goals of the *2017 Clean Air Plan*, which could result in a significant impact. Mitigation Measure TRAN-1 would reduce operational VMT and associated emissions. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The Sub-Alternative would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*. This could result in a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 would be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level by reducing per service population VMT below the Air District's design criteria; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*, which could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 would be implemented to lessen impacts; however, even with this measure, per service population VMT would still exceed the Air District's design criteria. Accordingly, NEPA Build Alternative 2 would not achieve consistency with the *Plan Bay Area* and *2017 Clean Air Plan* and would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The Sub-Alternative would be consistent with CARB's *2022 Scoping Plan*–identified key project attributes applicable to the proposed project but exceed the per service population VMT target for the Bay Area, conflicting with *Plan Bay Area* and *2017 Clean Air Plan*, which could be a significant impact. The same mitigation measure identified under NEPA Build

Alternative 1woul be implemented to lessen impacts; however, even with this measure, per service population VMT would still exceed the Air District's design criteria. Accordingly, NEPA Build Alternative 2 with the Sub-Alternative would not achieve consistency with the *Plan Bay Area* and *2017 Clean Air Plan* and would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

4.5.4 Biological Resources

Refer to Section 3.4, *Biological Resources*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Berkeley Space Center at NASA Research Park Biological Resources Technical Report* (Biological Resources Technical Report) prepared by ICF, April 2026 (Appendix 3.4-1 of this joint EIR/EIS)

4.5.4.1 Affected Environment

Section 3.4.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses biological resources fundamentals, and defines the relevant biological resources terminology.

The Biological Resources Study Area encompasses the Limits of Work plus a 50-foot buffer, which includes all areas in which temporary or permanent impacts could occur for construction of the project components and in which indirect effects on biological resources could result.

Two State-protected sensitive natural communities were mapped in the Biological Resources Study Area but do not occur within the Limits of Work: native perennial grassland and palustrine emergent wetland. This wetland is part of a larger stormwater retention pond that does not share a surface connection with any other body of water. Two special-status plants have the potential to occur in the Biological Resources Study Area: alkali milk vetch (California Rare Plant Rank [CRPR] 1B.2) and Congdon's tarplant (CRPR 1B.1). Fourteen special-status wildlife species have the potential to occur in the Biological Resources Study Area: California Ridgway's rail (federal Endangered Species Act [ESA] endangered, California Endangered Species Act [CESA] endangered, California Fully Protected); monarch butterfly and northwestern pond turtle (federal ESA proposed); tricolored blackbird (CESA threatened); Crotch's bumble bee and western burrowing owl (CESA candidate); white-tailed kite (California Fully Protected); and snowy egret, northern harrier, Alameda song sparrow, saltmarsh common yellowthroat, pallid bat, and Townsend's big-eared bat (California Species of Special Concern), and hoary bat (Western Bat Working Group medium priority species). In addition, all native special-status and non-special-status nesting bird species are protected under the federal MBTA and California Fish and Game Code.

4.5.4.2 Regulatory Setting

The plans, policies, and regulations applicable to biological resources, which are also applicable to the NEPA analysis, are discussed in the Biological Resources Technical Report, included as Appendix 3.4-1 of this joint EIR/EIS.

4.5.4.3 Thresholds of Significance and Methodology

The project could result in effects on biological resources if it would result in any of the following conditions:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- Violate a law, code, or ordinance protecting or regulating special-status species.
- Conflict with the provisions of an applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

The methods for analysis of impacts on biological resources are based on professional standards and information cited throughout the Biological Resources Technical Report in Appendix 3.4-1 of this joint EIR/EIS. The key impacts were identified and evaluated according to the environmental characteristics of the NEPA Build Alternative 1 area and the expected magnitude, intensity, and duration of activities related to construction and operation of the proposed project and alternatives. Refer to Section 3.3, *Biological Resources*, Section 3.4.3, *Methods of Analysis* for the detailed description of the methods used in the analysis.

4.5.4.4 Environmental Consequences

Impact NEPA-BIO-1: Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by the CDFW or USFWS?

Impact Summary

	Significance before Mitigation	Applicable Measures	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-2. Preconstruction Surveys for Special-Status Species BIO-3. Exclusion Fencing	Less than Significant with Mitigation

	Significance before Mitigation	Applicable Measures	Significance after Mitigation
		BIO-4. Alkali Milk-Vetch and Congdon's Tarplant BIO-5. Monarch Butterfly Breeding Habitat BIO-6. Crotch's Bumble Bee BIO-7. Herbicide and Pesticide Use BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat BIO-12. Nesting Birds BIO-13. Roosting Bats	
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in a substantial adverse effect on special-status wildlife species. Thus, the NEPA No-Action Alternative would result in ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As described in Impact CEQA-BIO-1 in Section 3.4, *Biological Resources*, NEPA Build Alternative 1 could result in significant impacts on special-status plants (alkali milk vetch and Congdon's tarplant) and wildlife (Crotch's bumble bee, monarch butterfly, northwestern pond turtle, snowy egret, northern harrier, white-tailed kite, California Ridgway's rail, western burrowing owl, Alameda song sparrow, tricolored blackbird, saltmarsh common yellowthroat, pallid bat, Townsend's big-eared bat, and hoary bat). Construction activities (i.e., ground disturbance, use of vehicles and heavy equipment, noise and vibration, visual disturbance, potential hazardous material spills), operations (i.e., increased vehicle traffic and human presence), and maintenance activities (i.e., storm drain

outfall maintenance) could result in the permanent and temporary loss of habitat, potential for injury and mortality, and the disruption of normal behaviors of special-status species. Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, BIO-10, BIO-11, BIO-12, and BIO-13 would reduce these effects through species-specific actions to assess habitat, provide exclusion, avoidance and minimization, monitoring, and, where necessary, compensation for loss of suitable habitat. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative could result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-BIO-2: Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-3. Exclusion Fencing	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in a direct substantial adverse effect on riparian habitat or sensitive natural communities. Thus, the NEPA No-Action Alternative would result in ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As described in Impact CEQA-BIO-2 in Section 3.4, *Biological Resources*, of this joint EIR/EIS, the construction, operations, and maintenance of NEPA Build Alternative 1 could result in significant impacts on State protected sensitive natural communities (i.e., native perennial grassland and palustrine emergent wetland) through the temporary effects of sidecasting. The NEPA Build Alternative 1 would include the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), including, but not limited to, the following BMPs: employee training, erosion and sediment controls, good housekeeping, material handling and waste management, preventive maintenance, quality assurance and recordkeeping, and spill and leak prevention and response. Mitigation Measures BIO-1 and BIO-3 would reduce these effects through actions to provide exclusion, avoidance and minimization, and monitoring. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 2 could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-BIO-3: Would the project have a substantial adverse effect on federally protected wetlands through direct removal, filling, hydrological interruption, or other means?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-3. Exclusion Fencing BIO-14. Avoid and Minimize Disturbance of Waters of the United States, including Wetlands, and Waters of the State BIO-15. Compensate for Losses of Waters of the United States, including Wetlands, and Waters of the State	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in a substantial adverse effect on State or federally protected wetlands. Thus, the NEPA No-Action Alternative would result in ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As described in Impact CEQA-BIO-3 in Section 3.4, *Biological Resources*, of this joint EIR/EIS, the construction, operations, and maintenance of NEPA Build Alternative 1 could result in significant direct adverse effects on State or federally protected wetlands through the temporary effects of sidecasting and pollution during construction. Therefore, NEPA Build Alternative 1 could result in significant impacts. Mitigation Measures BIO-1 and BIO-3 would reduce these effects through actions to provide exclusion, avoidance and minimization, and monitoring. Mitigation Measures BIO-14 and BIO-15 would reduce effects through avoidance and minimization of disturbance of State or federally protected wetlands and, where necessary compensation. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-BIO-4: Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-12. Nesting Birds BIO-13. Roosting Bats	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in a substantial adverse effect on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. Thus, the NEPA No-Action Alternative would result in ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As described in Impact CEQA-BIO-4 in Section 3.4, *Biological Resources*, of this joint EIR/EIS, the construction, operations, and maintenance of NEPA Build Alternative 1 would result in less-than-significant impacts on wildlife movement or migratory wildlife corridors and could result in significant adverse effects on the use of native wildlife nursery sites through the potential for injury and mortality, and the disruption of normal behaviors of nesting birds or roosting bats. Mitigation Measures BIO-1, BIO-12, and BIO-13 would reduce the impact by requiring avoidance and minimization measures. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-BIO-5: Would the project violate a law, code, or ordinance protecting or regulating special-status species?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	No Impact	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	No Impact	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in substantial adverse effects that would violate a law, code, or ordinance protecting or regulating special-status species. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The study area is federally owned land; compliance with the Santa Clara County Heritage Tree Ordinance is not required. Therefore, NEPA Build Alternative 1 would not result in effects that violate a law, code, or ordinance protecting or regulating special-status species. There would be ***no impact***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The effects of NEPA Build Alternative 1 with the Sub-Alternative would be the same as for NEPA Build Alternative 1. There would be ***no impact***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The effects of NEPA Build Alternative 2 would be the same as for NEPA Build Alternative 1. There would be ***no impact***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The effects of NEPA Build Alternative 2 with the Sub-Alternative would be the same as for NEPA Build Alternative 2. There would be ***no impact***.

Impact NEPA-BIO-6: Would the project conflict with the provisions of an applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	BIO-1. Environmental Resources Worker Awareness Training BIO-8. Burrowing Owl Surveys BIO-9. Burrowing Owl Avoidance BIO-10. Burrowing Owl Relocation BIO-11. Burrowing Owl Habitat	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in adverse effects that would conflict with the provisions of an applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The Project Site is located within the area covered by the Santa Clara Valley HCP/NCCP, but is not a permittee under the plan. NEPA Build Alternative 1 would not interfere with or impact any of the plan's covered activities construction, operations, and maintenance; however, NEPA Build Alternative 1 could result in adverse effects on burrowing owl through habitat loss, injury, mortality,

or disruption of normal behaviors, which would conflict with the provisions of the Santa Clara Valley HCP/NCCP. NEPA Build Alternative 1 could result in significant impacts. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11 would reduce the impact through requiring surveys, monitoring, avoidance measures, and where necessary, relocation of burrowing owls and compensation for loss of burrowing owl habitat. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result in significant impacts. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

4.5.5 Cultural Resources

Refer to Section 3.5, *Cultural Resources*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build

Alternatives. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Cultural Resource Inventory Report for the Berkeley Space Center at NASA Research Park Project* (Cultural Resource Inventory Report) prepared by Albion and Architectural Resources Group, April 2026 (Appendix 3.5-1 of this joint EIR/EIS)

4.5.5.1 Affected Environment

The cultural resources environment of the Project Site includes buildings, structures, sites, objects, and districts, which may include cultural landscapes, places of traditional cultural significance, and precolonial and historic-era archaeological sites.

Section 3.5, *Cultural Resources*, details the efforts undertaken to identify cultural resources that qualify for listing in the National Register of Historic Places (NRHP) (i.e., that constitute a "historic property" subject to review under the Section 106 process) and have the potential to be affected by the proposed project. These efforts included delineating an area of potential effects (APE), area of direct impacts (ADI, or Limits of Work), and a built-environment study area (defined in Section 3.5.2.1); conducting a search of cultural resources records at the California Historical Resources Information System – Northwest Information Center (NWIC); consulting with Native American tribes and other interested parties regarding potentially affected resources; and conducting pedestrian field surveys. NASA will continue to assess the presence of NRHP-eligible historic properties in the APE and potential adverse effects under the Section 106 review process informed by these identification efforts.

The NWIC records searches identified 155 previously recorded cultural resources within the APE, with an additional 40 previously recorded cultural resources recorded within a 0.5-mile radius of the APE. Of the 155 cultural resources within the APE, 145 are built-environment resources, and 10 are archaeological resources.

The built-environment survey conducted by ARG involved reviewing previously evaluated resources as well as surveying and conducting new evaluations of those historic-aged resources (i.e., more than 45 years old) without valid existing evaluations. Based on the results of the built-environment identification, the APE contains two extant buildings that are eligible for listing in the NRHP as individual resources: Hangar One and Hangar Two. In addition, the APE contains the U.S. Naval Air Station Sunnyvale, California, Historic District (NAS Sunnyvale Historic District), which was listed in the NRHP in 1994 and later expanded through consultation between NASA and the State Historic Preservation Officer (SHPO). The built-environment study area, which represents the geographic area in which the proposed project has the greatest potential to affect built-environment resources, contains 52 contributing properties to the NAS Sunnyvale Historic District, including buildings, objects, and airfield structures such as paved runways and taxiways. Three of the properties that contribute to the NAS Sunnyvale Historic District were newly identified during the investigation for the current study.

Of the 10 previously recorded archaeological resources identified by the NWIC records searches within the APE, nine are precontact archaeological sites (CA-SCL-14, CA-SCL-15, CA-SCL-16, CA-SCL-17, CA-SCL-18, CA-SCL-19, CA-SCL-20, CA-SCL-21, CA-SCL-24) and one is a multi-component site (CA-SCL-864/H). In addition, a review of previous cultural resources studies conducted for NASA ARC identified two recently recorded precontact archaeological sites (CA-SCL-1145, CA-SCL-1146) and four isolates (RP-ISO-01–04). Three of these (CA-SCL-1145, CA-SCL-001146, and RP-ISO-03) are

within the ADI (see Appendix A, Figure A-11 of the Cultural Resource Inventory Report). CA-SCL-1145 and CA-SCL-1146 are low-density shell scatters, while RP-ISO-03 is a mammal rib bone fragment.

The pedestrian archaeological survey of the project ADI conducted by Albion on May 15, 2025, relocated the two previously documented sites (CA-SCL-1145 and CA-SCL-1146); based on survey results, Albion expanded the site boundary for CA-SCL-1145 to include additional materials observed just outside the recorded boundary. The two archaeological sites identified within the ADI, CA-SCL-1145 and CA-SCL-1146, have not been formally evaluated for eligibility under the NRHP criteria. RP-ISO-03 was not relocated. The survey also identified two new isolates within the Project Site (Albion BSC-Isolate-01 and Albion-BSC-ISO-02). None of the isolates are eligible for the NRHP.

NASA and UC Berkeley have been conducting joint Native American consultation to identify potential tribal resources in the APE, including Traditional Cultural Places (TCPs)— defined as a building, structure, object, site, or district that may be eligible for listing in the NRHP for its significance to a living community because of its association with cultural beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity. On behalf of the lead agencies, Albion requested a search of the Sacred Lands Files (SLF) from the Native American Heritage Commission (NAHC) in June 2024. The NAHC responded in July 2024, indicating that the Sacred Lands File search was negative and identifying 19 interested Native American parties, none of whom represent federally recognized Tribes. Although none of the tribes identified by the NAHC are federally recognized Tribes, NASA sent Section 106 letters to the tribes to invite their participation as consulting parties on August 22, 2024. On behalf of the lead agencies, Albion sent follow-up emails on August 22 and 30, 2024.

In April 2025, NASA sent a second SLF request to the NAHC. On April 15, 2025, the NAHC responded again that the SLF search was negative and provided an updated list of interested Native American parties, none of whom represent federally recognized Tribes. NASA sent updated consultation letters to the tribes on April 18, 2025. Three tribes, The Muwekma Ohlone Tribe of the San Francisco Bay Area, Costanoan Rumsen Carmel Tribe, and the Tamien Nation responded to the request to consult. Following is a summary of tribal consultation to date:

- Initial consultation meetings were held with each tribe in May 2025 (May 14, 2025 – Muwekma Ohlone Tribe of the SF Bay Area; May 21, 2025 – Costanoan Rumsen Carmel Tribe; May 29, 2025 – The Tamien Nation).
- UC Berkeley sent follow-up emails to the tribes providing them with the Draft Cultural Resource Inventory Report dated September 2025 for their review on three separate occasions: September 30, 2025, October 17, 2025, and November 3, 2025.[25] None of the tribes responded via email to these requests to provide comments.
- A second consultation meeting was held with each of the tribes in January and February 2026 (January 21, 2026 – Costanoan Rumsen Carmel Tribe; January 30, 2026 – The Tamien Nation; February 17, 2026 – Muwekma Ohlone Tribe of the SF Bay Area).
- A Canine Forensic Survey of the Project Site was conducted on March 16 and March 17, 2026; the Tamien Nation monitored the survey.

[25] UC Berkeley emailed the Consulting Tribes during the time period when the U.S. government shutdown took place.

- Site visits of the Project Site were conducted with each of the tribes in March 2026 (March 20, 2026 – The Tamien Nation; March 25, 2026 – Muwekma Ohlone Tribe of the SF Bay Area; and March 31, 2026 – Costanoan Rumsen Carmel Tribe).
- A third consultation meeting was held with each of the tribes in April 2026 (April 6, 2026 – The Tamien Nation and Costanoan Rumsen Carmel Tribe; April 7, 2026 – Muwekma Ohlone Tribe of the SF Bay Area).
- On April 13, 2026, the Tamien Nation submitted comments: 1) The Tamien Nation Position Statement and Formal Comments on the Draft Cultural Resource Inventory Report and Proposed Tribal Cultural Resources (TCR) Mitigation Measures, and 2) The Tamien Nation Formal Tribal Comments on the Institute for Canine Forensics, Historic and Pre-Contact Human Remains Detection Dog Services, Canine Field Survey. On April 14, 2026, the Tamien Nation resent the Tamien Nation Position Statement with minor edits and signature and provided additional appendices to the Position Statement. On April 14, 2026, NASA acknowledged receipt of the materials from the Tamien Nation; on April 15, 2026, UC Berkeley acknowledged receipt of the materials from the Tamien Nation. Copies of these documents are in the confidential appendix for the Tamien Nation in Appendix M of the Cultural Resource Inventory Report (Appendix 3.5-1 of this joint EIR/EIS).

Through this consultation, the tribes identified TCPs within the APE that have not been formally evaluated for eligibility under the NRHP criteria. Further consultation with the tribes will seek to clarify the presence of TCPs that qualify as NRHP-eligible historic properties in the APE to ensure that NRHP-eligible TCPs are considered in the Section 106 review process.

4.5.5.2 Regulatory Setting

The plans, policies, and regulations applicable to cultural resources, which are also applicable to the NEPA analysis, are discussed in the Cultural Resource Inventory Report, included as Appendix 3.5-1 of this joint EIR/EIS.

The National Historic Preservation Act (NHPA) mandates that federal agencies consider the effects of projects on historic properties and seek comments on their actions from an independent reviewing agency, the State Historic Preservation Officer (SHPO) and/or the Advisory Council on Historic Preservation (ACHP). Title 36 of the CFR provides the methodology for assessing impacts on historic properties and details the requirements of the consultation process. For complex projects and programs expected to continue over time, the Section 106 regulations allow development of a Programmatic Agreement (PA) that governs ongoing and future activities undertaken as part of the project or program it addresses. An agency may fulfill its obligations under Section 106 by following the alternate review process outlined in a PA.

NASA, in consultation with the ACHP, the National Conference of State Historic Preservation Officers (NCSHPO), the National Association of Tribal Historic Preservation Officers, the National Trust for Historic Preservation, and invited federally recognized Indian Tribes and other consulting parties, developed the NASA-Wide Programmatic Agreement (NPA) as a Section 106 program alternative pursuant to 36 CFR 800.14(b). Executed in October 2025, the NPA implements an alternate project review process for Section 106 undertakings, defined as a project, activity, or program funded, permitted, licensed, or approved by NASA. The NPA sets forth planning and management tools for cultural resources and applies to NASA's real property assets and land owned or managed by NASA at participating NASA centers, including NASA ARC. To streamline the Section 106 process, the NPA

includes programmatic exclusions for several types of projects for which effects to historic properties are likely to be minimal or indirect, and programmatic mitigation for the resolution of adverse effects on historic properties under that process. For non-excluded projects, such as demolition of an individually eligible building or effects on an eligible archaeological site, and projects affecting the setting within designated Heritage Zones, defined under the NPA as discrete, special management areas that exhibit a distinct shared design, architectural style, or cohesive theme, project-specific consultation is required. If an adverse effect is unavoidable, NASA implements appropriate mitigation measures that are reviewed by its consulting parties. The other NPA Signatories (ACHP and NCSHPO) do not typically participate in consultation at the local level; ARC Center Consulting Parties, including the California State Historic Preservation Officer (SHPO), are other consulting parties identified consistent with 36 CFR 800.2. No federally recognized Tribes have been identified in association with NASA ARC. NASA ARC maintains and periodically updates a list of ARC Center Consulting Parties, which may include historical organizations, non-federally recognized tribes, and other stakeholders who have a demonstrated interest in cultural resources at ARC and elect to participate in consultation. Ultimately, the NPA removes the need for the execution of an MOA to resolve potential adverse effects on historic properties under Section 106 of the NHPA by pre-defining mitigation measures that are documented in a project-specific Mitigation Plan.

4.5.5.3 Thresholds of Significance and Methodology

NEPA requires that federal agencies take into account the effects of their actions on the quality of the human environment. Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on NRHP-listed and -eligible historic properties. When federal agencies choose to coordinate their project review responsibilities under Section 106 and NEPA, the Section 106 effects analysis informs the agency's assessment of impacts on the "human environment," as required under NEPA. The project would have the potential to result in effects on cultural resources if it would result in the following condition:

- Cause an adverse effect on a historic property pursuant to 36 CFR 800.5(a)(1).

Adverse effects on historic properties may occur from changes to the physical features and qualities that support a historic property's integrity and ability to convey its reasons for significance. Under the Section 106 regulations, an adverse effect would occur when "an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." Adverse effects can result from physical changes to the property itself (including damage caused by vibration) as well as from changes in the property's use, setting, ownership and management responsibilities, and atmospheric and audible conditions. Pursuant to 36 CFR 800.6, adverse effects are resolved through the Section 106 consultation process. Resolution of adverse effects under the NHPA through the culmination of the Section 106 process and any necessary mitigation, serves to reduce impacts on cultural resources under NEPA to less than significant.

4.5.5.4 Environmental Consequences

Impact NEPA-CUL-1: Would the project cause an adverse effect on a historic property pursuant 36 CFR 800.5(a)(1)?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	CUL-1. Protect and Reinstall Shenandoah Plaza Streetlights CUL-2. Review Project Design for Architectural Compatibility CUL-3. Develop and Implement an Interpretive Program CUL-4. Cultural Resources Treatment and Monitoring Plan CUL-5. Cultural Resources Monitoring and Sensitivity Training CUL-6. Cultural Resources Inadvertent Discoveries Protocols CUL-7. Human Remains Discovery Protocols NOI-5. Construction Vibration Control Plan for Vibratory Rollers	Less than Significant with completion of Section 106 review
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with completion of Section 106 review
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The current conditions within the Limits of Work, as well as the setting of nearby built-environment historic properties, would not change. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As described in the analysis of CEQA impacts presented in Section 3.5, NEPA Build Alternative 1 would involve physical alterations to built-environment historic properties that contribute to the NAS Sunnyvale Historic District. Specifically, construction of the proposed project would remove a portion of MF1002, an aircraft parking apron surrounding Hangar One, and relocate several original streetlights to accommodate the widening of Wescoat Road. Furthermore, construction activities occurring in the vicinity of Hangar One and other historic district contributors have the potential to reach intensities that could damage historic properties. Construction of the proposed project adjacent to the boundary of the NAS Sunnyvale Historic District would also introduce new development at a scale that would be substantially taller than most of the nearby historic district contributors. New development would alter characteristics of the historic district's setting that convey its historical development. The project would furthermore combine with other projects at NASA ARC to contribute to the ongoing diminishment of the NAS Sunnyvale Historic District's integrity of setting. Because the proposed project would damage or disturb historic properties and would introduce new visual elements that would diminish the historical integrity of the NAS Sunnyvale Historic District, the NEPA Build Alternative 1 would result in adverse effects on built-environment historic properties under Section 106 and significant impacts on cultural resources under NEPA.

Additionally, NEPA Build Alternative 1 has the potential to alter archaeological historic properties in the ADI. The APE and ADI have a history of intensive precolonial and historic-period use, and physical remnants from these former uses still exist within the APE and ADI. Therefore, project grading and excavation may substantially disturb, damage, or degrade archaeological historic properties in the ADI. As a result, construction may cause an adverse effect on archaeological historic properties. Appendix A, Figure A-37 in the Cultural Resource Inventory Report identifies the proposed project elements affecting the two known archaeological sites in the ADI, which have not been formally evaluated for eligibility under the NRHP criteria. Project elements affecting CA-SCL-1145 include excavations for building foundations and open space and landscaping. Resource CA-SCL-1146 is mapped within areas impacted by open space and landscaping activities. In addition to these identified archaeological sites, the archaeological sensitivity assessment shows that the Project Site has a high sensitivity for previously unidentified precontact and historic-era archaeological sites within the ADI (see Appendix A, Figures A-34 and A-35 in the Cultural Resource Inventory Report). The proposed impacts within the Project Site would most likely result in partial or complete destruction of the subsurface deposits. NEPA Build Alternative 1 would result in adverse effects on potential NRHP-eligible archaeological/TCP historic properties under Section 106 and significant impacts on cultural resources under NEPA.

Measures to avoid, minimize, or mitigate adverse effects on historic properties shall be determined through the Section 106 review process. Mitigation measures under consideration for Section 106 consultation that would reduce significant impacts on cultural resources include Mitigation Measures CUL-1 through 7 and NOI-5. Additional mitigation measures may be identified through consultation with the ARC Center Consulting Parties during the Section 106 review process.

Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5 would reduce impacts on NRHP-eligible built-environment historic properties. Mitigation Measure CUL-1 would ensure that contributing streetlights are protected during construction and are returned to near their original locations in order to continue expressing the NAS Sunnyvale Historic District's original landscape qualities. Mitigation Measure NOI-5 would furthermore protect historic properties near vibration-producing construction activities. Mitigation Measure CUL-2 would establish a process through which the proposed project design is developed to be as architecturally compatible with the NAS Sunnyvale Historic District as feasible while also meeting project objectives. Mitigation Measure CUL-3 would require the development of interpretive materials that document the historic district's physical development and setting. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would reduce impacts on NRHP-eligible archaeological/TCP historic properties through requiring the preparation of a Cultural Resources Treatment and Monitoring Plan, monitoring, protocols for inadvertent discoveries of archaeological resources, and protocols for discoveries of previously unknown human remains.

The Section 106 consultation process will resolve adverse effects on historic properties in the APE. Resolution of adverse effects through the culmination of the Section 106 process under the NPA and any necessary mitigation will reduce the impact on cultural resources; thus, the NEPA Build Alternative 1 would result in ***less than significant*** impacts with the completion of Section 106 review.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There could be a significant impact. The Section 106 consultation process will resolve adverse effects on historic properties in the APE. Resolution of adverse effects through the culmination of the Section 106 process under the NPA and any necessary mitigation will reduce the impact on cultural resources; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less than significant*** impacts with the completion of Section 106 review.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Like NEPA Build Alternative 1, the impactNEPA Build Alternative 2 could be significant. The Section 106 consultation process will resolve adverse effects on historic properties in the APE. Resolution of adverse effects through the culmination of the Section 106 process under the NPA and any necessary mitigation will reduce the impact on cultural resources; thus, the NEPA

Build Alternative 2 would result in ***less than significant*** impacts with the completion of Section 106 review.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative could result in significant impacts. The Section 106 consultation process will resolve adverse effects on historic properties in the APE. Resolution of adverse effects through the culmination of the Section 106 process under the NPA and any necessary mitigation will reduce the impact on cultural resources; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less than significant*** impacts with the completion of Section 106 review.

4.5.6 Energy

Refer to Section 3.6, *Energy,* of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.6.1 Affected Environment

Section 3.6.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment related to energy statewide, regionally, and at the Project Site, and defines the relevant energy terminology.

4.5.6.2 Regulatory Setting

The plans, policies, and regulations applicable to energy, which are also applicable to the NEPA analysis, are discussed in Section 3.6.3, *Plans, Policies, and Regulations*, in Section 3.6, *Energy*.

4.5.6.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on energy if it would result in any of the following conditions:

- Result in a potentially significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Energy impacts associated with construction and operation of the proposed project were assessed and quantified, using standard and accepted software tools and techniques. Energy consumption as a result of construction and operation of the proposed project were quantified using the California Emissions Estimator Model (CalEEMod), version 2022.1, and supporting industry tools. Refer to Section 3.6.3, *Methods of Analysis*, in Section 3.6, *Energy*, for additional description of the methods used to analyze potential energy impacts. Appendix 3.3-1, *Berkeley Space Center at NASA Research Park Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Report*, of this Draft EIR/EIS

also provides the CalEEMod output files and fuel use calculations for the air quality analysis which were used to calculate energy use.

4.5.6.4 Environmental Consequences

Impact NEPA-ENE-1: Would the project result in potentially significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Table 4.5.6-1 provides the estimated operational energy consumption under the NEPA No-Action Alternative.

There would be an increase in energy use under the NEPA No-Action Alternative from all existing buildings being occupied and vacant buildings being reoccupied. Impacts of energy use under the NEPA No-Action Alternative would be significantly less compared to NEPA Build Alternative 1 and NEPA Build Alternative 2 as the Build Alternatives would increase development on-site, which would increase employees and residents and overall energy usage. Additionally, under the NEPA No-Action Alternative, transportation demand management (TDM) features identified in the existing NADP TDM Plan would continue to be implemented as part of the NEPA No-Action Alternative, thereby reducing energy consumed from mobile sources in the form of electricity, diesel, gasoline, and natural gas. Thus, there would be ***less-than-significant*** impact.

Table 4.5.6-1. Estimated Operational Energy Consumption under the NEPA No-Action Alternative

Analysis Condition/Source	Energy Consumption in Million BTU/Year (without Mitigation)
Existing (2024)	
Mobile sources [a]	1,741
Building Electricity	2,434
Stationary Sources [b]	0
Total Existing	***4,175***
Project Buildout (2041)	
Mobile sources [a]	14,351
Building Electricity	7,447
Stationary Sources [c]	0
Total Project Buildout	***21,798***
Net Change with Project	
Existing vs. proposed	+17,623
Energy per Square Foot (Million BTU/sf)	
Existing	0.02
Proposed	0.15

Source: CalEEMod. See 3.3-1, *Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Appendix*.
BTUs= British thermal units
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] As previously described, there are no existing stationary sources, such as diesel-fueled generators on the Project Site.
[c] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction NEPA Build Alternative 1 (with or without the Central Utility Plant [CUP] Option or Water Reuse Facility [WRF] Option) would result in the consumption of energy resources. Construction energy use would include electricity used to power electric construction equipment, mobile offices, or water delivered to construction sites; gasoline and diesel fuel used for transportation of workers and haul trucks to and from construction sites; and fuel used for operation of off-road equipment. Construction-related energy usage and consumption would occur intermittently throughout the course of buildout of NEPA Build Alternative 1 and would vary substantially, depending on the level of activity, length of construction period, specific construction operations, types of equipment, and number of personnel. Table 3.6-3 in Section 3.6, *Energy*, provides the estimated energy consumption during construction of NEPA Build Alternative 1 with and without the CUP an WRF options. Construction of the CUP would require additional off-road equipment and on-road vehicles that would consume additional energy beyond what would be required for the NEPA Build Alternative 1 with and without the WRF. The types of land uses envisioned for NEPA Build Alternative 1 would involve construction activities typical of development projects in the surrounding region, and no land uses are expected to require an extraordinary amount of energy consumption during construction, as may occur with large, industrial facilities like new power plants or dams, because no such land uses are proposed on the Project Site. Additionally, construction-related energy consumption would be temporary and would cease upon completion of all construction activities. Furthermore, during construction, waste would be separated by source and tracked to be diverted away from landfills, with the goal of recycling more than 50 percent of construction and demolition waste. This would reduce the amount of

energy intensiveness associated with building materials, including discarded construction and demolition waste.

Additionally, while not required to reduce the significance of energy impacts during construction of the CEQA Proposed Project, implementation of Mitigation Measure AQ-1, Electric Equipment and Emissions Controls for Off-Road Diesel Engines during Construction; Mitigation Measure AQ-2, Zero-Emissions On-Road Vehicles during Construction; and Mitigation Measure GHG-1, Best Management Practices for Construction-Related GHG Emissions, which would be required to mitigate air quality and greenhouse gas impacts, respectively, would further reduce construction energy consumption. Implementation of these measures, which would be required to reduce other construction-related impacts, would indirectly reduce the amount of energy consumed during the construction of the CEQA Proposed Project.

Once operational, NEPA Build Alternative 1 would generate vehicle trips, which would consume gasoline, diesel, natural gas, and electricity. NEPA Build Alternative 1 would also result in the consumption of electricity and diesel for operational uses such as power, emergency generators, heating, cooling, research and development, life science lab, and landscaping activities. Energy consumption for project operations was quantified according to the methods summarized in Section 3.6.6.2, *Operations*, in Section 3.6, *Energy*. Table 4.5.6-2 summarizes operational energy consumption estimates under NEPA Build Alternative 1 (with and without the WRF and CUP options). NEPA Build Alternative 1's net energy consumption is determined by taking the difference in operational energy consumption between "project buildout (2041)" conditions and "existing (2024)" conditions of the Project Site.

Table 4.5.6-2. Estimated Operational Energy Consumption under the NEPA Build Alternative 1

Analysis Condition/Source	NEPA Build Alternative 1 Energy Consumption in Million BTU/Year	NEPA Build Alternative 1 with CUP Option Energy Consumption in Million BTU/Year	NEPA Build Alternative 1 with WRF Option in Million BTU/Year
Existing (2024)			
Mobile sources [a]	1,741	__	__
Landscape equipment	10	__	__
Building electricity	2,434	__	__
Stationary sources [b]	0	__	__
Total Existing	***4,185***	__	__
Project Buildout (2041)			
Mobile sources [a]	254,512	254,512	254,512
Landscape equipment [c]	608	608	608
Building electricity	230,757	204,427	230,757
Stationary sources [d]	6,255	6,776	6,776
Total Project Buildout	***492,199***	***466,391***	***492,881***
Net Change with Project			
Existing vs. proposed	+488,014	+462,205	+488,696

Analysis Condition/Source	NEPA Build Alternative 1 Energy Consumption in Million BTU/Year	NEPA Build Alternative 1 with CUP Option Energy Consumption in Million BTU/Year	NEPA Build Alternative 1 with WRF Option in Million BTU/Year
Energy per Square Foot (Million BTU/sf)			
Existing	0.02	0.02	0.02
Proposed	0.21	0.20	0.21

Source: CalEEMod. See 3.3-1, *Air Quality, Health Risk Assessment, and Greenhouse Gas Technical Appendix*.
BTUs= British thermal units
[a] Mobile sources include energy consumed by diesel, gasoline, natural gas, and electricity-fueled vehicles.
[b] As previously described, there are no existing stationary sources, such as diesel-fueled generators on the Project Site.
[c] Landscaping equipment consumes fossil fuels under the unmitigated condition.
[d] Stationary sources include energy consumed by the proposed diesel-fueled emergency generators.

As detailed under Impact CEQA-ENE-1 in Section 3.6.7, *Impacts and Mitigation Measures*, NEPA Build Alternative 1 would be designed to incorporate environmentally sustainable features to reduce energy consumption and improve energy efficiency. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT. Mitigation Measure AQ-6 requires the use of electric landscaping equipment during operations. Mitigation Measure TRAN-1 and Mitigation Measure AQ-6 would be required to mitigate transportation and air quality impacts, respectively. These mitigation measures are not required to reduce the significance of energy impacts during operation of the CEQA Proposed Project; however, implementation of these mitigation measures would reduce the amount of energy consumed during operation of the CEQA Proposed Project.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur under the Sub-Alternative. The intensity of construction for NEPA Build Alternative 1 with or without the Sub-Alternative would therefore be the same, and the energy consumption presented in Table 3.6-3 for NEPA Build Alternative 1 would also occur under the Sub-Alternative. Construction activities would result in approximately 899,103 million BTUs or 263,704 megawatt hours (MWh) consumed over the proposed project's approximately 14-year construction period.

The same operational sources of energy consumption proposed and evaluated under NEPA Build Alternative 1 would occur under the Sub-Alternative. Table 3.6-5 in Section 3.6, *Energy*, presents estimated operational energy consumption for the Sub-Alternative under full-buildout conditions. Compared to NEPA Build Alternative 1, the Sub-Alternative would increase net operational increase in energy consumption due primarily to mobile sources. The Sub-Alternative would utilize all-electric design and implement the same sustainability strategies as described above for NEPA Build Alternative 1. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. The energy consumption for construction of NEPA Build Alternative 2 is provided in Table 3.6-6 in Section 3.6, *Energy*. As shown in Table 3.6-6, construction activities would result in approximately 862,241 million BTUs or 252,893 MWh consumed over the proposed project's approximately 14-year construction period.

The same operational sources of energy consumption proposed and evaluated under NEPA Build Alternative 1 would occur under NEPA Build Alternative 2. Table 3.6-7 in Section 3.6, *Energy*, presents estimated operational energy consumption for NEPA Build Alternative 2 under full-buildout conditions. Compared to NEPA Build Alternative 1, NEPA Build Alternative 2 would result in reduced net operational increases in energy consumption due primarily to reduced mobile sources and building electricity. NEPA Build Alternative 2 would utilize all-electric design and implement the same sustainability strategies as described for NEPA Build Alternative 1. Thus, the NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The same construction activities proposed and evaluated under NEPA Build Alternative 2 would occur under the Sub-Alternative. The intensity of construction for NEPA Build Alternative 2 with or without the Sub-Alternative would therefore be the same, and the energy consumption presented in Table 3.6-6 in Section 3.6, *Energy*, for NEPA Build Alternative 2 would also occur under the Sub-Alternative. As shown in Table 3.6-6, construction activities would result in approximately 862,241 million BTUs or 252,893 MWh consumed over the proposed project's approximately 14-year construction period.

The same operational sources of energy consumption proposed and evaluated under NEPA Build Alternative 2 would occur under the Sub-Alternative. Table 3.6-8 in Section 3.6, *Energy*, presents estimated operational energy consumption for the Sub-Alternative under full-buildout conditions. Compared to NEPA Build Alternative 2, the Sub-Alternative would result in increased net operational energy consumption due primarily to mobile sources. The Sub-Alternative would utilize all-electric design and implement the same sustainability strategies as described for NEPA Build Alternative 1 and NEPA Build Alternative 2. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-ENE-2: Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be an increase in energy use under the NEPA No-Action Alternative from all existing buildings being occupied and vacant buildings being reoccupied; however, energy use under the NEPA No-Action Alternative would be significantly less compared to NEPA Build Alternative 1 and NEPA Build Alternative 2 as the Build Alternatives would increase development on-site, which would increase employees, guests, students, and residents and overall energy usage. Under the NEPA No-Action Alternative, TDM features identified in the existing NADP TDM Plan would continue to be implemented as part of the NEPA No-Action Alternative, thereby reducing energy consumed in the form of electricity, natural gas, diesel, and gasoline from mobile sources consistent with Assembly Bill 1493, Senate Bill 375, and Senate Bill 350. Therefore, the NEPA No-Action Alternative would not conflict with state or local plans for renewable energy or energy efficiency. There would be ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Operation of NEPA Build Alternative 1 with the WRF option would result in the greatest net increase in energy consumption in comparison to existing conditions, and would consume approximately 492,199 million BTU or 144,561 MWh per year. Operation of NEPA Build Alternative 1 (with and without the CUP and WRF options) would increase energy use per square foot with the approximately 13- fold increase in building area compared with existing conditions. However, NEPA Build Alternative 1 (with and without the CUP and WRF options) would incorporate multiple sustainability, energy-saving, and TDM features, including incorporating all-electric design, photovoltaic systems, and battery storage; implementing a robust TDM plan; achieving at a minium,

a LEED Silver rating; providing electric vehicle parking spaces in accordance with CALGreen Tier 2 nonresidential voluntary requirements; and utilizing recycled water for irrigation and non-potable water uses within the proposed buildings. NEPA Build Alternative 1 would be required to comply with applicable renewable energy an energy efficiency plans, and would benefit from the resulting increases in energy efficiency and renewable energy development. In addition, with implementation of NEPA Build Alternative 1, PG&E would continue to pursue the procurement of renewable energy sources to meet their Renewable Portfolio Standards (RPS) and goals and comply with state regulations. Therefore, NEPA Build Alternative 1 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same sustainability, energy-saving, and TDM features described above for NEPA Build Alternative 1 would be implemented under the NEPA Build Alternative 1 Sub-Alternative. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same sustainability, energy-saving, and TDM features described above for NEPA Build Alternative 1 would be implemented under NEPA Build Alternative 2. NEPA Build Alternative 2 would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Thus, the NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same sustainability, energy-saving, and TDM features described above for NEPA Build Alternative 2 would be implemented under the NEPA Build Alternative 1 Sub-Alternative. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.7 Geology, Soils, and Paleontological Resources

Refer to Section 3.7, *Geology, Soils, and Paleontological Resources*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.7.1 Affected Environment

Section 3.6.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment; discusses geology, soils, and paleontological resources fundamentals; and defines the relevant terminology.

4.5.7.2 Regulatory Setting

The plans, policies, and regulations applicable to geology, soils, and paleontological resources, which are also applicable to the NEPA analysis, are discussed in Section 3.7.3, *Plans, Policies, and Regulations*, in Section 3.7, *Geology, Soils, and Paleontological Resources*.

4.5.7.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on geology, soils and paleontological resources if it would result in any of the following conditions:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault.
    - Strong seismic ground shaking.
    - Seismically related ground failure, including liquefaction.
    - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

4.5.7.4 Methodology and Approach

Geology, Soils, and Seismicity

The study area for geology, soils, and seismicity is the Limits of Work. As described in Section 3,7, *Geology, Soils, and Paleontological Resources*, a Preliminary Geotechnical Evaluation was prepared to provide preliminary evaluation of the Project Site and identify potential geotechnical issues associated with the various proposed construction and building types and to develop preliminary conclusions and recommendations regarding appropriate foundation types, design parameters, and

seismic coefficients for project development. The Preliminary Geotechnical Evaluation provides the information which supports the analysis and impact conclusions related to geology, soils, and paleontology.

Paleontological Resources

The study area for paleontological resources is defined by a 150-foot buffer outside the Limits of Work plus underlying units to the maximum depth of excavation, 25 feet below ground surface. The fossil-yielding potential of geologic units in a particular area depends on the geologic age and origin of the units as well as on the processes they have undergone, both geologic and anthropogenic.[26] The methods used to analyze potential impacts on paleontological resources and develop mitigation for the identified impacts involved the following steps:

- Identify the geologic units in the paleontological study area.
- Evaluate the potential of the identified geologic units to contain significant fossils (their *paleontological sensitivity*).
- Identify the geologic units that would be affected by the Project, based on proposed depth of excavation—either at the ground surface or below the ground surface, defined as at least 5 feet bgs.
- Assess the likelihood of the geologic units affected by implementing the proposed project containing scientifically important, nonrenewable paleontological resources that could be directly affected.
- Identify and evaluate impacts on paleontologically sensitive geologic units as a result of construction and operation that involve ground disturbance.
- Evaluate impact significance.
- According to the identified degree of sensitivity, formulate and implement measures to mitigate potential impacts.

The potential of the proposed project to affect paleontological resources relates to ground disturbance. Ground disturbance caused by implementing the proposed project would take place only during construction phases; therefore, this impact analysis addresses construction impacts.

To identify the geologic units in the paleontological study area, the *Geologic Map of the San Francisco-San José Quadrangle, California,* was consulted.[27] The Project Site is located on Quaternary alluvium of the Santa Clara Valley (Q).[28] Pleistocene vertebrate fossils have been found from multiple localities in Quaternary alluvium across the Santa Clara Valley, indicating the potential for paleontological resources.

[26] *Anthropogenic* means caused by human activity.

[27] Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000.

[28] Wagner, D.L., E.J. Burtugno, R.D. McJunkin. 1991. *Geologic Map of the San Francisco-San José Quadrangle, California,* 1:250,000.

The Impact Mitigation Guidelines Revisions Committee of the Society of Vertebrate Paleontology (SVP) has published standard guidelines[29] for the investigation, collection, preservation, and cataloging of fossil-bearing sites (SVP Guidelines) and defines the level of potential as one of four sensitivity categories for sedimentary rocks: High, Undetermined, Low, and No Potential.[30]

Based on the scientific literature,[31] the geologic unit in the study area was assigned a High paleontological sensitivity according to the SVP Guidelines, as described in Table 3.7-4, *Geologic Units in the Paleontological Resources Study Area and Paleontological Sensitivity*. To evaluate impacts on paleontologically sensitive geologic units as a result of implementing the proposed project, geologic mapping was used to identify the geologic unit(s) that would be disturbed by construction-related ground-disturbing activities with respect to the location of geologic units with high potential and undetermined potential.

4.5.7.5 Environmental Consequences

Impact NEPA-GEO-1: Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

(a) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault?

(b) Strong seismic ground shaking?

(c) Seismically related ground failure, including liquefaction?

(d) Landslides?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	GEO-1. Design-Level Geotechnical Investigation	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

[29] Society of Vertebrate Paleontology. 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources.* Available: https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf. Accessed: September 11, 2025.

[30] Ibid.

[31] Maguire, K.C., and P.A. Holroyd. 2016. *Pleistocene Vertebrates of Silicon Valley (Santa Clara County, California).* Available: https://escholarship.org/uc/item/3k43832x. Accessed: September 12, 2025.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity; however, building would constitute to deteriorate without improvements. The Limits of Work would remain in its current condition and no ground distrubing activities such as grading and excavation would take place. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The NEPA Build Alternative 1 is not within an Alquist-Priolo Earthquake Fault Zone and no known active or potentially active faults exist on the Project Site. Therefore, the potential for fault rupture to occur at the Project Site during construction or operation is highly unlikely. The Project Site would be subject to strong ground shaking and liquefaction. Mitigation Measure GEO-1 would require the preparation of a site-specific design-level geotechnical investigation by a licensed Geotechnical Engineer. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The Project Site would be subject to strong ground shaking and liquefaction, but with adherence to requirements of the California Building Code and the Seismic Hazards Mapping Act. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under

the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-GEO-2: Would the project result in substantial soil erosion or the loss of topsoil?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The Limits of Work would remain in its current condition and no ground distrubing activities such as grading and excavation would take place. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Under NEPA Build Alternative 1, the proposed project would include ground-disturbing activity, including excavation, and grading could result in soil erosion or the loss of topsoil; however, as discussed in in Section 3.10, *Hydrology and Water Quality*, the proposed project would be required to comply with the State Water Resources Control Board's Construction General Permit which includes the preparation and implementation of a Stormwater Pollution Prevention Plan, which would ensure that the proposed project would result in less-than-significant impacts related to erosion or loss of topsoil during construction; therefore, impacts related to erosion or loss of topsoil would be ***less than significant.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under

the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would be required to comply with the State Water Resources Control Board's Construction General Permit which includes the preparation and implementation of a Stormwater Pollution Prevention Plan, which would ensure that the proposed project would result in less-than-significant impacts related to erosion or loss of topsoil during construction; therefore, impacts would be ***less than significant.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-GEO-3: Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	GEO-1. Design-Level Geotechnical Investigation HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would

continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The Limits of Work would remain in its current condition and no new structures or improvements would be placed on unstable geologic units or units that would become unstable because of new construction or operational activities. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

NEPA Build Alternative 1 would not encounter signficant effects from lateral spreading because the nearest free face is approximately 4,000 feet from the Project Site, and the potentially liquefiable soil layers underlying the Project Site are not continuous. NEPA Build Alternative 1 would encounter no significant effects related to landsliding because the Project Site is relatively flat and approximately 5 miles from the nearest Landslide Hazard Zone. The Preliminary Geotechnical Evaluation indicates that static and seismic settlement could occur at the Project Site, which could result in a significant impact. Mitigation Measure GEO-1 would require the preparation of a site-specific design-level geotechnical investigation by a licensed Geotechnical Engineer. Implementation of Mitigation Measure HAZ-1 would require ongoing monitoring and remediation during dewatering activities. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under

the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-GEO-4: Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	No Impact	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	No Impact	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The Project Site would remain connected to the existing sewer and stormwater collection and treatment system. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Under NEPA Build Alternative 1, the Project Site would remain connected to the existing sewer and stormwater collection and treatment system; therefore, there would be ***no impact*** related to septic or alternative water disposal systems.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

Under the NEPA Build Alternative 1 with the Sub-Alternative, the Project Site would remain connected to the existing sewer and stormwater collection and treatment system; therefore, there would be ***no impact*** related to septic or alternative water disposal systems.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

Under the NEPA Build Alternative 2, the Project Site would remain connected to the existing sewer and stormwater collection and treatment system; therefore, there would be ***no impact*** related to septic or alternative water disposal systems.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Under the NEPA Build Alternative 2 with the Sub-Alternative, the Project Site would remain connected to the existing sewer and stormwater collection and treatment system; therefore, there would be ***no impact*** related to septic or alternative water disposal systems.

Impact NEPA-GEO-5: Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	GEO-1. Design-Level Geotechnical Investigation	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. No new structures or other improvements would be constructed on expansive soils. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Under NEPA Build Alternative 1, the near-surface clay underlying the Project Site has high expansion potential. Expansive soils have the potential to damage proposed foundations/floor slabs, utilities, and pavement due to moisture fluctuations if appropriate engineering is not incorporated into the project design, which could result in a significant impact. Mitigation Measure GEO-1 would require the preparation of a site-specific design-level geotechnical investigation by a licensed Geotechnical Engineer. Implementation of this mitigation measure would reduce the impact to a less-

than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-GEO-6: Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	GEO-2. Paleontological Resources Discovery Protocols	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no ground-disturbing activitiy that could disturb paleontological resources. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Under the NEPA Build Alternative 1, ground-disturbing activities would occur in an area underlain by Quaternary alluvium of the Santa Clara Valley (Q), which has yielded scientifically important fossil finds at depths greater than 9 feet below surface, including vertebrate remains. While most ground disturbing activities would not be deeper than 5 feet bgs and would therefore occur in younger, previously disturbed sediments with a low paleontological sensitivity, some project excavation could reach a maximum depth of 25 feet bgs; therefore, it is possible that this deeper excavation could encounter significant paleontological resources. Disturbance of, damage to, or loss of paleontological resources with high paleontological potential would constitute a direct effect, which could result in a significant impact. Mitigation Measure GEO-2 would reduce impacts by ensuring that significant resources would be evaluated and the significance of the resource protected by preservation, documentation, and/or removal. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-signficant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

Alternative 1. Disturbance of, damage to, or loss of paleontological resources with high paleontological potential would constitute a direct effect, which could result in a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-signficant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-signficant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

4.5.8 Hazards and Hazardous Materials

Refer to Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives. Relevant technical documentation used in this analysis includes the following technical studies prepared for the project:

- *Environmental Issues Management Plan Berkeley Space Center Premises Parcels 1A, 3, 5A, 5B, and 6A Former NAS Moffett Field, California* (Spring 2026 project-specific EIMP) prepared by EKI, Spring 2026[32] (Appendix 2-2 of this joint EIR/EIS).
- *Berkeley Space Center at NASA Research Park—Hazardous Material Conditions* (Hazardous Material Conditions Memorandum) prepared by EKI, January 2026 (Appendix 3.9-1 of this joint EIR/EIS).

Summaries of other technical reports were included in the EIR/EIS to provide the most current environmental condition information available when describing the Project Site's environmental setting. These additional summaries included annual vapor intrusion and groundwater remediation progress reports that are routine and ongoing. The information found in these annual progress reports (up through the versions that were publicly available prior to the publication of the joint EIR/EIS) do not change the conclusions or recommendations in the Hazardous Material Conditions Memorandum.

4.5.8.1 Affected Environment

Section 3.9.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses hazardous materials and hazardous waste fundamentals, and defines relevant terminology.

[32] The Spring 2026 project-specific EIMP is currently under review by the EPA and San Francisco Bay Regional Water Quality Control Board, the regulatory agencies that will approve of the EIMP. NASA has previously reviewed and provided comments on the EIMP. NASA has previously reviewed and provided comments on the EIMP.

Spring 2026 Project-Specific Environmental Issues Management Plan

As mentioned, numerous soil and groundwater investigations have been conducted within the Project Site. The results of these investigations are summarized in various technical memoranda, remedial investigation and feasibility study reports and other documents. The Spring 2026 project-specific EIMP (summarized here) was prepared relying on the findings and conclusions of those documents. Implementation of the Spring 2026 project-specific EIMP is required for project implementation and is included in this EIR/EIS as a mitigation measure. The Spring 2026 project-specific EIMP was submitted to and reviewed by NASA, the EPA, and the Regional Water Board. Prior to commencement of construction of the proposed project, the EPA and the Regional Board will review and approve the Spring 2026 project-specific EIMP. The Spring 2026 project-specific EIMP will also be periodically reviewed and any necessary updates or addenda to the Spring 2026 project-specific EIMP will be reviewed by NASA and submitted to the EPA and Regional Water Board for approval.

The implementation of the Spring 2026 project-specific EIMP by the Project Proponent is not intended to relieve the Responsible Parties of their responsibilities and ongoing obligations. Rather, the Spring 2026 project-specific EIMP allocates as between NASA and the Project Proponent who will take actions to address environmental conditions in the event of non-performance or delayed performance by another Responsible Party, but such actions will not result in Project Proponent (including tenants and project developers) becoming a Responsible Party.

The Spring 2026 project-specific EIMP builds upon the prior 2005 NRP EIMP (and a subsequent 2007 Addendum). The Spring 2026 project-specific c EIMP has been updated to reflect current regulatory requirements[33] and includes more detailed procedures specific to the Project Site. The Spring 2026 project-specific EIMP was prepared to provide requirements to be implemented before, during, and after development for the protection of human health and the environment during construction and occupancy. A Settlement Agreement and Covenant Not to Sue (currently in draft form) is being entered into between the Project Proponent, Moffett Partners, LLC, and the United States Department of Justice and United States Environmental Protection Agency Region 9 (Covenant Not to Sue), with respect to the Project Site. The Covenant Not to Sue provides the Project Proponent with certain liability relief in consideration of a monetary payment, a phytoremediation project, and implementation of the Spring 2026 project-specific EIMP within the Limits of Work.

The Spring 2026 project-specific EIMP was prepared with input from EPA and the Regional Water Board as lead regulatory agencies for the NAS Superfund Site as well as input from the EPA as the lead regulatory agency for the MEW Superfund Site to provide a decision framework for the management of residual chemicals in soil, groundwater, and existing and future structures within the Project Site during occupancy and development. The Spring 2026 project-specific EIMP includes required procedures that must be followed to address the known remaining environmental conditions within the Limits of Work and contingency actions to be taken in the event previously-unknown environmental conditions are encountered during development in the Limits of Work. The purpose of the Spring 2026 project-specific EIMP is to provide sufficient information to Project Stakeholders (NASA, Project Proponent, developers, and tenants) to comply with land use restrictions and land use controls (LUCs) and identify reasonable steps that help ensure project

[33] The Spring 2026 project-specific EIMP: (a) provides an updated description of exposure pathways, (b) discusses soil and groundwater TCLs provided in the 2005 NRP EIMP, (c) provides updated TCLs for groundwater and soil, and (d) provides TCLs for indoor air, soil vapor, and sub-slab vapor.

occupancy and development activities proceed in a manner that is protective of human health and the environment and is coordinated with the ongoing response actions of the Responsible Parties. Figures 3.9-3 and 3.9-4 in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS show the Responsible Parties for soil, groundwater, and vapor intrusion (VI) issues within the Project Site and the Limits of Work.

The Spring 2026 project-specific EIMP provides a baseline of minimum design considerations for new construction, risk management measures to be implemented during construction within the Limits of Work, post-construction risk management procedures for future subsurface activities within the Limits of Work, as well as procedures for long-term compliance with the Spring 2026 project-specific EIMP, CERCLA, and other environmental requirements. The Spring 2026 project-specific EIMP directs Project Stakeholders with responsibility for activities within the Limits of Work to: (1) review available information concerning environmental conditions within the Limits of Work; (2) determine the adequacy of the Spring 2026 project-specific EIMP with respect to expected environmental conditions as well as the conditions actually encountered during development and the intended land use; (3) evaluate the current understanding of the health and environmental effects of identified COPCs, to the extent the understanding of health and environmental effects assumed in the Spring 2026 project-specific EIMP may change; (4) comply with applicable policies, laws and regulations; and (5) establish management procedures to ensure that risk management measures are properly implemented and maintained. NASA will monitor implementation of the Spring 2026 project-specific EIMP and the regulatory agencies will review and approve measures taken in accordance with the Spring 2026 project-specific EIMP. Table 4.5.9-1 summarizes the requirements in the EIMP.

Table 4.5.8-1. Summary of Spring 2026 Project-Specific EIMP Requirements

EIMP Requirement [a, b]	Implementing Entity	Reviewing Entity	Approving Entity
Protect existing remedial and monitoring systems, or, otherwise, relocate groundwater remediation system features in conflict with development	Project Proponent and Responsible Parties	NASA	EPA, Regional Water Board, and/or Responsible Parties
Install vapor intrusion mitigation systems for buildings located within the MEW Site VI Study Area and conduct subsequent indoor air sampling	Project Proponent and Responsible Parties	N/A	NASA and EPA
Prevent potential pathways for COPC migration in groundwater and soil gas that could result from construction	Project Proponent	NASA, Santa Clara Valley Water District [c]	EPA and Regional Water Board [d]
Prepare a Project Information and Summary of Environmental Conditions (PISEC) in advance of development activities	Project Proponent	NASA, MEW Companies	EPA and Regional Water Board
Implement risk management measures during construction to mitigate potential risks to human health and the environment from COPCs	Project Proponent	NASA	EPA and Regional Water Board
Implement post-construction risk management measures for long-term risks to human health and the environment during non-construction activity	Project Stakeholders	NASA	EPA and Regional Water Board

Source: Hazardous Material Conditions Memorandum included in Appendix 3.9-1 of this joint EIR/EIS.
COPC = chemicals of potential concern; EPA = U.S. Environmental Protection Agency; MEW = Middlefield-Ellis-Whisman Fairchild; N/A = Same as Approving Entity; NASA = National Aeronautics and Space Administration; Regional Water Board = San Francisco Bay Regional Water Quality Control Board.
Notes:

[a] This table presents a summary of key Spring 2026 project-specific EIMP requirements and are described in greater detail herein; refer to the Spring 2026 project-specific EIMP for complete requirements.

[b] In addition, all Project Stakeholders with responsibility for activities within the Limits of Work are required to: (1) review available information concerning environmental conditions within the Limits of Work; (2) determine the adequacy of the Spring 2026 project-specific EIMP with respect to expected environmental conditions as well as the conditions actually encountered during development and the intended land use; (3) evaluate the current understanding of the health and environmental effects of identified COPCs, to the extent the understanding of health and environmental effects assumed in the Spring 2026 project-specific EIMP may change; (4) comply with applicable policies, laws and regulations; and (5) establish management procedures to ensure that risk management measures are properly implemented and maintained.

[c] Driven piles are not included as part of the proposed project. The proposed project may include piles installed through other construction methods. The Spring 2026 project-specific EIMP provides for Santa Clara Valley Water District to review designs that include piles that extend to depths greater than 20 feet.

[d] Design reports for features that prevent potential pathways of COPC migration will be provided to the Regional Water Board and EPA for review and concurrence.

4.5.8.2 Regulatory Setting

The plans, policies, and regulations applicable to hazards and hazardous materials, which are also applicable to the NEPA analysis, are discussed in Section 3.9.3, *Plans, Policies, and Regulations*, in Section 3.9, *Hazards and Hazardous Materials*.

4.5.8.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on hazards and hazardous materials if it would result in any of the following conditions:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Be located on a site which is included on a local, state or federal environmental database with a history of hazardous materials/waste release (including hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the Comprehensive Environmental Response, Compensation, and Liability Act) and, as a result, would create a significant hazard to the public or the environment.
- For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people living or working in the project area would the project result in a safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physically interfere with emergency response or emergency evacuation requirements.

- Hinder or conflict with on-going, planned, or required remediation at NASA ARC.

The use of hazardous materials is subject to numerous laws and regulations. In most cases, the laws and regulations pertaining to hazardous materials management minimize risks to human health and the environment. The impact analysis identifies areas where impacts related to the use of hazardous materials during project construction and operation would be subject to applicable laws and regulations. To assess the proposed project's potential to affect the public or environment as it pertains to hazardous materials, the impact analysis considers the potential pathways through which exposure to hazards could occur.

4.5.8.4 Environmental Consequences

Impact NEPA-HAZ-1: Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact Summary

	Significance before Mitigation	Applicable Mitigation Measures	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Under the NEPA No-Action Alternative, there would be no demolition, grading, excavation, or construction activities including construction dewatering at the Project Site. Thus, there would be no additional routine use, handling and disposal of hazardous materials than what is already in use. The Limits of Work would remain in its current condition. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction

Project construction under the NEPA Build Alternative 1 would involve routine transport, use, and disposal of hazardous materials such as solvents, paints, oils, grease, and caulking. Such transport, use, and disposal must comply with applicable regulations discussed under Section 3.9.3, *Plans, Policies, and Regulations*. Although solvents, paints, oils, grease, and caulking would be transported, used, and disposed of during the construction phase, these materials are handled on a temporary basis and are typically used in construction projects and are not considered acutely hazardous. Any spills or releases involving these materials are expected to be small, localized, and cleaned as they occur. A Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented during project construction for coverage under the required Construction General Permit,[34] in accordance with the requirements of the SWRCB. A SWPPP requires implementation of best management practices for hazardous materials storage, soil stockpiles, site inspections and maintenance, employee training, and the containment of releases to prevent runoff to stormwater collection systems or waterways. Thus, implementation of a SWPPP would further reduce potential adverse effects associated with a hazardous materials release.

According to Section 2.3.4.1 *Demolition*, in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the proposed project would demolish all existing buildings, building slabs, pavement sections, utility infrastructure, sidewalks, and other hardscape, as well as cleared and grubbed material, and contaminated soil. As discussed under Section 3.9.2, *Affected Environment/Environmental Setting*, structures within the Project Site may contain hazardous building materials such as asbestos-containing material (ACM) and lead-based paint (LBP), and polychlorinated biphenyl (PCBs). As such, demolition of existing structures may expose construction workers, the public, or the environment to hazardous building materials. The exposure potential depends on the age, construction type, and building materials of each building. Any activity that involves cutting, grinding, or drilling during building renovation or demolition, or relocation of underground utilities, could release friable asbestos fibers or lead dust, unless proper precautions are taken. Potential exposure to hazardous building materials would be reduced through appropriate identification, removal, and disposal according to applicable regulations, as described in the NASA ARC *Asbestos Management Plan* (part of the NASA ARC Health and Safety Manual).

According to the Spring 2026 project-specific EIMP, many of the existing buildings within Project Site are known to contain ACM as a result of base-wide asbestos surveys conducted in 1993 and 2001, and sampling of several individual buildings that was conducted as a result of historical building modifications. Other buildings are assumed to likely contain ACM due to their age. Lead-based paint has been used in existing buildings and residues from lead-based paint occur in surface soil adjacent to buildings where lead-based paint has been used. Moreover, PCBs are known to be present in paint and building materials from buildings constructed between 1950 and 1979 and thus, PCBs are likely to be present on-site. The Spring 2026 project-specific EIMP requires a pre-demolition survey along with a building evaluation for PCBs and other chemicals to identify the presence of hazardous building materials in buildings to be demolished. In addition, the Spring 2026 project-specific EIMP provides protocols for proper handling and disposal of these materials.

[34] State Water Resources Control Board. 2025. *Welcome to the Construction Stormwater Program*. Available: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed: September 16, 2025.

Accordingly, the NEPA Build Alternative 1 could create a hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during construction, which could result in a significant impact. Mitigation Measure HAZ-1 requires compliance with the Spring 2026 project-specific EIMP, which would protect human health and the environment. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

Operations

Under the NEPA Build Alternative 1, the proposed project would be developed with research and office uses (consisting of offices, laboratories, R&D, and related amenities), conference center uses, active uses, Student/Faculty Housing, and Short-Term Lodging. Due to the nature of R&D uses, the possibility exists for hazards related to the handling of hazardous materials and waste to occur. A small portion of the proposed laboratories associated with R&D uses are categorized as biosafety levels (BSLs) 1 through 4. It is anticipated that the NEPA Build Alternative 1 could include BSL-1, BSL-2, and/or BSL-3 laboratories. BSL-4 laboratories, which are much less common, are not included in the NEPA Build Alternative 1. Any R&D tenant(s) handling qualifying hazardous materials would be required to adhere to all applicable federal, state and local regulations for qualifying hazardous materials, seek consultation with the County of Santa Clara, Department of Environmental Health[35] (DEH), and apply for applicable permits for any regulated substance that may pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive. Tenants must comply with the safety procedures mandated by applicable federal, state, and local laws and regulations (e.g., RCRA, California Hazardous Waste Control Law, Title 8 of the California Code of Regulations) to ensure that risks resulting from the routine use of hazardous materials and disposal of hazardous wastes remain less than significant. In accordance with standard industry practice, R&D laboratories would also meet relevant Biosafety in Microbiological and Biomedical Laboratories (BMBL) and National Institute of Health (NIH) guidelines applicable to the BSL, ensuring safe operating conditions and minimizing any risk of upset. In addition, registration of hazardous materials through the SMCEHD Hazardous Material Business Plan Program[36] would be required to ensure safe and responsible handling of those qualifying materials. Moreover, compliance with state and local regulations (e.g., City's Fire Code and National Fire Protection Association requirements) would ensure that buildings are equipped with safety measures to minimize potential impacts of the presence of hazardous materials.

Conference center uses, active uses, Student/Faculty Housing, and Short-Term Lodging uses included in NEPA Build Alternative 1 would involve the use of hazardous chemicals that are typical in retail, meeting space, and office settings (e.g., toners, paints, kitchen and restroom cleaners, other maintenance materials). Landscape maintenance on the Project Site would require the use of a wide variety of commercial products that are formulated with hazardous materials (e.g., fuels, cleaners and degreasers, solvents, paints, lubricants, adhesives, sealers, and pesticides/herbicides). Such materials are considered common and are unlikely to be stored or used in large quantities. Any spills involving these materials would be small and localized and would be cleaned up as they occur.

35 County of Santa Clara. 2026. *Hazardous Materials*. Available: https://deh.santaclaracounty.gov/hazardous-materials. Accessed: January 6, 2026.

36 County of Santa Clara. 2025. *Hazardous Materials Business Plan*. Available: https://deh.santaclaracounty.gov/hazardous-materials/hazardous-materials-business-plan. Accessed: December 30, 2025.

Finally, compliance with the California Department of Transportation (Caltrans) regulations would ensure that all necessary safety precautions would be taken during transport of hazardous materials during all phases of the proposed project. Therefore, mandatory compliance with all applicable federal, state, and local regulations pertaining to the safe use, storage, transport and disposal of hazardous materials would ensure that the proposed project would not create a significant hazard for the public or the environment through the routine transport, use, or disposal of hazardous materials during operation, and this impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The Sub-Alternative proposes more Research and Office Uses than NEPA Build Alternative 1. Thus, it is possible that the quantity of hazardous materials used and hazardous waste produced would be greater under the Sub-Alternative; however, the potential for types of adverse effects (associated with the handling of hazardous materials) would be the same as those analyzed under the NEPA Build Alternative 1; impacts could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Since the NEPA Build Alternative 2 proposes less Research and Office Uses, it is possible that the quantity of hazardous materials used and hazardous waste produced would be less under this alternative; however, the potential for types of adverse effects (associated with the handling of hazardous materials) would be the same as those analyzed under the NEPA Build Alternative 1 and impacts could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The Sub-Alternative proposes more Research and Office Uses than NEPA Build Alternative 2. Thus, it is possible that the quantity of hazardous materials used and hazardous waste produced would be greater under the Sub-Alternative; however, the potential for types of adverse effects (associated with the handling of hazardous materials) would be the same as those analyzed under the NEPA Build Alternative 2 and impacts could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-

significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-HAZ-2: Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Under the NEPA No-Action Alternative, there would be no demolition, grading, excavation, or construction activities including construction dewatering at the Project Site. Thus, there would be no additional handling of hazardous materials or disturbance of existing remediation infrastructure, contaminated soil, groundwater or hazardous building materials. The Limits of Work would remain in its current condition. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

The Project Site is located within the footprints of both the MEW Superfund Site and former Naval Air Station Moffett Field Superfund Site. Onsite soil and groundwater have been affected historically by contamination associated with both the MEW Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field. As a result, multiple site-specific investigations along with associated remediation activities have been conducted within the project area.

As a result of the historical information analyzed (additional details found under Section 3.9.2 *Affected Environment/ Environmental Setting,* of this joint EIR/EIS*)*, the Spring 2026 project-specific EIMP concluded that several environmental conditions are to be considered during project implementation. They are listed below:

- The presence of chlorinated VOCs in groundwater, soil gas and soil within the site.
- Fuel oil and solvent tanks associated with a former dry-cleaning facility that operated on-site.
- The presence of total petroleum hydrocarbons (TPH) and other fuel-related constituents, including BTEX compounds, in onsite groundwater and soil.
- The presence of per- and polyfluoroalkyl substances (PFAS) compounds in onsite groundwater.
- The potential for elevated concentrations of polychlorinated biphenyls (PCBs) in soil surrounding buildings or transformers.
- The potential for elevated concentrations of lead in soil surrounding buildings.
- Existing subsurface structures (e.g., sumps or tanks) that may require removal.
- Hazardous building materials containing asbestos-containing materials, lead-based paint, along with PCB containing equipment in existing buildings.
- Protection of existing remediation infrastructure.

In addition, primary potential future receptors and potential pathways of exposure were identified. Vapor intrusion was noted as the primary potentially *complete* exposure pathway[37] that could affect future indoor residents and workers within all portions of the Project Site.

Contaminated Soil and Groundwater

Ground disturbance and excavation activities conducted during construction are likely to encounter contaminated soil. Additionally, dewatering within the Project Site could result in the withdrawal of contaminated groundwater. Encountering either contaminated soil or groundwater during implementation of the proposed project would create an exposure risk to construction personnel and the surrounding environment, which could result in a significant impact.

To address these risks, the Project Proponent would be required to implement recommendations found in the Spring 2026 project-specific EIMP (as presented in detail in sections 6.1 through 6.3 and 6.10 of the Spring 2026 project-specific EIMP) related to the handling of impacted media. These measures would minimize the potential exposure of construction personnel to contaminated media and would mitigate risks to human health and the environment from exposure to primary chemicals of potential concern (COPCs) on the Project Site.

Subsurface Infrastructure

Numerous USTs and sumps were known to exist within the Project Site. All known USTs and sumps within the Project Site have been removed (confirmed and assigned *no further action* status by the

[37] There are five elements of an exposure pathway:
- Source—how the stressor(s) enter the environment.
- Media—where a stressor moves from its source (air, soil, and/or water).
- Exposure—where receptors contact the media.
- Exposure Route—how the stressor(s) enter the receptor's body (ingestion, inhalation, dermal).
- Receptor—which plants and/or animals are exposed or potentially exposed.

These five elements must be present for an exposure pathway to be complete; otherwise, a pathway is incomplete, and there is no exposure (https://www.epa.gov/ecobox/epa-ecobox-tools-exposure-pathways-exposure-pathways-era)

Regional Water Board). IR Site 15[38] within Parcels 5A/5B includes sumps located around the former Moffett Federal Airfield, two of which are located within or adjacent to the Project Site. According to the Spring 2026 project-specific EIMP, if residential use is planned within the IR Site 15 boundary, the Master Lessee will work with the Regional Water Board to evaluate if additional investigation and/or remediation is needed.

In the event an unknown UST or sump, or other undocumented subsurface feature (such as buried drums and containers and abandoned pipes) is discovered during construction activities, implementation of management and disposal measures (as presented in detail in Section 6.8 *Management and Disposal of Abandoned Underground Storage Tanks, Sumps, Abandoned Pipes, or Buried Drums and Containers* of the Spring 2026 project-specific EIMP) would be implemented to reduce potential exposure risks. Accordingly, there could be a significant impact related to subsurface infrastructure.

Hazardous Building Materials

Several of the buildings within the Project Site contain hazardous materials, such as ACM and LBP, and electrical equipment containing PCBs. Prior to demolition, the Project Proponent and its contractor shall implement applicable measures included in sections 6.4, 6.5, 6.6 and 6.7 of the Spring 2026 project-specific EIMP, which require adherence to the NASA-ARC *Asbestos Management Plan* requiring a pre-demolition survey for the presence of ACM, and the removal and management of ACM in accordance with all applicable government regulations and with oversight by the NASA-ARC Safety, Health & Medical Services Office. Accordingly, there could be a significant impact related to hazardous building materials.

Active Remediation Infrastructure

The MEW Companies have constructed and are currently operating groundwater extraction wells and associated conveyance piping and monitoring wells within the Project Site. In addition, the Navy has constructed remediation infrastructure onsite, including the installation of groundwater monitoring wells. This infrastructure could be damaged during construction activities. In addition to requiring potentially costly repairs, the contaminants within the damaged system(s) could be re-released into the environment; however, in advance of any construction activities in the vicinity of remediation infrastructure, the Project Proponent would be required to coordinate with the applicable Responsible Party (RP) for the protection of the said infrastructure**.** In addition, the Project Proponent and its contractor would implement measures during construction to further protect the integrity of the remediation infrastructure onsite, the MEW Companies groundwater remediation system, and the MEW, Navy, and NASA monitoring wells during development. Accordingly, there could be a significant impact related to active remediation infrastructure.

Vapor Intrusion

The Project Site is almost entirely within the MEW Vapor Intrusion (VI) Study Area (of the VI Pathway) for the MEW Superfund Site. Thus, implementation of the proposed project could result in vapor intrusion exposure risks. Accordingly, there could be a significant impact related to vapor intrusion.

[38] Parcels 5A and 5B within the Project Site contain three CERCLA-related sites (IR Site 14-North, IR Site 15, and IR Site 18) and are adjacent to and affected by an additional CERCLA site (IR Site 28). The Spring 2026 project-specific EIMP contains additional information related to these sites.

Mitigation Measure HAZ-1 would reduce these effects by requiring compliance with the Spring 2026 project-specific EIMP. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The potential for types of adverse effects (associated with the foreseeable upset and accident conditions involving the release of hazardous materials into the environment) would be the same as those analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-HAZ-3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	No Impact	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	No Impact	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There are no schools within 0.25 mile of the Project Site. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

There are no schools within 0.25 mile of the Project Site. Thus, there would be ***no impact***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

There are no schools within 0.25 mile of the Project Site. Thus, there would be ***no impact***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

There are no schools within 0.25 mile of the Project Site. Thus, there would be ***no impact***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

There are no schools within 0.25 mile of the Project Site. Thus, there would be ***no impact***.

Impact NEPA-HAZ-4: Would the project be located on a site which is included on a local, state or federal environmental database with a history of hazardous materials/waste release (including hazardous materials sites compiled pursuant to Government Code Section 65962.5 and the Comprehensive Environmental Response, Compensation, and Liability Act) and, as a result, would create a significant hazard to the public or the environment?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. As mentioned in the Spring 2026 project-specific EIMP and section 3.9 *Hazards and Hazardous Materials*, vapor intrusion was noted as the primary potentially complete exposure pathway that could affect future indoor residents and workers within *all portions* of the Project Site. As such, this could result in potential impacts during re-occupancy under the NEPA No-Action Alternative. However, hazardous materials conditions within the Project Site have been investigated and are well established, and thus, re-occupancy would follow applicable protocols and adhere to applicable requirements and recommendations included in existing investigations pertinent to the buildings that could be reoccupied. Under the NEPA No-Action Alternative, there would be no demolition, grading, excavation, or construction activities including construction dewatering at the Project Site. Thus, there would be no disturbance of contaminated soil or groundwater. The Limits of Work would remain in its current condition. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Onsite soil and groundwater have been affected by contamination associated with the MEW Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field. Also, the Project Site is located within the footprints of both the MEW Superfund Site and the former Naval Air Station Moffett Field Superfund Site. In addition, numerous other potential sources of contamination

(associated with underground storage tanks and sumps containing petroleum hydrocarbons) have been investigated and remediated within the Project Site. Thus, the Project Site has a long history of environmental releases, investigations and remediation activities, which have resulted in multiple environmental database listings including those meeting the requirements of a Superfund and Cortese List site. As a result of the environmental history available for the site, the Spring 2026 project-specific EIMP concluded that several environmental conditions are to be considered during project implementation. Potential adverse effects as a result of historical contamination (associated with impacted sites within and near the Project Site) are analyzed under Impact NEPA-HAZ-2 above, and thus, the analysis identified under Impact NEPA-HAZ-2 would also apply to this threshold. There could be a significant impact. Mitigation Measure HAZ-1 would reduce these effects by requiring compliance with the Spring 2026 project-specific EIMP, which would protect human health and the environment. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The potential for types of adverse effects associated with historical contamination (from impacted sites within the Project Site) would be the same as those analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA

Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-HAZ-5: For a project within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people living or working in the project area?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. It is assumed the NEPA No-Action Alternative would be consistent with applicable safety- and noise-related policies under the Moffett Federal Airfield. As such, the NEPA No-Action Alternative would not pose a safety hazard or generate excessive noise for people working in the project area. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Moffett Federal Airfield is immediately adjacent to the Project Site. As such, the Project Site is within the Federal Aviation Regulation Part 77 sphere of influence and within the boundaries of the Airport Influence Area (however, it is not located within an Airport Safety Zone) of the Santa Clara County Moffett Federal Airfield Comprehensive Land Use Plan[39] (CLUP). As such, compatibility criteria contained within the CLUP are applicable to development within the Project Site.

Due to the Project Site's location, the Project Site is within a FAA notification area and Height Restriction Area with a contour range of 157 feet to above mean sea level based in National Geodetic

[39] Santa Clara County Airport Land Use Commission. 2018. *Comprehensive Land Use Plan Santa Clara County Moffett Federal Airfield*. Available: https://stgenpln.blob.core.windows.net/document/ALUC_NUQ_CLUP.pdf. Accessed: September 16, 2025.

Vertical Datum (NGVD) of 1988 to 182 feet above mean sea level based in NVGD of 1988, per the Federal Aviation Regulation Part 77, Surfaces Map, for Moffett Federal Airfield,[40] and would require consultation with the FAA prior to construction of any structure or object within Part 77 surfaces. Compatibility would also be contingent on the issuance of a Determination of No Hazard from the FAA for any proposed structures. The use of construction equipment (such as building cranes) or the construction of buildings with heights in excess of 55 feet AGL could also pose a safety hazard to construction workers and future residents. With the issuance of a Determination of No Hazard from the FAA, project construction and operation would comply with the CLUP safety guidelines and would not pose a risk to aviation safety. In addition, and as discussed in Section 4.5.11, *Noise*, impacts related to aircraft noise would be considered less than significant.

The Project Site currently has approximately 245 trees. In total, implementation of NEPA Build Alternative 1 would include removing approximately 227 trees and planting approximately 1,283 new trees, resulting in a total of approximately 1,301 trees on the Project Site. The increased landscaping could potentially attract more birds to the Project Site, which could in turn increase the potential for aircraft-involved bird strike due to the Project Site's proximity to Moffett Federal Airfield; however, the Project Site and surrounding area are developed. Given that the area surrounding the Project Site is developed, large numbers of birds are not expected to be flying over the Project Site for substantial bird-strikes to occur. While more birds may be present at the Project Site compared to existing conditions, given the urbanized nature of the area, the introduction of more trees is unlikely to substantially change the existing bird population dynamics and flight patterns.

Moffett CLUP Policy G-6 states that proposed uses that may cause a hazard to aircraft in flight are not permitted within the airport influence area (AIA) and includes uses that attract birds (such as certain agricultural uses, sanitary landfills). The NEPA Build Alternative 1 does not propose these or any other type of use that would be expected to attract large flocks of birds. Moreover, the Project would adhere to the Advisory Circular on Airport Construction Standards AC 150/5370-10, which include seeding guidelines (901-2.1) which require that consideration be given to eliminate the use of seeds that could attract birds or large animals. Therefore, NEPA Build Alternative 1 would be consistent with applicable safety- and noise-related policies under the Moffett Federal Airfield. As such, the proposed project would not pose a safety hazard or generate excessive noise for people working in the project area. Impacts would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

40 NASA. 2009. *Moffett Federal Airfield; Moffet Field, California; Airport Space*. Available: https://historicproperties.arc.nasa.gov/hangar1/downloads/mfamap_airportairspace.pdf. Accessed: March 31, 2026.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1. The NEPA Build Alternative 2 would be conducted in the same project footprint and would include the same land uses (albeit less space for Research and Office Uses) and as such, the analysis of the NEPA Build Alternative 1 applies to NEPA Build Alternative 2. The potential for types of adverse effects associated with a project being constructed near an airport would be the same as those analyzed under the NEPA Build Alternative 1 and impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-HAZ-6: Would the project impair implementation of or physically interfere with emergency response or emergency evacuation requirements?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. As such, no temporary construction barricades or other roadway obstructions commonly used in construction would be employed. The NEPA No-Action Alternative would not conflict with any adopted emergency response plan or emergency evacuation plan. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives, of this joint EIR/EIS*, the proposed project would not include any permanent changes to existing public roadways that provide emergency access to the Project Site or surrounding area. It is possible that construction activity associated with the proposed project could affect emergency response or evacuation plans due to temporary construction barricades or other roadway obstructions that could impede emergency access onsite; however, compliance with Part 6 of the Manual on Uniform Traffic Control Devices (MUTCD) which outlines guidance and standards for accommodating emergency vehicles in construction areas (as described in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS) would minimize potential impacts associated with emergency response times and access.

As discussed under Impact CEQA-TRAN-4 in Section 3.16, *Transportation and Traffic*, project traffic would not cause a substantial adverse effect on emergency access. The project would not modify public streets outside the Project Site, and all public streets outside the project area would continue to accommodate emergency vehicles. Non-emergency vehicles would continue to yield the right-of-way to emergency vehicles on both internal NASA ARC and project roadway network and external public streets serving NASA ARC.

The project would not involve any permanent features that would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. On the contrary, the proposed project would include multi-modal transportation network and infrastructure improvements that would enhance vehicular access through the Project Site. Therefore, development of the proposed project is not expected to interfere with any California Governor's Office of Emergency Services mandates (under CCR Title 19 Public Safety Division 2) associated with evacuations in the project area nor emergency response requirements of the Ames Research Center Emergency Management Plan. Rather, access to the Project Site would be improved by incorporating the internal street improvements.

Lastly, R&D tenants who handle hazardous materials would be required to adhere to all applicable regulations. Adherence to these regulations would ensure a proper response and evacuation in the event of an emergency associated with a hazardous material release. Impacts would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The potential for types of adverse effects associated with project interference with an

adopted emergency response plan or emergency evacuation plan would be the same as those analyzed under the NEPA Build Alternative 1. Thus, NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-HAZ-7: Would the project hinder or conflict with on-going, planned, or required remediation at NASA ARC?

Impact Summary

Alternative	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Under the NEPA No-Action Alternative, there would be no demolition, grading, excavation, or construction activities including construction dewatering at the Project Site. Thus, there would be no disturbance of contaminated soil or groundwater. The Limits of Work would remain in its current condition. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

As mentioned, onsite soil and groundwater have been affected historically by contamination associated with both the MEW Superfund Site and the U.S. Navy's operations at Naval Air Station

Moffett Field. Thus, multiple site-specific investigations along with associated remediation activities have been conducted within the project area. Two groundwater extraction and treatment facilities are currently operating near the Project Site, the MEW Superfund Site and the NASA West-Side Aquifers Treatment System (WATS). The MEW extraction and treatment system is directly adjacent to the Project Site, with some of its associated infrastructure located within the Project Site. Onsite remediation system infrastructure associated with the MEW extraction and treatment system includes several recovery wells and underground piping. As such, construction activities (requiring ground disturbance) associated with the proposed project could result in the interruption, damage or destruction of onsite remediation system infrastructure. In addition to the cost associated with damaged infrastructure, an incident could result in the release of hazardous waste within the Project Site or in areas adjacent, and stall remediation activities for a substantial period. As stated in the Spring 2026 project-specific EIMP, redevelopment within the Project Site will be conducted in coordination with the MEW Companies and the Navy to allow for removal and replacement of groundwater monitoring wells, groundwater extraction wells, and associated conveyance piping. There could be a significant impact. Mitigation Measure HAZ-1 would reduce these effects by requiring compliance with the Spring 2026 project-specific EIMP, which would protect human health and the environment. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The potential for adverse effects associated with project hinderance of a remediation system would be the same as those analyzed under the NEPA Build Alternative 1. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the

Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

4.5.9 Hydrology and Water Quality

Refer to Section 3.10, *Hydrology and Water Quality*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.9.1 Affected Environment

Section 3.8.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses hydrology and water quality fundamentals, and defines the relevant hydrology and water quality terminology.

4.5.9.2 Regulatory Setting

The plans, policies, and regulations applicable to hydrology and water quality, which are also applicable to the NEPA analysis, are discussed in Section 3.10.3, *Plans, Policies, and Regulations*, in Section 3.10, *Hydrology and Water Quality.*

4.5.9.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on hydrology and water quality if it would result in any of the following conditions:

- Violate any water quality standards or waste discharge requirements, including erosion, or otherwise substantially degrade surface water or groundwater quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Result in storm runoff that would exceed the capacity of existing receiving bodies or drainage systems.
- Place structures or other improvements susceptible to flooding within a 100-year flood hazard zone as mapped on a Flood Insurance Rate Map or other flood hazard map in a manner that could impede or redirect floodflows.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Evaluation of potential impacts related to hydrology and water quality were analyzed by comparing baseline conditions to conditions expected during construction and/or operation of the proposed project based on a review of documents pertaining to the proposed project and desktop review of the project study area and surroundings. The analysis focuses on issues related to surface hydrology, groundwater supply, surface water and groundwater quality, and flood hazards. The key

construction and operational impacts are identified and evaluated according to the physical characteristics of the proposed project, and the magnitude, intensity, location, and duration of activities. Compliance with existing laws, regulations, and policies is assumed to be part of the baseline setting against which the proposed project's incremental impacts are assessed.

4.5.9.4 Environmental Consequences

Impact NEPA-HYD-1: **Would the project violate any water quality standards or waste discharge requirements, including erosion, or otherwise substantially degrade surface water or groundwater quality?**

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	HAZ-1. Implement the Environmental Issues Management Plan	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Under the NEPA No-Action Alternative, there would be no demolition, grading, excavation, or construction activities including construction dewatering at the Project Site. The area of impervious cover, which could affect stormwater runoff and associated pollutants, would remain the same as existing conditions. There would be no potential to affect water quality, including through the mobilization of the contaminated groundwater plume. The Limits of Work would remain in its current condition. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction

Construction of NEPA Build Alternative 1 could generate dust, sediment, litter, oil, and other pollutants that could temporarily contaminate runoff from the Project Site. Construction activities

must comply with the NPDES Construction General Permit and the Municipal Regional Permit. As part of the Construction General Permit, standard erosion control measures and BMPs would be identified in a SWPPP and implemented during construction to reduce adverse effects to water quality during construction.

Temporary dewatering may be required during construction. Dewatering could result in an exposure to pollutants from spills or other activities and may contaminate groundwater. Groundwater dewatering may also mobilize existing groundwater contaminant plumes. These existing plumes and neighboring contaminant plumes are described in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS. Untreated water from construction site dewatering could contain pollutants that, if discharged to a storm drain system, could cause the receiving water to exceed water quality standards. Typical pollutants that may be encountered include sediment, high levels of pH, and contaminant pollutants associated with current or past use of the site or adjacent land. Currently, remediation activities include groundwater extraction and treament to control and remove VOCs that are migrating beyond the recovery wells.[41] If contaminated groundwater is encountered during project-related construction activities, compliance with the current VOC and Fuel General Permit is required (Order No. R2-2017-0048, NPDES No. CAG912002, as amended by Order No. R2-2018-0050).

The Construction General Permit provides coverage for dewatering activities; however, groundwater sampling and/or treatment may be required to ensure compliance with applicable construction dewatering discharge permitting and that the quality of discharge water would not affect beneficial uses. If it is found that the groundwater does not meet water quality standards, it must either be treated prior to discharge so that all applicable water quality objectives (as designated in the Water Quality Control Plan for the San Francisco Bay Basin) are met or hauled off-site for treatment and disposal at an appropriate waste treatment facility that is permitted to receive such water. The proposed action would also comply with the incidental sanitary sewer discharge process. This would involve containerizing dewatered water, collecting representative samples, and obtaining approval from either the City Sunnyvale or Mountain View for discharge into the sanitary sewer through a manhole within the ARC; however, construction dewatering activity would have the potential to mobilize existing groundwater contaminate plumes in the area, which could result in a significant impact. Mitigation Measure HAZ-1 requires implementation of the Spring 2026 project-specific EIMP, and would reduce the impact through groundwater monitoring and sampling prior to dewatering activities. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

Operations

Implementation of the CEQA Proposed Project would result in a 9 percent increase the impervious surface area on the Project Site compared to existing conditions. Increases in impervious surface area have the potential to increase runoff rates and assocated pollutants. Stormwater runoff may carry pollutants to storm drains and receiving waters; however, stormwater runoff from the Project Site would be treated prior to discharging to San Francisco Bay, consistent with Provision C.3 requirements in the Municipal Regional Permit (MRP). Potential treatment and low-impact development (LID) options include bioretention areas, flow-through planters, green roofs, rainwater

[41] Recovery wells and underground piping are included in remediation system infrastructure found on-site associated with the MEW extraction and treatment system.

cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells.[42] LID methods and other site design features are intended to manage stormwater runoff flows and reduce stormwater pollution from the project area. The integration of landscaping includes phytoremediation strategies, which aid in decontamination efforts on-site.

The project would be designed and maintained in accordance with local and San Francisco Bay Regional Water Quality Control Board requirements, such as the San Francisco Bay MRP, Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), Santa Clara water quality requirements, and the Berkeley Space Center Development Guidelines as well as the Statewide Industrial General Permit. The project would not violate any water quality standards or otherwise result in water quality degradation during operation. Impacts would be ***less-than-significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. This could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same stormwater treatment and LID options, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells, would be considered, consistent with Provision C.3 requirements in the MRP. The same construction activities proposed and evaluated under NEPA Build Alternative 1 would occur. The area of ground-disturbing activities and depth of excavation, would be expected to be the same as under the NEPA Build Alternative 1. Temporary construction dewatering may be required. Construction would comply with dewatering regulations, ensuring that dewatering activities would be monitored and treatment would take place as required so that violations of water quality standards or waste discharge requirements would not occur; however, due to the presence of groundwater contaminate plumes in the area, construction dewatering activities may result in an exposure to pollutants from the mobilization of existing groundwater contaminant plumes, which could result in a significant impact on water quality. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

[42] *Silva Cells* are suspended pavement systems that prevent soil compaction around tree roots, while allowing trees to grow freely without buckling sidewalks and treating stormwater on-site.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. There could be a significant impact. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Impact NEPA-HYD-2: Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no change to existing groundwater resources and no change in groundwater supplies or groundwater recharge. Remediation activities within the Project Site would continue to occur. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Temporary, intermitent construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. Maximum excavation depths would extend to 25 feet below

ground surface (bgs). The CUP Option[43] would require excavation to 11 feet bgs for the distribution pipes, which is more than the excavation needed for the typical utility improvements that would otherwise be required for the NEPA Build Alternative 1. Consistent with the requirements of the Spring 2026 project-specific EIMP, groundwater produced during dewatering may be used for dust control within the Project Site if NASA approves and if concentrations of chemicals of potential concern are below target levels. Dewatered groundwater that is used for dust control would ultimately be available for groundwater recharge. The impervious surface area would increase on the Project Site by approximately 9 percent. Increases in impervious surface area could reduce the potential for groundwater recharge (although soils in the project area have low permeability due to high clay content, resulting in little to no groundwater recharge).[44] However, the proposed project would include new landscape areas and stormwater LID methods such as flow-through planters, media filters, permeable pavement/pavers, and Silva Cells. These features would provide the opportunity for effective groundwater infiltration and groundwater recharge to continue during project operation and designed to manage changes in stormwater runoff with the reduction in the pervious area.

Groundwater management strategies in the Subbasin, considerations of future development and planning, and projected water use and demand through 2045 are provided in the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins.* Groundwater in the Subbasin is not managed to a particular value for sustainable yield, but instead managed to maintain sustainable conditions through annual operations and long-term water supply planning. Each year, the projected end-of-year groundwater storage and water supply risks are evaluated to determine if short-term water use reduction is needed in accordance with the Water Shortage Contingency Plan. The Santa Clara Subbasin is not in a condition of chronic overdraft due to managed recharge of local imported water as well as in-lieu recharge activities. Groundwater data and balanced water budgets of the Subbasin demonstrate that long-term average yields are sustainable.[45]

NASA ARC is served by San Francisco Public Utilities Commission (SFPUC) via the Hetch Hetchy Aqueduct, which is generally drawn from surface water supply. Some retail customers are supplied with local groundwater and recycled water supplies. The split between these resources varies from year to year depending on the water year hydrology and operational circumstance. This analysis assumes water supply is predominantly derived from surface water sources. Due to restrictions of groundwater use from aquifer(s) under the Project Site, no direct groundwater pumping for operational water supply is expected. Therefore, impacts would be ***less-than-significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

43 Only the NEPA Build Alternative 1 includes the Central Utility Plant (CUP) Option. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building HVAC systems.

44 Jones & Stokes. 1999. *Ecological Analysis of NASA Ames Phase II Flood Mitigation Project.* December 10. Prepared for Daniel, Mann, Johnson, & Mendenhall, Moffett Federal Airfield, CA.

45 Valley Water. 2021. *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Temporary construction dewatering may be required in some isolated areas of the Project Site with shallow groundwater. The impervious surface area would increase on the Project Site by approximately 9 percent which could reduce the potential for groundwater recharge; hHowever, the proposed project would include new landscape areas and stormwater LID methods such as flow-through planters, media filters, permeable pavement/pavers, and Silva Cells. These features would provide the opportunity for limited groundwater infiltration and groundwater recharge and designed to manage changes in stormwater runoff with the reduction in the pervious area. Groundwater management strategies in the Subbasin are provided in the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins.* Managed recharge of local imported water as well as in-lieu recharge activities ensures that the Santa Clara Subbasin is not in a condition of chronic overdraft. Therefore, impacts would be ***less-than-significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-HYD-3: Would the project result in storm runoff that would exceed the capacity of existing receiving bodies or drainage systems?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no change to drainage infrastructure within the Limits of Work and there would be no change in runoff rates or volumes because impervous cover would remain the same. Therefore, the NEPA No-Action Alternative would not result in changes in drainage patterns, the capacity of existing drainage systems, or substantial adverse impacts associated with storm runoff. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Project construction would implement BMPs required in the SWPPP prepared for the proposed project to manage site runoff from the construction site. The impervious surface area would increase on the Project Site by approximately 9 percent. The existing 10-year, 24-hour storm design peak storm discharge and volume leaving the site is 18.29 cubic feet per second (cfs) and 203,838 cubic feet (cf), respectively. Based on the Storm Drain and Stormwater Management Master Plan, the proposed 10-year design peak storm discharge would be 18.93 cfs, and the peak volume would be 264,468 cf.[46] Total stormwater flows are required to be maintained such that flows do not exceed the existing flows and volumes that leave the Project Site. Flows leaving the site would be metered so that the peak discharge would not exceed the existing discharge rate.

The proposed stormwater system would contain the 10-year storm discharge in pipes. However, the proposed system would contain the 25-year storm discharge in pipes with surcharging[47] and contain the 100-year storm discharge in curbs without flooding buildings. Because the existing storm drain system north of Project Site is at capacity, additional stormwater flows to this system during peak rainfall events cannot be added. Given the known flooding issues north of the Project Site, flows and volumes would be detained and retained on-site to match existing flows and volumes leaving the site.

As discussed further below, runoff would be detained in oversized pipes upstream of the connection to the eastern diked marsh trunk main. On-site flows would be captured in oversized pipes at the northern end of the Project Site and would outfall into the off-site trunk main on Cody Road at a controlled flow rate. The off-site trunk main would discharge directly to the eastern diked marsh. Other potential options for detention include a detention pond, detention vault, or an array of pipes reserved for detention. In addition, the proposed project would incorporate a retention pond onsite to manage the increase in runoff volume (i.e., 60,630 cf) from part of the Project Site. Stormwater retention strategies would improve downstream conditions by slowing runoff flows during peak storm events.

The proposed on-site drainage system would consist of two subsystems: Subsystem 1 and Subsystem 2. Subsystem 1 (approximately 23.5 acres on the interior of the Project Site) would drain to the northeast corner of the site where the total volume would discharge to the proposed retention

46 BKF. 2026. *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan*. Spring.

47 Surcharging occurs when the flow discharging through a pipe exceeds the maximum capacity of the pipe, thereby backing up in the system. When surcharging occurs, it seeks to relieve itself at the lowest relief point on the system.

pond. Subsystem 2 (approximately 14.8 acres on the exterior of the site) would discharge to the eastern diked marsh trunk main. Flows would be metered upstream of the connection to the trunk main so that the flow rate would not exceed the flow rate of the existing site. Because several potential connection points are located adjacent to the Project Site, the proposed project could connect to the three existing NASA storm drain mains along the northern boundary or use the off-site storm drain main, with a direct connection to the eastern diked marsh. Based on the proposed Master Plan provided in Appendix 2-1 of this joint EIR/EIS, Wescoat Road and Cody Road are considered common-use roads and have a separate dedicated storm drain system and the capacity for stormwater flows. New drainage systems would also be installed in both Wescoat Road and Cody Road and connect to the existing NASA storm drain system, similar to existing conditions. All project-related development would comply with applicable federal, state, and local stormwater requirements including Provision C.3 and stormwater capacity requirements in the MRP. Therefore, impacts would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Impacts would be ***less than significant***.

Impact NEPA-HYD-4: Would the project place structures or other improvements susceptible to flooding within a 100-year flood hazard zone as mapped on a Flood Insurance Rate Map or other flood hazard map in a manner that could impede or redirect floodflows?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	No Impact	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	No Impact	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The Project Site is within FEMA Zone D, an area with possible but undetermined flood hazards. FEMA floodplain mapping has not been conducted for the Project Site. Localized flooding, particularity on the northwest boundary of the Project Site have occurred, but outside of the Project Site and was not considered a 100-year storm event. No known or reported flooding issues exist within the Project Site.[48] There would be no structures susceptible to flooding within a 100-year flood hazard zone. Therefore, the NEPA No-Action Alternative would not result in the potential to impede or redirect flood flows. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

There are known flooding issues north of the Project Site; however, the FEMA 100-year flood limits are 0.77 mile northwest of the Project Site. The Project Site, including the proposed stormwater outfall that would discharge to the eastern diked marsh, are within FEMA Zone D, an area with possible but undetermined flood hazards. There no known flooding issues within the Project Site. No structures or project improvements would be susceptible to flooding within a 100-year flood hazard zone or impede or redirect flood flows. There would be ***no impact***.

48 Ibid.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There would be ***no impact.***

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There would be ***no impact.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. There would be ***no impact.***

Impact NEPA-HYD-5: Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could

be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no change in runoff or discharges in a manner that would cause or contribute to an exceedance of water quality objectives or water quality standards because impervous cover would remain the same. Further, there would be no change in groundwater resources including groundwater supply. Therefore, the NEPA No-Action Alternative would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

During construction, commonly practiced BMPs would be implemented to control construction site runoff and reduce the discharge of pollutants from stormwater and other nonpoint-source runoff. Implementation of BMPs, as required by the NPDES Construction General Permit, would ensure that stormwater discharges do not contain pollutants that cause or contribute to an exceedance of applicable water quality objectives or water quality standards, as defined in the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan). During operations, incorporation of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, a retention pond, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells, would reduce stormwater runoff flows and associated pollutants.

Dewatering would be conducted on a temporary basis during the construction phase and groundwater produced during dewatering would be reused for dust control within the Project Site if NASA approves and if concentrations of chemicals of potential concern are below target levels. The area of impervious surface cover within the Project Site would increase upon project completion; h. However, stormwater treatment areas and gardens, bioretention planters, and landscape designs with integrated stormwater management, would be used to treat runoff and provide the opportunity for some of the existing stormwater runoff to infiltrate through the soil and provide for groundwater recharge. Groundwater management strategies in the Subbasin, considerations of future development and planning, and projected water use and demand through 2045 are provided in the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins.* As discussed under Impact NEPA-HYD-2, this analysis assumes water supply is predominantly derived from surface water sources. Therefore, the NEPA Build Alternative 1 would not conflict with implementation of the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*. Therefore, impacts would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

Alternative 1. Commonly practiced BMPs would be implemented to control construction site runoff and ensure that stormwater discharges do not contain pollutants that cause or contribute to an exceedance of applicable water quality objectives or water quality standards, as defined in the Basin Plan. Dewatering would be conducted on a temporary basis during the construction phase and groundwater produced during dewatering would be reused for dust control within the Project Site if NASA approves and if concentrations of chemicals of potential concern are below target levels. During operations, incorporation of stormwater treatment methods would reduce stormwater runoff flows and associated pollutants. Stormwater management and treatment areas would also allow for some groundwater infiltration and groundwater recharge to occur. Groundwater management strategies for the Santa Clara Subbasin are provided in the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*. Therefore, the NEPA Build Alternative 2 would not conflict with implementation of the *Groundwater Management Plan for the Santa Clara and Llagas Subbasins*. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.10 Land Use and Planning

Refer to Section 3.11, *Land Use and Planning*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.10.1 Affected Environment

Section 3.11.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment and discusses existing land uses in the region and adjacent to the Project Site.

4.5.10.2 Regulatory Setting

The plans, policies, and regulations applicable to land use and planning, which are also applicable to the NEPA analysis, are discussed in Section 3.11.3, *Plans, Policies, and Regulations*, in Section 3.11, *Land Use and Planning.*

4.5.10.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on land use and planning if it would result in any of the following conditions:

- Introduce new land uses incompatible with established uses at or surrounding Ames Research Center.

A project's incompatibility with new land uses do not, in and of themselves, constitute significant environmental impacts. Land use incompatibility is considered an environmental impact only when they result in direct environmental effects.

4.5.10.4 Environmental Consequences

Impact NEPA-LU-1: Would the project introduce new land uses incompatible with established uses at or surrounding Ames Research Center?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in land uses that would be incompatible with established uses at or surrounding NASA ARC. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Under the NADP, allowed development within the NRP planning area includes laboratories, office space, classrooms, auditoriums, museums, a conference center, open space, a burrowing owl preserve, parking, housing, and limited retail facilities. Within the NRP planning area, the Project Site was contemplated as University Reserve. NEPA Build Alternative 1 would be consistent with the University Reserve designation by including research uses with office, lab, research-and-development (R&D), and academic programs, along with residential uses, conference spaces, active uses (open space), and parking. Office uses would include space for corporate and general offices, which would allow multiple tenants to carry out research and technology, administrative, and professional office activities. In addition, the proposed laboratory and R&D uses would provide

functional spaces that could include laboratories, supportive administrative offices, meeting rooms, and light manufacturing or fabrication spaces as part of the overall R&D use.

NEPA Build Alternative 1 would include Student/Faculty Housing with a mix of studio, one-bedroom, and two-bedroom apartments as well as amenity space. Although residential uses are allowed in the NRP, the description of the University Reserve designation does not specifically include residential; however, residential uses under the NEPA Build Alternative 1 would include Short-Term Lodging for visitors and conference attendees and Student/Faculty Housing on a short-term basis (i.e., academic calendar year, semester, or summer). Housing would prioritize the UC students and faculty affiliated with the NEPA Build Alternative 1 as well as on-site federal employees and student interns. Therefore, the proposed residential uses are consistent with the "ancillary facilities required to achieve NASA's mission related to education and outreach." The NEPA Build Alternative 1 would not result in inconsistencies with the NADP land use designation for the Project Site. Impacts would be less than significant.

Although new uses would be constructed and operated within close proximity to the existing burrowing owl preserve, implementation of mitigation measures, as included in Section 3.4, *Biological Resources* of this joint EIR/EIS, would result in land use compatibility. NEPA Build Alternative 1 would comply with the Burrowing Owl Habitat Management Plan and implement measures to minimize adverse effects on burrowing owls from development activities at NASA ARC. Mitigation Measures BIO-5 though BIO-11 would be implemented to reduce impacts on burrowing owl habitats to less than significant.

Due to the Project Site's proximity to Moffett Federal Airfield, NEPA Build Alternative 1 would be within the area covered by the Moffett CLUP. Although NASA has not elected to apply the Moffett CLUP to NASA ARC, compatibility criteria contained within the Moffett CLUP are applicable to development within the Project Site. The proposed building heights under NEPA Build Alternative 1 would be in compliance with FAA requirements. With issuance of a determination of no hazard from the FAA, project construction and operation would comply with CLUP safety guidelines and pose no risk to aviation safety. In addition, and as discussed in Section 3.12, *Noise*, of this joint EIR/EIS, impacts related to aircraft noise would be considered less than significant.

NASA's NEPA requirements will be satisfied with completion of the joint EIR/EIS and associated decision document. Additional NEPA documentation should not be necessary for APR 8822.1. Upon completion of NEPA documentation, NASA will provide DRB clearance and approval of the proposed project pursuant to APR 8822.1 The completed Berkeley Space Center EIS, Master Plan, and Development Guidelines will be cited and included as part of the proposed project that will be approved by NASA at that time. All proposed development projects within the jurisdiction of ARC must comply with the DRP to ensure that the projects are properly coordinated. The DRP is typically a two-stage process: Pre-Conceptual Design Review, to adequately define the scope of a project, determine the level of environmental review needed for site approval, and ensure that an applicant conforms to applicable requirements, and Preliminary Design Review, which includes submission for the Concept Design Phase. The NEPA process would address the purpose of the Pre-Conceptual Design Review stage; thus, the need for a Pre-Conceptual Design submission for the proposed project may be waived. During the Preliminary Design Review stage, NASA will assess whether the design and configuration of the proposed project complies with the NADP and Project Site–specific NEPA documents, including the Master Plan Maximum and Minimum Development Parameters as well as the standards in the Development Guidelines, as documented in the ROD.

The land uses proposed at the Project Site under NEPA Build Alternative 1 would be consistent with the intent of the University Reserve land use designation. In addition, NEPA Build Alternative 1 would be consistent with the established surrounding land uses in the NRP planning area including laboratories, office space, museums, open space, a burrowing owl preserve, parking, and housing. All proposed development projects within the jurisdiction of ARC must comply with the DRP to ensure that the projects are properly coordinated and would be compatible with existing land uses. Therefore, NEPA Build Alternative 1 would not result in land uses that would be incompatible with established uses at or surrounding NASA ARC, resulting in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would be consistent with the established surrounding land uses in the NRP planning area including laboratories, office space, museums, open space, parking, and housing. Although new uses would be constructed and operated within close proximity to the existing burrowing owl preserve, implementation of mitigation measures, as included in Section 3.4, *Biological Resources* of this joint EIR/EIS, would result in land use compatibility. In addition, the proposed building heights under NEPA Build Alternative 1 would be in compliance with FAA requirements for the existing uses at the Moffett Federal Airfield. All proposed development projects within the jurisdiction of ARC must comply with the DRP to ensure that the projects are properly coordinated and would be compatible with existing land uses. Therefore, NEPA Build Alternative 2 would not result in land uses that would be incompatible with established uses at or surrounding NASA ARC, resulting in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.11 Noise

Refer to Section 3.12, *Noise*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build

Alternatives. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Berkeley Space Center at NASA Research Park Noise and Vibration Technical Report* (Noise and Vibration Technical Report) prepared by ICF, April 2026 (Appendix 3.12-1 of this joint EIR/EIS)

4.5.11.1 Affected Environment

Section 3.12.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses noise and vibration fundamentals, and defines the relevant noise and vibration terminology. In addition, the section summarizes the relevant data collected during the project noise measurement survey (summarized in Tables 3.12-3 and 3.12-4 in Section 3.12, *Noise*).

4.5.11.2 Regulatory Setting

The plans, policies, and regulations applicable to noise and vibration, which are also applicable to the NEPA analysis, are discussed in the Noise and Vibration Technical Report, included as Appendix 3.12-1 of this joint EIR/EIS.

4.5.11.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects related to noise if it would result in any of the following conditions:

- Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project construction.
- Generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project operations.
- Generate excessive groundborne vibration or groundborne noise levels.

Short-term Construction Noise Criteria

To evaluate construction noise, the NEPA analysis uses the general assessment methodologies and thresholds from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual*, which include construction noise thresholds for commercial, industrial, and residential uses during both daytime and nighttime hours.[49] The general assessment criteria for daytime and nighttime construction noise limits are summarized in Table 4.5.11-1.

[49] Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment*. FTA Report 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/ 118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: July 9, 2025.

Table 4.5.11-1. FTA General Assessment Criteria for Construction Noise

	1-hour L_{eq} (dBA)	
Land Use	**Day**	**Night**
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: Federal Transit Administration. 2018. *Transit Noise and Vibration Impact Assessment.* FTA Report No. 0123. Available: https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf. Accessed: July 9, 2025.
L_{eq} = Equivalent Sound Level; dBA = A-weighted decibels

Long-term Operational Noise Criteria

To evaluate operational noise, the NEPA analysis used estimated noise levels from on-site project operations and assessed them relative to Santa Clara County (County) noise exposure limits. Specifically, predicted noise levels were estimated to determine if they would exceed County noise limits (presented in Table 4-8 of the Noise and Vibration Technical Report (Appendix 3.12-1) at any off-site noise-sensitive receptor. Mechanical equipment could operate during both daytime and nighttime hours, with the nighttime noise limits being more stringent. Therefore, estimated noise levels are compared to the more stringent County noise exposure limit for nighttime hours (10:00 p.m. to 7:00 a.m.) to ensure a conservative analysis. According to Table 4-8 of the Noise and Vibration Technical Report, if measured ambient noise levels are higher than the standards, the allowable noise exposure standard is increased in 5 dB increments, as needed, to encompass or reflect the ambient noise level. The measured existing noise level at the residential receptors at Wescoat Village was 52.1 dBA L_{eq}. This ambient noise level is greater than the nighttime noise level standard outlined in Table 4-8 for multi-family dwellings of 50 dBA L_{eq}. Consequently, the noise standard used to assess mechanical equipment noise at this location is increased by 5 dB to encompass or reflect the ambient noise level. The applicable noise limit at this location is therefore 55 dBA L_{eq} during nighttime hours.

With respect to traffic noise, the County does not establish specific thresholds to assess the potential for a significant traffic noise increase to occur. Based on commonly used thresholds throughout the state, a traffic noise increase is considered significant for this analysis if the following were to occur:

- A project-generated increase of 5 A-weighted decibels (dBA) in traffic noise at a noise-sensitive receptor when the resulting (i.e., existing-plus-project) traffic noise level at that sensitive use remains below the "satisfactory" range for that land use (as defined in the County general plan [55 dBA, day-night sound level (L_{dn}), for residential land uses])
- A project-generated increase of 3 dBA or greater in traffic noise when the resulting (i.e., existing-plus-project) traffic noise level at that sensitive use is above the "satisfactory" range for that land use (as defined in the County general plan [55 dBA L_{dn} for residential land uses])

Groundborne Vibration Criteria

The NEPA analysis of groundborne vibration impacts considers the same standards used for the CEQA analysis of groundborne vibration for both damage- and annoyance-related effects. Evaluation of the potential for project construction to result in vibration-related damage and annoyance effects is based on the vibration-related damage and annoyance criteria from the California Department of

Transportation (Caltrans) *Transportation and Construction Vibration Guidance Manual*.[50] The Caltrans thresholds for potential damage and annoyance are presented in Tables 4-4 and 4-5 of the Noise and Vibration Technical Report (Appendix 3.12-1). As shown in Table 4-4, the Caltrans vibration damage criterion for newer residential structures is a PPV of 0.5 in/sec for continuous/frequent intermittent vibration sources; the criterion for historic and some old buildings is a PPV of 0.25 in/sec. Note that all of the analyzed equipment are classified as continuous/frequent intermittent vibration sources. With respect to vibration-related annoyance, the Caltrans "strongly perceptible" annoyance criterion (PPV of 0.1 in/sec) is used to assess the potential for sleep disturbance to occur at occupied residential land uses during nighttime hours.

In addition, an analysis was conducted to determine if construction-related vibration from the proposed project could be disruptive to sensitive research equipment at nearby off-site laboratories, such as U.S. Geological Survey (USGS) Building 800, which is north of the Project Site. FTA's criteria for detailed vibration analysis are contained in Table 4-3 in the Noise and Vibration Technical Report. The FTA vibration criteria range from a vibration level of 42 VdB (the most demanding criterion for extremely vibration-sensitive equipment) to 90 VdB (appropriate for workshops and similar areas).

Specifically, estimated vibration levels were evaluated to determine if the following would occur:

- Groundborne vibration levels would exceed the applicable Caltrans criteria for potential damage to structures at any off-site building at any time (Table 4-4 in the Noise and Vibration Technical Report).
- Groundborne vibration levels would exceed the Caltrans criterion for strongly perceptible vibration, which is defined as a peak particle velocity (PPV) of 0.1 inch per second (in/sec) at any off-site residential use during the nighttime hours of 10:00 p.m. to 7:00 a.m.
- Groundborne vibration levels would exceed the applicable FTA vibration criteria for detailed vibration analysis at nearby laboratory equipment locations (e.g., USGS Building 800) (Table 4-3 in the Noise and Vibration Technical Report).

4.5.11.4 Methods for Analysis

Refer to Section 5.1, *Methods for Analysis*, in the Noise and Vibration Technical Report, included as Appendix 3.12-1 of this joint EIR/EIS, for a description of the methods used for the analysis of noise and vibration impacts. The following considerations were included in the analysis:

Potential for Noise from New Stationary Sources to Combine

The evaluation of project operational noise is based on the potential for noise from the individual sources or activities described above to exceed the applied noise ordinance limits or criteria for each respective source. Although it is possible for noise levels from multiple stationary sources to combine and result in greater noise levels, overall, noise levels are generally dominated by the loudest and closest source of noise. In order to ensure a reasonably conservative analysis, the analysis of each source includes realistic worst-case assumptions for noise sources at the closest reasonable distance from the nearest receptors. For these reasons, the analysis of stationary

[50] California Department of Transportation. 2020. *Transportation and Construction Vibration Guidance Manual*. April. Available: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf. Accessed: July 9, 2025.

operational noise effects evaluates potential noise levels from individual types of operational noise sources associated with the proposed project rather than scenarios with multiple types of stationary noise sources (e.g., emergency generator testing and an event with amplified music) operating at the same time.

4.5.11.5 Environmental Consequences

Impact NEPA-NOI-1a: Would the project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project construction?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	NOI-1. Construction Noise Control Plan (required for NEPA Build Alternative 1, Central Utility Plant [CUP] Option, and Water Reuse Facility [WRF] Option) NOI-2. Temporary Noise Barriers (required for NEPA Build Alternative 1, CUP Option, and WRF Option)	Significant and Unavoidable with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	*Same as NEPA Build Alternative 1*	Significant and Unavoidable with Mitigation
NEPA Build Alternative 2, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no construction noise impacts to existing receptors. Thus, there would be ***no impact.***

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction of the proposed action has the potential to generate noise that could exceed applied noise thresholds at nearby sensitive receptors. Construction of the WRF Option or CUP Option would require additional off-road equipment and on-road vehicles, beyond that required for construction of NEPA Build Alternative 1; however, construction associated with the WRF and CUP subphases would not result in higher noise levels than those from the construction of NEPA Build Alternative 1. Therefore, the worst-case daytime construction noise levels (i.e., estimated noise levels from the worst-case loudest construction subphase) under NEPA Build Alternative 1 with the CUP or WRF options would be the same as under NEPA Build Alternative 1.

As described in the Noise and Vibration Technical Report included as Appendix 3.12-1 of this joint EIR/EIS, the proposed action would be constructed in four main phases (and more than 100 subphases) from 2027 to 2040. Construction would consist of both on-site and off-site work. Refer to Section 5.1, *Methods for Analysis,* of the Noise and Vibration Technical Report for details regarding the modeling methodology for construction noise.

Daytime Construction Noise

Most construction activities under the proposed action would occur during daytime hours, defined by the County as 7:00 a.m. to 7:00 p.m. Monday through Saturday (excluding legal holidays), noting that project construction would not take place on Saturdays. Initial modeling was conducted to estimate combined construction noise levels at a reference distance of 50 feet for each subphase type under NEPA Build Alternative 1, using the analysis approach described in Section 5.1, *Methods for Analysis,* of the Noise and Vibration Technical Report (Appendix 3.12-1). Specifically, this assessment assumes simultaneous and continuous operation of the two loudest pieces of equipment that are expected to operate during a given subphase of construction (noting that the equipment modeled varies by subphase). Both pieces of equipment are assumed to operate simultaneously at the center of a given construction site (i.e., a given future building footprint), which is as close as approximately 200 feet from the nearest off-site receptor for on-campus buildings. Both pieces of equipment are assumed to operate with a 100 percent utilization factor in accordance with the FTA general assessment modeling approach, meaning they were modeled to each operate at full power throughout the entirety of a given subphase.

The results of the analysis are summarized in Table 3.12-5 in Section 3.12, *Noise*. Table 3.12-5 estimates that combined noise levels at a reference distance of 50 feet during all project construction subphase types would be between 78 and 93 dBA L_{eq}. This initial modeling demonstrated that the worst-case, or loudest, on-site subphases of construction would be the Buildings – Demolition subphase, which would generate an estimated noise level of 93 dBA L_{eq} at a reference distance of 50 feet. These subphases would involve potentially concurrent operation of multiple concrete saws. Table 3.12-6 in Section 3.12, *Noise,* includes the FTA general assessment modeling results for combined noise levels from the worst-case, or loudest, on-site subphases of construction (i.e., Buildings – Demolition) at various distances from the Project Site.

The nearest sensitive receptor to on-site construction activities would be the existing residences at Wescoat Village west of the Project Site. Existing Wescoat Village residences would be approximately 200 feet from the center of the nearest proposed project building. At that distance, estimated noise levels from on-site construction activities involving concrete saws were modeled to be approximately 81 dBA L_{eq}, based on the modeling assumptions described previously. Note that the subphase type that includes the use of concrete saws (i.e., Buildings – Demolition) is the loudest

subphase type associated with the proposed project; other construction subphase types would result in lower noise levels at the nearest receptors. Although noise levels are estimated to be lower for some construction subphases, noise levels from all subphases were modeled to be in the range of 66 dBA L_{eq} (for building coatings) to 81 dBA L_{eq} at a distance of 200 feet, and most subphases would result in noise levels greater than 70 dBA L_{eq} at this distance. The other receptors that may be considered sensitive are located farther away; these include Carnegie Mellon University Silicon Valley, Moffett Field Chapel, and the Ames Child Care Center. At these greater distances, noise levels from on-site construction would be lower than at the nearest sensitive receptors, as shown in Table 3.12-6 in Section 3.12, *Noise*. Estimated noise levels from on-site construction were modeled to be 73 dBA L_{eq} at the nearest Carnegie Mellon University Silicon Valley structure, 69 dBA L_{eq} at the Moffet Field Chapel, and 63 dBA L_{eq} at the Ames Child Care Center.

With respect to off-site construction, limited in-street work would occur to install utilities throughout the Ames campus and near the Project Site as part of the Utilities/Roads – Excavation and Utilities/Roads – Drainage and Subgrade subphases. The nearest sensitive receptors to proposed off-site construction would be the existing residences at Wescoat Village west of the Project Site, which are approximately 55 feet from the center of the nearest portion of in-street work. The two loudest pieces of equipment included on the construction list for off-site construction subphases would be a grader and a concrete saw.

Table 3.12-7 in Section 3.12, *Noise,* includes the modeled combined noise levels from these worst-case, off-site subphases of construction at various receptor distances, including a distance of 55 feet (the distance to the nearest residence from expected locations of in-street/off-site utility work). Daytime noise from off-site/in-street construction is anticipated to be up to 90 dBA L_{eq} at the nearest residences (multi-family residences at Wescoat Village) during the worst-case loudest construction subphases for off-site work (Utilities/Roads – Excavation and Utilities/Roads Drainage and Subgrade). This noise level would equal, but would not exceed, the FTA's general assessment criterion of 90 dBA L_{eq} for residential land uses during daytime construction. At the nearby Ames Child Care Center, Moffett Field Chapel, and Carnegie Mellon University Silicon Valley, estimated noise levels from the nearest off-site/in-street construction activities were estimated to be up to 87 dBA L_{eq}, 86 dBA L_{eq}, and 82 dBA L_{eq}, respectively.

Results also show that the estimated daytime construction noise levels would be below the FTA's general assessment criterion of 100 dBA L_{eq} during daytime construction at commercial and industrial land uses, except one. At Hangar One, worst-case estimated noise levels would be up to 102 dBA L_{eq} during off-site/in-street construction.

In conclusion, daytime construction noise levels from both on- and off-site construction activities at nearby sensitive land uses were modeled to meet or be below the applicable FTA threshold (i.e., 90 dBA L_{eq} for residential land uses during daytime construction). Daytime construction noise levels from off-site construction activities at one nearby industrial land use were modeled to exceed the applicable FTA threshold (i.e., 100 dBA L_{eq} for industrial land uses during daytime construction), noting that noise levels at other nearby commercial/industrial land uses from on-site construction uses were not modeled to exceed this threshold. Daytime construction noise impacts could be significant.

Mitigation Measure NOI-1 would help reduce on- and off-site construction noise impacts to nearby the potentially affected nearby industrial land use (i.e., Hangar One) through development and implementation of a construction noise control plan. Although this mitigation measure would be

expected to reduce construction noise levels, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. For example, locating equipment as far as possible from noise-sensitive receptors and providing equipment with mufflers and sound control devices would reduce noise but may not be enough to reduce noise to levels to be below the significance criteria when in-street work occurs very close to a given receptor. In addition, alternate quieter equipment pieces are generally not available to substitue for the equipment required for in-street work close to Hangar One (i.e., a grader and a concrete saw for the work near Hangar One). Further, the worst-case distance between off-site/in-street construction and the nearest industrial use, Hangar One, is only 15 feet. Because the construction activity itself is required to take place approximately 15 feet from the adjacent industrial use, increasing the separation distance between construction equipment and this nearby industrial receptor is not possible for this construction activity.

Note that, although construction noise levels were modeled to be below the NEPA significance thresholds at nearby residential receptors without mitigation, Mitigation Measure NOI-1 would reduce construction noise levels at nearby residential receptors. Mitigation Measure NOI-2, which includes the installation of temporary noise barriers along the western and southern project perimeter of Subareas within 1,400 feet of Wescoat Village, would further reduce construction noise at residential receptors. Despite the noise reductions expected from implementation of mitigation, worst-case construction noise levels at one nearby industrial land use (Hangar One) would still exceed the applicable threshold. Because implementation of construction noise mitigation measures would not reduce the impact to Hangar One to a less-than-significant level, the NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts related to construction noise at nearby commercial/industrial land uses.

Nighttime Construction Noise

With respect to nighttime construction noise, the only construction activities proposed for nighttime hours are on-site concrete pours and off-site/in-street work for utilities. Table 3.12-8 in Section 3.12, *Noise,* provides the modeled combined noise levels from nighttime concrete pours at various distances from a given construction area. As shown in Table 3.12-8, construction noise during nighttime concrete pours is expected to be approximately 71 dBA L_{eq} at a distance of 200 feet, the approximate distance from the center of the nearest proposed project building to the nearest off-site existing (i.e., Wescoat Village residences) sensitive receptor. This noise level would be below the FTA's general assessment criterion of 80 dBA L_{eq} for residential land uses during nighttime construction.

Off-site construction in roadways for utility installation may also occur outside of normal business hours and on weekends, per NASA requirements. In general, this would include approximately 10 days of nighttime construction per utility system (e.g., sewer, stormwater, recycled water, power, and telecom systems). The nearest sensitive receptors to proposed in-road construction that may take place at night would be the existing residences west of the Project Site at Wescoat Village, which would be approximately 55 feet from the center of the nearest portion of in-street work.

The loudest off-site/in-street subphases (i.e., Utilities/Roads – Excavation and Utilities/Roads – Drainage and Subgrade) would involve potentially concurrent operation of a grader and a concrete saw. These are the same subphases that were previously analyzed as part of the daytime construction noise assessment for off-site/in-street work. The associated noise levels are reported in Table 3.12-7 in Section 3.12, *Noise*. As shown in Table 3.12-7, off-site/in-street utility work

required to take place during nighttime hours could result in noise levels of up to 90 dBA L_{eq} at the nearest noise-sensitive receptors (the existing residences at Wescoat Village). This noise level would exceed the FTA's general assessment criterion of 80 dBA L_{eq} that applies to residential land uses during nighttime construction. Therefore, nighttime construction noise impacts could be significant for in-street utility work. Mitigation Measure NOI-1 would reduce the impact through development and implementation of a construction noise control plan. Mitigation Measure NOI-2, which includes the installation of temporary noise barriers along the western and southern perimeter of Subareas within 1,400 feet of Wescoat Village, would reduce construction noise at these residential receptors from on-site construction (i.e., concrete pours) proposed to take place during nighttime hours, noting that estimated noise levels from on-site work were not modeled to exceed the FTA threshold for residential receptor land uses. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts related to construction noise during nighttime hours at the nearby Wescoat Village residences.

Noise from Haul Trucks and Heavy Trucks

Haul truck modeling results indicate that increases in traffic noise from construction truck activity along the proposed project haul routes would be in the range of 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul or heavy truck trips than the number presented in this analysis, resulting in even smaller noise increases. Note that there are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For this reason, and because the maximum modeled noise increase resulting from construction truck activity is less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would not be considered substantial. Impacts related to noise from construction truck activity would be considered ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

Daytime Construction

Potential effects related to daytime construction noise are the same as presented for NEPA Build Alternative 1. Worst-case daytime construction noise levels from off-site construction activities under the NEPA Build Alternative 1 with the Sub-Alternative may exceed the applied FTA thresholds. Specifically, daytime construction noise levels from off-site/in-street construction activities at one nearby industrial land use (Hangar One) were modeled to exceed the applicable FTA threshold (i.e., 100 dBA L_{eq} at industrial land uses during daytime construction), noting that noise levels from on-site construction at nearby commercial/industrial land uses were not modeled to exceed this threshold. Daytime construction noise effects could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. However, it may not be possible to reduce all daytime construction noise levels to a level below the significance thresholds, even with the implementation of all feasible mitigation measures. For example, locating equipment as far as possible from noise-sensitive receptors and providing equipment with mufflers and sound control devices would reduce noise but may not be enough to reduce noise to levels to be below the significance criteria when in-street work occurs very close to a given receptor. In addition, alternate quieter equipment pieces are generally not available to substitue for the equipment required for this in-street work (i.e., a grader and a

concrete saw). Further, the worst-case distance between off-site/in-street construction and the nearest industrial use, Hangar One, is only 15 feet. Because the construction activity itself is required to take place approximately 15 feet from the adjacent industrial use, increasing the separation distance between construction equipment and this nearby receptor is not possible for this construction activity. Finally, Mitigation Measure NOI-2 would not be expected to reduce noise from off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. For these reasons, noise levels from daytime construction are expected to exceed the applicable daytime construction noise limit at one nearby industrial land use, even with implementation of mitigation. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***significant and unavoidable*** impacts related to construction noise impact at one nearby industrial land use.

Nighttime Construction

Potential effects related to nighttime construction noise are the same as presented for NEPA Build Alternative 1. Nighttime construction noise levels from on-site construction were modeled to be below the FTA general assessment criterion of 80 dBA L_{eq} that applies to residential land uses during nighttime hours. However, noise from off-site/in-street utility work required to take place during nighttime hours could result in noise levels of up to 90 dBA L_{eq} at the nearest noise-sensitive receptors (the existing residences at Wescoat Village). This noise level would exceed the FTA general assessment criterion of 80 dBA L_{eq} for residential land uses during nighttime construction. Therefore, nighttime construction noise effects could be significant for off-site/in-street utility work. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***significant and unavoidable*** impacts related to construction noise during nighttime hours at the nearby Wescoat Village residences

Noise from Haul Trucks and Heavy Trucks

Haul truck modeling results indicate that increases in traffic noise from construction truck activity along the proposed project haul routes would be in the range of 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul or heavy truck trips than the number presented in this analysis, resulting in even smaller noise increases. Note that there are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For this reason, and because the maximum modeled noise increase resulting from construction truck activity is less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would not be considered substantial. Impacts related to noise from construction truck activity would be considered ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Daytime Construction

Worst-case daytime construction noise levels from and off-site construction activities under NEPA Build Alternative 2 may exceed the applied FTA thresholds. Specifically, daytime construction noise levels from off-site construction activities at one nearby industrial land use (Hangar One) were modeled to exceed the applicable FTA threshold (i.e., 100 dBA L_{eq} at industrial land uses during daytime construction), noting that noise levels from on-site construction at nearby commercial/industrial land uses were not modeled to exceed this threshold. Daytime construction noise effects could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. However, it may not be possible to reduce all daytime construction noise levels to a level below the significance thresholds, even with the implementation of all feasible mitigation measures. For example, locating equipment as far as possible from noise-sensitive receptors and providing equipment with mufflers and sound control devices would reduce noise but may not be enough to reduce noise to levels to be below the significance criteria when in-street work occurs very close to a given receptor. In addition, alternate quieter equipment pieces are generally not available to substitue for the equipment required for this in-street work (i.e., a grader and a concrete saw). Further, the worst-case distance between off-site/in-street construction and the nearest industrial use, Hangar One, is only 15 feet. Because the construction activity itself is required to take place approximately 15 feet from the adjacent industrial use, increasing the separation distance between construction equipment and this nearby receptor is not possible for this construction activity. Finally, Mitigation Measure NOI-2 would not be expected to reduce noise from off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. For these reasons, noise levels from daytime construction are expected to exceed the applicable daytime construction noise limit at one nearby industrial land use, even with implementation of mitigation. Thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts related to construction noise impact at one nearby industrial land use.

Nighttime Construction

Potential effects related to nighttime construction noise are the same as presented for NEPA Build Alternative 1. Nighttime construction noise levels from on-site construction were modeled to be below the FTA general assessment criterion of 80 dBA L_{eq} that applies to residential land uses during nighttime hours. However, noise from off-site/in-street utility work required to take place during nighttime hours could result in noise levels of up to 90 dBA L_{eq} at the nearest noise-sensitive receptors (the existing residences at Wescoat Village). This noise level would exceed the FTA general assessment criterion of 80 dBA L_{eq} for residential land uses during nighttime construction. Therefore, nighttime construction noise effects could be significant for off-site/in-street utility work. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts related to construction noise during nighttime hours at the nearby Wescoat Village residences.

Noise from Haul Trucks and Heavy Trucks

Haul truck modeling results indicate that increases in traffic noise from construction truck activity along the proposed project haul routes would be in the range of 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there

would be fewer daily haul or heavy truck trips than the number presented in this analysis, resulting in even smaller noise increases. Note that there are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For this reason, and because the maximum modeled noise increase resulting from construction truck activity is less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would not be considered substantial. Impacts related to noise from construction truck activity would be considered ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Daytime Construction

Potential effects related to daytime construction noise are the same as presented for NEPA Build Alternative 1. Worst-case daytime construction noise levels from off-site construction activities under the NEPA Build Alternative 2 with the Sub-Alternative may exceed the applied FTA thresholds. Specifically, daytime construction noise levels from off-site construction activities at one nearby industrial land use (Hangar One) were modeled to exceed the applicable FTA threshold (i.e., 100 dBA L_{eq} at industrial land uses during daytime construction), noting that noise levels from on-site construction at nearby commercial/industrial land uses were not modeled to exceed this threshold. Daytime construction noise effects could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. However, it may not be possible to reduce all daytime construction noise levels to a level below the significance thresholds, even with the implementation of all feasible mitigation measures. For example, locating equipment as far as possible from noise-sensitive receptors and providing equipment with mufflers and sound control devices would reduce noise but may not be enough to reduce noise to levels to be below the significance criteria when in-street work occurs very close to a given receptor. In addition, alternate quieter equipment pieces are generally not available to substitue for the equipment required for this in-street work (i.e., a grader and a concrete saw). Further, the worst-case distance between off-site/in-street construction and the nearest industrial use, Hangar One, is only 15 feet. Because the construction activity itself is required to take place approximately 15 feet from the adjacent industrial use, increasing the separation distance between construction equipment and this nearby receptor is not possible for this construction activity. Finally, Mitigation Measure NOI-2 would not be expected to reduce noise from off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. For these reasons, noise levels from daytime construction are expected to exceed the applicable daytime construction noise limit at one nearby industrial land use, even with implementation of mitigation. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts related to construction noise impact at one nearby industrial land use.

Nighttime Construction

Potential effects related to nighttime construction noise are the same as presented for NEPA Build Alternative 1. Nighttime construction noise levels from on-site construction were modeled to be below the FTA general assessment criterion of 80 dBA L_{eq} that applies to residential land uses during nighttime hours. However, noise from off-site/in-street utility work required to take place during nighttime hours could result in noise levels of up to 90 dBA L_{eq} at the nearest noise-sensitive receptors (the existing residences at Wescoat Village). This noise level would exceed the FTA

general assessment criterion of 80 dBA L_{eq} for residential land uses during nighttime construction. Therefore, nighttime construction noise effects could be significant for off-site/in-street utility work. The same mitigation measure(s) identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts related to construction noise during nighttime hours at the nearby Wescoat Village residences.

Noise from Haul Trucks and Heavy Trucks

Haul truck modeling results indicate that increases in traffic noise from construction truck activity along the proposed project haul routes would be in the range of 0.5 to 2.7 dB. This is less than the 3 dB increase established for the proposed project. During most subphases of construction, there would be fewer daily haul or heavy truck trips than the number presented in this analysis, resulting in even smaller noise increases. Note that there are no noise-sensitive receptors along the roadway segments that comprise the haul route north of U.S. 101. For this reason, and because the maximum modeled noise increase resulting from construction truck activity is less than the 3 dB increase threshold established for the proposed project, noise impacts related to construction truck activity would not be considered substantial. Impacts related to noise from construction truck activity would be considered ***less than significant***.

Impact NEPA-NOI-1b: Would the project generate substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, from project operations?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant (mechanical equipment)	NOI-3. Design and Install Mechanical Equipment to Comply with Noise Standards	Less than Significant with Mitigation (mechanical equipment)
	Potentially Significant (emergency generator testing)	NOI-4. Design and Install Emergency Generators to Comply with Noise Standards	Less than Significant with Mitigation (emergency generator testing)
NEPA Build Alternative 1, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Potentially Significant (mechanical equipment) Potentially Significant (emergency generator testing)	*Same as NEPA Build Alternative 1*	Less than Significant with Mitigation (mechanical equipment) Less than Significant with Mitigation (emergency generator testing)
NEPA Build Alternative 2, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Operation of the existing on-site buildings would not generate substantial noise. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Mechanical Equipment

Noise levels from mechanical heating, cooling and ventilation equipment, CUP equipment, WRF equipment, sewer pump station equipment, and battery energy storage system equipment would have the potential to exceed the applied noise standards at the nearest noise-sensitive receptors under NEPA Build Alternative 1 (refer to the analysis contained under Impact CEQA-NOI-1b in Chapter 3.12 of this joint EIR/EIS). Mechanical equipment noise effects could be significant. Mitigation Measure NOI-3 would reduce mechanical equipment noise levels by requiring the design and installation of mechanical equipment to comply with noise standards. Although the exact makes and models of project mechanical equipment are not currently known, several noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts from project mechanical equipment that would be ***less than significant with mitigation***.

Emergency Generator Testing

Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applied noise standards at the nearest noise-sensitive receptors under NEPA Build Alternative 1. Noise effects from emergency generator testing could be significant. Mitigation Measure NOI-4 would reduce noise levels from emergency

generator testing by requiring the design and installation of emergency generators to comply with noise standards. Although the exact makes and models of project emergency generators are not currently known, noise-reduction options for emergency generators are available to reduce generator testing noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter generator models, upgrading the generators' acoustical enclosures, upgrading the generators' mufflers or silencers, orienting or shielding generators to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the generators and noise-sensitive receptors, and/or placing noise-attenuating barriers around generators. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts from project emergency generator testing that would be ***less than significant with mitigation***.

Loading Noise

The Project Site is in an urban area with elevated noise levels, a large portion of project deliveries would take place inside project buildings, and delivery and loading activities would be temporary, intermittent, and primarily during daytime hours. Accordingly, noise effects associated with loading activities under NEPA Build Alternative 1 would be considered ***less than significant***.

Traffic Noise

Project-related traffic is estimated to increase existing ambient noise levels by up to 1.2 dB. This increase is below the 3 dB increase threshold established for traffic noise. Therefore, project traffic noise impacts would be ***less than significant*** under NEPA Build Alternative 1.

Parking Garage Noise

Modeled parking garage noise levels under NEPA Build Alternative 1 are 15 to 28 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.2 dB or less). Noise impacts related to parking garage activity would be considered ***less than significant***.

Amplified Music or Speech at Events

Noise levels from sound-amplifying equipment at project-related programming or events would most likely be well below the existing daytime noise levels at the nearest noise-sensitive receptors. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (with approximately 12 per year). For these reasons, noise effects associated with amplified sound under NEPA Build Alternative 1 would be considered ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1.

Mechanical Equipment

Noise levels from mechanical heating, cooling and ventilation equipment, sewer pump station equipment and battery energy storage system equipment would have the potential to exceed the applied noise standards at the nearest noise-sensitive receptors under the NEPA Build Alternative 1 with the Sub-Alternative. Mechanical equipment noise effects could be significant. The same

mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts from project mechanical equipment that would be ***less than significant with mitigation***.

Emergency Generator Testing

Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applied noise standards at the nearest noise-sensitive receptors under the NEPA Build Alternative 1 with the Sub-Alternative. Noise effects from emergency generator testing could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts from project emergency generator testing that would be ***less than significant with mitigation***.

Loading Noise

The Project Site is in an urban area with elevated noise levels, a large portion of project deliveries would take place inside project buildings, and delivery and loading activities would be temporary, intermittent, and primarily during daytime hours. Accordingly, noise effects associated with loading activities under the NEPA Build Alternative 1 with the Sub-Alternative would be considered ***less than significant***.

Traffic Noise

Project-related traffic is estimated to increase existing ambient noise levels by up to 1.2 dB. This increase is below the 3 dB increase threshold established for traffic noise. Therefore, project traffic noise effects would be considered ***less than significant*** under the NEPA Build Alternative 1 with the Sub-Alternative.

Parking Garage Noise

Modeled parking garage noise levels under NEPA Build Alternative 1 are 15 to 28 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.2 dB or less). Noise impacts related to parking garage activity would be considered ***less than significant*** under the NEPA Build Alternative 1 with the Sub-Alternative.

Amplified Music or Speech at Events

Noise levels from sound-amplifying equipment at project-related programming or events would most likely be well below the existing daytime noise levels at the nearest noise-sensitive receptors. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (with approximately 12 per year). For these reasons, noise effects associated with amplified sound under the NEPA Build Alternative 1 with the Sub-Alternative would be considered ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan.

Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Mechanical Equipment

Noise levels from mechanical heating, cooling and ventilation equipment, sewer pump station equipment, and battery energy storage system equipment would have the potential to exceed the applied noise standards at the nearest noise-sensitive receptors under NEPA Build Alternative 2. Mechanical equipment noise effects could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts from project mechanical equipment that would be ***less than significant with mitigation***.

Emergency Generator Testing

Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applied noise standards at the nearest noise-sensitive receptors under NEPA Build Alternative 2. Noise effects from emergency generator testing could be ***significant***. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts from project emergency generator testing that would be ***less than significant with mitigation***.

Loading Noise

The Project Site is in an urban area with elevated noise levels, a large portion of project deliveries would take place inside project buildings, and delivery and loading activities would be temporary, intermittent, and primarily during daytime hours. Accordingly, noise effects associated with loading activities under NEPA Build Alternative 2 would be considered ***less than significant***.

Traffic Noise

Project-related traffic is estimated to increase existing ambient noise levels by up to 0.8 dB. This increase is below the 3 dB increase threshold established for traffic noise. Therefore, project traffic noise effects would be considered ***less than significant*** for the NEPA Build Alternative 2.

Parking Garage Noise

Modeled parking garage noise levels under NEPA Build Alternative 2 are approximately 17 to 31 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., and Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.2 dB or less). Noise impacts related to parking garage activity would be considered ***less than significant***.

Amplified Music or Speech at Events

Noise levels from sound-amplifying equipment at project-related programming or events would most likely be well below the existing daytime noise levels at the nearest noise-sensitive receptors. In addition, events with outdoor amplified sound at the proposed project's Central Green would be

infrequent (with approximately 12 per year). For these reasons, noise effects associated with amplified sound under NEPA Build Alternative 2 would be considered ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Mechanical Equipment

Noise levels from mechanical heating, cooling and ventilation equipment, sewer pump station equipment, and battery energy storage system equipment would have the potential to exceed the applied noise standards at the nearest noise-sensitive receptors under the NEPA Build Alternative 2 with the Sub-Alternative. Mechanical equipment noise effects could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts from project mechanical equipment that would be ***less than significant with mitigation***.

Emergency Generator Testing

Generator testing would be temporary (lasting 2 to 4 hours) and intermittent (occurring once per month). Nonetheless, estimated noise levels would exceed the applied noise standards at the nearest noise-sensitive receptors under the NEPA Build Alternative 2 with the Sub-Alternative. Noise effects from emergency generator testing could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts from project emergency generator testing that would be ***less than significant with mitigation***.

Loading Noise

The Project Site is in an urban area with elevated noise levels, a large portion of project deliveries would take place inside project buildings, and delivery and loading activities would be temporary, intermittent, and primarily during daytime hours. Accordingly, noise impacts associated with loading activities under the NEPA Build Alternative 2 with the Sub-Alternative would be considered ***less than significant***.

Traffic Noise

Project-related traffic is estimated to increase existing ambient noise levels by up to 0.8 dB. This increase is below the 3 dB increase threshold established for traffic noise. Therefore, project traffic noise impacts would be considered ***less than significant*** for the NEPA Build Alternative 2 with the Sub-Alternative.

Parking Garage Noise

Modeled parking garage noise levels under the NEPA Build Alternative 2 with the Sub-Alternative are 17 to 31 dB lower than the existing average daytime noise levels at nearby noise-sensitive receptors (i.e., the Wescoat Village residences). The resulting overall increases in ambient noise levels would be negligible (0.1 dB or less). Noise impacts related to parking garage activity would be considered ***less than significant***.

Amplified Music or Speech at Events

Noise levels from sound-amplifying equipment at project-related programming or events would most likely be well below the existing daytime noise levels at the nearest noise-sensitive receptors. In addition, events with outdoor amplified sound at the proposed project's Central Green would be infrequent (with approximately 12 per year). For these reasons, noise impacts associated with amplified sound under the NEPA Build Alternative 2 with the Sub-Alternative would be considered ***less than significant***.

Impact NEPA-NOI-2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant (vibration-induced damage)	NOI-5. Construction Vibration Control Plan for Vibratory Rollers (vibration-induced damage)	Less than Significant with Mitigation (vibration-induced damage)
	Potentially Significant (interference with vibration-sensitive equipment)	NOI-6. Vibration Control Plan for Sensitive Equipment (interference with vibration-sensitive equipment)	Significant and Unavoidable with Mitigation (interference with vibration-sensitive equipment)
NEPA Build Alternative, 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Potentially Significant (vibration-induced damage)	*Same as NEPA Build Alternative 1*	Less than Significant with Mitigation (vibration-induced damage)
	Potentially Significant (interference with vibration-sensitive equipment)		Significant and Unavoidable with Mitigation (interference with vibration-sensitive equipment)
NEPA Build Alternative 2, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There would be no construction vibration impacts to existing receptors. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Vibration-Induced Damage

Estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures[51] would be expected to exceed the applied Caltrans damage criterion for such buildings (with an applicable PPV vibration criterion of 0.25 in/sec)[52] under NEPA Build Alternative 1. Vibration-related damage effects under NEPA Build Alternative 1 could be significant. Mitigation Measure NOI-5, which would be implemented if a vibratory roller were to operate within 22 feet of nearby Vibration-Sensitive Structures (expected to include Buildings 6, 16, and 510), would reduce construction-related vibration impacts by ensuring that specific buffer distances between sensitive buildings and construction activities involving a vibratory roller would be maintained, as feasible. Mitigation Measure NOI-5 would also require pre-construction surveys to document the existing condition of buildings located close to vibration-intensive construction activities, vibration monitoring, post-construction surveys, and remediation of structures to pre-construction conditions (should damage occur) when such buffer distances are infeasible to maintain. Implementation of this mitigation measure would avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions) and would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

Vibration-Related Annoyance

Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels that would be below the "strongly perceptible" annoyance threshold at nearby residential land uses. Vibration-related annoyance effects under NEPA Build Alternative 1 would be considered ***less than significant***.

Vibration-Sensitive Equipment

Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction. Effects on vibration-sensitive equipment could be significant. Mitigation Measure NOI-6 would reduce impacts on vibration-sensitive equipment through development and implementation of a vibration control plan for sensitive equipment. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Implementation of this

[51] For the purpose of this analysis, structures most similar to the "historic and some old buildings" Caltrans structure type are called Vibration-Sensitive Structures in the vibration-related damage discussion.

[52] Rusch, J., Project Architectural Historian & Preservation Planner (2025, June 16). Email regarding the appropriate Caltrans vibration criteria to apply to buildings near project construction areas.

mitigation measure would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts related to construction vibration impacts on nearby sensitive research equipment.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

Vibration-Induced Damage

Estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration Sensitive Structures would be expected to exceed the applied Caltrans damage criterion (a PPV of 0.25 in/sec) for such buildings under the NEPA Build Alternative 1 with the Sub-Alternative. Vibration-related damage effects under the NEPA Build Alternative 1 with the Sub-Alternative could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions) and would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant with mitigation***.

Vibration-Related Annoyance

Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels below the "strongly perceptible" annoyance threshold at nearby residential land uses. Vibration-related annoyance effects under the NEPA Build Alternative 1 with the Sub-Alternative would be considered ***less than significant***.

Vibration-Sensitive Equipment

Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction. Effects on vibration-sensitive equipment could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts related to construction vibration impacts on nearby sensitive research equipment.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

Vibration-Induced Damage

Estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures would be expected to exceed the applied Caltrans damage criterion

(a PPV of 0.25 in/sec) for such buildings under NEPA Build Alternative 2. Vibration-related damage effects under NEPA Build Alternative 2 could be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would avoid or reduce vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions) and would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in impacts that would be ***less than significant with mitigation***.

Vibration-Related Annoyance

Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels that would be below the "strongly perceptible" annoyance threshold at nearby residential land uses. Vibration-related annoyance effects under NEPA Build Alternative 2 would be considered ***less than significant.***

Vibration-Sensitive Equipment

Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction. Effects on vibration-sensitive equipment could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts related to construction vibration impacts on nearby sensitive research equipment.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Vibration-Induced Damage

Estimated vibration levels from the use of a vibratory roller for in-street utility work within 22 feet of Vibration-Sensitive Structures would be expected to exceed the applied Caltrans damage criterion for such buildings (a PPV of 0.25 in/sec) under the NEPA Build Alternative 2 with the Sub-Alternative. Vibration-related damage effects under the NEPA Build Alternative 2 with the Sub-Alternative could be significant. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to reduce impacts. Implementation of this mitigation measure would avoid or reduce and repair vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions) and would reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in impacts that would be ***less than significant with mitigation***.

Vibration-Related Annoyance

Nighttime on-site concrete pours and off-site in-street utility work would both be expected to result in vibration levels below the "strongly perceptible" annoyance threshold at nearby residential land uses. Vibration-related annoyance effects under the NEPA Build Alternative 2 with the Sub-Alternative would be considered ***less than significant***.

Vibration-Sensitive Equipment

Vibration generated by project construction equipment may exceed applied thresholds for nearby sensitive research equipment and may disrupt the use of such equipment during project construction. Effects on vibration-sensitive equipment would be significant. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts related to construction vibration impacts on nearby sensitive research equipment.

Impact NEPA-NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2, No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not result in significant impacts related to the exposure of persons to excessive aircraft noise. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

With implementation of the NEPA Build Alternative 1, the closest airport or airstrip to the Project Site would be Moffett Federal Airfield, which is directly east of the Project Site. No other airports or airstrips are within 2 miles of the Project Site. According to the Moffett CLUP, the eastern edge of the Project Site is at the outer boundary of the 65 dBA CNEL noise contour for this airfield. Most of the Project Site, including the majority of each potential building location along the eastern perimeter, is outside of the 65 dBA CNEL contour; that portion of the Project Site would be developed with office and/or R&D buildings and a parking structure. According to the Moffett CLUP, noise levels of up to 65 dBA CNEL are generally acceptable for office and professional land uses. Noise levels of 65 to 70 dBA CNEL are considered conditionally acceptable, provided that necessary noise insulation features are included in the design of the building. No portion of the Project Site is within the 70 or 75 dBA CNEL noise contours. This would also be the case under the NEPA Build Alternative 1 with the CUP or WRF Options. Exterior-to-interior noise attenuation at buildings with closed windows is approximately 25 dBA, according to U.S. Environmental Protection Agency's (EPA's) national average data. The office and R&D buildings would be expected to have similar exterior-to-interior noise attenuation. As such, given that exterior noise levels at all project buildings would be approximately 65 dBA CNEL or less, interior noise levels would most likely be around 40 dBA CNEL or less at the office and R&D buildings. The proposed Student/Faculty Housing and Short-Term Lodging uses proposed by the proposed project would also be exposed to aircraft noise. However, these uses would be required to comply with the interior noise performance standards prescribed by Title 24 of the California Code of Regulations (refer to Section 4.2.1.1), ensuring such uses would be designed to provide interior noise levels of 45 dBA CNEL or less. For these reasons, impacts related to aircraft noise under the NEPA Build Alternative 1 would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts related to aircraft noise would be ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts related to aircraft noise would be considered ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Impacts related to aircraft noise would be considered ***less than significant***.

4.5.12 Public Services

Refer to Section 3.14, *Public Services*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.12.1 Affected Environment

Section 3.14.2, *Affected Environment/Environmental Setting*, includes details regarding the affected fire, police, school, and library service providers that serve NASA ARC and Mountain View.

4.5.12.2 Regulatory Setting

The plans, policies, and regulations applicable to public services, which are also applicable to the NEPA analysis, are discussed in Section 3.14.3, *Plans, Policies, and Regulations*, in Section 3.14, *Public Services*.

4.5.12.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on public services if it would result in any of the following conditions:

- Result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services.
- Result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services.
- Result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services.
- Result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other library performance objectives.

Evaluation of potential impacts to police and fire facilities, schools, and libraries is based on a review of documents pertaining to the proposed project and field review of the project study area and surroundings. Impacts on school services that would result from the proposed project were identified by comparing existing service capacity and facilities against future demand associated with project implementation.

4.5.12.4 Environmental Consequences

Impact NEPA-PS-1: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. While the reoccupancy of the buildings that are currently vacant would generate some employment opportunities, given the overall minor increase in employees under the NEPA No-Action Alternative, the increase in demand for police services would not be substantial, and would likely be able to be served by the current police facility. The NEPA No-Action Alternative would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. Thus, the impact would be ***less than significant***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Police services for the Project Site are currently provided by NASA ARC through a contract service via the NASA/ARC Protective Services Contract. The project would result in approximately 200 Short-Term Lodging guests, approximately 363 Student/Faculty Housing residents, and up to 6,132 net new employees and students on-site. The increase in employment and short-term residents associated with the proposed project would represent a more intense use of the Project Site, that

would continue to be served by NASA ARC's Office of Protective Services while the Project Site remains under exclusive federal jurisdiction.[53]

As discussed in Section 3.14.2.2, *Police*, NASA Protective Services does not have a standard service ratio of officers to population or acreage; however, the approximate service population for protective services is 14,500 people. The average response time for the NASA ARC Office of Protective Services is 5 minutes. NASA Protective Services confirmed that to maintain current service levels, two new 24/7 law enforcement officer positions would be required.[54] To accommodate the two new officers, the current protective services facility would require additional office space, weapon storage, lockers, and law enforcement vehicles.[55] However, NASA Protective Services confirmed that the existing protective services facility could be modified internally to accommodate the additional space required without having to expand the facility itself.[56]

Given the developed nature of NASA ARC and the minor nature of these modifications, the physical alteration of the existing police facilities is not expected to be substantial or result in adverse environmental impacts. As stated in the NADP, NASA has its own building permit process and architectural review board. The ARC has adopted the Uniform Building Code and California Green Building Code; all developments at ARC will need to comply with these codes to receive NASA-issued permits prior to construction.[57] In addition, any future modifications would be subject to federal environmental regulations. Based on the available information and review of environmental documents for similar projects, it is anticipated that given the minor nature of the interior modifications required to the existing protective services facility, the modifications would likely not result in significant impacts.

Under NEPA Build Alternative 1, the Project Proponent would also be compensating NASA for services provided at the Project Site, such as Institutional Shared Pool (ISP), which is the mechanism by which NASA charges its tenants for costs for common levels of services provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), and additional demand services above the common levels of service. NEPA Build Alternative 1 would comply with the requirements to pay ISP on an annual basis, and payment of ISP fees would address any increased demand on protective services or the need for new or expanded protective services facilities. These factors support the conclusion that the physical and environmental impact of such a project would not be significant.

Because the proposed project would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts, there would be a ***less-than-significant*** impact.

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53 The proposed project is not evaluating any change in legislative jurisdiction, which would trigger the need for County of Santa Clara Sheriff's Office to provide additional law enforcement services to the Project Site. However, it is noted that a change in legislative jurisdiction could occur in the future, but not included for purposes of the analysis in this environmental document.

54 Lynn Bala, NASA. Desire for Information: Berkeley Space Center at NASA Research Park-NASA ARC Protective Services Questionnaire. May 7, 2025.

55 Ibid.

56 Lynn Bala, NASA. Desire for Information: Berkeley Space Center at NASA Research Park-NASA ARC Protective Services Questionnaire. December 17, 2025.

57 NASA. December 2002. NASA Ames Development Plan. Page 19.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would result in the addition of up to 3,426 new employees and students, 200 Short-Term Lodging guests, and up to 363 Student/Faculty Housing residents. Even with fewer new employees and students than under NEPA Build Alternative 1, NASA Protective Services confirmed that two new 24/7 law enforcement officer positions would be required to maintain current service levels. Therefore, effects would be the same as under NEPA Build Alternative 1 and would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. There would be a ***less-than-significant*** impact.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-PS-2: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. With more employees at the Project Site, there may be an increase in demand for fire protection services. However, the increase in demand for fire protection services resulting from new employees is not expected to be substantial enough to require new or altered fire protection facilities. The NEPA No-Action Alternative would not result in substantial adverse physical impacts associated with the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts. Thus, the impact would be ***less than significant***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Fire protection and emergency medical services would be provided by NASA Ames Fire Department and the County of Santa Clara Emergency Medical Services Agency. NEPA Build Alternative 1 would cause service levels to drop below current levels due to the increase in employees and short-term residents and guests on-site.

NEPA Build Alternative 1 would cause fire and emergency medical service levels to drop below current levels due to the increase in the number of employees and short-erm loding guests and residents on-site. The proposed buildings woul have a maximum height of approximately 80 feet, which is shorter than some of the existing tallest building at ARC.[58] According to the NASA Ames Fire Department, the Department is in need of a larger aerial ladder truck to improve on the Department's ability to provide safe and effective emergency response and access to the existing buildings on NASA ARC as well as the proposed buildings under the proposed project, due to the age of the existing aerial ladder truck and the height of the buildings.[59] The existing Ames Fire Station cannot accommodate the size and operational needs of a larger aerial ladder truck due to limited bay dimensions and an outdated design of the existing facility, andwould need to be modified (i.e., the bay would need to be expanded) to accommodate a larger aerial truck.

[58] The highest occupied floor level would be at a height equal to or less than 75 feet; in accordance with Section 202 of the California Building Code, the proposed project would not be considered a high-rise structure.

[59] Lynn Bala, and Jerry Clark, NASA. Desire for Information: Berkeley Space Center at NASA Research Park—NASA Ames Fire Department Questionnaire. December 17, 2025.

Under NEPA Build Alternative 1, the Project Proponent would compensate NASA for fire services provided at the Project Site through payment of ISP fees, which is the mechanism by which NASA charges its tenants for costs for common levels of services provided throughout its Property on an annual basis (e.g., security and law enforcement, fire department response and inspections, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), and additional demand services above the common levels of service. Payment of the ISP fees would mitigate any increased demand on fire services or the need for new or expanded fire service equipment and fire facilities as a result of NEPA Build Alternative 1.

In conclusion, although the proposed project could result in the need for new or physically altered fire facilities, the related construction is unlikely to cause adverse physical or significant environmental impacts. Therefore, there would be a ***less-than-significant impact***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Impacts would be ***less than significant.***

Impact NEPA-PS-3: Would the project result in substantial adverse physical impacts associated with the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives for school services?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Less than Significant*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Less than Significant*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. However, the reoccupancy of vacant on-site buildings would not include on-site housing and would not directly generate increased demand for school services. Therefore, there would be no need for new or physically altered school facilities, the construction of which could cause adverse environmental impacts. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

School services for the Project Site are provided by MVWSD and MVLA, which serve more than 9,000 students across 9 elementary schools, 2 middle schools, 2 comprehensive high schools, and an alternative high school. The NEPA Build Alternative 1 would include Student/Faculty Housing on-site, which would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). The proposed project is not a housing development project. The proposed housing would prioritize the UC students and faculty affiliated with the proposed project, as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Use Lease requirements. Due to the nature of the proposed project, it is not anticipated that the proposed project would generate school-aged children. Nonetheless, this analysis conservatively assumes that school-aged children could be generated as a result of the Student/Faculty Housing. The NEPA Build Alternative 1 includes Student/Faculty Housing, which could directly increase

demand for school services, as shown in Table 4.5.12-1. The NEPA Build Alternative 1 would generate approximately 18 new elementary and middle school students and seven new high school students. Student generation rates are based on multifamily, market rate housing units; these types of units are not proposed as part of the project. However, this is the closest generation rate for the proposed Student/Faculty Housing units. Thus, the anticipated number of students would be less than what is estimated in Table 4.5.12-1.

Table 4.5.12-1. Project Student Generation Data

School District	Student Generation Rate (Multifamily, Market Rate)	Proposed Housing Units	New Students
MVWSD (K-5)	0.085	145	12.3
MVWSD (6-8)	0.039	145	5.7
MVLA (9-12)	0.047	145	6.8
Total	—	—	***24.8***[60]

As shown in Table 3.14-2 in Section 3.14, *Public Services*, elementary and middle schools in MVWSD are all currently under capacity, although Stevensen and Mistral elementaries are above 90 percent. Any elementary or middle school aged children associated with the additional employees who would reside in the Project Site would likely attend various schools throughout the MVWSD and would not affect one individual school. In addition, the 18 new elementary and middle school students would represent an approximately 1.0 percent increase in enrollment in MVWSD. Therefore, MVWSD could accommodate the potential increase of 18 elementary and middle school students from the proposed project.

In MVLA, Los Altos High School is under capacity by 199 students, but Mountain View High School exceeds capacity by 186 students. Additionally, enrollment across MVLA's comprehensive high schools exceeds total capacity at those schools.[61] As shown in Table 4.5.12-1, the NEPA Build Alternative 1 could generate approximately 7 new high-school students in MVLA. Therefore, it is possible that this increase in enrollment would exceed school capacity levels if any of the students enroll in Mountain View High School, which is already above capacity. Even if all 7 new students attended Mountain View High School, this would represent a 1.0 percent increase in enrollment at Mountain View High School. However, high-school aged students would likely attend various schools throughout MVLA and would not affect one individual school. Conservatively, the NEPA Build Alternative 1 could result in a less than 1.0 percent increase in enrollment at Mountain View High School.

In addition, the increase in employment opportunities could result in indirect impacts on schools, as a small number of employees (with school-aged children) may choose to move to Mountain View to be closer to their work location. The CEQA Proposed Project would result in up to 6,132 net new employees and university students on-site. It is anticipated that that the majority of CEQA Proposed Project employees already live in the San Francisco Bay Area, and that the net number of new employees that would choose to relocate to Mountain View would not be substantial enough to

60 Calculations: 12 elementary students= (145 x 0.085); 6 middle school students= (145 x 0.039); and 7 high school students= (145 x 0.047).

61 Mike Mathiesen, Associate Superintendent – Business, Mountain View Los Altos High School District. Personal Communication, June 2, 2025.

generate unplanned population growth and result in a substantial increase in the demand for school services. Furthermore, families of employees that do not reside in the city of Mountain View would not easily be able to send their children to school at MVWSD or MVLA schools because they would be required to request an inter-district transfer from their school district if they wish to send their school-aged children to schools in Mountain View. The likelihood of a new inter-district transfer into MVWSD being approved or wait listed is very low.[62] In addition, given that both high schools in MVLA are close to or exceed capacity, there are very few slots availabe for inter-district transfers.[63] The NEPA Build Alternative 1 would not result in substantial population growth, and the increases in enrollment across MVLA and MVWSD is anticipated to be 1.0 percent or less. In addition, the proposed project is not a housing development project. Thus, the NEPA Build Alternative 1 would result in impacts that would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not directly generate new students on the Project Site because no Student/Faculty Housing units would be constructed. However, impacts as a result of indirect increases in enrollment from employees (with school-aged children) who may choose to move to Mountain View under the Sub-Alternative would be similar to those of NEPA Build Alternative 1. As discussed under NEPA Build Alternative 1, the increase would not be substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Because the Sub-Alternative would not result in substantial population growth, the increase in employment population associated with the Sub-Alternative would not result in a substantial increase in the demand for public school services or require the construction or expansion of educational facilities. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 2 would result in impacts that would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not directly generate new students on the Project Site because no Student/Faculty Housing units would be constructed. However, impacts as a result of indirect increases in enrollment from employees (with school-aged children) who may choose to move to Mountain View under the Sub-Alternative would be similar to those of NEPA Build Alternative 1. As discussed under NEPA Build Alternative 1, the increase would not be

62 Mountain View Whisman School District. 2026. Interdistrict Transfers. Available: https://www.mvwsd.org/services_and_requests/register_a_student/interdistrict_transfers. March 16, 2026.

63 MVLA School District. 2026. Transfer Process and Policies. Available: https://www.mvla.net/Departments/Educational-Services/Policies-and-Procedures/Transfer-Process-and-Policies/. March 16, 2026.

substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Because the Sub-Alternative would not result in substantial population growth, the increase in employment population associated with the Sub-Alternative would not result in a substantial increase in the demand for public school services or require the construction or expansion of educational facilities. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-PS-4: In order to maintain acceptable service ratios or other performance objectives, would the proposed project result in the provision of or need for new or physically altered library facilities, the construction or operation of which could cause significant environmental impacts?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. The reoccupancy of vacant on-site buildings would not include on-site housing and would not directly generate increased demand for library facilities. Therefore, there would be no need for new or physically altered library facilities, the construction of which could cause adverse environmental impacts. Thus, the impact would be ***less than significant***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Library services for the Project Site are provided by the City of Mountain View. The project would result in approximately 200 Short-Term Lodging guests, approximately 363 Student/Faculty Housing residents, and up to 6,132 net new employees and students on-site that would directly result in an increase in demand for public library services. The anticipated growth in population

associated with the new Student/Faculty Housing is not expected to be substantial and the increase in demand for library services is expected to be minimal. Mountain View Public Library facilities has adequate capacity to service the proposed project-related increase in demand. Therefore, the proposed project would not result in a substantial increase in library use or require the construction of new facilities. As such, implementation of the proposed project would not require the construction of new or expanded library facilities that could result in environmental impacts, and there would be a ***less-than-significant impact***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The anticipated growth in population associated with the new employees is not expected to be substantial and the increase in demand for library services is expected to be minimal. Mountain View Public Library has adequate capacity to service the proposed project-related increase in demand. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There would be a ***less-than-significant impact***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The anticipated growth in population associated with the new employees is not expected to be substantial and the increase in demand for library services is expected to be minimal. Mountain View Public Library has adequate capacity to service the proposed project-related increase in demand. There would be a ***less-than-significant impact***.

4.5.13 Recreation

Refer to Section 3.15, *Recreation*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives.

4.5.13.1 Affected Environment

Section 3.15.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment and recreational resources within NASA ARC, Mountain View, and Sunnyvale, and defines the relevant open space level-of-service goals.

4.5.13.2 Regulatory Setting

The plans, policies, and regulations applicable to recreation, which are also applicable to the NEPA analysis, are discussed in Section 3.15.3, *Plans, Policies, and Regulations*, in Section 3.15, *Recreation*.

4.5.13.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on recreation if it would result in any of the following conditions:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered parks facilities, need for new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks services.
- Substantially reduce the amount of active recreation or passive recreation within Ames Research Center, thus leading to an increase in use of surrounding recreational areas by people living or working at the center.
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Evaluation of potential impacts related to recreational resources is based on a review of documents pertaining to the proposed project and desktop review of the project study area and surroundings. Impacts on recreational resources that would result from the proposed project were identified by comparing existing service capacity and facilities against future demand associated with project implementation.

4.5.13.4 Environmental Consequences

Impact NEPA-REC-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered parks facilities, need for new or physically altered parks facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks services?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. There would be no change to existing recreation resources and no increase in use of or demand for new parks facilities. Therefore, the NEPA No-Action Alternative would not result in substantial adverse physical construction-related impacts associated with the provision or the need for new or physically altered parks. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

NEPA Build Alternative 1 would include a minimum of 10 acres of publicly accessible open space, including pathways, active uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). In addition, NEPA Build Alternative 1 would include up to 90,000 square feet of active uses that would be accessible by pedestrians. Active uses could include display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, a gym or other amenities, shared maker spaces and fabrication workshops, co-working spaces, restaurants, community-serving retail, and personal services.

NEPA Build Alternative 1 includes approximately 145 Student/Faculty Housing units and 100 Short-Term Lodging units; overall, there will be approximately 200 Short-Term Lodging guests and 363 Student/Faculty Housing residents on the Project Site, for a total of 563 new guests and residents. In addition, NEPA Build Alternative 1 would result in approximately 5,997 employees and 177 students working at the Project Site for a total of approxiamtely 6,174 new employees and students. The increase in student/faculty residents and employees could result in an increase in demand for parks facilities within the surrounding the areas.

As shown in Table 4.5.13-1, using the NASA open space level-of-service goal, the new residents, guests, students, and employees from NEPA Build Alternative 1 would result in open space demand in excess of what is provided by the Project Site alone. However, NASA ARC currently has approximately 129.6 acres of active recreational land and is exceeding the acceptable service ratio by 9 acres.[64] With the 10 additional acres of open space included in the proposed project, the demand from new residents and employees would not exceed NASA ARC level-of-service ratios and

[64] NASA approximately 131 acres of active recreational areas; however, approximately 1.4 acres is designated for ARC Park, which is accessible only to NASA badged employees, and includes a small outdoor fitness area and volleyball courts.

would not result in the need for new or physically altered parks facilities. In addition, under NEPA Build Alternative 1, the Project Proponent would also compensate NASA for services provided at the Project Site, such as the ISP, the mechanism by which NASA charges its tenants for costs associated with common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, and infrastructure maintenance and repairs), along with additional demand services above the common levels of service.

Table 4.5.13-1. NEPA Build Alternative 1 Service Ratio Calculation

	NASA ARC
Total Net New Guests and Residents	563
New Guests and Residents Open Space Demand	1.69 acres[a]
Total Net New Employees and Students	6,132
New Employees and Students Open Space Demand	9.26 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	10.95 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***-0.95 acre***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

Because new potential users of park and recreational amenities associated with the proposed project would not substantially increase the use of recreational facilities, the proposed project would not require new facilities to be built. Therefore, implementation of the proposed project would not result in substantial adverse physical construction-related to effects associated with the provision or the need for new or physically altered parks. The effects would be ***less than significant.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 1. Under the NEPA Build Alternative 1 with the Sub-Alternative, there would be no increase in use of or demand for recreation facilities from residents. However, as shown in Table 4.5.13-2, the guests, students, and employees generated by the Sub-Alternative could result in a deficit of 0.37 acre of open space. As shown in Table 4.5.13-2, the new residents, guests, students, and employees from the Sub-Alternative would result in open space demand in excess of what is provided by the Project Site alone; however, NASA ARC currently has approximately 129.6 acres of active recreational land and is exceeding the acceptable service ratio by 9 acres. With the 10 additional acres of open space proposed by the proposed project, the demand from new residents, guests, students, and employees would not exceed NASA ARC level-of-service ratios and would not result in the need for new or physically altered parks facilities. In addition, under the Sub-Alternative, the Project Proponent would compensate NASA for services provided at the Project Site, including payment of ISP fees. As such, new potential users of recreational facilities associated with the proposed project would not directly substantially increase the use of park or recreational

facilities, and the proposed project would not require new facilities to be built. Therefore, implementation of the proposed project would not result in substantial adverse physical construction-related effects associated with the provision of or the need for new or physically altered parks. Impacts would be ***less than significant***.

Table 4.5.13-2. NEPA Build Alternative 1 No Student/Faculty Housing Variant Service Ratio Calculation

	NASA ARC
Total Net New Guests	200
New Guests Open Space Demand	0.6 acres[a]
Total Net New Employees and Students	6,518
New Employees and Students Open Space Demand	9.77 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	10.37 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***-0.37 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

NEPA Build Alternative 2 would not change the basic characteristics of NEPA Build Alternative 1, including the types of land uses, locations, and the site plan. Therefore, the analysis for NEPA Build Alternative 1 applies to NEPA Build Alternative 2, and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 1. Under NEPA Build Alternative 2, there would be fewer employees and students than under NEPA Build Alternative 1. As shown in Table 4.5.13-3, the guests, residents, students, and employees generated by the CEQA Reduced Density Alternative could result in a surplus of 3.17 acres of open space.

Table 4.5.13-3. NEPA Build Alternative 2 Service Ratio Calculation

	NASA ARC
Total Net New Guests and Residents	563
New Guests and Residents Open Space Demand	1.69 acres[a]
Total Net New Employees and Students	3,384
New Employees and Students Open Space Demand	5.08 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	6.77 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***3.23 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

As shown on Table 4.5.13-3, NEPA Build Alternative 2 would not exceed acceptable service ratios for NASA ARC. New potential users of recreational facilities associated with the proposed project would not directly substantially increase the use of park or recreational facilities and the proposed project would not require new facilities to be built. Therefore, implementation of the proposed project would not result in substantial adverse physical construction-related effects associated with the provision or the need for new or physically altered parks. Impacts would be ***less than significant.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 2. Under the NEPA Build Alternative 2 with the Sub-Alternative, there would be no increase in use of or demand for recreation facilities from residents. As shown in Table 4.5.13-4, the guests, residents, students, and employees generated by the Sub-Alternative could result in a surplus of 3.74 acres of open space.

Table 4.5.13-4. NEPA Build Alternative 2 No Student/Faculty Housing Variant Service Ratio Calculation

	NASA ARC
Total Net New Guests	200
New Guests Open Space Demand	0.6 acres[a]
Total Net New Employees and Students	3,770
New Employees and Students Open Space Demand	5.66 acres[b]
Total New Open Space Demand (Residents + Employees + Students)	6.26 acres
Proposed New Open Space on the Project Site	10 acres
Open Space Surplus or Deficit	***3.74 acres***

Note:

a. The open space demand is based on a residential demand rate of 3 acres per 1,000 residents, consistent with the demand rate in the NADP.

b. The open space demand is based on an employee and student demand rate of 1.5 acres per 1,000 residents, consistent with the demand rate in the NADP.

The Sub-Alternative would not exceed acceptable service ratios for NASA ARC. New potential users of recreational facilities associated with the proposed project would not directly substantially increase the use of park or recreational facilities and the proposed project would not require new facilities to be built. Therefore, implementation of the proposed project would not result in substantial adverse effects associated with the provision or the need for new or physically altered parks. Impacts would be ***less than significant***.

Impact NEPA-REC-2: Would the project substantially reduce the amount of active recreation or passive recreation within Ames Research Center, thus leading to an increase in use of surrounding recreational areas by people living or working at the center?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	No Impact	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	No Impact	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. There would be no change to existing recreation resources and no increase in the use of surrounding recreational areas by people living or working at NASA ARC. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

NEPA Build Alternative 1 would not directly reduce the amount of active or passive recreation within NASA ARC and would provide an additional minimum of 10 acres of open space within NASA ARC. In addition, as described under Impact NEPA-REC-1, NEPA Build Alternative 1 would not exceed acceptable level service ratios for NASA ARC. Therefore, there would be ***no impact***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 1. Therefore, the analysis for NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 1. There would be ***no impact***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

NEPA Build Alternative 2 would not directly reduce the amount of active or passive recreation within NASA ARC and would provide an additional minimum of 10 acres of open space within NASA ARC. In addition, as described under Impact NEPA-REC-1, NEPA Build Alternative 2 would not exceed acceptable level service ratios for NASA ARC. Therefore, there would be ***no impact***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 2. Therefore, the analysis for NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 2. There would be ***no impact***.

Impact NEPA-REC-3: Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The reoccupancy of the buildings that are currently vacant would generate some employment opportunities. There would be no change to existing recreation resources and no increase in use of or demand for new parks facilities. The NEPA No-Action Alternative would not require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

NEPA Build Alternative 1 would include a minimum of 10 acres of publicly accessible open space, including pathways, active uses (e.g., occupied areas that pedestrians could access via sidewalks or pathways), and passive uses (e.g., open lawns, patios). The project would include up to four open space areas, consisting of the following: Central Green, Hangar Commons, Gateway Plaza, and Promenade. The environmental impacts associated with the construction of the open space and active use areas are evaluated throughout this EIR/EIS, including, but not limited to, in Section 3.3, *Air Quality*; Section 3.4, *Biological Resources*; Section 3.8, *Greenhouse Gas Emissions*; and Section 3.10, *Hydrology and Water Quality*. As analyzed in Impact NEPA-REC-1, the proposed project would not require new recreational facilities to be built because future project residents, guests, students, and employees would have access to a minimum of 10 acres of publicly accessible open space, including pathways and a gym. In addition, as discussed above, NASA ARC has approximately 129.6 acres of active recreational areas, including a golf course, informal recreation areas, playing fields, small outdoor picnic area, and natural areas that are used for walking and could be used by project employees. In addition, under NEPA Build Alternative 1, the Project Proponent would compensate NASA for services provided at the Project Site through payment of ISP fees. Furthermore, although it is possible that some project-generated employees who reside outside of the adjacent cities may choose to take advantage of Mountain View and Sunnyvale's park and recreational facilities near the Project Site, Mountain View has approximately 972 acres of parkland and Sunnyvale has approximately 223 acres of parkland. Therefore, given the amount of existing open space and recreational facilities, the existing NASA ARC, Mountain View, and Sunnyvale facilities are anticipated to be able to absorb park and recreational demands resulting from the proposed project. NEPA Build Alternative 1 would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. Therefore, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 1. In addition, the NEPA Build Alternative 1 with the Sub-Alternative would include the same amount of open space as under NEPA Build Alternative 1. Therefore, the analysis for NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 1. There would be a ***less-than-significant*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

NEPA Build Alternative 2 would not change the basic characteristics of NEPA Build Alternative 1, including the types of land uses, locations, and the site plan. Therefore, the analysis for NEPA Build Alternative 1 applies to NEPA Build Alternative 2, and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 1. NEPA Build Alternative 2 would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment. There would be a ***less-than-significant*** impact.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of NEPA Build Alternative 2. Therefore, the analysis for NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 2. There would be a ***less-than-significant*** impact.

4.5.14 Socioeconomics

Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Berkeley Space Center at NASA Research Park Socioeconomics Technical Report* (Socioeconomics Technical Report) prepared by ICF, April 2026 (Appendix 4-1 of this joint EIR/EIS)

In addition, U.S. Census Bureau, U.S. Bureau of Labor Statistics, and California Employment Development Department data as well as feedback from NASA were used in this analysis.

4.5.14.1 Affected Environment

To assess proposed action socioeconomic effects on the local economy, housing-related demand, and fiscal effects local governments, this analysis considers different regions for each analysis. As detailed in the Socioeconomics Technical Report, because Bay Area housing markets do not exclusively conform with geographic and jurisdictional boundaries, a housing impact area (HIA) was identified to analyze housing-related demand effects of the proposed project. The HIA was defined by comparing residential patterns of commuters to patterns found within the Metropolitan Transportation Commission (MTC) superdistricts, which contains the area covered by the 2002 programmatic environmental impact statement (PEIS) for the NADP. The comparison was limited to regions that added 1 percent or more to the total number of commuters to the NADP superdistrict; the patterns were verified by the most recent commuting data (2016), see Figure 3-2 in the Socioeconomics Technical Report.[65] The HIA remains consistent with the 2002 PEIS. Additionally, because of where employees are likely to reside, this analysis provides additional consideration to the city of Sunnyvale and Mountain View in addition to Santa Clara County. The study area with respect to effects on the local economy and with respect to fiscal effects on local governments is defined as Santa Clara County. Further consideration of fiscal effects on local governments extends to Sunnyvale and Mountain View in addition to Santa Clara County because of the housing demand expected in those cities.

4.5.14.2 Regulatory Setting

The plans, policies, and regulations applicable to socioeconomics, which are also applicable to the NEPA analysis, are discussed in the Socioeconomics Technical Report, included as Appendix 4-1 of this joint EIR/EIS.

[65] The regions that generated 1 percent or more to the commute percentage were Central San Mateo County, South San Mateo County, Northwest Santa Clara County, North Santa Clara County, West Santa Clara County, Central Santa Clara County, East Santa Clara County, Central-South Santa Clara Couty, South Santa Clara County, East Alameda County, and South Alameda County.

4.5.14.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on socioeconomics if it would result in any of the following conditions:

- Create a significant detriment or benefit to the local economy.
- Generate workers who would not be able to find on-site housing or would represent more than 1 percent of the predicted new households in the identified HIA between 2026 and 2040. This would be considered significant due to the presence of a jobs/housing imbalance in the region.
- Create a cost impact on a local government or school district that amounts to more than 0.5 percent of that jurisdiction's general fund or revenue limit.

The analysis of the proposed project's potential to create a significant detriment or benefit to the local economy considers how construction and operation of each Build Alternative would affect the local economy. It does this by considering contributions to employment relative to the scale of development under each Build Alternative. The impact on the local economy is studied further using an economic modeling tool, IMPLAN.[66] In addition to the direct employment that the proposed project would support through the construction and operation, the impacts to local and regional economy extends to local supply chains and increased household spending as a result of the spending of employees. These indirect and induced impacts are significant, and the structure of the IMPLAN model shows that, during operation of all four phases, the proposed project would create, on average, 0.95 indirect and induced jobs for each direct job supported annually (see the Socioeconomics Technical Report). Because these impacts are not specifically and exclusively project-specific impacts, they are excluded from the effects on the local economy threshold analysis in Section 4.5.14.4, *Environmental Consequences*. The development of the IMPLAN model, including inputs and the consideration of direct, indirect and induced impacts, is discussed further in the Socioeconomics Technical Report. In cases of minimal detriment or benefit a magnitude finding of *negligible* may be useful to support an impact characterization.

To assess the impact of the Build Alternatives on housing demand, this analysis relies on the latest available data to calculate project-generated household demand (by considering net employee and student growth under each alternative compared to the NEPA No-Action Alternative), following the approach used in the 2002 PEIS and detailed in Section 5.1, *Methodology,* in the Socioeconomics Technical Report. This additional household demand is compared to the total number of households projected to be added to the HIA between 2026 and 2040, which is when the proposed project is expected to be fully operational. For additional context, it also considers the compatibility of the NEPA Build Alternatives with the land uses from the 2002 PEIS, given that much of the growth proposed under the NEPA Build Alternatives was analyzed under the PEIS.

Financial impacts on local governments are informed by feedback from NASA and other public service providers regarding the procedures to compensate for local government and facility uses; the analysis also considers the 2002 PEIS fiscal impact analysis. Section 3.5, *Local Governments and Facilities Budget Conditions*, in the Socioeconomics Technical Report describes the funding mechanisms NASA imposes on its development partners, which do not alter the commitments previously analyzed in the 2002 PEIS. The specific jurisdictional impacts are unknown at this time due to uncertainties regarding where employees will reside. The following analysis provides a high-

[66] This IMPLAN analysis acknowledges that the build location is on federal land; however, the model does not differentiate between land types.

level perspective to the overall fiscal impacts in the three most affected jurisdictions (i.e., Mountain View, Sunnyvale, and unincorporated Santa Clara County). Similar to the approach to economic effects, above, for fiscal impacts on local governments, a magnitude finding of *negligible* may be useful to support an impact characterization.

4.5.14.4 Environmental Consequences

Impact NEPA-SOCIO-1: Would the project create a significant detriment or benefit to the local economy?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Negligible Benefit	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Minor Benefit	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Minor Benefit	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of the buildings that are currently vacant would generate some benefit to the local economy under this alternative. Employees associated with the reoccupied buildings would generate economic activity through both their spending habits and possible relocation to the HIA. However, without major construction activity, there would be no related construction spending under the NEPA No-Action Alternative compared with the NEPA Build Alternatives. Ultimately, the NEPA No-Action Alternative would provide some beneficial effect to the local economy; the 626 potential new workers[67] added under this alternative would be a negligible percentage of the overall number of workers in Santa Clara County (i.e., 466,891 new jobs by 2040,

[67] This excludes the 42 employees or tenants currently on-site and includes only the approximately 626 new employees who would be generated by the NEPA No-Action Alternative. The total number of employees generated by the NEPA No-Action Alternative (668) is based on a generation rate of 3.6 employees per 93 square meters (i.e., 1,000 square feet), as used in the 2002 PEIS, and the approximately 185,600 square feet of unoccupied buildings currently on-site.

see Table 6 in the Socioeconomics Technical Report). Thus, there would be a ***negligible benefit*** as a result of the NEPA No-Action Alternative*.*

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction and operation of NEPA Build Alternative 1 would result in economic growth. While construction of NEPA Build Alternative 1 would generate an economic benefit through materials and labor required, as detailed in the Socioeconomics Technical Report, this benefit would be temporary. Operation of NEPA Build Alternative 1 would generate 6,132 new employees and students, or 5,329 more employees and 177 more students than under the NEPA No-Action Alternative. While NEPA Build Alternative 1 would increase the number of permanent employees at the Project Site, this increase would be relatively minor in the context of the county's projected job growth, accounting for only 1.3 percent of the 466,891 projected new jobs by 2040, and therefore would not represent a significant benefit or detriment to the local economy. Overall, NEPA Build Alternative 1 would result in an increase in the number of permanent employees and students at the Project Site and potentially an increase in the number of occupied households in Santa Clara County. The growth under NEPA Build Alternative 1 would generate economic activity through both spending and possible relocation to the HIA to a greater extent than the NEPA No-Action Alternative. Thus, there would be ***minor benefit*** as a result of NEPA Build Alternative 1*.*

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Construction of the NEPA Build Alternative 1 with the Sub-Alternative would generate a similar temporary beneficial effect on the local economy to that of NEPA Build Alternative 1. Operation of the sub-alternative would generate 6,518 new employees and students, or 5,705 more employees and 187 more students than the NEPA No-Action Alternative. Similar to NEPA Build Alternative 1, the overall incremental increase in the number of permanent employees at the Project Site would be relatively minor in the context of the county's projected job growth, accounting for only 1.4 percent of the 466,891 projected new jobs by 2040. Overall, the Sub-Alternative would result in an increase in the number of employees and students at the Project Site and potentially an increase in the number of occupied households in Santa Clara County. Similar to NEPA Build Alternative 1, this growth would generate economic activity through both spending and possible relocation to the HIA. Thus, there would be ***minor benefit*** as a result of NEPA Build Alternative 1 Sub-Alternative.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for NEPA Build Alternative 1 applies to NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under NEPA Build Alternative 1. With 920,000 fewer square feet than NEPA Build Alternative 1, NEPA Build Alternative 2 would result in reduced direct expenditures for construction-related materials, expenditures that would normally benefit local suppliers, and less secondary spending. Operation of NEPA Build Alternative 2 would generate 3,384 new employees and students, or 2,663 more employees and 95 students more than under the NEPA No-Action Alternative. While NEPA Build Alternative 2 would increase the number of permanent employees at the Project Site, this increase would be relatively minor in

the context of the county's projected job growth, accounting for only 0.7 percent of the 466,891 projected new jobs by 2040. Overall, NEPA Build Alternative 2 would result in an increase in the number of employees and students at the Project Site and potentially an increase in the number of occupied households in Santa Clara County. Similar to NEPA Build Alternative 1, this growth would generate economic activity through both spending and possible relocation to the HIA. Thus, there would be ***minor benefit*** as a result of NEPA Build Alternative 2.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Construction of the NEPA Build Alternative 2 with the Sub-Alternative would have a temporary beneficial effect on the local economy less than NEPA Build Alternative 1, which would be more similar to that of NEPA Build Alternative 2. However, with respect to operation, the Sub-Alternative would generate 386 more new employees and students than NEPA Build Alternative 2. Operation of the NEPA Build Alternative 2 with the Sub-Alternative would generate 3,770 new employees and students, or 3,039 more employees and 105 more students than under the NEPA No-Action Alternative. Similar to the above NEPA Build Alternatives, the overall incremental increase in the number of permanent employees at the Project Site would be relatively minor in the context of the county's projected job growth, accounting for only 0.8 percent of the 466,891 projected new jobs by 2040. Overall, the Sub-Alternative would result in an increase in the number of employees and students at the Project Site and potentially a minor increase in the number of occupied households in Santa Clara County. Similar to NEPA Build Alternative 1, this growth would generate economic activity through both spending and possible relocation to the HIA. Thus, there would be ***minor benefit*** as a result of NEPA Build Alternative 2 Sub-Alternative***.***

Impact NEPA-SOCIO-2: Would the project generate workers who would not be able to find on-site housing or would represent more than 1 percent of the predicted new households in the identified HIA between 2026 and 2040? This would be considered significant due to the presence of a jobs/housing imbalance in the region.

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	None Available	Significant and Unavoidable
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	None Available	Significant and Unavoidable
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of buildings under the NEPA No-Action Alternative would generate approximately net new 626 employees.[68] This analysis conservatively assumes all of these employees would need new housing in the HIA. The household demand in the HIA generated by the NEPA No-Action Alternative would be 447, which is 0.13 percent of the total number of new households in the HIA from 2025 to 2040.[69] Housing demand generated by the NEPA No-Action Alternative would not represent more than 1 percent of the number of predicted new households in the identified HIA between 2025 and 2040 and therefore would not exceed the threshold for significant adverse effects with respect to housing. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction of NEPA Build Alternative 1 would require an estimated annual average of 457 construction employees. Even if all construction employees were new and moved to the HIA, this would represent less than 1 percent of the anticipated 345,900 new households in the HIA. Therefore, the construction phase of NEPA Build Alternative 1 would not exceed the housing significance threshold. Operations under NEPA Build Alternative 1 would generate up to 6,132 net new employees and students at NASA ARC.[70] After considering the nature of the proposed Student/Faculty Housing provided under this alternative, the net household demand in the HIA generated by NEPA Build Alternative 1 would be 4,276, which is 1.24 percent of the total number of new households in the HIA from 2025 to 2040[71] Therefore, operation of NEPA Build Alternative 1 would exceed the impact threshold of 1 percent.

Although NEPA Build Alternative 1 would generate workers who would not be housed on-site and would represent more than 1 percent of the predicted new households in the HIA through 2040 there are some nuances to consider, including the existing housing vacancies in the HIA, the remaining underutilized sites at NASA ARC, and the nature of the housing imbalance in the region. Regarding project demand for housing units in the HIA, as discussed in Section 3.2*, Population and Housing Characteristics,* there were 33,046 vacant housing units in Santa Clara County in 2025 and 47,796 vacant housing units in the HIA, which could serve household demand (4,121 households) generated by NEPA Build Alternative 1. As noted in the Socioeconomics Technical Report, in Section 5.1.2, *Housing Demand Impacts*, under *Methodology,* the proposed 145 Student/Faculty Housing

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68 This excludes the 42 employees or tenants currently on-site who would remain at the Project Site; it includes only the approximately 626 employees that would be generated by the NEPA No-Action Alternative. The number of employees generated by the NEPA No-Action Alternative is based on the generation rate of 3.6 employees per 93 square meters (i.e., 1,000 square feet) used in the 2002 PEIS and the approximately 185,600 square feet of unoccupied building space currently on-site.

69 The net household demand in the HIA generated by NEPA No-Action Alternative 1 (447 units [see Appendix 4-1, Table 10]) divided by the total number of new households in the HIA from 2025 to 2040 (345,900 [derived from Table 3]) equals the percentage (0.13 percent [from Table 10]).

70 Reference to net new employees and students is used throughout to account for the 42 existing employees on the Project Site that is deducted from the calculation.

71 The net household demand in the HIA generated by NEPA Build Alternative 1 (4,276 units [see Appendix 4-1, Table 10]) divided by the total number of new households in the HIA from 2025 to 2040 (345,900 [derived from Table 3]) equals the percentage (1.24 percent [from Table 10]).

units would contribute to the residential units programmed in the NADP that have not yet been developed in NASA ARC.[72] The proposed Student/Faculty Housing would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer), and occupants are conservatively assumed to also include partners/spouses and children. Housing would prioritize UC students and faculty affiliated with the NEPA Build Alternative as well as on-site federal employees and student interns, per the Project Proponent's enhanced-use lease requirements. The Student/Faculty Housing would include a mix of studio, one-bedroom, and two-bedroom apartments as well as amenity space. Based on the above, the proposed Student/Faculty Housing units were programmed in the NADP and analyzed in the 2002 PEIS; thus, the proposed Student/Faculty Housing units have previously been considered in planning processes.

Projects go forward at different times; therefore, there will inevitably be temporary periods of imbalance. The proposed project is facilitating the overall vision of the 2002 NADP, a planning-level document, by developing an underutilized site with land uses consistent with the NRP site. As further noted in the Socioeconomics Technical Report in Section 3.3, *Labor Supply and Employment,* the housing imbalance is at a regional level and varies by jurisdiction, and based on current rates is improved from the 2002 PEIS identified rates of 1.4 to 1.6.[73] While this is a planning-level threshold and NASA could achieve an improved balance for NASA ARC through subsequent projects, given that there are no feasible mitigation measures for the Project Proponent to provide additional housing at the Project Site, the impact related to a jobs/housing imbalance would be ***significant and unavoidable.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Construction-related housing demand under the NEPA Build Alternative 1 with the Sub-Alternative is expected to be the same as under NEPA Build Alternative 1. Given housing is not proposed under the Sub-Alternative, operation of this Sub-Alternative would generate approximately 6,518 net new employees and students and a household demand of 4,656, which is 1.35 percent of the total number of new households in the HIA from 2025 to 2040.[74] Therefore, operation of NEPA Build Alternative 1 with the Sub-Alternative would exceed the impact threshold of 1 percent. For the same rationale as outlined for the NEPA Build Alternative 1 regarding feasibility of project mitigation, the NEPA Build Alternative 1 with the Sub-Alternative would result in a ***significant and unavoidable impact*** related to a jobs/housing imbalance.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the

[72] The 100 units for short-term guest lodging would never be used for residential occupancy and are therefore not considered in this analysis.

[73] As detailed in Appendix 4-1, Section 3.3, for every housing unit in Mountain View, Sunnyvale, and Santa Clara County, there are 1.21, 1.37, and 1.41 employed persons, respectively. These rates are comparable and in some cases better than the current Bay Area-wide rate of 1.4.

[74] The net household demand in the HIA generated by NEPA Build Alternative 1 (4,656 units [see Table 10]) divided by the total number of new households in the HIA from 2025 to 2040 (345,900 [derived from Table 3]) equals the percentage (1.35 percent [from Table 10]).

analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Compared with NEPA Build Alternative 1, NEPA Build Alternative 2 would have a reduced effect on housing demand because it would generate fewer employees and students and therefore would reduce the demand associated with future households. Construction-related housing demand under NEPA Build Alternative 2 is expected to be less than under NEPA Build Alternative 1 because the estimated annual average construction workforce demand is 232 (as opposed to 457). Operations under NEPA Build Alternative 2 would generate approximately 3,384 net new employees and students. After considering the nature of the proposed Student/Faculty Housing provided under this alternative, the net household demand would be 2,314, which is 0.67 percent of the total number of new households in the HIA from 2025 to 2040.[75] Therefore, operation of NEPA Build Alternative 2 would be less than the impact threshold of 1 percent and the impact related to a jobs/housing imbalance is considered ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

Compared with NEPA Build Alternative 1, the NEPA Build Alternative 2 with the Sub-Alternative would have a reduced effect on housing demand because it would generate fewer employees and therefore would reduce the demand associated with future households. Construction-related housing demand under the Sub-Alternative is expected to be the same as under NEPA Build Alternative 2. Given housing is not proposed under the NEPA Build Alternative 2 with the Sub-Alternative, operation of this alternative would generate up to approximately 3,770 net new employees and students at NASA ARC and a household demand of 2,693, which is 0.78 percent of the total number of new households in the HIA from 2025 to 2040.[76] Therefore, operation of NEPA Build Alternative 2 with the Sub-Alternative would generated housing demand less than the impact threshold of 1 percent and the impact related to a jobs/housing imbalance is considered ***less than significant***.

75 The net household demand in the HIA generated by NEPA Build Alternative 2 (2,314 units [see Table 10]) divided by the total number of new households in the HIA from 2025 to 2040 (345,900 [from Table 3]) equals the percentage (0.62 percent [from Table 10]).

76 The net household demand in the HIA generated by the NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (2,693 units [see Table 10]) divided by the total number of new households in the HIA from 2025 to 2040 (345,900 [from Table 3]) equals the percentage (0.78 percent [from Table 10]).

Impact NEPA-SOCIO-3: Would the project create a cost impact on a local government or school district that amounts to more than 0.5 percent of that jurisdiction's general fund or revenue limit?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Negligible	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Overall, reoccupancy of buildings under the NEPA No-Action Alternative would contribute somewhat to local sales tax revenues. Without new construction, there would be no nexus for the payment of ISP fees or other fees to local jurisdictions. Employees and visitors associated with the reoccupied buildings would contribute to local sales tax revenues at the same rate as the Build Alternatives, but to a lesser level than under the Build Alternatives because there would be fewer employees under the NEPA No-Action Alternative. Under the NEPA No-Action Alternative, there would be a minimal impact on local government fiscal resources, and there would be a ***negligible*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The Project Site is one of the parcels considered for redevelopment in the 2002 NADP. Although NEPA Build Alternative 1 proposes additional square footage, the land uses are within the scope of the analysis set forth in the 2002 PEIS[77] and the ROD. According to IMPLAN economic modeling, total tax revenues generated from construction activities, including federal, state, and local taxes in jurisdictions around the Project Site, would amount to $425 million, averaging $30.4 million

[77] The 2002 PEIS explored the fiscal impact on local governments by studying per capita expenditures on recreation.

annually. The total tax revenue from operation activities (described as operation and maintenance in Socioeconomics Technical Report) is about $617 million annually. The adopted fiscal year 2024–2025 budgets for Santa Clara County[78], Sunnyvale[79], and Mountain View[80] indicates that local general fund revenue was about $583 million collectively.[81] When excluding State and federal taxes, the cumulative total for local tax from construction activities is $59 million, (about 14 percent of local tax revenue) with an annual average contribution of $4.3 million (a contribution rate of 0.7 percent of local taxes a year) and the local tax from operation activities is amounts to $43 million annually (about 7.3 percent of the local tax revenue).[82] Although project-specific tax exemptions at the Project Site may reduce annual contributions, and the ultimate allocation between jurisdictions is subject to where future employees reside and do business, based on the above IMPLAN modeling, if these additional tax revenues are included, the general fund revenue would increase by roughly 0.7 percent in a year with construction and 7.3 percent during years with all four phases of operation.

The anticipated tax revenues discussed above would be partly offset by additional use of public services and facilities. NEPA Build Alternative 1 would generate 145 Student/Faculty Housing units (with 2.5 occupants per units) and have a corresponding increase in demand for public services. Additionally, the Project Proponent would compensate demand for NASA services provided to the proposed project through the ISP. Currently, NASA charges its tenants for services provided on demand and ISP costs for common levels of service provided throughout its property on an annual basis (e.g., security and law enforcement, fire department response and inspection, emergency medical response, first responder operations, common grounds [including recreational areas], roads, infrastructure maintenance and repairs, and basic environmental oversight), along with additional demand services above the common levels of service. The Project Proponent would comply with the requirements to pay ISP on an annual basis. Payment of the ISP fees would address any increased demand and net cost on NASA services as a result of NEPA Build Alternative 1. Furthermore, the demand for 4,121 housing units under this alternative would be spread throughout the HIA, constituting a negligible marginal cost increase in the HIA.[83] The increase in the number of new residents across the County is expected to be offset by the growth in tax revenue

78 County of Santa Clara. 2024. *Fiscal Year 2024–2025 Adopted Budget. Funds Summary – All Funds, Revenues by Type*. Available: https://files.santaclaracounty.gov/2024-10/fy-2024-2025-adopted-budget.pdf?VersionId=mPrgC2w4I6bie3stRWk_CJmR4Wc66oNn. Accessed: July 31, 2025.

79 City of Sunnyvale. 2025. *Annual Comprehensive Financial Report* Available: https://www.sunnyvale.ca.gov/home/showpublisheddocument/6307/639010391944870000. Accessed: March 18, 2026.

80 City of Mountain View. 2025. *Annual Comprehensive Financial Report*. Available: https://www.mountainview.gov/home/showpublisheddocument/12666/639020856765230000. Accessed: March 18, 2026.

81 County of Santa Clara. 2024. *Fiscal Year 2024–2025 Adopted Budget. Funds Summary – All Funds, Revenues by Type*. Available: https://files.santaclaracounty.gov/2024-10/fy-2024-2025-adopted-budget.pdf?VersionId=mPrgC2w4I6bie3stRWk_CJmR4Wc66oNn. Accessed: July 31, 2025.

82 *Local tax* refers to the revenue collected by a county, city, township, village government, public school district, or fire district. *Total tax* refers to the revenue collected by federal, state, and local governments.

83 For context, the student count for Santa Clara County is 253,000, according to 2025 data from the California Department of Education (https://www.cde.ca.gov/ds/ad/cefenrollgradetype.asp).

from construction as well as operation, resulting in negligible net service impacts.[84] The potential tax revenues for County and state jurisdictions from NEPA Build Alternative 1 would far exceed the potential net increased costs (i.e. in excess of their paid user fees) from their use of government facilities. NEPA Build Alternative 1 would not result in a cost impact on a local government that would amount to more than 0.5 percent of a jurisdiction's general fund or revenue limit. Therefore, the impact on local government fiscal resources is considered ***less than significant***.

As mentioned above, NEPA Build Alternative 1 would generate 145 Student/Faculty housing units. These units would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). The proposed housing would prioritize the UC students and faculty affiliated with the proposed project, as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Lease requirements. Due to the nature of the proposed project, it is not anticipated that the proposed project would generate school-aged children. Nonetheless, this analysis conservatively assumes that school-aged children could be generated as a result of the proposed Student/Faculty Housing. It is anticipated that the proposed Student/Faculty Housing is expected to generate 25 additional K–12 students that would attend MVWSD and MVLA school districts.

Enrollment across MVLA's comprehensive high schools exceeds total capacity at those schools.[85] NEPA Build Alternative 1 is expected to generate approximately seven new high-school students in MVLA. Therefore, it is likely that this increase in enrollment would exceed school capacity levels if any of the students enroll in Mountain View High School. Even if all seven new students attend Mountain View High School, this would represent an approximately 1.0 percent increase in enrollment at Mountain View High School. However, high-school aged students would likely attend various schools throughout MVLA and would not affect one individual school. As such, NEPA Build Alternative 1 is expected to result in a less than 1.0 percent increase in enrollment at Mountain View High School. In addition, the increase in employment opportunities could result in indirect impacts on schools because a small number of employees (with school-aged children) may choose to move to Mountain View to be closer to their work location. It is anticipated that that the majority of NEPA Build Alternative 1 employees already live in the San Francisco Bay Area and that the net number of new employees that would choose to relocate to Mountain View would not be substantial enough to generate unplanned population growth and result in a substantial increase in the demand for school services. Furthermore, it would not be easy for families of employees who do not reside in the city of Mountain View to send their children to school at MVWSD or MVLA schools; they would be required to request an inter-district transfer from their school district to send their school-aged children to schools in Mountain View. The likelihood of a new inter-district transfer into MVWSD being

[84] The 2002 PEIS explored the recreational expenses of the City of Mountain View by estimating per capita expenses and comparing to tax revenue. This assessment over estimates the impacts of new residents because the majority of residents would be outside the Mountain View area. The increase in expenses is estimated to be less than 10 percent of the incremental tax revenue generated by the facility.

[85] Mike Mathiesen, Associate Superintendent – Business, Mountain View Los Altos High School District. Personal Communication, June 2, 2025.

approved or wait listed is low.[86] In addition, given that both high schools in MVLA are close to or exceeding capacity, there are very few slots available for inter-district transfers.[87]

Overall, when considering the potential tax revenue per the IMPLAN economic modeling above, the dispersed demand for public services, and contributions by ISP, the NEPA Build Alternative 1 would not result in a cost impact on a local government that would amount to more than 0.5 percent of a jurisdiction's general fund or revenue limit. The NEPA Build Alternative 1 would result in impacts that would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. According to IMPLAN economic modeling for the NEPA Build Alternative 1 with the Sub-Alternative, the collective general fund revenue[88] would increase by roughly 0.7 percent in a year with construction and 7.9 percent during operational years. Overall, costs generated by the Sub-Alternative would be similar to those detailed under NEPA Build Alternative 1. Therefore, as discussed under NEPA Build Alternative 1, the potential tax revenues for local city, county, and state jurisdictions from the NEPA Build Alternative 1 with the Sub-Alternative would far exceed the potential increased costs from the use of government facilities. The NEPA Build Alternative 1 with the Sub-Alternative would not result in a cost impact on a local government that would amount to more than 0.5 percent of a jurisdiction's general fund or revenue limit. The NEPA Build Alternative 1 with the Sub-Alternative would not directly generate new students from new housing units on the Project Site. Therefore, the impact on local government and school district fiscal resources is considered ***less than significant***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1.

According to the economic modeling in IMPLAN for the NEPA Build Alternative 2, the total tax revenues generated from construction activities, including federal, State, and local taxes in Santa Clara County, amount to $207 million, averaging to $15 million annually. When excluding State and federal taxes, the cumulative total local tax from construction activities is $29 million (about 5 percent of the total tax revenue), with an annual average of $2 million (a contribution of 0.3 percent of local taxes a year)[89] and the local tax from the O&M activities amounts to $24 million (about 4.1

86 Mountain View Whisman School District. 2026. *Interdistrict Transfers*. Available: https://www.mvwsd.org/services_and_requests/register_a_student/interdistrict_transfers. Accessed : March 16, 2026.

87 MVLA School District. 2026. *Transfer Process and Policies*. Available: https://www.mvla.net/Departments/Educational-Services/Policies-and-Procedures/Transfer-Process-and-Policies/. Accessed : March 16, 2026.

88 Per NEPA Build Alternative 1 analysis, this considers revenue for Santa Clara County, Sunnyvale, and Mountain View, which totals $583 million.

89 *Local tax* refers to the revenue collected by a county, city, township, village government, public school district, or fire district. *Total tax* refers to the revenue collected by federal, State, and local governments.

percent of the total tax revenue). Although project-specific tax exemptions at the Project Site may reduce these annual contributions, and the ultimate allocation between jurisdictions is unclear subject to where future employees reside and do business, based on the above modeling by IMPLAN, these additional tax revenues are included, the general fund revenue across the three main communities would increase by roughly 0.3 percent in a year with construction and 4.1 percent during operational years. Overall, costs generated by the Sub-Alternative would be similar to, though less than those under NEPA Build Alternative 1. Therefore, as discussed under Build Alternative 1, the potential tax revenues for local city, county, and state jurisdictions from NEPA Build Alternative 2 would far exceed the potential increased costs from the use of government facilities. NEPA Build Alternative 2 would not result in a cost impact on a local government that would amount to more than 0.5 percent of a jurisdiction's general fund or revenue limit. Therefore, the impact on local government fiscal resources is considered ***less than significant***.

As mentioned above, NEPA Build Alternative 1 would generate 145 Student/Faculty Housing units. These units would be used by UC students or faculty on a short-term basis (i.e., academic calendar year, semester, or summer). The proposed project is not a housing development project. The proposed housing would prioritize the UC students and faculty affiliated with the proposed project, as well as on-site federal employees and student interns, per the Project Proponent's Enhanced Lease requirements. Due to the nature of the proposed project, it is not anticipated that the proposed project would generate school-aged children. Nonetheless, this analysis conservatively assumes that school-aged children could be generated as a result of the Student/Faculty Housing. It is anticipated that the proposed Student/Faculty Housing is expected to generate 25 additional K–12 students that would attend MVWSD and MVLA school districts. Student generation rates used to calculate the number of anticipated studies are based on multifamily, market rate housing units; these types of units are not proposed as part of the project. However, this is the closest generation rate for the proposed Student/Faculty Housing units. Thus, the anticipated number of students would likely be less than 25. The NEPA Build Alternative 2 would result in impacts that would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would generate fees related to the additional 130,000 square feet of Research and Office Uses instead of the 130,000 square feet of Student/Faculty Housing in Subarea 6 under NEPA Build Alternative 2. According to IMPLAN economic modeling for NEPA Build Alternative 2 with the Sub-Alternative the collective general fund revenue would increase by roughly 0.3 percent in a year with construction and 4.6 percent during operational years. Overall, costs generated by the Sub-Alternative would be similar to, though less than those under NEPA Build Alternative 1. Therefore, as discussed under NEPA Build Alternative 1, the potential tax revenues for local city, county, and state jurisdictions from the NEPA Build Alternative 2 with the Sub-Alternative would far exceed the potential increased costs from the use of government facilities. The NEPA Build Alternative 2 with the Sub-Alternative would not result in a cost impact on a local government that would amount to more than 0.5 percent of a jurisdiction's general fund or revenue limit. The NEPA Build Alternative 1 with the Sub-Alternative would not directly generate new students from new housing units on the Project Site. Therefore, the impact on local government and school district fiscal resources is considered ***less than significant***.

4.5.15 Transportation and Traffic

Refer to Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Berkeley Space Center at NASA Research Park Transportation Analysis* (Transportation Analysis) prepared by Fehr & Peers, April 2026 (Appendix 3.16-1 of this joint EIR/EIS)

NEPA Build Alternative 1 and NEPA Build Alternative 2 would include a project-specific TDM plan to reduce the vehicle trips and associated VMT generated by the proposed project through a range of design features (e.g., mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle infrastructure, preferential carpool and vanpool parking, limited automobile parking supply, and ample bicycle parking) and ongoing operational programs (e.g., transit pass/subsidy programs, shuttles, and participation in the NRP Transportation Management Association) to achieve TDM mode-shift targets and thereby reduce the number of trips made by project-generated employees, students/faculty and visitors. Appendix 2-4 of this joint EIR/EIS includes the project-specific TDM plan.[90] The project-specific TDM plan is designed to reduce the trip generation by at least 22 percent as part of the NEPA Build Alternative 1 and NEPA Build Alternative 2. The 22 percent TDM reduction aligns with the TDM assumptions in the 2002 programmatic EIS.

4.5.15.1 Affected Environment

Section 3.16.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment, discusses transportation and traffic fundamentals, and defines the relevant transportation and traffic terminology.

4.5.15.2 Regulatory Setting

The plans, policies, and regulations applicable to transportation and traffic, which are also applicable to the NEPA analysis, are discussed in the Transportation Analysis, included as Appendix 3.16-1 of this joint EIR/EIS.

4.5.15.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on transportation and traffic if it would result in any of the following conditions:

- Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.
- Increase vehicle parking demand without providing for either adequate vehicle parking capacity or sufficient alternative modes of transportation.

[90] The project-specific TDM Plan is tentative, as transportation-related studies may validate the approach in the TDM Plan or require adjustments to the TDM Plan.

- Substantially increases vehicle trips that results in traffic congestion that degrades the level of service of intersections to below locally adopted LOS thresholds (generally LOS D for local intersections and LOS E for Congestion Management Program (CMP) intersections).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

Significance criteria for impact relating to plan conflict, transportation hazards, and emergency vehicle access are the same as under the CEQA analysis and addressed in Section 3.16, *Transportation and Traffic*, of this joint EIR/EIS. This section focuses on impacts relating to adequate parking capacity and traffic operations at intersections and freeway segments. Methodology for analyzing traffic operations is described below.

Project effects on the study area roadway facilities and freeway segments were evaluated by measuring operations during the hour with the highest volumes during the morning (7:00 to 10:00 AM) and evening (4:00 to 7:00 PM) peak periods. Figure 4-6, Study Intersections and Freeway Segments, shows the location of the 15 study intersections in the City of Mountain View and the City of Sunnyvale as well as 12 study freeway segments along SR 85, SR 237, and US 101.

Intersection operations were evaluated during the weekday AM and PM peak hours under the following scenarios:

- **Scenario 1: Existing Conditions** – Existing volumes obtained from 2024 traffic counts.
- **Scenario 2: Existing with NEPA Build Alternative 1 Conditions** – Scenario 1 volumes plus trips generated by the buildout of NEPA Build Alternative 1.
- **Scenario 3: Existing with NEPA Build Alternative 2 Conditions** - Scenario 1 volumes plus trips generated by buildout of NEPA Build Alternative 2.
- **Scenario 4: Reasonably Foreseeable NEPA No-Action Alternative Conditions** – Year 2040 volumes reflecting traffic generated by major developments in the Project vicinity and consistent with the VTA travel demand model and financially constrained roadway improvements in the Valley Transportation Plan (VTP 2040).
- **Scenario 5: Reasonably Foreseeable with NEPA Build Alternative 1 Conditions** – Scenario 4 volumes plus trips generated by buildout of NEPA Build Alternative 1.
- **Scenario 6: Reasonably Foreseeable with NEPA Build Alternative 2 Conditions** – Scenario 4 volumes plus traffic generated by buildout of NEPA Build Alternative 2.

Consistent with the VTA freeway impact analysis guidelines, freeway operations were evaluated during the weekday AM and PM peak hours under the following scenarios:

- Existing with NEPA Build Alternative 1 Conditions
- Existing with NEPA Build Alternative 2 Conditions

Intersection operations were evaluated using TRAFFIX analysis software based on 2000 Highway Capacity Manual (HCM) methods, consistent with VTA guidelines in Santa Clara County. The analysis results are presented as average vehicle delay in seconds and the corresponding Level of Service (LOS), which qualitatively describes traffic conditions ranging from free-flowing (LOS A) to heavily congested (LOS F).

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Source: Fehr & Peers 2025; ACE 2025; Caltrain 2025; Santa Clara Valley Transportation Authority 2025.

Note: The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 4-2. In addition, Hangar Three was demolished in 2024.

G:\GIS\SJ\2024_Projects\SJ24_2273_Moffett_Field_University_Research_Park\SJ24_2273\Existing Conditions\SJ24_2273_CA.aprx

Graphics ... 104894 (2-6-2026) TG

Figure 4-6
Study Intersections and Freeway Segments
Berkeley Space Center at NASA Research Park

Signalized intersection operations and significant impacts are evaluated based on the appropriate jurisdiction's LOS standards. A Significant impact at signalized intersections would occur when the addition of project traffic would cause one of the following:

- City of Mountain View or City of Sunnyvale local intersection operations degrade from an acceptable level (LOS D or better) to an unacceptable level (LOS E or F); or
- City of Sunnyvale regionally significant roadway intersection operations degrade from an acceptable level (LOS E or better) to an unacceptable level (LOS F); or
- Exacerbates unacceptable operations by increasing the critical delay by four seconds or more, and increasing the volume-to-capacity (V/C) ratio by 0.01 or more; or
- An increase in the V/C ratio of 0.01 or more at an intersection with unacceptable operations when the change in critical delay is negative (i.e., decreases). This can occur if the critical movements change.

One unsignalized study intersection is within the jurisdiction of the City of Mountain View. The City of Mountain View does not have an adopted standard for unsignalized intersections, but the City strives to maintain LOS D.

Freeway segments were evaluated using the VTA analysis procedure, which is based on the density of the traffic flow using methods described in the 2000 HCM. Significant impacts on freeway segments would occur when the addition of Project traffic would cause one of the following:

- Freeway segment operations degrade from an acceptable level (LOS E or better) to an unacceptable level (LOS F); or
- Exacerbates unacceptable operations due to the number of project vehicle trips added exceeding one percent of the freeway capacity.

4.5.15.4 Environmental Consequences

Impact NEPA-TRAN-1: Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As discussed in more detail in Appendix 3.16-1, construction activities for the NEPA Build Alternative 1 would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities; thus the construction of the NEPA Build Alternative 1 would have a ***less-than-significant*** impact. Operation of the NEPA Build Alternative 1 would not conflict with a program, plan, ordinance, or policy addressing the circulation system and would have a ***less-than-significant*** impact.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Construction activities for the NEPA Build Alternative 1 with the Sub-Alternative would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Operation of the NEPA Build Alternative 1 with the Sub-Alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Construction activities for the NEPA Build Alternative 2 would not conflict with

adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities; thus the construction of the NEPA Build Alternative 2 would have a ***less-than-significant*** impact. Operation of the NEPA Build Alternative 2 would not conflict with a program, plan, ordinance, or policy addressing the circulation system and would have a ***less-than-significant*** impact.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Construction activities for the NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative would not conflict with adopted federal and state plans, ordinances, or policies addressing the safety and performance of the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Operation of the NEPA Build Alternative 2 with the Sub-Alternative would not conflict with a program, plan, ordinance, or policy addressing the circulation system. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-TRAN-2: Would the project increase vehicle parking demand without providing for either adequate vehicle parking capacity or sufficient alternative modes of transportation?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	TRAN-1. Mitigated TDM Plan that Further Reduces VMT	Less than Significant with Mitigation
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

Refer to Chapter 6 of the *Berkeley Space Center at NASA Research Park Transportation Analysis*, included as Appendix 3.16-1 of this joint EIR/EIS for a detailed parking impact analysis.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would

continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of buildings under the NEPA No-Action Alternative is estimated to generate minimal new parking demand and the existing site has adequate vehicle parking capacity to accommodate the reoccupation of currently vacant on-site buildings. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As discussed in more detail in Appendix 3.16-1, temporary surface parking for construction purposes would be provided on the Project Site for every phase of project construction. While there are not enough details about specific temporary surface parking supply, parking demand from construction purposes would be temporary. Parking demand would generally be limited to construction equipment and personnel and would not result in long-term parking demand; thus the construction of the NEPA Build Alternative 1 would have a ***less-than-significant*** impact.

Chapter 6 of the Transportation Analysis, included as Appendix 3.16-1 to this joint EIR/EIS, includes additional parking detail under project operations. Operation of the NEPA Build Alternative 1 would provide automobile parking at the maximum parking ratios established in the Development Guidelines as summarized in Table 4.5.15-1.

Table 4.5.15-1. Proposed Parking Maximums

Use	Unit[1]	Proposed Parking Rate per Unit[2]	Estimated Parking Demand Rate per Unit[3]
Short-Term Lodging	DU	1.3 spaces	0.4 spaces
Student/Faculty Housing	DU	1.0 space	0.7 spaces
Office	KSF	1.5 spaces	1.1 spaces
Laboratory and R&D	KSF	1.5 spaces	1.5 spaces
Academic	KSF	1.3 spaces	1.1 spaces
Conference Uses	KSF	1.7 spaces	1.1 spaces
Active Uses	KSF	1.7 spaces	1.7 spaces

Notes:
DU = dwelling units; KSF = 1,000 square feet
Source: Project Proponent, 2024.

The proposed maximum parking ratios account for the following project characteristics that would reduce overall parking demand at the Project Site:

- Most of the Project Site would be within 0.5 mile of the Bayshore/NASA VTA light rail station and the Project would improve the non-motorized connections between the Project Site and the light rail station to further encourage use of transit.
- All of the proposed parking ratios summarized in Table 4.5.15-1 include a 15 percent reduction for shared parking compared to typical standalone uses. Shared parking is defined as a parking space that is not assigned to a specific person or use and can be used to reduce the overall parking supply for mixed-use projects. Thus, a shared parking space can be used by an employee during business hours, a visitor to the active uses in the evening, and a project resident at night.
- The proposed project includes various design features such as a mix of complementary land uses to increase internal trips, on-site amenities to reduce off-site trips, pedestrian and bicycle

infrastructure, preferential carpool and vanpool parking, and ample bicycle parking throughout the Project Site that encourage non-automobile travel, lower automobile dependance, and reduce parking demand.

- The proposed project would implement a robust TDM Plan to reduce the vehicle trips and the resulting parking demand through ongoing operational programs, which may include transit pass/subsidy programs, shuttles, priced on-site parking, and participation in the NRP Transportation Management Association. The proposed project is required to implement Mitigation Measure TRAN-1to reduce the proposed project trip generation, which also corresponds to proposed project parking demand, by at least 29 percent.

Table 4.5.15-1 also shows the estimated parking demand rates for each use. The average parking demand rates are based on the peak parking demand rates for similar stand-alone uses in a suburban setting, as published in the ITE *Parking Generation Manual*, and are adjusted to account for use of shared parking and the implementation of the required TDM plan, as described above. The proposed parking ratios would exceed or are the same as the estimated parking demand rates for all uses.

Based on the above, the operation of NEPA Build Alternative 1 would provide adequate parking supply to meet the parking demand and provide sufficient alternative modes of transportation to reduce the overall parking demand; therefore the impact on parking is considered ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Temporary surface parking for construction purposes would be provided on the Project Site for every phase of project construction. While there are not enough details about specific temporary surface parking supply, parking demand from construction purposes would be temporary. Parking demand would generally be limited to construction equipment and personnel and would not result in long-term parking demand. Operation of NEPA Build Alternative 1 with the Sub-Alternative would provide the same maximum parking ratios as the NEPA Build Alternative 1. With implementation of Mitigation Measure TRAN-1, the NEPA Build Alternative 1 with the Sub-Alternative would result in impacts that are ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Temporary surface parking for construction purposes would be provided on the Project Site for every phase of project construction. While there are not enough details about specific temporary surface parking supply, parking demand from construction purposes would be temporary. Parking demand would generally be limited to construction equipment and personnel and would not result in long-term parking demand; thus the construction of the NEPA Build

Alternative 1 would have a ***less-than-significant*** impact. Because operation of NEPA Build Alternative 2 would provide the same maximum parking ratios as the NEPA Build Alternative 1, potential impacts related to parking would be the same as under NEPA Build Alternative 1. With implementation of Mitigation Measure TRAN-1, the impact is considered ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Temporary surface parking for construction purposes would be provided on the Project Site for every phase of project construction. While there are not enough details about specific temporary surface parking supply, parking demand from construction purposes would be temporary. Parking demand would generally be limited to construction equipment and personnel and would not result in long-term parking demand. Operation of NEPA Build Alternative 2 with the Sub-Alternative would provide the same maximum parking ratios as the NEPA Build Alternative 2. With implementation of Mitigation Measure TRAN-1, the impact is considered ***less than significant with mitigation***.

Impact NEPA-TRAN-3: Would the project substantially increase vehicle trips that results in traffic congestion that degrades the level of service of intersections to below locally adopted LOS thresholds (generally LOS D for local intersections and LOS E for Congestion Management Program (CMP) intersections)?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	TRAN-1. Mitigated TDM Plan that Further Reduces VMT TRAN-2 (NEPA-only). Signalize Ellis Street/Manila Avenue Intersection	Significant and Unavoidable
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Significant and Unavoidable
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

Refer to Chapter 6 of the *Berkeley Space Center at NASA Research Park Transportation Analysis*, included as Appendix 3.16-1 to this joint EIR/EIS the detailed LOS impact analysis.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of buildings under the NEPA No-Action Alternative is estimated to generate minimal new traffic and have a minimal increase to intersection delay at the study locations. Therefore, the NEPA No-Action Alternative would not increase vehicle trips that results in traffic congestion that degrades the level of service of intersections to below locally adopted LOS thresholds. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As discussed in more detail in Appendix 3.16-1, trips used for construction purposes would be temporary, and any trips generated would generally be limited to construction equipment and personnel and would not result in long-term trip generation; thus the construction of the NEPA Build Alternative 1 would have a ***less-than-significant*** impact.

Operation of NEPA Build Alternative 1 is estimated to generate 20,671 daily, 1,801 AM peak hour, and 1,949 PM peak hour net new trips. Chapter 6 of the *Berkeley Space Center at NASA Research Park Transportation Analysis*, included as Appendix 3.16-1 to this joint EIR/EIS includes detailed intersection and freeway LOS analysis results. Effects for NEPA Build Alternative 1 are described below.

Ellis Street / Manila Avenue Intersection – The operations at this all-way stop-controlled intersection in the City of Mountain View would exceed the threshold of significance because NEPA Build Alternative 1 would degrade the intersection from acceptable LOS C to unacceptable LOS F during both the AM and PM peak hours under Reasonably Foreseeable conditions. In addition, the intersection would meet the MUTCD peak hour volume signal warrant under the Reasonably Foreseeable with NEPA Build Alternative 1 Conditions. NEPA Build Alternative 1 could result in significant impacts. Mitigation Measure TRAN-1 would require the proposed project to implement the mitigated TDM Plan to reduce the overall project trip generation by an additional 7 percentage points for NEPA Build Alternative 1 and an additional 9 percentage points for NEPA Build Alternative 1 with the Sub-Alternative. Mitigation Measure TRAN-1 would reduce the project added trips at this intersection. Mitigation Measure TRAN-1 would need to reduce the trip generation by an additional 35 percent to mitigate this impact for the NEPA Build Alternative 1. An additional 35 percent TDM reduction would not be considered feasible for the proposed project, as achieving such a reduction would require fundamental changes to the project description, which is not feasible. The impact at Ellis Street / Manila Avenue intersection would be considered significant and unavoidable with implementation of Mitigation Measure TRAN-1.

Mitigation Measure TRAN-2 (NEPA-only), provided below, consists of physical improvements to reduce the impact at the Ellis Street / Manila Avenue intersection, which would result in the intersection operating at LOS B during both the AM and PM peak hours.

Mitigation Measure TRAN-2 (NEPA-only). Signalize Ellis Street/Manila Avenue Intersection

Prior to occupancy of Phase 3 of NEPA Build Alternative 1 (CEQA Proposed Project) or prior to occupancy of Phase 4 of NEPA Build Alternative 2 (CEQA Reduced Density Alternative), the Project Proponent or its contractor(s) shall install a signal at the Ellis Street/Manila Avenue intersection. The Project Proponent is responsible for 50 percent of the Reasonably Foreseeable with NEPA Build Alternative 1 percent growth. While the intersection is in exclusive federal jurisdiction and lands of the USA, it is granted to the City of Mountain View via easement(s). Installation of a new signal would therefore require review by the City. In addition, signal timing at this intersection shall be coordinated with nearby signalized intersections on Ellis Street at the U.S. 101 northbound and southbound ramp intersections, as well as the at-grade light rail crossing on Manila Street about 240 feet east of the intersection.

Due to the need for coordination, the Project Proponent cannot ensure implementation of the signal and the impact at the Ellis Street / Manila Avenue intersection would be considered significant and unavoidable. The Project Proponent would be required to coordinate with the City of Mountain View to pursue the signalization of the intersection.

Mitigation Measure TRAN-1 would reduce the proposed project-generated traffic at the intersection through implementing additional TDM measures and Mitigation Measure TRAN-2 would reduce the delay at this intersection through installing a signal at the intersection. Although the implementation of these mitigation measures would reduce the impact to a less-than-significant level; the Project Proponent cannot ensure implementation of the signal; thus, NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts.

Mathilda Avenue/ SR 237 Westbound Ramps / Moffett Park Drive intersection – The operations at this signalized intersection in the City of Sunnyvale exceeds the threshold of significance because the Reasonably Foreseeable with NEPA Build Alternative 1 would exacerbate unacceptable LOS F operations during the AM peak hour under, while increasing the critical delay by more than four seconds and increasing the critical V/C ratio at the intersection by more than 0.01. NEPA Build Alternative 1 could result in significant impacts. Physical improvements to mitigate the impact would require the provision of a third northbound left-turn lane on Mathilda Avenue to Moffett Park Drive. However, there are right-of -way constraints that render this possible mitigation measure infeasible and there are no feasible physical improvements measures for this intersection. The City of Sunnyvale is currently evaluating several design alternatives for the Mary Avenue Overcrossing, which would provide multimodal connection from Mary Avenue and Almanor Avenues, over US-101, SR-237 and Moffett Park Light Rail Station to 11th Avenue and Discovery Way in Moffett Park. The Mary Avenue Overcrossing would provide an additional north-south connection to the Project Site that could be an alternative to using Mathilda Avenue; thus reducing the impact at the Mathilda Avenue/ SR 237 Westbound Ramps / Moffett Park Drive intersection. As of February 2026, the City of Sunnyvale is preparing the Draft EIR for the Mary Avenue Overcrossing, which has not yet been released for public review. VTA does not have an established impact fee program or formally adopted mechanism for collecting fair share contributions to regional transportation projects. The City of Sunnyvale collects a Transportation Impact Fee for developments within its jurisdiction, which the proposed action is not subject to. Mitigation Measure TRAN-1 would reduce this impact through reducing trips. To fully mitigate this impact, Mitigation Measure TRAN-1 would need to reduce the NEPA Build Alternative 1 trip generation by an additional 40 percent. An additional 40 percent TDM reduction target would not be considered

feasible for the proposed project, as achieving such a reduction would require fundamental changes to the project description. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts.

Multiple Freeway Segments – The operations of freeway segments exceed the threshold of significance because NEPA Build Alternative 1 would cause multiple freeway segments to degrade from LOS E to LOS F or exacerbate LOS F conditions by increasing the freeway segment volume by one percent or more. NEPA Build Alternative 1 could result in significant impacts. The VTA Valley Transportation Plan 2040 (October 2014) identifies several improvement projects for the freeway segments where the threshold of significance is exceeded. Those that have not already been constructed as of 2025 consist of new freeway express lanes on SR 85, SR 237, and US 101 (VTA VTP 2040 Project #H2 and H5), and new freeway auxiliary lanes on SR 237 and US 101 (VTA VTP 2040 Project #H47 and H49) that to improve freeway operations. Complete improvement of freeway impacts is considered beyond the scope of an individual development project, due to the inability of any individual project or City to fully fund a major freeway mainline improvement. Mitigation Measure TRAN-1 would reduce this impact through reducing trips. To fully mitigate this impact, Mitigation Measure TRAN-1 would need to reduce the NEPA Build Alternative 1 trip generation by an additional 85 percent. An additional 85 percent TDM reduction target would not be considered feasible for the NEPA Build Alternative 1, as achieving such a reduction would require fundamental changes to the project description. Implementation of this mitigation measure would not reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 1 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Vehicle trips used for construction purposes would be temporary, and any trips generated would generally be limited to construction equipment and personnel and would not result in long-term trip generation. Thus, construction of the NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

During the AM and PM peak hours NEPA Build Alternative 1 with the Sub-Alternative would generate approximately 70 to 110 additional peak hour trips, which equates to approximately four to six percent additional trips, which would not substantially change the intersection and freeway LOS analysis as for the NEPA Build Alternative 1. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in a significant impact. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 1 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

Alternative 1. Vehicle trips used for construction purposes would be temporary, and any trips generated would generally be limited to construction equipment and personnel and would not result in long-term trip generation; thus the construction of the proposed project would have a ***less-than-significant*** impact.

Operation of NEPA Build Alternative 2 is estimated to generate 14,035 daily, 1,104 AM peak hour, and 1,300 PM peak hour net new trips. Chapter 6 of the Transportation Analysis includes detailed intersection and freeway LOS analysis results. While NEPA Build Alternative 2 has the same direct LOS effects as identified under the NEPA Build Alternative 1, the contributions to those impacts are less than for NEPA Build Alternative 1 because the trip generation estimates are about 30 to 40 percent lower in the AM and PM peak periods. Nonetheless, the effects for the NEPA Build Alternative 2 could be considered significant at the Ellis Street / Manila Avenue Intersection, Mathilda Avenue/ SR 237 Westbound Ramps / Moffett Park Drive intersection, and multiple freeway segments. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 2 would result in ***significant and unavoidable*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. Vehicle trips used for construction purposes would be temporary, and any trips generated would generally be limited to construction equipment and personnel and would not result in long-term trip generation. Thus, construction of the NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts. During the AM and PM peak hours NEPA Build Alternative 2 with the Sub-Alternative would generate approximately 70 to 110 additional peak hour trips, which equates to approximately five to ten percent additional trips, which would not substantially change the intersection and freeway LOS analysis as for the NEPA Build Alternative 2. The effects identified under the NEPA Build Alternative 2 would also be applicable under the NEPA Build Alternative 2 with the Sub-Alternative and and the impact could be significant at the Ellis Street / Manila Avenue Intersection, Mathilda Avenue/ SR 237 Westbound Ramps / Moffett Park Drive intersection, and multiple freeway segments. The same mitigation measures identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of these mitigation measures would not reduce the impact to a less-than-significant level; thus, NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impacts.

Impact NEPA-TRAN-4: Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	*Less than Significant*	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of buildings under the NEPA No-Action Alternative would not result in increased hazards due to a geometric design feature or incompatible uses. Thus, there would be no impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction of NEPA Build Alternative 1 would not result in increased hazards due to geometric design features or incompatible uses. While there are not enough details about specific temporary roadway closures, NEPA Build Alternative 1 would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption. The construction traffic control plan will address temporary roadway closures and detours to ensure access and circulation for all travel modes, consistent with all applicable standards, during construction. Operation of NEPA Build Alternative 1 not increase hazards due to a geometric design feature or incompatible uses. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. While there are not enough details about specific temporary roadway closures, NEPA Build Alternative 2 would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Thus, the NEPA Build Alternative 2 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-TRAN-5: Would the project result in inadequate emergency access?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 with the Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 with the Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could

be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of buildings under the NEPA No-Action Alternative would not impact emergency access. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Construction of NEPA Build Alternative 1 would not impact emergency access. NEPA Build Alternative 1 would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Appendix 2-3 of this joint EIR/EIS includes the temporary traffic control procedures, which establish required procedures for temporary traffic control during construction pursuant to APR 8715.1, Chapter 27, Section 27.8, Temporary Traffic Disruption. The construction traffic control plan will address emergency access to and from the construction site throughout construction. The construction traffic control plan will include coordination with local emergency agencies. If temporary roadway closures are needed during the construction period, the traffic control plan will also identify alternative emergency vehicle routes. Operation of NEPA Build Alternative 1 would not impact emergency access. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Construction and operation of NEPA Build Alternative 2 would not impact emergency access. The NEPA Build Alternative 2 would include a construction traffic control plan for each phase of the proposed project to address construction traffic on regional and local roads in the vicinity of the Project Site. Thus, the NEPA Build Alternative 1 would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.16 Utility and Service Systems

Refer to Section 3.18, *Utility and Service Systems*, of this joint EIR/EIS for a detailed discussion of the affected environment, regulatory setting, and the environmental consequences of the NEPA Build Alternatives. Relevant technical documentation used in this analysis includes the following technical study prepared for the proposed project.

- *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park* (Water Supply Evaluation) prepared by EKI Environment and Water, April 2026 (Appendix 3.18-1 of this joint EIR/EIS)

4.5.16.1 Affected Environment

Section 3.8.2, *Affected Environment/Environmental Setting*, includes details regarding the affected environment for project-serving utilities, this includes: water supply, recycled water, wastewater collection and treatment, stormwater, solid waste, electricity, natura gas, and telecommunications.

4.5.16.2 Regulatory Setting

The plans, policies, and regulations applicable to utilities and service systems, which are also applicable to the NEPA analysis, are discussed in Section 3.18.3, *Plans, Policies, and Regulations*, in Section 3.18, *Utility and Service Systems*.

4.5.16.3 Thresholds of Significance and Methodology

The project would have the potential to result in effects on utilities and service systems if it would result in any of the following conditions:

- Place a demand on existing water distribution facilities that exceeds available conveyance to Ames Research Center.
- Exceed baseline water demand projected to occur under baseline conditions to the extent that this exceedance would interfere with the ability of the service provider to meet the reasonably foreseeable needs of existing users.
- Create a demand for water service that exceeds existing water supply capacity to Ames Research Center.
- Place a demand on existing recycled water distribution facilities that exceeds available conveyance capacity.
- Create a demand for recycled water service that exceeds existing supply capacity.
- Interfere with provision of recycled water service to existing land uses.
- Interfere with provision of recycled water service for future, planned development.
- Place a demand on existing wastewater collection facilities that exceed the available conveyance capacity.
- Create a demand for wastewater treatment that exceeds existing treatment capacity.
- Place a demand on existing wastewater distribution facilities that exceeds available conveyance capacity.

- Interfere with the provision of wastewater service to existing land uses.
- Utilize wastewater treatment or conveyance capacity intended for identified future projects.
- Require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects.
- Create a demand for solid waste disposal that exceeds the capacity of the landfill site currently receiving ARC waste products.
- Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.
- Create a demonstrable need for new or enlarged energy facilities with respect to electrical and natural gas services.
- Place a demand on existing electrical distribution facilities that exceeds available conveyance capacity to Ames Research Center.
- Place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity.
- Interfere with provision of electrical and natural gas services to existing off-site land uses.

Evaluation of potential impacts to the afore-listed utilities thresholds is based on the technical analysis incorporated and referenced below. These include: the *Water Supply Evaluation for the Berkeley Space Center at NASA Research Park* (Water Supply Evaluation) prepared by EKI Environment and Water, April 2026 (Appendix 3.18-1 of this joint environmental impact report/environmental impact statement [EIR/EIS]), and four separate reports prepared by BKF (Spring 2026) that address separately, the Potable Water System Master Plan, Recycled Water System Master Plan, Sanitary Sewer Master Plan, and Storm Drain & Stormwater Management Master Plan. Additionally, direct feedback from the City of Mountain View is included in this analysis.[91]

4.5.16.4 Environmental Consequences

Impact NEPA-UTIL-1: Would the project place a demand on existing water distribution facilities that exceeds available conveyance to Ames Research Center?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

[91] Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division, March 3, 2023, Public Works Department, City of Mountain View, CA.

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. Water consumption at the existing buildings would continue at a rate between existing and historical usage, which would be within the currently available conveyance to Ames Research Center. The NEPA No-Action Alternative would not place any new demand on existing water distribution facilities. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As further described and analyzed under Impact CEQA-UTIL-1, which considers construction and expansion of water facilities to supply project demand, the Project Site is currently served by the NASA-owned 18-inch Tyrella Feed, one of three conveyance pipelines that connects directly to the SFPUC Hetch Hetchy Aqueduct. Existing SFPUC water mains in the roadways adjacent to the site include 12-inch water mains that extend along Wescoat Road. These mains connect to the larger NRP water system at Wescoat Road and Cody Road.

The NEPA Build Alternative 1 would include 10-inch and 12-inch water mains on-site that would be routed from the connection on the southwest side of the site to the proposed buildings through a looped system that would extend east–west along Girard Road and north of the center of the Project Site (see Figure 2-15a in Chapter 2, *Proposed Project/Project Action and Alternatives*). Backflow preventors, meters, and pressure regulators would be installed on water supply lines. Three sampling ports would also be installed near representative population areas. In addition, dead-end mains would be provided along all building shared-use roads for building services and fire hydrants. The potable water system could also include an emergency backup connection to the NASA water system—specifically, the P500—at the intersection of Cody Road and Girard Road at the southeast corner of the Project Site. This connection would also be capable of backfeeding NASA's water system in case of emergencies. The Tyrella Feed would provide potable water and fire flow water to the Project Site and has been determined to be able to do so with sufficient water presure for project demand and fire flow requirements.[92] Project actions under the NEPA Build Alternative 1, including the two possible routings for the off-site water mains and connection to the Tyrella Feed, the WRF, and the CUP would not alter the conclusion related to conveyance capacity of the Tyrella Feed for water distribution to the Project Site.

As discussed in Section 3.18.3, *Plans, Policies and Regulations*, utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately

[92] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Potable Water System Master Plan.* Spring. As discussed therein, per the City of Mountain View, the minimum fire flow allowed for the Project Site is 3,500 GPM since all buildings within the Project Site will have an automatic sprinkler system. See Section 3.1.4 and Section 3.1.5 in the *Potable Water System Master Plan* for additional information.

sized and properly constructed transmission and conveyance system for the proposed project's water demand. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. As also noted in Chapter 2, the design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[93] The specifics regarding utility connections and designs will be evaluated through NASA's NRP Design Review Board process in connection with NASA's approval of the proposed project pursuant to APR 8822.1, and through NASA's Construction Permit Review Process, established by APD 8829.1. During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project.

Based on the above discussion, the proposed project would not place a demand on existing water distribution facilities that exceeds available conveyance to NASA ARC and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. All water utility infrastructure improvements would remain the same. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. All water utility infrastructure improvements would remain the same. Therefore, the NEPA Build Alternative 2would not place a demand on existing water distribution facilities that exceeds available conveyance to NASA ARC and the impact would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. All water utility infrastructure improvements would remain the same. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

[93] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-2: Would the project exceed baseline water demand projected to occur under baseline conditions to the extent that this exceedance would interfere with the ability of the service provider to meet the reasonably foreseeable needs of existing users?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	UTIL-1. Water Demand Reduction Measures	Significant and Unavoidable
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Significant and Unavoidable
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

Given that recycled water supply is addressed under Impacts NEPA-UTIL-5 through 7, this analysis is focused on potable water supply. Additional tables and analysis related to water supply are included under Impact CEQA-UTIL-2, which considers water supply availability.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. If buildings were reoccupied, baseline water demand would continue in line with historical usage, which would not interfere with supplying water to other existing users but would increase water demand compared to existing conditions. As presented in the Water Supply Evaluation (Appendix 3.18-1) and considered in additional detail under Impact NEPA-UTIL-3, under the worst-case water supply evaluation scenario (Scenario 1) for single to multiple dry years, SFPUC would experience a shortfall of water supply relative to its existing retail demand meaning the supplier would not have enough water to fully meet the demand of existing users, including the buildings within the Limits of Work. There are no feasible mitigation measures under the NEPA No-Action Alternative. Thus, there would be a ***significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Impacts on water demand are assessed by comparing existing water supplies against the increase in water demand associated with implementation of the proposed project. The methodology that follows is a summary of the water demand and supply methodology detailed in the Water Supply Evaluation included in Appendix 3.18-1 of this of this joint EIR/EIS. According to the Water Supply Evaluation, because the NEPA Build Alternative 1 (i.e., without the Variant, without the Central

Utility Plant Option, and without the Water Reuse Facility Option) is the most conservative scenario (i.e., it would generate the greatest amount of water demand), it also provides a comprehensive analysis of the water demand associated with the other scenarios (i.e., the NEPA Build Alternative 1 with the Sub-Alternative, the Central Utility Plant Option, the Water Reuse Facility Option, the NEPA Build Alternative 2, and the NEPA Build Alternative 2 with the Sub-Alternative). Water demand for the NEPA Build Alternative 1 considers commercial indoor uses, cooling water uses, residential indoor uses, and outdoor water uses as well as distribution system losses. Projected water demand under the proposed project was calculated using the water demand factors in Table 4.5.16-1. The water demand factors do not account for increased water conservation measures that are likely to be implemented in the future.

Table 4.5.16-1. Increase in Water Demand at Full Buildout: NEPA Build Alternative 1

Water Use	Land Use at Full Buildout	Land Use Units	Adjusted Water Demand Factor (gpd) [a]
Office	350,000	Sq ft	0.056
Lab and R&D	1,390,000	Sq ft	0.056
Academic	260,000	Sq ft	0.056
Conference Uses	25,000	Sq ft	0.056
Active Uses: Kitchen	9,000	Sq ft	0.060
Active Uses: Retail	81,000	Sq ft	0.026
Student/Faculty Housing	145	Rooms	225
Short-term Lodging	100	Rooms	100
Parking	1,080,000	Sq ft	0.020
Landscape Irrigation	5.8	Acres	800
Cooling [b]	n/a	n/a	n/a
Distribution System Loss	—	—	7.1%

Source: Water Supply Evaluation included in Appendix 3.18-1 of this joint EIR/EIS.
Notes:
gpd = gallons per day
a. Adjusted Water Demand Factor provides gpd per the land use unit to the column left (i.e., square feet, rooms, and acres), and accounts for embedded cooling demand.
b. Per Table 4 in Appendix 3.18-1, a cooling demand estimate has been factored into water demand calculations.

The Water Supply Evaluation analysis then considers current and projected future water supplies for the SFPUC and Mountain View service areas through 2045 (a 24-year planning horizon) and evaluates whether SFPUC and Mountain View have a sufficient potable and non-potable water supply, respectively, to meet current and planned water demands within their respective service areas, including the demands associated with the proposed project during normal, dry, and multiple dry years over a 20-year horizon. As noted in Section 3.18.2, under *Water Supply Sources,* given the ongoing proceedings surrounding the Bay-Delta Plan Amendment and per the standard SFPUC scenarios used by SFPUC in WSAs and their UWMP (i.e., SFPUC guidance about how they plan their urban supplies, etc.).the following three scenarios[94] are also used to analyze water supply and demand:

- Scenario 1: Implementation of the Bay-Delta Plan Amendment,

94 Note that while Scenario 2 is unrealistic for future planning, it continues to be used by SFPUC as a point of reference.

- Scenario 2: Without Implementation of the Bay-Delta Plan Amendment or the Proposed Voluntary Agreement, or
- Scenario 3: Implementation of the Proposed Voluntary Agreement.

According to the Water Supply Evaluation, the existing water demand from the Project Site is estimated at 0.6 acre-feet per year (afy); this is less than 0.1 percent of total historical NASA ARC demand, which averaged 574 afy from 2019 to 2023. Potable water is provided by the San Francisco Public Utilities Commission and non-potable/recycled water is provided by the City of Mountain View (additional analysis regarding recycled water is analyzed under Impact NEPA-UTIL-5 through 7, below). Under the proposed project, water demand would increase because of the increase in employees and students, short-term residents, and building square footage. Based on the total water demand for the NEPA Build Alternative 1 is 284 afy, comprised of a demand for 124 afy of potable water and 160 afy of non-potable/recycled water. Ultimately, the proposed project's forecasted potable water demand of 124 afy represents only 0.13 percent of the total SFPUC Service Area Demand of 88,167 afy.

As further described in Impact CEQA-UTIL-2, when considering water supply in the three scenarios related to the Bay-Delta Plan Amendment above, and in six different water supply/drought year scenarios (refer to Table 3.18-4), the Water Supply Evaluation identifies that current SFPUC plus project water demand exceeds supply in single dry through multiple dry year scenarios: with supply shortfall relative to demand ranging from 27 to 37 percent. Because the WSCP systematically identifies ways in which SFPUC can reduce water demand for the six drought stages to address water demand reductions of more than 50 percent, it is anticipated that, in single and multiple dry years, SFPUC would enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all users, including the proposed project. However, because the proposed project is not subject to the reduction measures of the WSCP, project specific mitigation would be necessary to support the water supplier's reduction intent. Mitigation Measure UTIL-1 would require the Project Proponent implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. While this mitigation measure would reduce effects related to water supply in drought conditions, conservatively, because the WSE and SFPUC identify a water supply shortfall relative to demand in dry year conditions, even with implementation of Mitigation Measure UTIL-1, the project along with overall baseline water demand expected to occur under baseline conditions could experience a demand that exceeds supply, which could interfere with the ability of SFPUC to meet the foreseeable needs of existing users, and the impact is considered to be ***significant and unavoidable.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts but not to a less-than-significant level. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would result in a ***significant and unavoidable*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. With less building square footage, the water demand would be reduced, but the overall supply shortage would remain the same. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts but not to a less-than-significant level. Therefore, the Sub-Alternative would exceed baseline water demand to the extent that this exceedance could interfere with the ability of the service provider to meet the reasonably foreseeable needs of existing users. The impact would be ***significant and unavoidable***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in a ***significant and unavoidable*** impact.

Impact NEPA-UTIL-3: Would the project create a demand for water service that exceeds existing water supply capacity to Ames Research Center?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	UTIL-1. Water Demand Reduction Measures	Significant and Unavoidable
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	UTIL-1. Water Demand Reduction Measures	Significant and Unavoidable
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. If buildings were reoccupied, baseline water demand would

continue in line with historical usage, which would not interfere with supplying water to other existing users but would increase water demand compared to existing conditions. According to the Water Supply Evaluation, SFPUC would be able to accommodate total water demand for its retail users in normal years, but would experience supply shortfalls relative to total demands during dry years. According to the Water Supply Evaluation when supply shortfalls occur, SFPUC is expected to meet those shortfalls through implementation of its Water Shortage Contingency Plan (WSCP). The WSCP systematically identifies ways in which SFPUC can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages and address water demand reductions of over 50 percent. However, given that there is a shortfall of supply during dry years, increased water demand under the NEPA No-Action Alternative would be considered significant. There are no feasible mitigation measures under the NEPA No-Action Alternative. Thus, there would be a ***significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As discussed under Impact NEPA-UTIL-2 and CEQA-UTIL-2, potable water is sourced from SFPUC and non-potable/recycled water would be provided by the City of Mountain View. Under the proposed project, water demand would increase because of the increase in employees and students, short-term residents, and building square footage. As discussed in aforementioned analysis, the total water demand for the NEPA Build Alternative 1 is 284 afy, comprised of a demand for 124 afy of potable water and 160 afy of non-potable/recycled water.

Given that in Scenario 1, SFPUC would experience supply shortfalls relative to total demand estimated to range from 27 to 37 percent during single to multiple dry years, and in Scenario 2 this would be 0.14 percent during dry and multiple dry years there would be an anticipated exceedance in water demand relative to water supply. While SFPUC is anticipated to meet demand-supply shortfalls by implementing its WSCP, the proposed project is not subject to the demand reduction measures of the WSCP. Therefore, implementation of Mitigation Measure UTIL-1 would be necessary to support the water supplier's reduction intent. Mitigation Measure UTIL-1 would require the Project Proponent implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. While this mitigation measure would reduce effects related to water supply in drought conditions, conservatively, because the WSE and SFPUC identify a water supply shortfall relative to demand in dry year conditions, even with implementation of project Mitigation Measure UTIL-1, there could still be an overall water supply shortfall for NASA ARC, and the impact is considered to be ***significant and unavoidable.***

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts but not to a less-than-significant level. Thus, the NEPA Build Alternative 1 with the Sub-Alternative could result in a ***significant and unavoidable*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. With less building square footage, the water demand would be reduced, but the overall supply shortage would remain the same. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts but not to a less-than-significant level. Therefore, the Sub-Alternative there could result in a demand for water service that exceeds existing water supply for NASA ARC, and the impact is considered to be ***significant and unavoidable.***

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts but not to a less-than-significant level. Thus, the NEPA Build Alternative 2 with the Sub-Alternative would result in ***significant and unavoidable*** impact.

Impact NEPA-UTIL-4: Would the project place a demand on existing recycled water distribution facilities that exceeds available conveyance capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	UTIL-2. Recycled Water Service Agreements and Approvals	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 1	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. No new facilities would be constructed. As addressed under

the NEPA Build Alternative 1, while there is no existing recycled water distribution system serving these buildings, the proposed Mountain View service extension across RT Jones would still occur in the NEPA No-Action Alternative. However, given that there is no existing onsite recycled water infrastructure, there would be no new recycled water demand or service to the Project. Thus, there would be ***no impact*** to existing recycled water distribution facilities.

NEPA Build Alternative 1 (CEQA Proposed Project)

Under the NEPA Build Alternative 1 it is anticipated that the existing City of Mountain View's service system would be extended (i.e., the flow of recycled water would be extended in existing lines) to the south along RT Jones Road, providing a recycled water connection to the NRP once the connection is extended. The existing main line that is owned and operated by NASA; this service extension, which would load the existing main line with recycled water and involves minimal ground work (i.e., turning on a valve), is not part of the NEPA Build Alternative 1. NASA would be the recycled water distribution administrator with water NASA purchases from City of Mountain View at the north-western meter box, and would then be responsible for safe use and extension of recycled water use into the NRP including the Project Site. As stated under Impact CEQA-UTIL-2, Mountain View's 2022 Recycled Water Feasibility Study Update identifies planned upgrades including a new recycled water tank to improve operational flexibility and manage short duration peak recycled water demands.[95] This planned upgrade would occur with or without the proposed project, as it is tied to overall system expansion. No other new City of Mountain View recycled water treatment facilities would be needed to serve the proposed project. Discussions between NASA and Mountain View to execute a recycled water utility service agreement are ongoing. This agreement once finalized, would allow NASA to obtain recycled water directly from Mountain View to deliver non-potable water past the meter (located on the east side of Stevens Creek) to fill NASA's 12 inch recycled water main that runs along RT Jones Road. Additionally, NASA is applying for a Title 22 Recycled Water Distribution Administrator permit directly from the Regional Water Quality Control Board, to administer recycled water purchased from the City of Mountain View throughout NASA's infrastructure at NASA ARC. NASA anticipates finalizing the agreement and obtaining required permits by 2027. After the agreement is finalized, the City of Mountain View will construct a 10-foot connection to enable recycled water flow to NASA ARC; this connection is not part of the proposed project.

The NEPA Build Alternative 1 would include 12-inch recycled water mains on-site with branches throughout the Project Site to serve the proposed buildings and irrigated areas. The on-site recycled water system would be looped internally. As discussed in Section 2.3.6, *Utilities,* in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the NEPA Build Alternative 1 could include two possible routings for the off-site recycled water mains to one point of connection to the existing recycled water main in RT Jones Road near the main gate: RT Jones Road Recycled Water Main Connection Option 1 and RT Jones Road Recycled Water Main Connection Option 2. Overall, the NEPA Build Alternative 1 would generate a recycled water demand of 160 afy, a demand, as analyzed under Impact NEPA-UTIL-5, below, is within the service supply capacity.

As discussed in Section 3.18.3, *Plans, Policies and Regulations*, utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's recycled water demand. Any necessary connections would be constructed prior to building

[95] City of Mountain View. 2022. *Recycled Water Feasibility Study, Final.* Prepared by Carollo. March 2022.

occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. As also noted in Chapter 2, the design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[96] The specifics regarding utility connections and designs will be evaluated through NASA's NRP Design Review Board process in connection with NASA's approval of the proposed project pursuant to APR 8822.1, and through NASA's Construction Permit Review Process, established by APD 8829.1. During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project. The Project Proponent would compensate NASA for services provided to the proposed project.

Given that the aforementioned recycled water service agreements and approvals are outstanding, implementation of Mitigation Measure UTIL-2 would ensure timely completion of all conveyance system approvals per the available capacity. Based on the above discussion, the proposed project would not place a demand on existing recycled water distribution facilities that exceeds available conveyance capacity and the impact would be ***less than significant with mitigation***.

Water Reuse Facility Option

The Water Reuse Facility Option would include an approximately 15,000-gross-square-foot (gsf) water reuse facility that would produce recycled water to serve the proposed buildings and irrigated areas. The facility would process all of the NEPA Build Alternative 1's wastewater and supplement recycled water needs within the Project Site.[97] The facility's anticipated production would be approximately 37,000 to 44,000 gpd (41 to 49 afy). Therefore, it would reduce demand on Mountain View's existing recycled water distribution facilities to the Project Site and would not exceed existing available conveyance capacity. A backup connection to the City of Mountain View's and recycling water system would supplement the NEPA Build Alternative 1's anticipated demand for recycled water and for emergency purposes. As discussed above, the proposed project would not place a demand on existing recycled water distribution facilities that exceeds available conveyance capacity and the impact would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. All recycled water utility infrastructure improvements would remain the same. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-2 would reduce the impact to existing recycled water distribution facilities to a less-than-significant level; thus, the

[96] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

[97] The proposed WRF Option would comply with NASA's Regulatory Review Procedures for On-Site Blackwater Treatment and Reuse.

impact by the NEPA Build Alternative 1 with the Sub-Alternative would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. There would be no WRF Option, but all recycled water utility infrastructure improvements would remain the same. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Therefore, the NEPA Build Alternative 2 would not place a demand on existing recycled water distribution facilities that exceeds available conveyance capacity and the impact would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. All recycled water utility infrastructure improvements would remain the same. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-2 would reduce the impact to existing recycled water distribution facilities to a less-than-significant level; thus, the impact of the NEPA Build Alternative 2 with the Sub-Alternative would be ***less than significant with mitigation***.

Impact NEPA-UTIL-5: Would the project create a demand for recycled water service that exceeds existing supply capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Current buildings do not generate a demand for recycled water, and under the NEPA No-Action Alternative they would not create a new demand. Therefore, the NEPA No-Action Alternative would have ***no impact*** on the demand for recycled water service.

NEPA Build Alternative 1 (CEQA Proposed Project)

Recycled water is provided by the City of Mountain View (refer to Impact NEPA-UTIL-4 for additional detail). Based on the calculations of the Water Supply Evaluation the proposed project would generate a recycled water demand of 160 afy in 2045. As detailed in Section 3.18.2, *Recycled Water*, and detailed in the Water Supply Assessment (Appendix 3.18-1), the historical recycled water demand supplied to Mountain View averaged 425 afy, with demand forecast to increase to 448 afy by 2045, which is below the contractual limit available from the Palo Alto Regional Water Quality Control Plant (RWQCP) of 988 afy in 2045.[98] Forecast demand of 448 afy plus proposed project demand of 160 afy is expected to be 608 afy, which is still within Mountain View's existing supply capacity (988 afy). Under the WRF Option, the proposed project's demand for recycled water from Mountain View would be reduced. Therefore, the NEPA Build Alternative 1 would not create a demand for recycled water service that exceeds existing supply capacity and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 1 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in a ***less-than-significant*** impact.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Under NEPA Build Alternative 2, the demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 1 because there would be fewer employees on-site. There would be no WRF Option under NEPA Build Alternative 2. Therefore, the NEPA Build

[98] A peaking factor of 3.4 (Mountain View, 2022) was applied to the contractual recycled water supply limit of 3.0 MGD for peak flow rate to estimate the annualized availability of recycled water supply for a value of 988 afy. Mountain View, 2022. *Recycled Water Feasibility Study,* prepared by Carollo for Mountain View. March 2022.

Alternative 2 would not create a demand for recycled water service that exceeds existing supply capacity and the impact would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 2 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in a ***less-than-significant*** impact.

Impact NEPA-UTIL-6: Would the project interfere with provision of recycled water service to existing land uses?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. There are no recycled-water demanding uses on the Project Site, therefore the NEPA No-Action Alternative would not interfere with provision of recycled water service to existing land uses. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

Given that there are no recycled water users on the Project Site, and that connection to the recycled water system involves new connection (does not require temporarily shutting off existing service) construction and operation of the NEPA Build Alternative 1 would not interrupt existing recycled

water service to existing land uses on the Project Site. Based on the regulatory requirements and design approval process including NASA's NRP Design Review Board process presented under Impact NEPA-UTIL-4, construction and of NEPA Build Alternative 1 would be completed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's recycled water demand. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. NEPA Build Alternative 1 would not interfere with provision of recycled water service to existing land uses. The impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 1 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Under NEPA Build Alternative 2, the demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 1 because there would be fewer employees on-site. As mentioned for NEPA Build Alternative 1, Mountain View would have an excess supply of recycled water. Therefore, the NEPA Build Alternative 2 would not interfere with provision of recycled water service to existing land uses. The impact would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The demand for recycled water from Mountain View would be lower than the NEPA Build Alternative 2 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-7: Would the project interfere with provision of recycled water service for future, planned development?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	UTIL-2. Recycled Water Service Agreements and Approvals	Less than Significant with Mitigation
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 2	Less than Significant with Mitigation
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. As addressed in Impacts NEPA-UTIL-4 through -6, the NEPA No-Action Alternative would not add any new recycled water demands, therefore would not interfere with provision of recycled water service for future, planned development and would thus generate ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

As addressed under Impacts NEPA-UTIL-5 and CEQA-UTIL-2, there is adequate recycled water supply to meet forecast demand in 2045. The City of Mountain View is not projected to experience a shortfall of recycled water supply for future, planned development, even with added demand from the proposed project. Forecast demand of 448 afy plus proposed project demand of 160 afy is expected to be 608 afy, which is still within Mountain View's contractual limit available from the RWQCP 988 afy in 2045. According to the City of Mountain View 2020 UWMP, the PRWQCP provides recycled water pursuant to an agreement that allocates 3.0 mgd of recycled water to Mountain View at no cost through 2060. In December 2019, Mountain View and Palo Alto executed an agreement with Valley Water to "Advance Resilient Water Reuse Programs in Santa Clara County." This agreement established funding for the advanced treatment facility to improve recycled water quality. NEPA Build Alternative 1 would not interfere with provision of recycled water service through these agreements.[99] As mentioned above, with the WRF Option, the proposed project's

[99] A peaking factor of 3.4 (Mountain View, **Error! Reference source not found.**) was applied to the contractual r ecycled water supply limit of 3.0 MGD for peak flow rate to estimate the annualized availability of recycled water supply for a value of 988 afy. Mountain View, 2022. *Recycled Water Feasibility Study,* prepared by Carollo for Mountain View. March 2022.

demand for recycled water from Mountain View would be reduced. When accounting for recycled water service agreements and approvals that are outstanding under Impact NEPA-UTIL-4, implementation of Mitigation Measure UTIL-2, would ensure timely completion of all conveyance system approvals per the available capacity, which would further ensure there is no interference of recycled water for other future development. Based on the above analysis, the NEPA Build Alternative 1 would not interfere with provision of recycled water service for future, planned development. The impact would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Thus, the NEPA Build Alternative 1 with the Sub-Alternative would not interfere with provision of recycled water service for future, planned development and the impact would be ***less-than-significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. A lower building square footage of buildings would lead to lower recycled water demand. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Therefore, the NEPA Build Alternative 2 would not interfere with provision of recycled water service for future, planned development. The impact would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-2 would reduce the impact to existing recycled water distribution facilities to a less-than-significant level; thus, the impact of the NEPA Build Alternative 2 with the Sub-Alternative would be less-than-significant with mitigation.

Impact NEPA-UTIL-8: Would the project place a demand on existing wastewater collection facilities that exceed the available conveyance capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	UTIL-3. Wastewater Connection Requirements	Less than Significant
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Same as NEPA Build Alternative 2	Less than Significant
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 2*

Given that wastewater capacity and conveyance are closely tied, there are cross-references between the analysis for Impacts NEPA-UTIL-8 through NEPA-UTIL-12. This particular impact analysis is focused on conveyance capacity. Additional tables and analysis related to the potential relocation of existing or construction of new/expanded wastewater treatment and facilities are included under Impact CEQA-UTIL-3 which considers this related topic.

Impacts related to wastewater generation, and associated infrastructure are identified by determining the adequacy of existing infrastructure and comparing existing service capacity against future demand from project implementation. The methodology that follows is a summary of the wastewater generation and capacity analysis methodology detailed in the *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026. The City of Mountain View 2018 Sewer System Management Plan (Appendix A) was used to determine design flows for the proposed project. These standards include procedures for determining average dry-weather flow, peak dry-weather flow, and peak wet-weather flow for commercial, office/research-and-development, mixed-use, industrial, public, employment, restaurant, residential, and parking uses. Because the wastewater generation modeled for the NEPA Build Alternative 1 provides the greatest generation volumes and system demand, using the same rational detailed in Section 3.18.2, under *Water Demand*, the analysis modeled for the NEPA Build Alternative 1 provides a comprehensive analysis of wastewater generation associated with the other scenarios.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. While the NEPA No-Action Alternative would increase

wastewater conveyance over existing conditions it would not place additional demand on existing wastewater collection facilities over historic uses. As opposed to transitioning to the City of Mountain View service area, the NEPA No-Action Alternative would continue to use the City of Sunnyvale wastewater conveyance system. Regardless of the proposed project, according to the 2015 Wastewater Collection System Master Plan,[100] planned upgrades and replacements of system facilities and operations, will ensure that the City of Sunnyvale wastewater conveyance system will meet changing regulations, treat existing and projected wastewater flows reliably and cost effectively, and increase recycled water production. The NEPA No-Action Alternative would therefore, not exceed the existing available conveyance capacity, previously developed to serve the Project Site. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As detailed in Impact CEQA-2, the Project Site is currently served by a collection of small 6-inch and 8-inch sewer mains that extend from south to north along Dailey Road, Bailey Road, Gorsky Road, Kaiser Road, Betio Road, and Cody Road. These mains discharge into three larger sewer mains that serve Shenandoah Plaza, then discharge farther north into an 18-inch NASA main sewer trunk line. The Project Site's existing sewer flow to the City of Sunnyvale system is not separately metered from NRP flow. According to NASA, based on the square footage of existing buildings, the current wastewater generation at the Project Site is approximately 32,366 gpd. Because the project proposes to route new sanitary sewer flows to the City of Mountain View sewer system, as opposed to the City of Sunnyvale sewer system, the proposed project would no longer discharge approximately 32,366 gpd of sewer flow to the City of Sunnyvale system.[101] Any unused lines from the Sunnyvale system within the Project Site would be removed up to the sewer main.

The NEPA Build Alternative 1 would include new 8-inch, 10-inch, and 12-inch sewer lines throughout the Project Site to serve the proposed buildings. Wastewater generated from the Project Site would be routed off-site through an on-site sewer lift station, which would be appropriately sized to ensure the discharge flows needed to prevent surcharging of the upstream gravity pipe. Under the preferred alignment option, the lift station would be in the southwest corner of the Project Site, near Girard Road and the Girard Connector. As part of the NEPA Build Alternative 1, a new connection and a new meter would be installed at the point of connection to the City of Mountain View's wastewater main in RT Jones Road at the Girard Connector. Wastewater would ultimately be treated at the PARWQCP.

While the City of Mountain View does not publicly list a conveyance capacity, the proposed project's off-site sanitary sewer system would be designed, constructed, and operated in accordance with the City of Mountain View's design criteria for sewer pipe performance during peak dry weather flow and peak wet-weather flow. Modeling of the existing Mountain View sewer system demonstrates that the system has capacity to accept new flows without new infrastructure.[102] The proposed on- and off-site sanitary sewer system would be adequately sized to convey project flows and designed, constructed, and operated in accordance with the City of Mountain View's design criteria for sewer pipe

[100] Sunnyvale. 2015. *Sewer System Management Plan*. Available: https://sunnyvaleca.legistar.com/LegislationDetail.aspx?ID=2283077&GUID=733EECED-24F9-42AC-81D4-1FFC6067FCB9&FullText=1. Accessed April 2, 2026.

[101] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan.* Spring 2026.

[102] BKF. 2026. *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan.* Spring 2026.

performance during peak dry-weather flows and peak wet-weather flows. Further, as part of the City of Mountain View's permitting process, the Project Proponent must complete an excavation permit application, a Sanitary Sewer Service Application, and a Utility Impact Study, ensuring any contributions to usage and possible upgrades would be addressed.

Utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's wastewater. As discussed under Impact NEPA-UTIL-1, any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[103] During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project. The Project Proponent would compensate NASA for services provided to the proposed project.

Given that the aforementioned wastewater service application and approvals are outstanding, implementation of Mitigation Measure UTIL-3 would ensure timely completion of all conveyance system approvals per the available capacity. With implementation of Mitigation Measure UTIL-3 the proposed project would not place a demand on existing wastewater collection facilities that exceed the available conveyance capacity and the impact would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The proposed wastewater infrastructure would remain the same as NEPA Build Alternative 1. The generation of wastewater would be lower than the NEPA Build Alternative 1 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-3 would reduce the impact to existing wastewater water collection facilities to a less-than-significant level. The impact by the NEPA Build Alternative 1 with the Sub-Alternative would ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

[103] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

Alternative 1. Under the NEPA Build Alternative 2, the proposed wastewater infrastructure would remain the same as NEPA Build Alternative 1, but NEPA Build Alternative 2 would generate less wastewater. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts and impacts would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Hou sing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The proposed wastewater infrastructure would remain the same as NEPA Build Alternative 2. The generation of wastewater would be lower than the NEPA Build Alternative 2 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-3 would reduce the impact to existing wastewater water collection facilities to a less-than-significant level. The impact of the NEPA Build Alternative 2 with the Sub-Alternative would be ***less than significant with mitigation***

Impact NEPA-UTIL-9: Would the project create a demand for wastewater treatment that exceeds existing treatment capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not create a new demand for wastewater treatment beyond historic rates. Wastewater from the NEPA No-Action Alternative would continue to flow to the existing City of Sunnyvale Water Pollution Control Plant.

Regardless of proposed project activity, according to the plant's 2016 master plan, and upcoming plan update (completion expected in the fourth quarter of 2026), ongoing maintenance and improvements at the plant would ensure it continues to meet forecast capacity and complies with updated Sunnyvale policy, state and federal laws and regulations, changing water quality conditions, changing flows and loads, operating conditions, the state of technology, and market conditions.[104] The NEPA No-Action Alternative and would not exceed existing treatment capacity. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

As described under Impact NEPA-UTIL-8, the proposed project would no longer discharge approximately 32,366 gpd of sewer flow to the City of Sunnyvale system and the increased water demand associated with the proposed project would result in a new increase in the volume of wastewater conveyed through the existing sanitary sewer system and treated at the RWQCP. Based on the generation rates used by BKF, the average dry-weather flow and peak wet-weather flow increase in wastewater generation by the NEPA Build Alternative 1, which would go to the City of Mountain View's system, is estimated at approximately 440,279 gpd and 837,529 gpd (i.e., 0.53 mgd and 1.01 mgd), respectively. According to the Public Works Department, the City of Mountain View is able to accommodate the projected flows.[105] In addition, the Palo Alto RWQCP currently has a hydraulic capacity of 80 mgd with a daily flow rate of 20.22 mgd.[106] Therefore, the RWQCP has a remaining capacity of 59.78 mgd and has the capacity to accommodate the increase in wastewater from the proposed project. Therefore, the proposed project would not create a demand for wastewater treatment that exceeds existing treatment capacity.

With the WRF Option, the WRF would process all of the proposed project's wastewater. Under this option, the proposed project would not create a demand for wastewater treatment that exceeds existing treatment capacity. The impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The generation of wastewater would be lower than the NEPA Build Alternative 1 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and

104 Sunnyvale. 2016. *Water Pollution Control Plant Master Plan*. Available: https://www.sunnyvalecleanwater.com/water-pollution-control-master-plan. Accessed April 2, 2026.

105 Au, Lisa, P.E. (Assistant Public Works Director) to Fearon, Steward (Chief, Facilities Engineering and Real Property Management Division), March 3, 2023, Public Works Department, City of Mountain View, CA.

106 City of Palo Alto. 2025. Regional Water Quality Control Plant 2024 Pretreatment Program Annual Report. Available: https://www.paloalto.gov/files/assets/public/v/1/public-works/water-quality-control-plant/annual-reports/pretreatment-program-annual-report-2024.pdf. Accessed : March 17, 2026.

the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. NEPA Build Alternative 2 would generate less wastewater and would not create a demand for wastewater treatment that exceeds existing treatment capacity. The impact would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The generation of wastewater would be lower than the NEPA Build Alternative 2 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-10: Would the project place a demand on existing wastewater distribution facilities that exceeds available conveyance capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. As addressed under Impact NEPA-UTIL-8 and UTIL-9 the NEPA No-Action Alternative would not place additional demand on the existing wastewater distribution system and would generate waste within historic rates for the Limits of Work and the RWQCP's capacity. Given that the RWQCP would continue operating within its permitted capacity regardless of the proposed project, wastewater distribution demand by the NEPA No-Action Alternative would not exceed available conveyance capacity. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The project's treated wastewater from Palo Alto RWQCP may flow into the San Francisco Bay, the Emily Renzel Wetlands and Pond, the Horizontal Levee, or be used as recycled water. Sludge is a leftover byproduct of the process, and it is dried in the RWQCP's sludge dewatering and loadout facility. Trucks transport it off-site so it can be further processed into biosolids to be reused as fertilizer.[107] The plant falls under three NPDES permits for which it operates strict compliance measures, including its main discharge permit, permits governing specific pollutants, and lastly, as a producer of recycled water it falls under a recycled water permit. The City of Palo Alto ensures conveyance adequacy at the RWQCP, its complex sewer system, and regional partners through key capital improvement projects initiatives including the Long Range Facilities Plan (2012), new outfall pipe installation, and the Joint Intercepting Sewer Rehabilitation Phase 1 project.[108] As analyzed under Impact NEPA-UTIL-9, the RWQCP would continue operating within its capacity even with inclusion the proposed project. Related analysis for recycled water conveyance, and for wastewater collection is considered under Impact NEPA-UTIL-4 and Impact NEPA-UTIL-8, respectively. Therefore, the project would not place a demand on existing wastewater distribution facilities that exceeds available conveyance capacity and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

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107 City of Palo Alto. 2026. Regional Water Quality Control Plant. About the Plant. https://www.paloalto.gov/Departments/Public-Works/Regional-Water-Quality-Control-Plant/About-the-Plant. Accessed: March 17, 2026.

108 City of Palo Alto, 2026. *Regional Water Quality Control Plant, Capital Improvement Projects.* Available: https://www.paloalto.gov/Departments/Public-Works/Regional-Water-Quality-Control-Plant/Capital-Improvement-Projects. Accessed March 18, 2026.

Impact NEPA-UTIL-11: Would the project interfere with the provision of wastewater service to existing land uses?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. As discussed under Impacts NEPA-UTIL-8, NEPA-UTIL-9, and NEPA-UTIL-10, the NEPA No-Action Alternative would not place a new demand on existing wastewater collection, distribution, or treatment facilities that exceed historic use from the Project Site and would not impact the available conveyance or treatment capacity. Given that there is no existing capacity limitation in the system that would interfere with wastewater service to existing land uses, the NEPA No-Action Alternative would not interfere with the provision of wastewater service to existing land uses and would generate ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

The construction and operation of the NEPA Build Alternative 1 would provide new onsite sewer lines as detailed under Impact NEPA-UTIL-8. The connection of project infrastructure to the existing wastewater system would not result in an impact to existing conveyance or treatment of wastewater to other City of Mountain View users as considered under Impacts NEPA-UTIL-8, NEPA-UTIL-9, and NEPA-UTIL-10. Relatedly, there are no existing land uses, apart from those proposed to be demolished under NEPA Build Alternative 1, on the Project Site that would experience interference with wastewater services from construction or operation because no offsite sewer lines would be removed. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-12: Would the project utilize wastewater treatment or conveyance capacity intended for identified future projects?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Significant	Mitigation Measure UTIL-3 Wastewater Connection Requirements	Less than Significant
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*	*Same as NEPA Build Alternative 1*
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Significant	Mitigation Measure UTIL-3 Wastewater Connection Requirements	Less than Significant
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 2*	*Same as NEPA Build Alternative 2*

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of currently vacant buildings, along with other planned projects, could increase demand for wastewater service in the future, but only to rates between existing and historic demand. The Palo Alto RWQCP is investing $397.2 million dollars in capital improvement projects for upgrades to aging equipment, infrastructure rehabilitation, and new treatment process technologies.[109] Mountain View and Palo Alto RWQCP would be responsible for evaluating the environmental effects of any new or expanded infrastructure within their service areas at the time such improvements are proposed. In addition, as discussed under Impacts NEPA-UTIL-8, NEPA-UTIL-9, and NEPA-UTIL-10, the NEPA No-Action Alternative's contribution to the wastewater treatment and conveyance system is a small percentage of the system's capacity. Therefore, the NEPA No-Action Alternative would not utilize wastewater treatment or conveyance capacity intended for identified future projects. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The NEPA Build Alternative 1, in combination with future projects, would contribute wastewater flows to Mountain View's sewer system and the Palo Alto RWQCP. The Palo Alto RWQCP is investing $397.2 million dollars in capital improvement projects for upgrades to aging equipment, infrastructure rehabilitation, and new treatment process technologies.[110] Mountain View and Palo Alto RWQCP would be responsible for evaluating the environmental effects of any new or expanded infrastructure within their service areas at the time such improvements are proposed. In addition, as discussed in Impact NEPA-UTIL-8, NEPA-UTIL-9, and NEPA-UTIL-10, the NEPA Build Alternative 1's contribution to the wastewater treatment and conveyance system is a small percentage of the system's remaining capacity. Given that the aforementioned wastewater service application and approvals are outstanding (see Impact NEPA-UTIL-8), implementation of Mitigation Measure UTIL-3 Wastewater Connection Requirements would ensure timely completion of all conveyance system approvals per the available capacity. With implementation of Mitigation Measure UTIL-3, the NEPA Build Alternative 1 would not utilize wastewater treatment or conveyance capacity intended for identified future projects. The impact would be ***less than significant with mitigation***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The proposed wastewater infrastructure would remain the same as NEPA Build Alternative 1. The generation of wastewater would be lower than the NEPA Build Alternative 1 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts.

[109] City of Palo Alto. 2026. R*egional Water Quality Control Plant Capital Improvement Project.* Available: https://www.paloalto.gov/Departments/Public-Works/Regional-Water-Quality-Control-Plant/Capital-Improvement-Projects. Accessed March 18,2026

[110] Ibid.

Implementation of Mitigation Measure UTIL-3 would reduce the impact to existing wastewater water collection facilities to a less-than-significant level. The impact by the NEPA Build Alternative 1 with the Sub-Alternative would be ***less than significant with mitigation***.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Under the NEPA Build Alternative 2, the proposed wastewater infrastructure would remain the same as NEPA Build Alternative 1, but NEPA Build Alternative 2 would generate less wastewater. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Therefore, the NEPA Build Alternative 2 would not place a demand on existing wastewater collection facilities that exceed the available conveyance capacity identified for future users and the impact would be ***less than significant with mitigation***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The proposed wastewater infrastructure would remain the same as NEPA Build Alternative 2. The generation of wastewater would be lower than the NEPA Build Alternative 2 because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The same mitigation measure identified under NEPA Build Alternative 1 could be implemented to lessen impacts. Implementation of Mitigation Measure UTIL-3 would reduce the impact to existing wastewater water collection facilities to a less-than-significant level. Thus, the impact of the NEPA Build Alternative 2 with the Sub-Alternative would be ***less-than-significant with mitigation***.

Impact NEPA-UTIL-13: Would the project require or result in the relocation or construction of new or expanded stormwater drainage facilities, the construction or relocation of which could cause significant environmental effects?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

Additional analysis related to stormwater is included under Section 4.5.9, *Hydrology and Water Quality*, as well as under Impact CEQA-UTIL-5, which also considers this threshold.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. The NEPA No-Action Alternative would not relocate or construct new or expanded stormwater drainage facilities because the existing facilities would be adequate. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The NEPA Build Alternative 1 would increase the impervious surface area on the Project Site to approximately 79 percent, which is a 9 percent increase from existing conditions. The increase in impervious surface area would result in a 10-year peak stormwater discharge rate of approximately 18.93 cfs and a peak volume of approximately 264,468 cf. The NEPA Build Alternative 1 would meter flows leaving the Project Site so that the peak discharge rate would not exceed the existing discharge rate of 18.29 cfs. This would be accomplished through detention involving the oversized pipes upstream of the eastern diked marsh trunk main as well as an orifice and weir to meter flows leaving the Project Site. In addition, the NEPA Build Alternative 1 would incorporate a retention pond to treat the approximately 60,630 cf increase in stormwater volume compared with existing conditions. The retention basin in the northern corner of the Project Site, within the Hangar Commons, would be approximately 0.5 acre in size and approximately 3 feet deep.

The NEPA Build Alternative 1 could connect to three existing NASA storm drain mains along the northern boundary of the Project Site or use the off-site storm drain main, which would connect directly to the eastern diked marsh. The proposed on-site stormwater drainage system would consist of two subsystems. Subsystem 1 would make up approximately 23.5 acres on the interior of the Project Site. All stormwater from Subsystem 1 would drain to the northeast corner of the Project Site and then be discharged into the 0.50-acre retention pond and the eastern diked marsh trunk main. As mentioned above, flows would be metered upstream of the connection to the trunk main to ensure that the proposed project's flow rate would not exceed the existing flow rate. Subsystem 2 would make up approximately 15.1 acres on the perimeter of the Project Site, along Girard Road, and the portion of the Wescoat Road and Cody Road within the lease boundary. Subsystem 2 would discharge to the eastern diked marsh trunk main, these improvements would not require any significant detention or retention as they are being replaced close to in-kind. In addition, the separate dedicated storm drain systems in Wescoat Road, Girard Road, and Cody Road would

continue to flow into NASA's storm drain system, as the drainage pattern of each road is not changing, so the downstream system has capacity to accept these flows.

To treat stormwater discharges from the Project Site during operation of the proposed project, the proposed project would incorporate a variety of stormwater treatment methods, including bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. In addition, the proposed open space would incorporate bioretention areas along the Promenade within the Central Green and a self-treating lawn area, also within the Center Point. Street stormwater runoff would be treated with flow-through planters.

Utility connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's wastewater. As discussed under Impact NEPA-UTIL-1, any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The design of the proposed utility infrastructure is based on relevant design criteria from applicable agencies, assumed flow requirements, and other relevant standards (e.g., the California Waterworks Standards as outlined in Title 22 of the California Code of Regulations).[111] During the Design Review Board process, pursuant to its agreement with NASA, the Project Proponent will prepare and submit for NASA's review and approval utility demand studies to confirm NASA's utility systems will have capacity for the proposed project. The Project Proponent would compensate NASA for services provided to the proposed project.

Construction impacts associated with new stormwater drainage infrastructure are analyzed throughout this joint EIR/EIS. For example, Section 3.3, *Air Quality*, Section 3.8, *Greenhouse Gas Emissions*, and Section 3.12, *Noise*, evaluate increases in air pollutants, greenhouse gas emissions, and noise levels associated with all construction activities, including any ground disturbance needed for tie-ins to existing utility infrastructure, as well as increases in emissions associated with the project's utility demands. Section 3.5, *Cultural Resources*, and Section 3.17, *Tribal Cultural Resources*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have on buried resources. Section 3.7, *Geology, Soils, and Paleontological Resources*; Section 3.9, *Hazards and Hazardous Materials*; and Section 3.10, *Hydrology and Water Quality*, evaluate the potential impacts that trenching and excavation, including any ground disturbance needed for tie-ins to existing utility infrastructure, may have related to erosion and siltation, degradation of water quality, and the release of contamination into the environment.

Therefore, NEPA Build Alternative 1's construction of stormwater drainage facilities would not cause significant adverse environmental effects and the impact would be ***less than significant***.

[111] For more information regarding the design criteria, requirements, and other relevant standards, refer to the following plans: *Berkeley Space Center Project Moffett Field, NASA Research Park, Potable Water System Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Sanitary Sewer Master Plan* prepared by BKF, Spring 2026; *Berkeley Space Center Project, Moffett Field, NASA Research Park, Recycled Water System Master Plan* prepared by BKF, Spring 2026; and *Berkeley Space Center Project, Storm Drain & Stormwater Management Master Plan* prepared by BKF, Spring 2026.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The proposed stormwater drainage facilities are the same as NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Under the NEPA Build Alternative 2, the proposed stormwater drainage facilities are the same as NEPA Build Alternative 1. Therefore, impacts related to the relocation or construction of new or expanded stormwater drainage facilities would be the same as NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The proposed stormwater drainage facilities are the same as NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-14: Would the project create a demand for solid waste disposal that exceeds the capacity of the landfill site currently used for Ames Research Center's waste products?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

Additional analysis related to solid waste is included is Impacts CEQA-UTIL-6 and CEQA-UTIL-7, which consider comparable thresholds.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of existing buildings would result in an increase in solid waste generation compared to existing conditions due to the presence of more employees on-site. Solid waste is transported from the Project Site to various disposal destinations, including the Kirby Canyon Landfill. The Kirby Canyon Landfill has a permitted throughput of 2,600 tons per day, and, based on current disposal volume rates, Kirby Canyon is estimated to be in operation until at least 2059. Therefore, the NEPA No-Action Alternative would not generate a demand for solid waste disposal excess of the capacity of local infrastructure. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

This analysis evaluates the capacity of existing solid waste infrastructure to accommodate the change in solid waste generation from project implementation compared to baseline conditions.

Baseline solid waste generation is estimated using standard waste generation rates by land use from a CalRecycle Waste Generation analysis carried out in 2014. Daily waste generation forecasts have been estimated for each building on-site. Separation rates based on CalRecycle Data have been used to identify the corresponding volume of compost, recycling, cardboard, landfill, and other waste streams. Solid waste generated by the proposed project is estimated based on the disposal rates in Table 4.5.16-2.

Table 4.5.16-2. Waste Generation Rates for the Project Site

Land Use	Waste Generation Rate	Unit	Source
Academic & Educational	2.74	lbs/employee/day	CalRecycle
Conference Center	1.77	lbs/employee/day	Arup Confidential Project
Hotel	11.91	lbs/employee/day	CalRecycle Waste Generation 2014
Housing (Students + Faculty)	4.77	lbs/MFR/day	CalRecycle Waste Generation 2014
Lab and R&D	0.04	lbs/sq. ft./day	Arup Confidential Project
Office	1.73	lbs/employee/day	CalRecycle Waste Generation 2014

Land Use	Waste Generation Rate	Unit	Source
Retail (Food and Beverage)	10.52	lbs/employee/day	CalRecycle Waste Generation 2014
Retail (Other)	10.74	lbs/employee/day	CalRecycle Waste Generation 2014
Short-term Stay	4.81	lbs/employee/day	CalRecycle Waste Generation 2014

Source: Conference Center and Lab and R&D generation rates are from prior confidential Arup projects. All other generation rates are from CalRecycle[112]

The Kirby Canyon Landfill has a permitted throughput of 2,600 tons per day. Assuming the landfill is receiving the maximum permitted throughput of 2,600 tons per day (949,000 tons per year) since the last capacity inspection in 2011, the landfill would have received approximately 17,082,000 tons (approximately 12,201,428 cubic yards) of solid waste by 2029 (the first year of construction). Based on this calculation, the estimated remaining capacity of the landfill would be 20,335,714 cubic yards by the start of Phase I of construction. Therefore, the landfill would have sufficient capacity to accommodate approximately 19,600 cubic yards of construction debris and solid waste generated from project-related construction activities.

During operations, the Project Site would generate 58,206 pounds (541.9 cubic yards) of waste per day and divert approximately 85 percent of waste from landfills. A comprehensive set of waste management strategies (plastic packaging substitution, smart waste bins, a fabrics separation program, and a cardboard takeback scheme) are required to ensure diversion can get as close as possible to Zero Waste (90 percent diversion). With these strategies in place, waste generation would decrease to 57,918 pounds (474.8 cubic feet) per day with a diversion rate of 84.6 percent. As discussed above, the Kirby Canyon Landfill has a remaining capacity of 20,335,714 cubic yards, which would be able to support the proposed project's operational waste generation of 173,302 cubic yards per year. Therefore, the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Construction impacts would be the same as NEPA Build Alternative 1. Operational waste generation would be slightly lower because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build

[112] CalRecycle. September 10, 2015. 2014 Generator-Based Characterization of Commercial Sector Disposal and Diversion in California. Available: https://www2.calrecycle.ca.gov/WasteCharacterization/PubExtracts/2014/GenSummary.pdf. Accessed: March 17, 2026.

Alternative 1. During operation, the NEPA Build Alternative 2 would generate less waste than the NEPA Build Alternative 1. The NEPA Build Alternative 2 would generate 42,668 pounds of waste per day with a 71 percent waste diversion. After the same waste management strategies as the NEPA Build Alternative 1 (plastic packaging substitution, smart waste bins, a fabrics separation program, and a cardboard takeback scheme), waste generation would decrease to 40,911pounds per day with a diversion rate of 84 percent.[113] As discussed above, the Kirby Canyon Landfill has available capacity to support this operational waste generation. Therefore, the impact would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Construction impacts would be the same as NEPA Build Alternative 2. Operational waste generation would be slightly lower because there would be fewer short-term residents on-site. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-15: Would the project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings

[113] Nasa Research Park Stage Two Appendix, page 101

would not require construction activity. The NEPA No-Action Alternative would occur in accordance with federal, state, and local solid waste regulations. Thus, there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

The NEPA Build Alternative 1 would comply with the California Green Building Code Standards, which require that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse. The NEPA Build Alternative would also comply with the requirements of AB 341 that mandates recycling for commercial land use. During operations, the Project Site would provide recycling and organic waste services in accordance with AB 1826. Organic waste generation would be reduced in line with the targets set by SB1383. During operation, the proposed project would implement waste management strategies to divert approximately 85 percent of waste from landfills. As such, the project would comply with AB 939 and SB 1322. Therefore, the NEPA Build Alternative 1 would comply with all applicable federal, State, and local solid waste regulations, and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-16: Would the project create a demonstrable need for new or enlarged energy facilities with respect to electrical and natural gas service?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

Additional analysis related to energy is included is *Impact CEQA-UTIL-8,* and *CEQA-C-UTIL-5* which consider similar thresholds.

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require the installation of new electrical or natural gas service. Therefore, the NEPA No-Action Alternative would not create a demonstrable need for new or enlarged energy facilities with respect to electrical and natural gas services. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

The project would not require natural gas for operation. Impacts related to electricity and natural gas are evaluated by determining whether any new facilities would need to be constructed to serve implementation of the proposed project, whether service providers (PG&E, NASA) would be able to serve the proposed project, and whether the construction of necessary improvements would adversely affect service provider capacity or infrastructure. The focus of this section is on the environmental effects of constructing new or connecting to existing infrastructure needed to serve the proposed project, while Section 4.5.6, *Energy*, focuses on the consumption of energy resources.

As discussed in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, the NEPA Build Alternative 1 would require the installation of new connections to the surrounding Pacific Gas and Electric Company (PG&E) grid to provide electrical service to future buildings throughout the Project Site. The existing 2.4-kilovolt (kV) switchgear located in Building 104, which currently serves infrastructure adjacent to the Project Site, would be relocated as part of the proposed project. The project would connect directly to the existing PG&E system and route an electrical duct back to

the Project Site. Electrical lines would then be routed under the interior streets on the Project Site to the proposed buildings.

The NEPA Build Alternative 1 would also require the relocation and replacement of existing gas infrastructure; however, none of the proposed gas infrastructure would serve the NEPA Build Alternative 1. The existing gas main that runs south to north through the Project Site within Dailey Road, then continues from the east side of Building 104 to Shenandoah Plaza, would be relocated to follow the alignment of Dailey Road to the intersection of Wescoat Road. It would then follow Wescoat Road east and ultimately connect to the NASA natural gas main near Building 509. In addition, a new gas manifold and metering station would be installed at the connection to the existing NASA gas main along the north side of Wescoat Road near Building 509. Furthermore, the existing PG&E natural gas meter on the south side of the Project Site would be relocated to the south side of Dailey Road within the Project Site.

Twelve diesel emergency generators with Tier 4 engines would be installed at the Project Site to provide emergency power, offering a maximum power capacity of more than 670 brake horsepower per generator. In addition, the NEPA Build Alternative 1 would include the construction and operation of photovoltaic (PV) systems and battery storage systems, which would be distributed throughout the buildings within each Subarea. As discussed in Section 5.5.6, *Energy,* energy consumption under the CUP Option would be lower than the NEPA Build Alternative 1 and, except for stationary sources, energy consumption under the WRF Option would be the same as NEPA Build Alternative 1.

Energy connections would be constructed in accordance with all applicable building codes and standards to ensure an adequately sized and properly constructed transmission and conveyance system for the proposed project's energy demand. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. Given that the proposed project's energy demand would be supplied by the proposed PV systems, battery storage systems, and PG&E, the proposed project's energy demand is not expected to require the construction of a new or larger off-site energy facility. The impact related to the need for new or enlarged energy facilities with respect to electrical and natural gas service would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Electrical and gas-related use and associated construction impacts would be the same as the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Electrical and gas-related use and associated construction impacts would be the same as the NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-17: Would the project place a demand on existing electrical distribution facilities that exceeds available conveyance capacity to Ames Research Center?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity and would not result in a demand for electricity above historic levels. Therefore, the NEPA No-Action Alternative would not require new or enlarged energy facilities, including electrical distribution facilities. The NEPA No-Action Alternative would not place a demand on existing electrical distribution facilities that exceeds available conveyance capacity to NASA ARC. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Changes in new or enlarged energy facilities are characterized under Impact NEPA-UTIL-16. As discussed therein, the proposed electrical facilities at the Project Site would be new and would not put additional demand on existing facilities (e.g., the switchgear) such that they would exceed conveyance capacity to NASA ARC. As discussed in Section 3.18.3, *Plans, Policies and Regulations*, and referenced in impacts above, utility connections, including those related to energy conveyance would be constructed in accordance with all applicable building codes and standards to ensure an

adequately sized and properly constructed transmission and conveyance system for the proposed project's energy demand. Any necessary connections would be constructed prior to building occupancy and in a manner that would minimize the potential for utility service disruption of existing uses. The impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. The proposed energy facilities and related demand would be the same as NEPA Build Alternative 1.Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. The proposed energy facilities and related demand would be the same as NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. The proposed energy facilities and related demand would be the same as NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-18: Would the project place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	Less than Significant	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require construction activity. Reoccupancy of existing buildings would result in a small increase in gas use, but no more than historic uses of the site and, thus, the NEPA No-Action Alternative would not require modified off-site gas distribution facilities. Therefore, the NEPA No-Action Alternative would not place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity. Thus, there would be a ***less-than-significant*** impact.

NEPA Build Alternative 1 (CEQA Proposed Project)

Under the NEPA Build Alternative 1, all new building systems (e.g., HVAC, mechanical systems) would be supplied by electricity, eliminating the need for connections to PG&E's natural gas infrastructure for building operations. However, gases (e.g. oxygen, CO2, nitrogen, natural gas) may be used by tenants for research purposes in laboratories within the Research and Office Uses. The proposed laboratories would be supported through gas tanks, either within the laboratories or at a central location within the building. It is anticipated that a small amount of gases for research purposes only would be used under the NEPA Build Alternative 1. Therefore, the proposed project would not place a demand on existing off-site gas distribution facilities that exceeds available conveyance capacity. The impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Gas-related use and associated impacts would be the same as NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Gas-related use and associated impacts would be the same as NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

Impact NEPA-UTIL-19: Would the project interfere with provision of electrical and natural gas service to existing off-site land uses?

Impact Summary

	Significance before Mitigation	Applicable Mitigation	Significance after Mitigation
NEPA No-Action Alternative	No Impact	—	—
NEPA Build Alternative 1 (CEQA Proposed Project)	Less than Significant	—	—
NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 1*	—	—
NEPA Build Alternative 2 (CEQA Reduced Density Alternative)	Less than Significant	—	—
NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative	*Same as NEPA Build Alternative 2*	—	—

NEPA No-Action Alternative

Under the NEPA No-Action Alternative, the proposed action would not be constructed and operated at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational. The buildings within the Limits of Work that are currently vacant could be reoccupied consistent with the prior uses of the buildings; reoccupying the vacant buildings would not require changes to the existing electrical or natural gas infrastructure. Reoccupancy of existing buildings would result in a small increase in energy use between existing and historic use and would not interrupt existing services. Therefore, the NEPA No-Action Alternative would not interfere with provision of electrical and natural gas service to existing off-site land uses, and there would be ***no impact***.

NEPA Build Alternative 1 (CEQA Proposed Project)

As addressed under Impacts NEPA-UTIL-16 through NEPA-UTIL-18, under the NEPA Build Alternative 1, all new building systems (e.g., HVAC, mechanical systems) would be supplied by electricity, eliminating the need for connections to PG&E's natural gas infrastructure for building operations. As detailed above, the proposed project would comply with PG&E's engineering review and permitting process for new electrical interconnections to ensure that the proposed project can

connect to the grid without compromising service to existing customers. Therefore, NEPA Build Alternative 1 would not interfere with provision of natural gas service to existing off-site land uses, and the impact would be ***less than significant***.

NEPA Build Alternative 1 No Student/Faculty Housing Sub-Alternative (CEQA Proposed Project No Student/Faculty Housing Variant)

The NEPA Build Alternative 1 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 1. Electrical and gas-related use and associated construction impacts would be the same as the NEPA Build Alternative 1. Therefore, the analysis for the NEPA Build Alternative 1 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. The NEPA Build Alternative 1 with the Sub-Alternative would result in ***less-than-significant*** impacts.

NEPA Build Alternative 2 (CEQA Reduced Density Alternative)

The NEPA Build Alternative 2 would not change the basic characteristics of the NEPA Build Alternative 1, including the same types of land uses at the same locations and the same site plan. Therefore, the analysis for the NEPA Build Alternative 1 applies to the NEPA Build Alternative 2 and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 1. Therefore, the NEPA Build Alternative 2 would not interfere with provision of electrical and natural gas service to existing land use Impacts would be ***less than significant***.

NEPA Build Alternative 2 No Student/Faculty Housing Sub-Alternative (CEQA Reduced Density Alternative No Student/Faculty Housing Variant)

The NEPA Build Alternative 2 with the Sub-Alternative would not change the basic characteristics of the NEPA Build Alternative 2. Electrical and gas-related use and associated construction impacts would be the same as NEPA Build Alternative 2. Therefore, the analysis for the NEPA Build Alternative 2 applies to the Sub-Alternative and the potential types of impacts analyzed would be the same as analyzed under the NEPA Build Alternative 2. The NEPA Build Alternative 2 with the Sub-Alternative would result in ***less-than-significant*** impacts.

4.5.17 Resource Topics Dismissed from Analysis

As part of the scoping and environmental analysis carried out for the proposed project, the environmental resources listed below were considered, but would not be affected. As a result, there is no further discussion about these issues in this document.

4.5.17.1 Agriculture and Forestry Resources

The Project Site and all surrounding lands within the project vicinity are identified as Urban and Built-up Land by the California Department of Conservation, with no “important farmland” (i.e., Farmland). Consequently, there is no potential for the proposed project to result in the conversion of important farmland to non-agricultural uses. No land within the Project Site is agricultural land under a Williamson Act or Farmland Security Zone Contract. In addition, there is no forestland within or near the Project Site. Therefore, NEPA Build Alternative 1 and NEPA Build Alternative 2 would have ***no impact*** on agriculture and forestry resources, and no further analysis is required.

4.5.17.2 Mineral Resources

There are no known mineral resources within the project vicinity. The Project Site is categorized as MRZ-1. It is not in an area that is used or available for extraction of a regionally important mineral resources. Therefore, NEPA Build Alternative 1 and NEPA Build Alternative 2 would have ***no impact*** on mineral resources, and no further analysis is required.

4.5.17.3 Wildfire

The Project Site is not within or near a State Responsibility Area or a Very High Fire Hazard Severity Zone. Therefore, NEPA Build Alternative 1 and NEPA Build Alternative 2 would have ***no impact*** related to wildfire, and no further analysis is required.

4.6 Other Required Disclosures

The following sections contain other NEPA information for the proposed action regarding short-term uses versus long-term productivity, irreversible and irretrievable commitments of resources, growth-inducing effects, and required federal consultations. Potentially Significant and unavoidable impacts of the proposed action are identified in Chapter 5, Section 5.2, *Significant Environmental Effects that Cannot be Avoided*.

4.6.1 Short-Term Use of the Environment Versus Long-Term Productivity

NEPA requires that an EIS consider the relationship between short term uses of the environment and the maintenance and enhancement of long-term productivity. This consideration is especially relevant in projects that affect natural resource areas, where resources could be extracted or depleted in the short-term to the detriment of long-term maintenance of these resources.

Refer to Chapter 5, Section 5.3, *Irreversible Changes from Implementation of the CEQA Proposed Project and CEQA Reduced Density Alternative*, of this joint EIR/EIS, for a discussion on how the proposed action would not result in long-term impacts to productivity or the availability of natural resources.

4.6.2 Irreversible and Irretrievable Commitments of Resources

Refer to Chapter 5, Section 5.3, *Irreversible Changes from Implementation of the CEQA Proposed Project and CEQA Reduced Density Alternative*, of this joint EIR/EIS, for a discussion of the proposed action's irreversible and irretrievable commitment of resources.

4.6.3 Growth-Inducing Effects

Refer to Chapter 5, Section 5.4, *Growth Inducing Impacts*, of this joint EIR/EIS for a discussion of the proposed action's growth-inducing effects.

4.6.4 Required Federal Consultations

Beyond NEPA compliance, the proposed action will require the following consultations to conform with federal law:

- Certification from the San Francisco Bay Regional Water Quality Control Board for Clean Water Act Section 401 water quality
- Consultation with the U.S. Army Corps of Engineers for a permit under Section 404 of the Clean Water Act
- Consultation with the State Historic Preservation Officer and other Consulting Parties, including tribes, under Section 106 of the National Historic Preservation Act for consideration of avoidance of adverse effects on historic properties
- Consultation with the U.S. Fish and Wildlife Service under Section 7 of the Federal Endangered Species Act

4.7 List of Preparers

Refer to Chapter 8, *Preparers List*, for the name and title of each person involved in the preparation of this EIS.

Chapter 5
Other CEQA Information and Alternatives

5.1 Introduction

Pursuant to State California Environmental Quality Act (CEQA) Guidelines Section 15126.2, this chapter discusses significant environmental effects that cannot be avoided (Section 5.2), as identified in this joint environmental impact report/environmental impact statement (EIR/EIS); significant irreversible environmental changes, including those related to energy and the consumption of nonrenewable resources (Section 5.3); and growth-inducing impacts (Section 5.4). Section 5.5, *Additional CEQA Alternatives*, of this chapter evaluates an additional alternative for CEQA purposes only, the CEQA Reduced Height Alternative, as well as the CEQA No-Project/Existing Conditions Alternative. Section 5.5 also discusses other alternatives that were considered but rejected as infeasible.

Pursuant to the National Environmental Policy Act (NEPA), this joint EIR/EIS evaluates the following alternatives at an equal level of detail:

- CEQA Proposed Project (NEPA Build Alternative 1)
- CEQA Reduced Density Alternative (NEPA Build Alternative 2)
- NEPA No-Action Alternative

The Project Proponent has identified one variant/sub-alternative that includes certain project features that are different from those of the CEQA Proposed Project and CEQA Reduced Density Alternative: the No Student/Faculty Housing Variant/Sub-Alternative (Variant).[1] In addition, the CEQA Proposed Project could also include a Water Reuse Facility (WRF) Option or a Central Utility Plant (CUP) Option.[2]

5.2 Significant Environmental Effects that Cannot Be Avoided

State CEQA Guidelines Section 15126.2(c) requires EIRs to include a discussion of significant environmental effects that cannot be avoided if a proposed project is implemented. Further, if there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

The impacts that follow are considered significant and unavoidable; that is, there is no feasible mitigation available to reduce the impacts of the CEQA Proposed Project (with or without the Variant), CEQA Reduced Density Alternative (with or without the Variant), or the to a less-than-

[1] Throughout the joint EIR/EIS, *Variant* refers to both the variant (under CEQA) and the Sub-Alternative (under NEPA).

[2] Under the WRF Option, portions of the non-potable supply would be provided on-site rather than by Mountain View. The CUP Option would provide a centralized heating and cooling system for all buildings instead of building-by-building heating, ventilation, and air-conditioning (HVAC) systems.

significant level. Additional details about these impacts are provided in the respective sections of Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*.

- **Impact CEQA-AIR-1: Conflicts with Air Quality Plan**. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in ROG and PM_{10} emissions (see Impact CEQA-AIR-2) and cancer risks as well as $PM_{2.5}$ concentrations above the Air District's thresholds (see Impact CEQA-AIR-3). The analysis therefore finds that the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan under CEQA. Mitigation Measures AQ-1 through AQ-9, GHG-1, HAZ-1, and TRAN-1 would be required to reduce project-generated emissions during construction and operation and associated health risks from receptor exposure to TACs and $PM_{2.5}$. Although these measures would reduce emissions, operational ROG and PM_{10} would still exceed the Air District's thresholds; $PM_{2.5}$ risk would likewise exceed the Air District's threshold at some future onsite worker receptor locations. The analysis finds that the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could impede the protection of regional air quality and the elimination of health disparities under State standards as well as obstruct implementation of the 2017 Clean Air Plan, even with implementation of identified mitigation measures. The impact would be significant and unavoidable.
- **Impact CEQA-AIR-2: Criteria Pollutants (Full Operations).** Although sustainable project design features would reduce the severity of growth-oriented criteria pollutants by supporting energy-efficient buildings and fostering active and alternative transportation, the CEQA Proposed Project (with and without the Variant), and the CEQA Reduced Density Alternative (with and without the Variant) would generate ROG and PM_{10} emissions above the Air District's thresholds. ROG emissions would be primarily the result of consumer products, architectural coatings, and landscaping equipment (i.e., area sources). PM_{10} emissions would be primarily the result of private vehicle trips. Mitigation Measures AQ-5 and AQ-6 would be required to reduce ROG emissions from area sources. Mitigation Measure AQ-5 requires, at a minimum, the use of low-VOC paints and cleaning supplies. Mitigation Measure AQ-6 would require the use of zero-emission landscaping equipment over conventional gasoline-fueled counterparts. Mitigation Measure AQ-6 would also reduce operational NO_X, PM_{10}, and $PM_{2.5}$ emissions, and Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces vehicle miles traveled (VMT). Nonetheless, even with implementation of the above-identified mitigation measures, ROG and PM_{10} emissions would still exceed the Air District's thresholds. The project design features and Mitigation Measures AQ-5, AQ-6 and TRAN-1 collectively represent the best available control strategies to reduce operational emissions resulting from buildout of a large-scale development project. There is no feasible mitigation beyond these measures and the project design features to reduce operational ROG and PM_{10} emissions to levels below the Air District's thresholds. Consequently, the impact on air quality from ROG and PM_{10} emissions during operation of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would be significant and unavoidable.
- **Impact CEQA-AIR-3: Pollutant Concentrations.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in exceedances of the Air District project-level cancer risk threshold and $PM_{2.5}$ threshold

for existing off-site receptors located adjacent to the Project Site. For future on-site worker receptors, there would be exceedances of the project-level cancer risk threshold and $PM_{2.5}$ threshold due to project construction activities. The primary cause of the cancer risk threshold exceedances for existing and future receptors is exposure to DPM during construction at the Project Site—specifically, exhaust from off-road equipment and on-site trucks, with smaller contributions from operational sources of TACs. The primary causes of the $PM_{2.5}$ concentration exceedances are on-site off-road equipment activity, earthmoving activity, and vehicle travel, which generates fugitive $PM_{2.5}$ from resuspended road dust. Mitigation Measures AQ-1 through AQ-3, AQ-8, AQ-9, HAZ-1, and GHG-1 would be required to minimize construction cancer and $PM_{2.5}$ risks. Mitigation Measure TRAN-1 would be required to reduce operational $PM_{2.5}$ risks. However, the CEQA Proposed Project (with and without the Variant) would exceed the Air District's annual $PM_{2.5}$ threshold, even with implementation of the above-identified mitigation measures. These measures collectively represent the best available control strategies to reduce receptor exposure to emissions resulting from buildout of a large-scale development project. There is no further mitigation available, and this impact would be significant and unavoidable.

- **Impact CEQA-C-AIR-1: Cumulative Air Quality Impacts.** Because impacts from criteria pollutants are cumulative in nature, the project-level and cumulative impact thresholds for the analysis of regional air quality impacts are the same. Thus, the analysis and conclusions presented characterize the cumulative regional air quality impacts of the project. Emissions generated by the project during the construction period would not contribute to a cumulative regional air quality impact under CEQA with mitigation. However, long-term operational emissions of ROG and PM_{10} would be cumulatively considerable, even with implementation of all feasible mitigation. Localized $PM_{2.5}$ concentrations at the maximally exposed receptor location would also be cumulatively considerable. This impact is significant and unavoidable.
- **Impact CEQA-CUL-1: Historical Resources.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in physical damage to contributors to the NAS Sunnyvale Historic District associated with construction equipment and vibration within the Limits of Work, and new development would introduce new facilities into the setting of the NAS Sunnyvale Historic District that would significantly alter the visual character of the district's immediate surroundings. Implementation of Mitigation Measure CUL-1 would ensure that contributing streetlights would be protected from inadvertent damage during construction. Mitigation Measure NOI-5 would protect historical resources near vibration-producing construction activities. Mitigation Measure CUL-2 would establish a process through which the design of project components adjacent to the historic district would be developed to be as architecturally compatible with the NAS Sunnyvale Historic District as feasible while also meeting project objectives. However, it cannot be guaranteed that Mitigation Measure CUL-2 would successfully prevent material impairment to the NAS Sunnyvale Historic District's setting. If it is not feasible to modify project designs in a manner that complies with the Secretary of the Interior's Standards, Mitigation Measure CUL-3 would require the development of interpretive materials that document the historic district's physical development and setting. However, there is no feasible mitigation beyond these measures and the project design features to prevent material impairment of the historic district's setting. Even with the project design features and mitigation measures, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) would result in substantial adverse change to the setting of the NAS Sunnyvale Historic District; that change would constitute material impairment of the historic

district's significance. Therefore, there would be a significant and unavoidable impact on built-environment resources.

- **Impact CEQA-CUL-2: Archaeological Resources**. The Area of Potential Effects (APE) and Area of Direct Impact (ADI) have a history of precontact and historic-period use and physical remnants from these former uses still exist within the APE and ADI. Therefore, the CEQA Proposed Project's grading and excavation may substantially disturb, damage, or degrade archaeological resources. As a result, construction may cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5. Ground disturbance within the Project Site extending up to five feet in depth could result in partial or complete destruction of two assumed eligible archaeological sites identified within the Project Site (CA-SCL-1145 and CA-SCL-1146). Mitigation Measures CUL-4, CUL-5, and CUL-6 would require preparation and implementation of a Cultural Resources Treatment and Monitoring Plan (CRTMP), cultual resources monitoring and sensitivity training, and protocols for inadvertent discoveries of cultural resources, which would reduce the impacts to archaeological resources. Even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-CUL-3: Human Remains**. The CEQA Proposed Project would have a significant impact if it were to disturb human remains, including those interred outside of dedicated cemeteries. The results of the records search from the Northwest Information Center indicated that human remains have been recorded within the APE and ADI and within a 0.5-mile radius. Moreover, it is possible that original construction of the former and existing uses at the Project Site has displaced human remains or other types of cultural resources. Project grading and excavation may encounter and disturb human remains. Mitigation Measure CUL-7 includes protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts to human remains. As discussed above, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation.
- **Impact CEQA-C-CUL-1: Cumulative Historical Resources Impacts.** The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects would result in substantial adverse change to the setting of the expanded NAS Sunnyvale Historic District. For example, the demolition of Hangar Three removed a historic district contributor and diminished the district's historic visual character. The removal of other historic district contributors by cumulative projects anconstruction of new facilities in the NASA Research Park (NRP) consistent with the buildout of the NASA Ames Development Plan (NADP) may further diminish significant qualities in the historic district's setting. The cumulative impact on historical resources would therefore be significant, and the proposed project's contribution to this impact would be cumulatively considerable. Implementation of Mitigation Measure CUL-2 would improve the proposed project's architectural compatibility with the contributors to the NAS Sunnyvale Historic District. Mitigation Measure CUL-2 would be expected to somewhat reduce the proposed project's visual impact on the historic district's setting but would not reduce the setting impact to a less-than-significant level. Mitigation Measure CUL-3 has been identified to document and

share information on the historical development and setting of the NAS Sunnyvale Historic District but would not be able to avoid the change in the district's setting. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on built-environment historical resources would be cumulatively considerable with mitigation.

- **Impact CEQA-C-CUL-2: Cumulative Archaeological Resources and Human Remains Impacts**. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects, would include construction excavations with the potential to affect archaeological resources and human remains. The proposed project and all cumulative projects would be required to implement best management practices, policy/regulatory requirements, and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of archaeological resources. Nonetheless, cumulative impacts on archaeological resources and disturbance of human remains are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown archaeological resources. Because damage to archaeological resources is irreversible, past projects, the effects of other current projects, and the effects of probable future projects would have a significant unavoidable impact on known and potentially unknown archaeological resources. Therefore, even with the implementation of mitigation, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on archaeological resources and human remains. Therefore, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on archaeological resources and human remains.
- **Impact CEQA-GHG-1: Greenhouse Gas Emissions.** The CEQA Reduced Density Alternative (with and without the Variant) would be expected to exceed vehicle miles traveled (VMT) per service population threshold, which conflicts with the Air District's VMT criteria for transportation. Mitigation Measure TRAN-1 requires implementation of a mitigated TDM plan that further reduces VMT; it would not achieve sufficient reductions to meet the regional per service population VMT target. Accordingly, operation of the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to global climate change from mobile sources. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-GHG-2: Conflict with Applicable Plan, Policy, or Regulation Adopted to Reduce Greenhouse Gas Emissions.** The regional VMT reduction target is designed to meet regional and statewide VMT and emission reduction goals. Because consistency with the regional VMT threshold cannot be achieved with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-GHG-1), the CEQA Reduced Density Alternative (with and without the Variant) would conflict with *Plan Bay Area* and *2017 Clean Air Plan*. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-C-GHG-1: Cumulative Greenhouse Gas Emissions Impacts.** Climate change is a global problem, and GHG impacts are inherently cumulative. Thus, project-level conclusions characterize the cumulative impacts. Because consistency with the regional VMT threshold cannot be achieved with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-GHG-

1), the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to global climate change from mobile sources and conflict with *Plan Bay Area* and *2017 Clean Air Plan*. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-NOI-1a: Construction Noise.** Daytime construction noise levels from both on- and off-site (in-street) construction would be expected to exceed County construction noise thresholds at the nearest noise-sensitive uses. A 10 dB increase (or greater) over the existing ambient noise level would also be expected to occur at the nearest noise-sensitive uses. Because noise levels from daytime construction may exceed the applicable construction noise thresholds and result in a 10 dB or greater increase in the ambient noise level, daytime construction noise impacts would be considered potentially significant. In addition, concrete pours and off-site/in-street construction activities taking place during nighttime hours may result in noise levels that would exceed the applicable construction noise thresholds and a 10 dB or greater increase in the ambient nighttime noise level. Nighttime construction noise impacts would also be considered potentially significant. Mitigation Measure NOI-1, which requires a noise control plan that includes measures to reduce noise from construction during all hours (i.e., daytime and nighttime hours), would be implemented to reduce the project's significant impacts related to daytime and nighttime construction noise. Although this mitigation measure would reduce construction noise levels, it may not be possible to reduce noise levels during all construction activities to less-than-significant levels. Mitigation Measure NOI-2 would also be implemented, which includes the installation of temporary construction noise barriers along the western and southern perimeters of all project subareas within 1,400 feet of Wescoat Village. However, in order for temporary noise barriers to be effective, they must block the full line of sight between the noise source and the receiver, which may not be feasible at all locations during all construction activities. In addition, note that Mitigation Measure NOI-2 would not be expected to reduce noise from nighttime off-site/in-street work because such work would generally not take place behind the temporary noise barriers described under this measure. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-NOI-2: Excessive Groundborne Vibration or Groundborne Noise Levels (Vibration-Sensitive Laboratory Equipment).** An analysis was conducted to determine if construction-related vibration from the project could be disruptive for sensitive research equipment at nearby off-site laboratories, such as USGS Building 800, which is north of the Project Site. Vibration-sensitive machinery or instruments, such as those used in research laboratories or hospitals, can be affected by much lower vibration velocity levels than other uses. According to the analysis, vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment categories at distances of approximately 9 to 1,350 feet (depending on both the type of construction equipment in use and the specific sensitivity of nearby laboratory equipment). It is important to note that the nearby USGS Building 800 includes some vibration-isolation features in select rooms, which may reduce the propagation of external vibration to sensitive equipment within those rooms. In addition, background vibration velocity levels in typical residential and educational environments are generally around 50 VdB, as noted in FTA's *Transit Noise and Vibration Impact Assessment Manual*. Consequently, ambient vibration levels at laboratory facilities near the Project Site, including USGS Building 800, may already exceed the VC-D and VC-E criteria established for highly sensitive equipment. However, vibration from project construction may still interfere

with the use of some sensitive research equipment within nearby laboratory buildings. Mitigation Measure NOI-6 has been identified to reduce impacts on vibration-sensitive equipment. However, even with implementation of all feasible mitigation, it may not be possible to eliminate vibration-related interference effects on nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be considered significant and unavoidable with mitigation.

- **Impact CEQA-C-NOI-1a: Cumulative Construction Noise.** As described previously, worst-case daytime construction noise levels from the project may exceed the applicable County criterion for daytime construction noise (65 dBA L_{eq}) from construction activities lasting 10 days or longer. A 10 dB increase (or greater) over the existing ambient noise level would also be expected to occur at the nearest noise-sensitive receptors. Similarly, nighttime construction noise levels may exceed the applicable criterion of 55 dBA for multi-family residential land uses. A 10 dB increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive receptors. Construction of the cumulative projects is already complete; consequently, cumulative project construction would not be expected to occur concurently with project construction activities (beginning in 2027). Construction noise from cumulative projects would therefore not be expected to combine with construction noise from the proposed project and expose nearby sensitive receptors to greater overall construction noise levels. However, because project construction noise levels for both daytime and nighttime hours were modeled to exceed applicable thresholds, cumulative construction noise impacts would conservatively be considered significant. Although mitigation measures would be expected to somewhat reduce project construction noise, it may not be possible to reduce all construction noise levels to a level below the significance thresholds used in this assessment, even with implementation of all feasible mitigation measures. Therefore, cumulative construction noise effects during daytime and nighttime hours are considered to be significant and unavoidable, and the project's contribution would be considered cumulatively considerable, even with the implementation of project-specific mitigation.
- **Impact CEQA-C-NOI-2: Cumulative Excessive Groundborne Vibration or Groundborne Noise Levels (Vibration-Sensitive Laboratory Equipment).** Vibration generated by project construction equipment may exceed thresholds for the various sensitive equipment located within the nearby USGS Building 800 according to the project-specific vibration analysis. Note that the cumulative projects list does not include any projects in proximity to the nearby USGS Building 800 (with construction of all nearby cumulative projects already complete) for which construction would occur concurrently with project construction. Therefore, vibration from project construction would not be expected to combine with vibration from the construction of cumulative projects and result in greater levels of interference with nearby vibration-sensitive research equipment. However, because project-specific impacts related to interference with vibration-sensitive research equipment were considered significant, cumulative impacts related to interference with vibration-sensitive research equipment would also conservatively be considered significant. Mitigation Measure NOI-6 has been identified to reduce impacts on vibration-sensitive equipment. Even with implementation of all feasible mitigation, it may not be possible to fully reduce vibration-related annoyance effects on nearby sensitive laboratory or research equipment. Cumulative vibration impacts related to interference with vibration-sensitive equipment would conservatively be considered significant and unavoidable, and the project's contribution would be cumulatively considerable, even with implementation of mitigation.

- **Impact CEQA-TRAN-2: Vehicle Miles Traveled.** The CEQA Reduced Density Alternative (with and without the Variant) would be expected to exceed VMT per service population threshold, which is based on the total VMT per service population for the Bay Area region under 2024 (existing) conditions. Mitigation Measure TRAN-1 would be required to reduce VMT through implementation of a mitigated TDM plan to reduce project-generated trip generation and associated VMT. The mitigated TDM plan includes both project-specific TDM elements and mitigated TDM elements and specifies which TDM measures need to be completed before construction completion, before Phase 1 certificate of occupancy, and ongoing during implementation of the proposed project. The mitigated TDM plan outlines regular monitoring requirements to evaluate TDM effectiveness on a regular basis. While the mitigated TDM plan would reduce VMT, the CEQA Reduced Density Alternative (with and without the Variant) would still exceed the VMT threshold even with implementation of the above-identified mitigation measure. The mitigated TDM plan includes all feasible measures to reduce VMT for the proposed project (i.e., a mixed-use academic and research project). Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-C-TRAN-2: Cumulative Vehicle Miles Traveled Impacts.** The project-level and cumulative impact the analysis of VMT impacts are the same. Thus, the analysis and conclusions presented for Impact CEQA-TRAN-2 characterize the cumulative VMT impacts of the CEQA Reduced Density Alternative (with and without the Variant). Even with implementation of Mitigation Measure TRAN-1 (see Impact CEQA-TRAN-2), the CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to a cumulatively significant VMT impact. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on VMT would be cumulatively considerable with mitigation. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable
- **Impact CEQA-TCR-1: Tribal Cultural Resources**. Through consultation with the tribes, multiple tribes identified the twelve known tribal archaeological sites in the APE as potential Tribal Cultural Resources (TCRs). The Tamien Nation also identified a cultural landscape and its multiple contributing components as potential TCRs. Under Public Resources Code (PRC) Section 21074(a)(1)(2), the CEQA lead agency has determined, in its discretion and supported by substantial evidence, the archaeological resources located within the APE/ADI are significant for the purpose of CEQA. In addition, the CEQA lead agency has determined that the cultural landscape and its contributing components identified by the Tamien Nation that are located within the APE/ADI are significant for the purpose of CEQA. The entire ADI also has the potential to contain as yet unidentified TCRs. The proposed project would result in impacts on the two assumed eligible archaeological sites identified within the Project Site (CA-SCL-1145 and CA-SCL-1146) and identified as TCRs by the tribes. The proposed project would also result impacts on the cultural landscape identified as a TCR by the Tamien Nation. The CEQA Proposed Project has the potential to cause physical damage to TCRs which may alter characteristics that qualify them as TCRs. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7 would require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains, which would reduce the impacts to TCRs.

Even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

- **Impact CEQA-C-TCR-1: Cumulative Tribal Cultural Resources Impacts**. The CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) in combination with cumulative projects, would include construction excavations with the potential to affect TCRs. The proposed project and all cumulative projects would be required to implement best management practices, policies, regulations, and/or mitigation measures to ensure that project activities would not result in the inadvertent destruction of a TCR. Nonetheless, cumulative impacts on TCRs are considered significant because the cumulative projects would most likely involve ground-disturbing activities that could uncover unknown TCRs. Because damage to TCRs is irreversible, past projects, the effects of other current projects, and the effects of probable future projects would have a significant unavoidable impact on known and potentially unknown TCRs. Therefore, even with the implementation of mitigation, the CEQA Proposed Project (with and without the Variant) and CEQA Reduced Density Alternative (with and without the Variant) would result in a cumulatively considerable contribution to significant environmental impacts on TCRs. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-UTIL-2: Water Supply**. The San Francisco Public Utilities Commission (SFPUC) would have adequate water supplies available to enable NASA to provide water to the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) and reasonably foreseeable future development during normal years. However, current SFPUC potable demand would exceed available supply in single dry through multiple dry year scenarios, with the supply shortfall relative to demand ranging from 27 to 37 percent. SFPUC's Water Shortage Contingency Plan (WSCP) identifies water demand reduction measures for drought scenarios. Therefore, SFPUC is expected to enact its WSCP to curtail demand and ensure that its supplies would remain adequate and able to serve all users, including the proposed project. Because the proposed project is not subject to the reduction measures of the WSCP, project-specific mitigation, in the form of Mitigation Measure UTIL-1, would be necessary to support the water supplier's reduction intent. Implementation of Mitigation Measure UTIL-1 would require the Project Proponent and NASA ARC to implement parallel water demand reduction measures during single-dry and multiple-dry years to achieve reduction levels consistent with those in the WSCP. This mitigation measure would reduce effects related to water supply in drought conditions. However, even with implementation of project Mitigation Measure UTIL-1, the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) could experience a water supply shortfall relative to demand in dry year conditions. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.
- **Impact CEQA-C-UTIL-1: Cumulative Water Supply Impacts**. The impacts on water supply and infrastructure under the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant), described in Impact CEQA-UTIL-1 is cumulative in nature because the analysis evaluates whether SFPUC has adequate water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years. As discussed in Impact CEQA-UTIL-2, SFPUC can meet customer demand through 2045 during normal years; however, during single-year and

multi-year droughts, SFPUC will need to implement the WSCP to meet supply shortfalls. Therefore, even with implementation of all feasible mitigation measures, the contribution of the CEQA Proposed Project (with and without the Variant) and the CEQA Reduced Density Alternative (with and without the Variant) to cumulative impacts on water supply could be cumulatively considerable with mitigation. Therefore, even with implementation of all feasible mitigation measures, this impact would be significant and unavoidable.

5.3 Irreversible Changes from Implementation of the CEQA Proposed Project and CEQA Reduced Density Alternative

The State CEQA Guidelines require a discussion of any significant irreversible changes caused by a project. Specifically, Section 15126.2(d) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified

5.3.1 CEQA Proposed Project and the No Student/Faculty Housing Variant

The CEQA Proposed Project would include academic and research facilities, consisting of Research and Office uses, Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, transportation networks, and open spaces as well as landscaped spaces. In total, the CEQA Proposed Project would create 2.3 million square feet of new uses, including 2 million square feet for Research and Office uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. The CEQA Proposed Project No Student/Faculty Housing Variant would include the same types of land uses and general site plan as the CEQA Proposed Project, but would replace the 130,000 square feet of Student/Faculty Housing with 130,000 square feet of Research and Office Uses.

As discussed in Section 3.6, *Energy*, of this joint EIR/EIS, construction of the CEQA Proposed Project and the Variant would result in approximately 899,103 million British thermal units (BTU) being consumed over the approximately 14-year construction period.

Buildout of the CEQA Proposed Project would increase operational energy consumption on the Project Site by approximately 488,014 million BTU compared with existing conditions, and buildout of the Variant would increase operational energy consumption by approximately 493,590 million BTU compared with existing conditions. In addition, energy consumption per square foot would increase from 0.02 million BTU under existing conditions to 0.21 million BTU under buildout of both the CEQA Proposed Project and the Variant. This is because the building area would be approximately 12 times larger compared with existing conditions.

The CEQA Proposed Project and the Variant would incorporate on-site renewable energy resources, such as photovoltaic systems and battery storage systems, that would be distributed throughout buildings within each subarea and offset energy usage within each proposed building. In addition, the proposed building design would respond to the climate by optimizing thermal comfort through passive cooling and windbreaks and prioritizing daylight within floor plates, buildings, and outdoor spaces, which would increase the use of renewable energy and promote energy efficiency and conservation. The CEQA Proposed Project and the Variant would achieve, at a minimum, a Leadership in Energy and Environmental Design (LEED) Silver rating and have an all-electric design for new building systems (e.g., heating, ventilation, and air conditioning and mechanical), which would result in buildings that would outperform buildings constructed under the 2022 Title 24 California Building Energy Efficiency Standards. The CEQA Proposed Project and the Variant would also reduce water use through incorporation of low-flow fixtures and on-site recycled water systems for drought-friendly landscaping. Nonetheless, to the extent that electrical energy supplied to the CEQA Proposed Project and the Variant would come from non-renewable sources, such as natural gas, gasoline, and diesel, it would represent an irreversible use of those resources. However, any such irreversible use of those resources would nevertheless be an improvement over existing conditions because both the CEQA Proposed Project and the Variant would incorporate environmentally sustainable features and on-site renewable energy resources. Thus, the irreversible use of any non-renewable energy resources by the CEQA Proposed Project and the Variant is justified.

As discussed in Section 3.9, *Hazards and Hazardous Materials*, accidents, such as a release of hazardous materials, may trigger irreversible environmental damage. The Project Site is within the footprints of both the Middlefield-Ellis-Whisman (MEW) Superfund Site and former Naval Air Station Moffett Field (NAS) Superfund Site. On-site soil and groundwater have been affected historically by contamination associated with both Superfund sites. The Project Proponent would be required to implement the Spring 2026 project-specific Environmental Issues Management Plan (EIMP) (Appendix 2-2 of this joint EIR/EIS) recommendation related to the handling of affected media. These measures would minimize the potential exposure of construction personnel to contaminated media and mitigate risks to human health and the environment. Applicable measures include, but are not limited to, health and safety requirements for workers, dust and particulate control, decontamination, stormwater pollution control, soil management protocols, and dewatering protocols. With respect to subsurface infrastructure, implementation of management and disposal measures would reduce potential exposure risks for construction personnel and the surrounding environment should the subsurface infrastructure contain hazardous materials or affected media. With respect to hazardous building materials, the CEQA Proposed Project and the Variant would adhere to the National Aeronautics and Space Administration Ames Research Center (NASA ARC) Asbestos Management Plan (part of the NASA ARC Health and Safety Manual), requiring a pre-demolition survey for the presence of asbestos-containing material (ACM) and the removal and management of ACM in accordance with all applicable government regulations, with oversight from the NASA ARC Safety, Health, and Medical Services Office. In addition, the Project Proponent would conduct a pre-demolition survey (and a building evaluation for polychlorinated biphenyls [PCBs] and other chemicals) to identify the presence of hazardous building materials. Management and disposal of these materials would be conducted in a manner consistent with State of California (State) laws and applicable requirements. Furthermore, with respect to active remediation infrastructure, the Project Proponent would be required to coordinate with the responsible party for protection of said infrastructure and implement measures during construction to further protect the

integrity of remediation infrastructure on-site, the MEW companies' groundwater remediation system, and the MEW, Navy, and NASA monitoring wells during development.

With respect to routine use of hazardous materials, the CEQA Proposed Project and the Variant would be developed with both Research and Office Uses (i.e., offices, laboratories, research-and-development [R&D] facilities, related amenities), Conference Uses, Active Uses, and Short-Term Lodging. Due to the nature of R&D uses that would be included in the CEQA Proposed Project and the Variant, the possibility exists for hazards related to hazardous materials to occur. A small portion of the proposed laboratories associated with R&D uses are categorized as biosafety levels (BSLs) 1 through 4. It is anticipated that the CEQA Proposed Project and the Variant could include BSL-1, BSL-2, and/or BSL-3 laboratories. BSL-4 laboratories, which are much less common, would not be included. Any R&D tenants that handle qualifying hazardous materials would be required to adhere to all applicable federal, State, and local regulations for such materials; seek consultation with the County of Santa Clara, Department of Environmental Health;[3] and apply for applicable permits for regulated substances that may pose a threat to public health and safety or the environment because of their highly toxic, flammable, or explosive nature. Tenants must comply with the safety procedures mandated by applicable federal, State, and local laws and regulations (e.g., Resource Conservation and Recovery Act [RCRA], California Hazardous Waste Control Law, Title 8 of the California Code of Regulations) to ensure that risks resulting from the routine use of hazardous materials and disposal of hazardous waste remain less than significant. In accordance with standard industry practice, R&D laboratories would also meet the relevant Biosafety in Microbiological and Biomedical Laboratories (BMBL) and National Institute of Health (NIH) guidelines applicable to the BSL, ensuring safe operating conditions and minimizing any risk of upset. In addition, registration of hazardous materials through the County of Santa Clara, Department of Environmental Health, Hazardous Material Business Plan[4] would be required to ensure the safe and responsible handling of qualifying materials. Moreover, compliance with State and local regulations (e.g., California Fire Code, National Fire Protection Association requirements) would ensure that buildings would be equipped with safety devices to minimize potential impacts from the presence of hazardous materials. Finally, the CEQA Proposed Project and the Variant would comply with California Department of Transportation regulations, ensuring that all necessary safety precautions would be taken during the transport of hazardous materials. Therefore, the CEQA Proposed Project and the Variant are not expected to create a significant hazard to public health or the environment or result in significant irreversible damage related to environmental accidents associated with the CEQA Proposed Project and the Variant.

5.3.2 CEQA Reduced Density Alternative and the No Student/Faculty Housing Variant

The CEQA Reduced Density Alternative would create 1.4 million square feet of new uses, including 1.1 million square feet for Research and Office Uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 130,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging. The CEQA Reduced Density Alternative No Student/Faculty Housing Variant would include the same types of land uses and general site plan as the CEQA Reduced

[3] County of Santa Clara. 2026. *Hazardous Materials*. Available: https://deh.santaclaracounty.gov/hazardous-materials. Accessed: January 6, 2026.

[4] County of Santa Clara. 2025. *Hazardous Materials Business Plan*. Available: https://deh.santaclaracounty.gov/hazardous-materials/hazardous-materials-business-plan. Accessed: December 30, 2025.

Density Alternative, but would replace the 130,000 square feet of Student/Faculty Housing with 130,000 square feet of Research and Office Uses.

As discussed in Section 3.6, *Energy*, of this joint EIR/EIS, construction of the CEQA Reduced Density Alternative and the Variant would result in approximately 862,241 million BTUs being consumed over the approximately 14-year construction period. Buildout of the CEQA Reduced Density Alternative would increase operational energy consumption on the Project Site by approximately 290,736 million BTU compared with existing conditions, and buildout of the Variant would increase operational energy consumption by approximately 296,544 million BTU compared with existing conditions. In addition, energy consumption per square foot would increase from 0.02 million BTU under existing conditions to 0.21 million BTU under buildout of both the CEQA Reduced Density Alternative and the Variant. This is because the building area would be approximately seven times larger compared with existing conditions. The CEQA Reduced Density Alternative and Variant would incorporate the same on-site renewable energy resources, all-electric design, and other sustainability strategies as the CEQA Proposed Project. Nonetheless, consistent with the CEQA Proposed Project, the CEQA Reduced Density Alternative and the Variant would also result in an irreversible use of energy resources. However, for the same reasons discussed above for the CEQA Proposed Project, the irreversible use of any non-renewable energy resources by the CEQA Reduced Density Alternative and the Variant is justified.

Similarly, the CEQA Reduced Density Alternative and the Variant would include the same hazardous materials usage and would implement the same hazardous materials spill and exposure prevention measures as the CEQA Proposed Project. Therefore, the CEQA Reduced Density Alternative and the Variant are not expected to create a significant hazard to public health or the environment or result in significant irreversible damage related to environmental accidents associated with the CEQA Reduced Density Alternative and the Variant.

5.4 Growth-Inducing Impacts of the CEQA Proposed Project

CEQA Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(e) of the State CEQA Guidelines provides the following guidance for assessing the growth-inducing impacts of a project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant, for example, could allow more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can include growth directly, indirectly, or both directly and indirectly. Direct growth inducement could result if a project involves the construction of new housing. Indirect growth inducement could result, for instance, from implementation of any of the following:

- Substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- Substantial new permanent employment opportunities (e.g., at commercial, industrial, or government enterprises) that stimulate the need for additional housing and services to support the new employment demand; and/or
- Removal of an obstacle to additional growth and development, such as a constraint on a required utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but can lead to foreseeable environmental effects. If substantial growth inducement occurs, it could result in secondary environmental effects, such as increased demand for housing, the construction of which could cause environmental effects; increased demand for community and public facilities; increased demand for infrastructure, the construction of which could cause environmental effects; increased traffic and noise; degradation of air or water quality; degradation or loss of plant or animal habitats; conversion of agricultural land and open space to urban uses; and other effects.

5.4.1 Short-Term Employment Opportunities

As discussed in Section 3.13, *Population and Housing*, of this joint EIR/EIS, the size of the construction workforce would vary during the different phases of construction and would require an estimated annual average of 457 workers. It is anticipated that the construction workers would be hired from Bay Area sources. Although some workers would commute from outside the Bay Area, because of the temporary nature of construction, these workers would not be expected to relocate permanently. Therefore, the CEQA Proposed Project would not induce population growth by bringing a substantial number of construction jobs to the area or creating associated increases in the demand for housing.

5.4.2 Permanent Employment Opportunities

The CEQA Proposed Project would result in new employment opportunities at the Project Site that would also result in housing demand in the region. As addressed Section 3.13, *Population and Housing*, of this joint EIR/EIS, employment growth by the CEQA Proposed Project is within Plan Bay Area forecasts for Santa Clara County, and as addressed in Section 4.5.15, *Socioeconomics*, the housing demand by the project is within the forecast capacity of the Housing Study Area.[5]

[5] For the purposes of this analysis, the Housing Study Area was defined to analyze housing-related impacts of the CEQA Proposed Project. The Housing Study Area encapsulates all of Santa Clara County, extends into the southern and eastern parts of Alameda County (to include Newark, Fremont, Union City, Pleasanton, Dublin, and Livermore), and extends into the southern and central parts of San Mateo County (to include Half Moon Bay, Hillsborough, San Mateo, Foster City, Belmont, part of Burlingame, Atherton, Menlo Park, Redwood City, Woodside, East Palo Alto, Portola Valley, and San Carlos).

5.4.2.1 Employment Growth

Operation of the CEQA Proposed Project includes a net increase of 6,132 employees and students that would work at NASA ARC when accounting for the 42 existing employees who would no longer work at the Project Site. The CEQA Proposed Project would add 145 new Student/Faculty Housing units that could house approximately 363 students and faculty members on-site. Per Table 3.13-1, ABAG estimates that the number of jobs in Santa Clara County will grow by approximately 466,891 between 2023 and 2040. Therefore, the number of employees generated by the CEQA Proposed Project in Santa Clara County would equal approximately 1.28 percent of the anticipated employment growth from 2023 to 2040, which is within employment growth forecasts. Therefore, the number of employees generated by the CEQA Proposed Project is within ABAG employment projections.

5.4.2.2 Housing Demand

The CEQA Proposed Project would increase the supply of housing in Santa Clara County by providing new short-term Student/Faculty Housing; however, non-residential project components would increase employment and result in demand for additional housing somewhere within the Housing Study Area. Under the CEQA Proposed Project, up to approximately 6,132 net additional employees and students would work and study at NASA ARC; these are conservatively assumed to not be existing residents within the Housing Study Area. As a result, all of the employees and students would need housing in the Housing Study Area.

It is anticipated that 363 employees and students would find short-term on-site housing in the 145 Student/Faculty Housing units (with 2.5 occupants per unit) proposed as part of the CEQA Proposed Project, with the remaining 5,769 employees requiring housing elsewhere. The 5,769 employees, based on an average of 1.4 workers per worker household, would result in a worker housing demand amounting to approximately 4,121 new households. According to current California Department of Finance counts and Association of Bay Area Governments (ABAG) projections, the number of households in the Housing Study Area is expected to grow by 345,900 between 2025 and 2040. For a comparison of scale, within that timeframe, ABAG projects that the number of households will grow by 28.3 percent in the Bay Area, 31.7 percent in the Housing Study Area, and 42.6 percent in Santa Clara County. The growth in household demand under the CEQA Proposed Project represents 1.19 percent of the forecast growth in the Housing Study Area.

When further considering commute patterns for the Project Site and housing demand impacts on nearby cities, it is expected that of the total identified housing demand, 412 housing units would be in Sunnyvale and 330 would be in Mountain View. While not forecasting through 2040 (as with the Housing Study Area comparison), based on the projected 2023–2031 RHNA housing supply allocations for Sunnyvale and Mountain View, the CEQA Proposed Project would generate a demand of 3.4 percent and 3 percent of the future housing in these cities, respectively, which is also within the forecast housing supply growth.

Therefore, although the employment growth under the CEQA Proposed Project would be greater than that previously approved for the Project Site, the growth overall is accounted for in Santa Clara County's Housing Element as well as regional ABAG growth plans and projections. The Project Site is an urban infill site and served by existing infrastructure and services. The CEQA Proposed Project would increase the supply of housing in Santa Clara County by providing new short-term Student/Faculty Housing. Consequently, the CEQA Proposed Project would not result in an increase in county population or demand for housing that would exceed ABAG projections.

5.4.3 Removal of an Obstacle to Additional Growth

Development of infrastructure could remove obstacles to population growth if it were to facilitate development in an area that was not previously considered feasible for development because of infrastructure limitations. As discussed in Section 3.18, *Utility and Service Systems*, of this joint EIR/EIS, the CEQA Proposed Project would require new on-site and off-site utility infrastructure. The on-site and off-site improvements are anticipated to be included as part of the CEQA Proposed Project.

The on-site utility improvements would include connections to existing water, recycled water, wastewater, stormwater, electricity, natural gas, and telecommunications infrastructure. The off-site utility improvements may be constructed within the limits of Zook Road, Cummins Avenue, Wescoat Road, Bailey Road, Cody Road, Clark Road, and Moffett Boulevard, depending on the utility layout options selected and the extent feasible. As described in more detail in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, for the CEQA Proposed Project, the off-site utility improvements include two possible routings for the off-site water mains and connection to the Tyrella Feed (Tyrella Feed Water Main Connection Option 1 and Option 2); two possible routings for the off-site recycled water mains to one point of connection to the existing recycled water main in RT Jones Road near the main gate (RT Jones Road Recycled Water Main Connection Option 1 and Option 2); and two possible routings for the off-site sewer and connection to the City of Mountain View's wastewater Main (Mountain View Wastewater Main Connection Option 1 and Option 2). Additional off-site roadway improvements as part of the CEQA Proposed Project are anticipated within the Limits of Work. These include, but are not limited to, pedestrian and bike lane enhancements, realignment of Cody Road and Girard Road, construction of new Shared-Use Streets, and connections between existing roadways.

The CEQA Proposed Project is an infill development within an already-developed area of NASA ARC. The infrastructure improvements are intended to serve project-related demand. These improvements would not extend infrastructure or roadway improvements into unserved or underserved areas or provide excess infrastructure capacity. Therefore, indirect impacts related to population growth as a result of infrastructure expansion would not occur.

5.5 Additional CEQA Alternatives

5.5.1 Introduction

Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*, of this joint EIR/EIS evaluates the following alternatives at an equal level of detail as required by NEPA:

- CEQA Proposed Project (NEPA Build Alternative 1)
- CEQA Reduced Density Alternative (NEPA Build Alternative 2)

Chapter 4, *Environmental Impact Statement,* of this joint EIR/EIS evaluates the NEPA No-Action Alternative.

Consistent with the guidance in State CEQA Guidelines Sections 15126.6(d) and 15126.6(e), which differs from the requirements of NEPA, this joint EIR/EIS evaluates the following additional alternatives in comparison to the CEQA Proposed Project in Section 5.5.7, *Additional CEQA Alternatives Impact Assessment*, and in Chapter 3, as indicated below:

- CEQA Reduced Density Alternative (NEPA Build Alternative 2) (evaluated in Chapter 3)
- CEQA No-Project/Existing Conditions Alternative (evaluated in Section 5.5.7)
- CEQA Reduced Height Alternative[6] (evaluated in Section 5.5.7)

For a complete summary of potential environmental impacts that could occur from implementation of the CEQA Proposed Project (including the CUP and WRF Options), CEQA Reduced Density Alternative, and the No Student/Faculty Housing Variant (Variant), refer to Section ES1.6, *Summary of Environmental Impacts*, in the Executive Summary.

5.5.2 Range of Reasonable Alternatives

As required by CEQA Guidelines section 15126.6, an EIR shall describe a range of reasonable alternatives to the project that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project. In accordance with State CEQA Guidelines Section 15126.6(f), the range of alternatives required in an EIR is governed by a "rule of reason" that requires an EIR to set forth only those potentially feasible alternatives necessary to foster informed public participation and an informed and reasoned choice by the decision-making body. Therefore, an EIR is not required to present an alternatives analysis at the same level of detail as the assessment of the project, and it is not required to consider every conceivable alternative to a project. An EIR does not need to consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative, in accordance with State CEQA Guidelines Section 15126.6(f)(3).

One of the alternatives that must be analyzed under CEQA is the "no-project" alternative. The purpose of a no-project analysis is to allow decision-makers to compare the impacts of approving a proposed project with the impacts of not approving a proposed project. The no-project analysis must discuss existing conditions at the time the notice of preparation (NOP) is published as well as what would be reasonably expected to occur in the foreseeable future if a project were not approved and development continued to occur in accordance with existing plans and consistent with available infrastructure and community services (State CEQA Guidelines Section 15126.6[e][2]). The State CEQA Guidelines recognize that the definition of a no-project alternative will vary, depending on the nature of the project proposed for approval (State CEQA Guidelines Section 15126.6[e][3]). A no-project alternative will not necessarily correspond to the baseline for assessing a project's environmental impacts because a no-project alternative is concerned solely with the consequences of disapproving a project (State CEQA Guidelines Section 15126.6[e][1]). In some situations, the existing environment will not change if a project is rejected, and a no-project alternative will be the same as the existing environmental setting. In other situations, however, rejection of a project will not preserve existing environmental conditions, and the no-project alternative will be different from the existing environmental setting (State CEQA Guidelines Section 15126.6[e]). Pursuant to the State CEQA Guidelines, this section discusses and analyzes the CEQA No-Project/Existing Conditions Alternative and compares it to the CEQA Proposed Project.

[6] CEQA Guidelines require that an EIR "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6[a]). Thus, this section includes an evaluation of alternatives that could reduce or avoid significant environmental effects of the CEQA Proposed Project, including the CEQA Reduced Height Alternative.

If mitigation measures or a feasible project alternative that would meet most of the basic project objectives would substantially lessen the significant environmental effects of a proposed project, then the lead agency should not approve the proposed project unless it determines that specific technological, economic, social, or other considerations make the mitigation measures and the project alternative infeasible (PRC Section 21002, State CEQA Guidelines Section 15091[a][3]). The EIR must also identify alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination (State CEQA Guidelines Section 15126.6[c]). Section 5.5.4, *Alternatives Considered but Rejected*, describes alternatives rejected from further consideration and summarizes the reasons for eliminating those alternatives.

This section describes and evaluates two alternatives to the CEQA Proposed Project, the CEQA No-Project/Existing Conditions Alternative and the CEQA Reduced Height Alternative. Specifically, it compares the impacts of the alternatives to the environmental impacts of the CEQA Proposed Project, consistent with the guidance in State CEQA Guidelines Section 15126.6(d). This chapter also identifies alternatives that were considered but rejected from further consideration.

In Section 5.5.8, *Comparison of Impacts of the CEQA Proposed Project Alternatives and Variant*, a series of tables summarizes and compares the impact determinations for the CEQA Proposed Project, CEQA Proposed Project with No Student/Faculty Housing Variant, CEQA Reduced Density Alternative, CEQA Reduced Density Alternative with No Student/Faculty Housing Variant, CEQA Reduced Height Alternative, and CEQA No-Project Alternative. Impacts of the alternatives and Variant are compared to those of the CEQA Proposed Project, and are presented as either reduced, the same as, or greater than those of the CEQA Proposed Project. At the conclusion of the analysis, the environmentally superior alternative is identified, in accordance with State CEQA Guidelines Section 15126.6(e)[2]).

5.5.3 Project Objectives

As noted in Chapter 1, *Introduction*, the underlying purpose of the project is to redevelop the approximately 39-acre Project Site with an economically viable development that combines housing, lodging, a conference center, and academic uses, along with employment opportunities near transit and freeway access. Project objectives include the following:

1. Develop a state-of-the-art, collaborative, and multidisciplinary master-planned research park that integrates public and private R&D efforts in the areas of space exploration, scientific discovery, and aeronautics, as contemplated in the NASA Ames Development Plan (NADP).
2. Co-locate University of California, Berkeley (UC Berkeley) academic and private industry research space at NASA Ames Research Center (NASA ARC) to enable intellectual exchange, interdisciplinary research and experimentation, and further advancements in science, engineering, and technology among government, private industry, and academia.
3. Provide sufficient multi-tenant Class A office, R&D, and academic space and a conference center to support a variety of research functions and tenant types and sizes and create a synergistic campus environment while maintaining flexibility to be responsive to academic needs, tenant demands, and market conditions.
4. Provide a publicly accessible and high-quality central greenspace for collaboration spaces as well as meeting spaces for faculty, staff, employees, and visitors to the Berkeley Space Center

while also providing ecological functions such as stormwater management and phytoremediation.

5. Redevelop an underutilized site by replacing existing obsolete and aging buildings and infrastructure with new state-of-the-art buildings and infrastructure in a manner that optimizes density and site capacity while complying with applicable environmental and land use restrictions.
6. Create a financially sustainable R&D campus that can support costs associated with completion of the critical infrastructure upgrades and improvements necessary to redevelop the site and facility operations.
7. Provide a positive fiscal impact on the local economy and NASA ARC through the creation of public, private, and non-profit industry jobs.

5.5.4 Description of Additional CEQA Alternatives Selected for Evaluation

5.5.4.1 CEQA No-Project/Existing Conditions Alternative

The No-Project/Existing Conditions Alternative is required to be evaluated in an EIR under State CEQA Guidelines Section 15126.6(e). The continuation of existing Project Site conditions characterizes the CEQA No-Project/Existing Conditions Alternative, under which the Project Proponent would not construct and operate the CEQA Proposed Project at the Project Site. The buildings within the Limits of Work that are currently operational would continue to be operational, and the buildings within the Limits of Work that are currently vacant would remain vacant.[7] This differs from the NEPA No-Action Alternative described in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, which would involve reoccupation of buildings within the Limits of Work that are currently vacant, consistent with the prior uses of the buildings.

5.5.4.2 CEQA Reduced Height Alternative

State CEQA Guidelines Section 15126.6 requires that an EIR evaluate a range of reasonable alternatives to a proposed project that "would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." As indicated in State CEQA Guidelines Section 15126.6(a), the alternatives analysis is intended to "evaluate the comparative merits of the alternatives," comparing the impacts of the alternatives to those of the Proposed Project. The Proposed Project would alter the immediate setting of the NAS Sunnyvale Historic District in a manner that would materially impair the district's significance. No feasible mitigation is available to reduce those impacts to a less-than-significant level. Therefore, this EIR considers an alternative that would reduce impacts on historical resources by reducing the height of buildings in specific areas adjacent to the NAS Sunnyvale Historic District. The primary differences between the CEQA Proposed Project and CEQA Reduced Height Alternative would be the maximum building height (discussed further below), the number of internal floors, the amount of square footage for Research and Office Uses and Student/Faculty Housing, the number of employees and residents, and the number of parking spaces.

[7] This provides a conservative analysis under CEQA for the purposes of comparison.

The CEQA Reduced Height Alternative proposes lower maximum building heights and a greater step-down depth for the Subareas along Wescoat Road, which face north toward the National Register of Historic Places– (NRHP-) listed NAS Sunnyvale Historic District. Under this alternative, the new buildings nearest to Wescoat Road could be up to 35 feet tall, the same as under the CEQA Proposed Project. However, the CEQA Reduced Height Alternative includes a 30-foot-deep step-down depth above a height of 35 feet, which is twice as deep as the 15-foot step-down depth under the CEQA Proposed Project. Under the CEQA Reduced Height Alternative, the maximum height of development on the Project Site, including the mechanical screen, would be either 65 or 75 feet, depending upon the subarea. In comparison, the maximum development height along Wescoat Road under the CEQA Proposed Project would be 80 feet for buildings and an additional 25 feet for mechanical screens, for a total maximum height of 105 feet. Therefore, new buildings constructed under the CEQA Reduced Height Alternative would be more than 25 percent shorter (equivalent to 30 feet) compared with the CEQA Proposed Project. The tallest portion of the buildings would be 15 feet farther away from the boundary of the NAS Sunnyvale Historic District. The CEQA Reduced Height Alternative would create approximately 2 million square feet, including approximately 1.66 million square feet for Research and Office uses, 25,000 square feet for Conference Uses, 90,000 square feet for Active Uses, 100,000 square feet for Student/Faculty Housing, and 75,000 square feet for Short-Term Lodging.

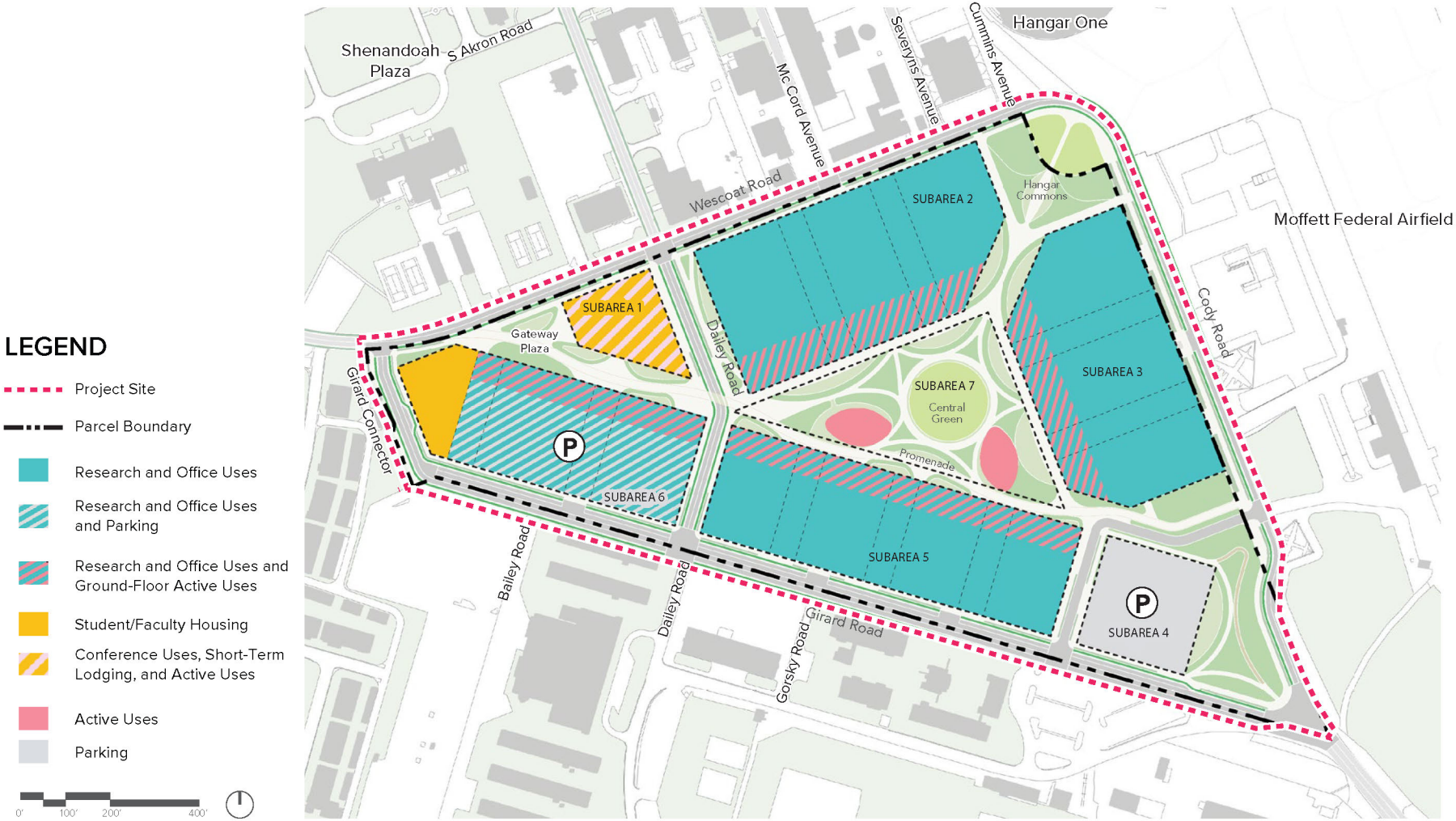
Table 5-1 summarizes the proposed maximum square footage of land uses under the CEQA Proposed Project and the CEQA Reduced Height Alternative. The types of land uses shown in Figure 5-1, Conceptual Land Use Plan for the CEQA Reduced Height Alternative, would be the same for the CEQA Proposed Project and the CEQA Reduced Height Alternative

Table 5-1. Summary of Proposed Maximum Square Footage for Land Uses under the CEQA Proposed Project and the CEQA Reduced Height Alternative

Land Use	CEQA Proposed Project (square feet)	CEQA Reduced Height Alternative (square feet)
Research and Office Uses	2,000,000	1,665,000
Office	*350,000*	*Same*
Lab and R&D	*1,390,000*	*1,055,000*
Academic	*260,000*	*Same*
Conference Uses	25,000	*Same*
Active Uses	90,000	*Same*
Housing and Lodging	205,000	175,000
Short-Term Lodging	*75,000*	*Same*
Student/Faculty Housing	*130,000*	100,000
Other Lodging	—	—
Recreation	—	—
Utility	n/a	n/a
Industrial	—	—
Storage	—	—
Retail	—	—
Total	***2,320,000***	***1,955,000***

Source: Project Proponent, 2025.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2024.

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Figure 5-1

Conceptual Land Use Plan for the CEQA Reduced Height Alternative

Berkeley Space Center at NASA Research Park

Table 5-2 summarizes the similarities and differences between the CEQA Proposed Project and the CEQA Reduced Height Alternative. The two alternatives would have the same types of land uses at the same locations; the same site plan; the same amount of square footage for conference uses, active uses, short-term lodging, and open space; the same number of guests; the same utility infrastructure and roadways; and the same maximum parking ratio. The CEQA Reduced Height Alternative would achieve lower maximum building height in some areas (discussed further below), fewer internal floors, less square footage for Research and Office Uses and Student/Faculty Housing, fewer employees and residents, and fewer parking spaces than the CEQA Proposed Project.

Table 5-2. Summary of Similarities and Differences between the CEQA Proposed Project and the CEQA Reduced Height Alternative

Characteristic	CEQA Proposed Project	CEQA Reduced Height Alternative
Similarities		
Types of Land Uses	Same	
Location of Land Uses	Same	
Site Plan	Same	
Limits of Work (i.e., project footprint)	Same (45 acres, including 39-acre Project Site and 6 acres of off-site areas)	
Utility Infrastructure and Roadways	Same	
Parking Ratio	Same	
Internal Floor-to-Floor Heights	Same (range of heights available)	
Construction Start and End Dates	Same (begin in 2027 and end in 2040)	
Differences		
Maximum Building Height	Higher (approximately 80 feet, with an exceedance of up to 25 feet for mechanical equipment and screens)	Lower along Wescoat Road (Maximum Development Parameter and the Maximum Mechanical Screening heights are set to a maximum of 75 feet along Wescoat Road for Subareas 1 & 2. In Subarea 6, the Maximum Development Parameter and Maximum Mechanical Screen heights are set to a Maximum of 65'.) Same throughout rest of the Project Site (approximately 80 feet, with an exceedance of up to 25 feet for mechanical equipment and screens)
Step-down	Wescoat Road would have a step-down zone of 35 feet in height and 15 feet in width along the buildable edge	Wescoat Road would have a step-down zone of 35 feet in height (same) and 30 feet in width along the buildable edge
Number of Internal Floors	Greater to accommodate increased square footage	Less, to accommodate the required mechanical screens along Westcoat Road, Same in all other locations.

Characteristic	CEQA Proposed Project	CEQA Reduced Height Alternative
Amount of Square Footage for Research and Office Uses	Greater (2,000,000 square feet)	Less (1,6650,000 square feet)
Amount of Conference Uses, Active Uses, Student/Faculty Housing, Short-Term Lodging, and Open Space	Greater (25,000-square-feet of Conference Uses, 90,000 square feet of Active Uses, 145 Student/Faculty Housing units, 100 Short-Term Lodging units, and a minimum of 10 acres of open space)	Same as to all uses except less Student/Faculty Housing (25,000-square-feet of Conference Uses, 90,000 square feet of Active Uses, 112 Student/Faculty Housing units, 100 Short-Term Lodging units, and a minimum of 10 acres of open space)

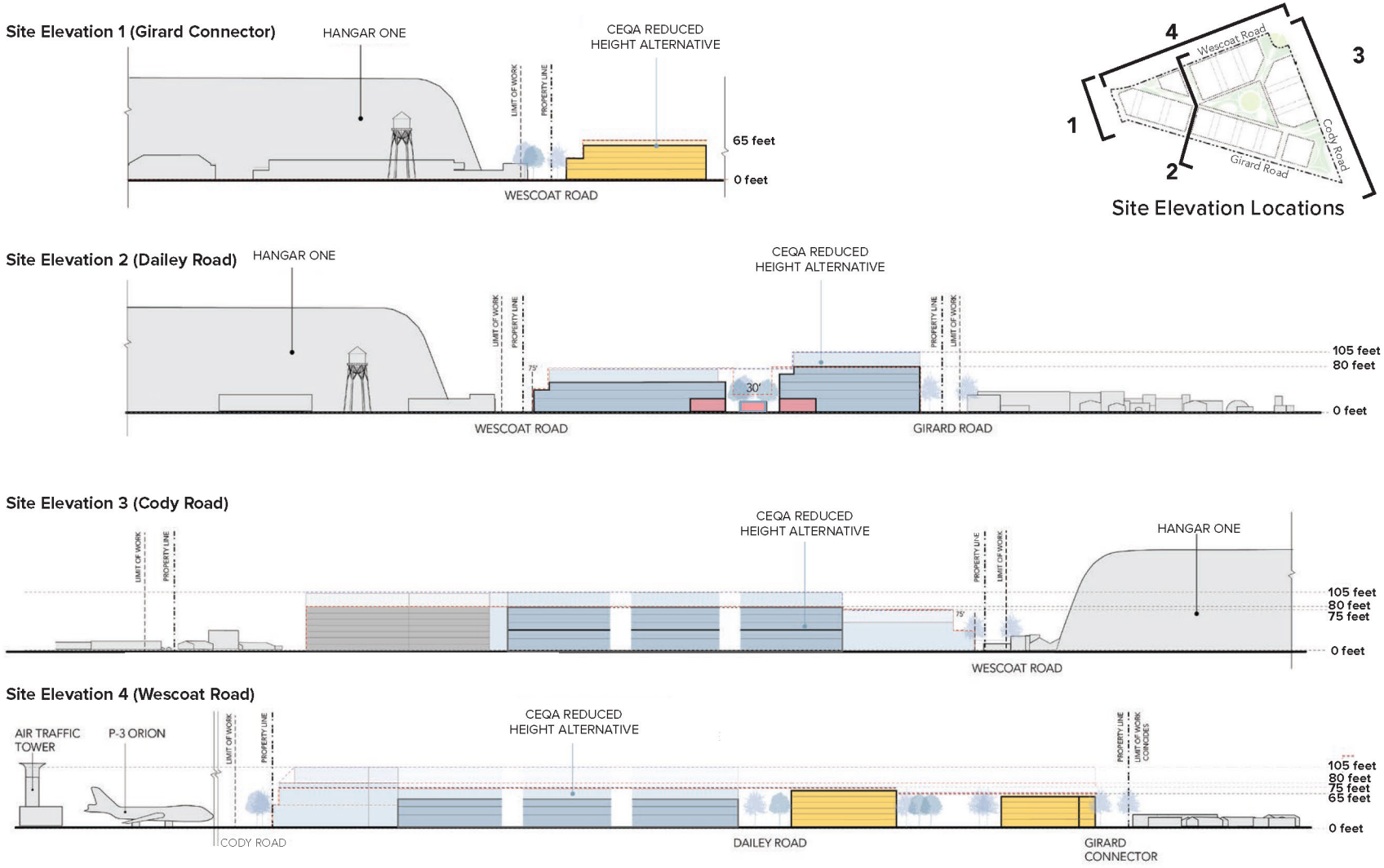
Source: Project Proponent, 2025.

With the exception of Subareas 1, 2, and 6 along Wescoat Road, the CEQA Reduced Height Alternative would have the same maximum building height as the CEQA Proposed Project (i.e., approximately 80 feet, with an exceedance of up to 25 feet [approximately 105 feet in total] allowed for mechanical equipment and screens). Along Wescoat Road, building heights and mechanical screening heights would be constrained by a Maximum Development Parameter for both building height and mechanical screens, limiting structures to a maximum total height of 75 feet along Wescoat Road for Subareas 1 and 2. In Subarea 6, the Maximum Development Parameter and Maximum Mechanical Screen heights would be set at 65 feet for the CEQA Reduced Height Alternative. See Figure 5-2, Conceptual Elevations for the CEQA Reduced Height Alternative, and Figure 5-3, Maximum and Minimum Development Parameters for the CEQA Reduced Height Alternative. In addition, the proposed step-down zone along Wescoat Road would be greater under the CEQA Reduced Height Alternative compared with the CEQA Proposed Project. Under the CEQA Proposed Project, the building façades along Wescoat Road would incorporate a step-down zone of 35 feet in height and 30 feet in width (i.e., a recession in the building exterior) along the buildable edge for the portions of the buildings higher than 35 feet compared to the 15-foot step back under the CEQA Proposed Project. Overall, the CEQA Reduced Height Alternative would result in less development than the CEQA Proposed Project (i.e., 365,000 square feet, with a decrease of 335,000 square feet for Research and Office Uses and 30,000 square feet for Student/Faculty Housing). Therefore, the CEQA Reduced Height Alternative would result in 827 fewer employees compared to the CEQA Proposed Project. In addition, the CEQA Reduced Height Alternative would result in 33 fewer Student/Faculty Housing units and 84 fewer residents compared to the CEQA Proposed Project.

5.5.5 Attainment of Project Objectives under Project Alternatives

Pursuant to State CEQA Guidelines Section 15126.2(a), this analysis evaluates whether the alternatives meet most of the basic objectives of the CEQA Proposed Project. As described in detail above, there are three alternatives to the CEQA Proposed Project: the CEQA No-Project/Existing Conditions Alternative, the CEQA Reduced Density Alternative, and the CEQA Reduced Height Alternative. The analysis that follows describes the extent to which these alternatives meet or do not meet the Project Proponent's objectives, as described in Chapter 1, *Introduction*, and above.

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



Note: Images are conceptual until after project approval. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. The parcel boundary includes the leased premises; it is provided for informational purposes only.

Source: Project Proponent 2025.

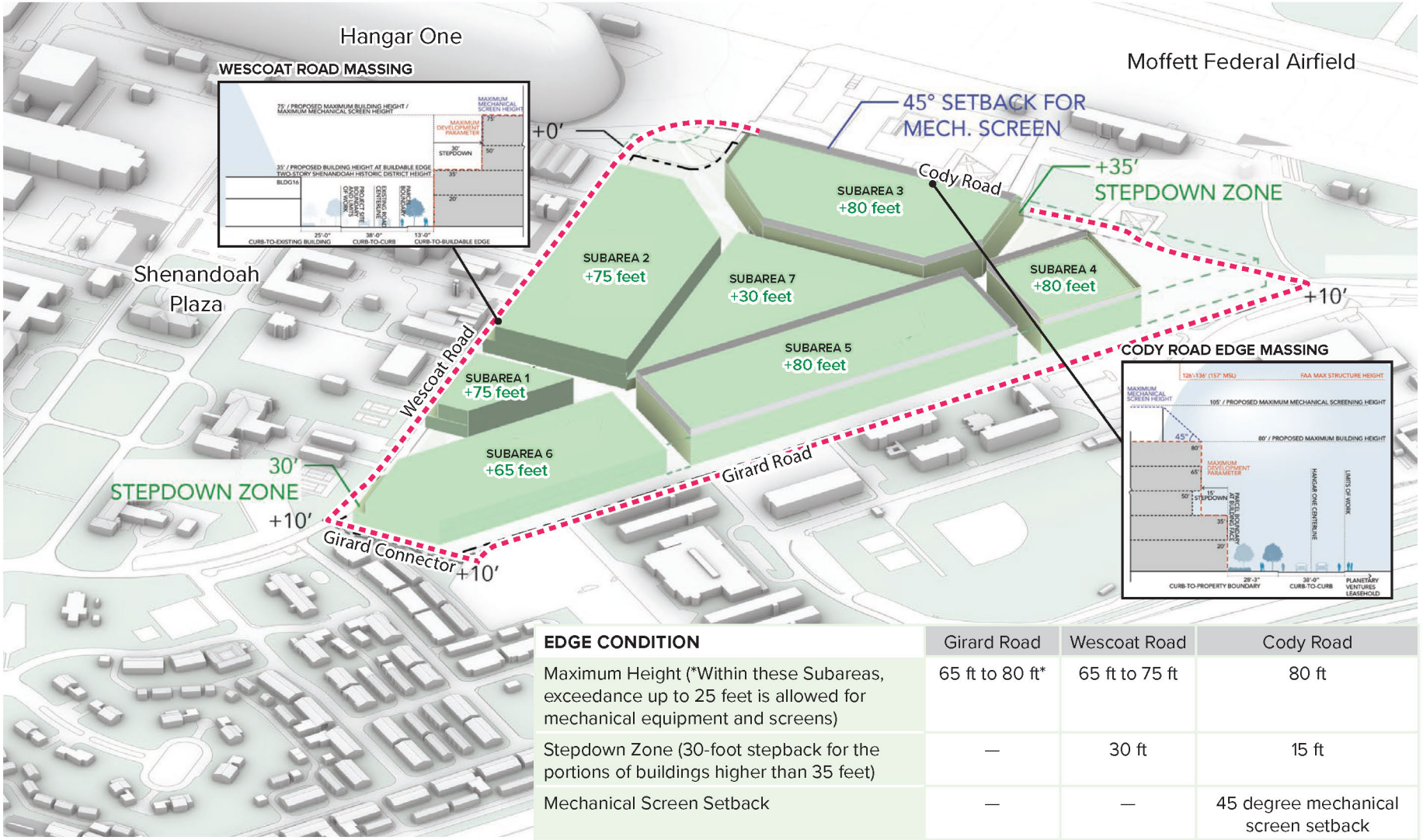
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Figure 5-2

Conceptual Elevations for the CEQA Reduced Height Alternative

Berkeley Space Center at NASA Research Park

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



EDGE CONDITION	Girard Road	Wescoat Road	Cody Road
Maximum Height (*Within these Subareas, exceedance up to 25 feet is allowed for mechanical equipment and screens)	65 ft to 80 ft*	65 ft to 75 ft	80 ft
Stepdown Zone (30-foot stepback for the portions of buildings higher than 35 feet)	—	30 ft	15 ft
Mechanical Screen Setback	—	—	45 degree mechanical screen setback

Note: Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed Maximum and Minimum Development Parameters for each Subarea. Because the proposed project would not be required to be developed to reach the maximum dimensions in each Subarea, image represents a conservative depiction of the project's conceptual layout. The proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2.

Source: Project Proponent 2025.

LEGEND

Project Site

Not to Scale

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Figure 5-3

Maximum and Minimum Development Parameters and Standards for CEQA Reduced Height Alternative

Berkeley Space Center at NASA Research Park

5.5.5.1 CEQA No-Project/Existing Conditions Alternative

Under the CEQA No-Project/Existing Conditions Alternative, no new construction or changes in existing operations would be proposed for the Project Site. Therefore, this alternative would not meet the basic objectives of the proposed project.

The Limits of Work are currently developed with 18 one- to three-story buildings that total approximately 185,600 square feet (including approximately 132,500 square feet of vacant uses and approximately 53,100 square feet of occupied uses), along with surface parking lots, roadways, and utility infrastructure (see Figure 2-4, Existing Conditions Site Plan (Limits of Work) in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, and Table 2-1 in Chapter 2 in Chapter 2, *Proposed Project/Proposed Action and Alternatives*, which summarizes the condition of the existing buildings at the Project Site. The existing buildings are mostly vacant; many were formerly used as ancillary buildings to support Naval operations (e.g., offices, food services, a gas station, pool, recreation center, lodging). The other existing buildings on the Project Site comprise industrial, storage, and utility facilities. As of mid-2024, approximately 42 people were employed within the Limits of Work; no full-time residents or short-term occupants (e.g., summer interns) lived within the Limits of Work.

The CEQA No-Project/Existing Conditions Alternative would preserve these uses and existing vacancies would remain, thus it would not meet the objectives related to developing a state-of-the-art, collaborative, and multidisciplinary master-planned research park on the Project Site (Objective 1) or co-locating UC Berkeley academic and private industry research space to enable intellectual exchange, interdisciplinary research, and experimentation (Objective 2). Because no new facilities would be built under the CEQA No-Project/Existing Conditions Alternative, it would not meet the project objective associated with providing sufficient multi-tenant Class A office, R&D, and academic space to support a variety of research functions as well as tenant types and sizes to create a synergistic campus environment (Objective 3), or the project objective related to creating of a central greenspace and other meeting spaces for faculty, staff, employees, and visitors (Objective 4). redeveloping an underutilized site by replacing existing obsolete and aging buildings with new state-of-the-art buildings (Objective 5); or creation of a financially sustainable R&D campus that can support costs associated with critical infrastructure upgrades and improvements (Objective 6). Because existing vacancies would remain and no new development would occur, the CEQA No-Project/Existing Conditions Alternative would likewise not meet the objective associated with providing a positive fiscal impact on the local economy and NASA ARC (Objective 7).

5.5.5.2 CEQA Reduced Density Alternative

The CEQA Reduced Density Alternative would meet most of the basic project objectives, although it may not meet some objectives to the same degree as the proposed project. The CEQA Reduced Density Alternative would meet the project objectives of developing a state-of-the-art, collaborative, and multidisciplinary master-planned research park on the Project Site (Objective 1) and co-locating UC Berkeley academic and private industry research space to enable intellectual exchange, interdisciplinary research, and experimentation (Objective 2). Because of its reduced Research and Office square footage, this alternative would partially achieve the project objective associated with providing sufficient multi-tenant Class A office, R&D, and academic space to support a variety of research functions as well as tenant types and sizes to create a synergistic campus environment (Objective 3). This alternative would incorporate a publicly accessible and high-quality central

greenspace (Objective 4) and would meet the objective of redeveloping an underutilized site by replacing existing obsolete and aging buildings with new state-of-the-art buildings (Objective 5).

The CEQA Reduced Density Alternative would involve a reduction of Research and Office space square footage but the same level of infrastructure costs and improvements. As a result, this alternative may not meet the project objective of creating a financially sustainable R&D campus that can support costs associated with completion of the critical infrastructure upgrades and improvements necessary to redevelop the site and facility operations (Objective 6). Because it would provide less Research and Office square footage, the CEQA Reduced Density Alternative would not fully meet the objective associated with providing a positive fiscal impact on the local economy and NASA ARC (Objective 7).

5.5.5.3 CEQA Reduced Height Alternative

The CEQA Reduced Density Alternative would meet most of the basic project objectives, although it may not meet some objectives to the same degree as the proposed project. The CEQA Reduced Height Alternative would achieve the project objectives of developing a state-of-the-art, collaborative, and multidisciplinary master-planned research park on the Project Site (Objective 1) and co-locating UC Berkeley academic and private industry research space to enable intellectual exchange, interdisciplinary research, and experimentation (Objective 2). Because of its reduced Research and Office square footage, this alternative would partially meet the project objective associated with providing sufficient multi-tenant Class A office, R&D, and academic space to support a variety of research functions as well as tenant types and sizes to create a synergistic campus environment (Objective 3). This alternative would incorporate a publicly accessible and high-quality central greenspace (Objective 4). The CEQA Reduced Height Alternative would also meet the objective of redeveloping an underutilized site by replacing existing obsolete and aging buildings with new state-of-the-art buildings (Objective 5).

The CEQA Reduced Height Alternative would involve a reduction of Research and Office space square footage but the same level of infrastructure costs and improvements. As a result, this alternative may not meet the project objective of creating a financially sustainable R&D campus that can support costs associated with completion of the critical infrastructure upgrades and improvements necessary to redevelop the site and facility operations (Objective 6). Because it would provide less Research and Office square footage and less Student/Faculty Housing, the CEQA Reduced Height Alternative would not fully meet the objective associated with providing a positive fiscal impact on the local economy and NASA ARC (Objective 7).

5.5.6 Alternatives Considered but Rejected

Section 15126.6(c) of the State CEQA Guidelines provides that an EIR should "identify any alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination." The screening process for identifying the viable EIR alternatives included consideration of the following criteria: (1) ability to meet most of the basic project objectives, (2) ability to substantially lessen or avoid significant environmental effects associated with the project, and (3) potential feasibility, taking into account economic, environmental, social, technological, and legal factors. The discussion below describes the alternatives that were considered during preparation and scoping for this EIR and gives the rationale for eliminating them from detailed consideration. These alternatives were considered for the CEQA Proposed Project (with and without Variant).

5.5.6.1 Off-Site Alternative

As stated in State CEQA Guidelines, Section 15126.6(f)(1), factors that may be considered when a lead agency is assessing the feasibility of an alternative include: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

The Project Proponent does not control, nor is it aware of, a site within either the cities of Mountain View or Sunnyvale that could accommodate the proposed project or meet the basic project objectives. Any off-site locations within the vicinity of NASA ARC, to the extent they exist and are available, also would not satisfy many of the basic project objectives, including those related to development at NASA ARC as contemplated in the NADP (Objectives 1 and 2), redevelopment of an underutilized site (Objective 5), and creation of positive fiscal impacts on NASA ARC (Objective 7). Because the amount of development would remain the same, many other impacts under this option would be similar to the CEQA Proposed Project. While an off-site alternative would avoid the impacts of the CEQA Proposed Project at the Project Site, especially the CEQA Proposed Project's significant and unavoidable impact associated with the scale and visual bulk of the proposed buildings on the Naval Air Station (NAS) Sunnyvale Historic District—specifically, Shenandoah Plaza, an alternative site would result in similar environmental impacts overall and would not substantially lessen or avoid the CEQA Proposed Project's other significant and unavoidable environmental effects.

An off-site alternative would not meet any of the project objectives, which are primarily concerned with redevelopment of the Project Site as well as the benefits of the proposed project's location at NASA ARC. For this reason, an off-site alternative was not considered further in this joint EIR/EIS.

5.5.6.2 Further Reduced Project Massing Alternative

This alternative would address the CEQA Proposed Project's significant and unavoidable impact associated with the scale and visual bulk of the proposed buildings by incorporating a 54-foot maximum allowable development height limit and a 100-foot building setback along the entirety of Wescoat Road to minimize views of the proposed project from the NAS Sunnyvale Historic District, specifically Shenandoah Plaza. At this height, new facilities along Wescoat Road would be less impactful when viewed facing south from North Akron Road, which defines the northern edge of the Shenandoah Plaza open space at the core of the NAS Sunnyvale Historic District. From such vantage points, the new facilities would not be visible above Building 20, which stands along the southern edge of Shenandoah Plaza.

The maximum development height along Wescoat Road under the CEQA Proposed Project would be 80 feet for buildings and an additional 25 feet for mechanical screens, for a total maximum height of 105 feet, with buildings nearest Wescoat Road including a 15-foot stepback (i.e., a recession in the building exterior) for the portions of the buildings higher than 35 feet. Under the CEQA Reduced Height Alternative (analyzed in Section 5.5.5.2), the maximum height of development on the Project Site, including the mechanical screen, in Subareas 6, 1 and 2, would be either 65 or 75 feet, depending upon the subarea and the portions of new buildings nearest to Wescoat Road could be up to 35 feet tall (with a 30-foot-deep step-down depth above a height of 35 feet).

A further reduced height of 54 feet (including mechanical screens) and the 100-foot setback under this alternative would be a substantial change and would require a new site layout. Such changes would substantially reduce the amount of Class A office, R&D, and academic space, reducing the ability to support a variety of research functions and tenant types. It would also negatively affect sitewide vehicular, bicycle, and pedestrian traffic circulation. With this substantial reduction in the height of buildings at the Project Site, it is anticipated that buildings would be minimally visible from the historic district, specifically from vantage points along N Akron Road. From these locations, the new facilities within the Project Site would not be visible above the roofs of buildings along the southern edge of Shenandoah Plaza. The reduced visibility of the project and more compatible scale of new development would reduce impacts under Impact CEQA-CUL-1 to a less than significant level.

This alternative would consist of additional measures proposed to minimize views from Shenandoah Plaza, including a potential 100-foot setback along Westcoat Road, planting trees within Shenandoah Plaza or along Westcoat Road, or a 30-foot step-back in combination with the 35-foot maximum building height along Westcoat Road.

This alternative would not satisfy many of the basic project objectives, including those related to providing sufficient space for a variety of research functions and tenant types as well as collaboration and meeting spaces (Objectives 3 and 4) or creating a financially sustainable R&D campus (Objective 6). In addition, this alternative would be infeasible due to site constraints and economic constraints, as discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative*.

For these reasons, the Further Reduced Project Massing Alternative was not considered further in this joint EIR/EIS.

5.5.6.3 Thirty-Foot-Tall Buildings Alternative

This alternative would address the CEQA Proposed Project's significant and unavoidable impact associated with the scale and visual bulk of the proposed buildings by incorporating a 30-foot maximum allowable development height along the entirety of Wescoat Road to minimize views of the proposed project from the NAS Sunnyvale Historic District, specifically from Shenandoah Plaza. This represents a further reduction in building height when compared to the Further Reduced Project Massing Alternative. Under the Thirty-Foot-Tall Buildings Alternative, buildings along Wescoat Road would rise no taller than 30 feet and would not feature mechanical screens. Therefore, the CEQA Proposed Project's impact on the setting of the NAS Sunnyvale Historic District under Impact CEQA-CUL-1 would be reduced when compared to the Further Reduced Project Massing Alternative.

Similar to the Further Reduced Project Massing Alternative, the Thirty-Foot-Tall Buildings Alternative would lessen the visual impact on the setting of the NAS Sunnyvale Historic District when compared to the CEQA Proposed Project and the CEQA Reduced Height Alternative. The Thirty-Foot-Tall Buildings Alternative would be expected to achieve a less than significant impact on historical resources under Impact CEQA-CUL-1 because new facilities along Wescoat Road would have a maximum height that is more compatible with the scale of nearby historic district contributors, which are one to two stories tall. Furthermore, with lower building heights and the removal of mechanical screens, the new facilities would not be visible from viewpoints within the historic district because they would not be visible above the buildings along the southern edge of Shenandoah Plaza. Therefore, this alternative would substantially improve impacts related to

historical resources under Impact CEQA-CUL-1 compared to the CEQA Proposed Project and CEQA Reduced Height Alternative.

This alternative would not satisfy many of the basic project objectives, including those related to providing sufficient space for a variety of research functions and tenant types as well as collaboration and meeting spaces (Objectives 3 and 4) or creating a financially sustainable R&D campus (Objective 6). In addition, this alternative would be infeasible due to site constraints, technical constraints, and economic constraints, as discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative*, and would similarly not entirely avoid impacts related to historical resources. For these reasons, the Thirty-Foot-Tall Buildings Alternative was not considered further in this joint EIR/EIS.

5.5.6.4 Cultural Resource High-Sensitivity Zones Avoidance Alternative

This alternative was recommended by the Tamien Nation to address the CEQA Proposed Project's significant and unavoidable impact associated with archaeological resources and TCRs by avoiding ground disturbance in the areas with the highest sensitivity within the Project Site, as well as implementing preservation in place as the primary strategy for mitigation. As requested by the Tamien Nation, the Cultural Resource High-Sensitivity Zones Avoidance Alternative would mean the proposed development and ground disturbance would avoid all areas identified by the Tamien Nation as within TCRs/Traditional Cultural Places (TCPs). Additional detailed analysis of this alternative is included in confidential Appendix 5-1 of this joint EIR/EIS.

Based on the locations of the TCRs/TCPs, the areas with highest sensitivity would be located throughout a majority of the Limits of Work (i.e., the areas with highest sensitivity would overlap with all the Subareas). Thus, excluding proposed development from the TCRs/TCPs and implementing preservation in place as a primary strategy for mitigation within the Project Site under this alternative would substantially reduce the intensity, mass, and grading depth compared to the CEQA Proposed Project. As a result, this alternative would reduce or avoid the potential to result in impacts to archaeological sites identified within the Project Site and identified as TCRs by the tribes. In addition, this alternative would reduce or avoid impacts to a cultural landscape, identified as a TCR by the Tamien Nation, when compared to the CEQA Proposed Project. The Cultural Resource High-Sensitivity Zones Avoidance Alternative would substantially reduce impacts related to archaeological resources under Impact CEQA-CUL-2, human remains under Impact CEQA-CUL-3, and TCRs under Impact CEQA-TCR-1 compared to the CEQA Proposed Project.

As recommended by the Tamien Nation, preservation in place as a mitigation strategy would be implemented as feasible (e.g., in open space areas within the Project Site) as part of Mitigation Measure CUL-4. The avoidance of the TCRs/TCPs under this alternative would be a substantial change and would require a new site layout and building and infrastructure configurations. The areas identified by the Tamien Nation as within TCRs/TCPs are mostly located where the proposed buildings would be constructed, as well as either existing or proposed roads. Such changes would substantially reduce the amount of office, R&D, and academic space, reducing the ability to support a variety of research functions and tenant types. It would also negatively affect sitewide vehicular, bicycle, and pedestrian traffic circulation.

Specifically, avoidance of the TCRs/TCPs under this alternative would conflict with both existing roadways providing access to the Project Site and other areas in NASA ARC (e.g., Wescoat Road, Dailey Road), as well as proposed access roadways (e.g., Girard Road, Cody Road) to the Project Site.

This alternative would not satisfy many of the basic project objectives, including those related to providing sufficient space for a variety of research functions and tenant types as well as collaboration, meeting spaces, and central greenspace (Objectives 3 and 4), replacing obsolete buildings and infrastructure with state-of-the-art buildings and infrastructure in a manner that optimizes density (Objective 5), or creating a financially sustainable R&D campus (Objective 6).

This alternative would be infeasible due to site constraints (both vertically and horizontally), technical constraints, and economic constraints. Specifically, the site constraints include:

- Existing utilities in and around the Project Site, noting that relocating some of the existing utilities within the Project Site would be infeasible. The design of the proposed project accommodates some existing utilities in their current location (e.g., underneath Edquiba Road, which is the alignment of the proposed Promenade, a multi-modal connection through the Project Site, where no proposed buildings would be constructed);[8]
- Existing roadways adjacent to the Project Site that provide access to other areas of NASA ARC (e.g., Wescoat Road, Dailey Road);
- Existing soil and groundwater contamination within the Project Site (discussed under Section 5.5.6.6, *Tribal Cultural Stewardship Preserve Alternative*, and in Section 3.9, *Hazards and Hazardous Materials*, of this joint EIR/EIS);
- Existing biological resources in and around the Project Site (e.g., limiting the proximity of the proposed development within the Project Site to the nearby area designed as a preserve providing burrowing owl habitat); and
- Proximity to Moffett Federal Airfield, which means the Project Site is subject to certain height limitations pursuant to Federal Aviation Regulation Part 77.9 of the Code of Federal Regulations notification requirements.

To accommodate approximately the same amount of mixed-use academic and research uses under the Cultural Resource High-Sensitivity Zones Avoidance Alternative as under the CEQA Proposed Project, this alternative would require taller buildings within a substantially reduced building footprint. Taller buildings would require, in turn, alternative foundations designs. As a result, this alternative would result in deeper ground disturbance, increased vibration impacts, higher potential for encountering groundwater contamination, and increased visibility from the NAS Sunnyvale Historic District (specifically Shenandoah Plaza) compared to the CEQA Proposed Project.

For these reasons, the Cultural Resource High-Sensitivity Zones Avoidance Alternative was not considered further in this joint EIR/EIS.

5.5.6.5 Clustered Development/Reduced Density Alternative

This alternative was recommended by the Tamien Nation to address the CEQA Proposed Project's significant and unavoidable impact associated with archaeological resources and TCRs by concentrating the proposed buildings, foundation, grading, and associated infrastructure within the

[8] The specifics regarding the design and configuration of the proposed project (including utility connections and designs) will be evaluated through NASA's NRP Design Review Board process in connection with NASA's approval of the proposed project pursuant to Ames Procedural Requirement (APR) 8822.1, and through NASA's Construction Permit Review Process, established by Ames Policy Directive (APD) 8829.1.

areas of lowest demonstrated archaeological sensitivity within the Project Site. According to the Tamien Nation, this alternative would need to substantially reduce the intensity, mass, and grading depth of development compared to the CEQA Proposed Project. As requested by the Tamien Nation, the Clustered Development/Reduced Density Alternative would propose development and ground disturbance outside of TCRs/TCPs. Additional detailed analysis of this alternative is included in confidential Appendix 5-1 of this joint EIR/EIS.

There is limited available information regarding some of the parameters of the areas described by Tamien Nation. It should be noted that most of the Project Site has been developed and redeveloped in successive cycles of work during the 20th century. Due to the lack of associated extant plans, particularly for the earlier cycles of development, it is not possible to determine the depth and extent of intact historic stratigraphy. Thus, there is insufficient information regarding the outlined parameters of this alternative such that it is not possible to develop a conceptual site plan for this alternative for the purposes of this evaluation. Also, there are no known shellmound sites within the ADI/Limits of Work.

The Clustered Development/Reduced Density Alternative, which would limit development to outside TCRs/TCPs, is similar in nature to the Cultural Resource High-Sensitivity Zones Avoidance Alternative. Specifically, this alternative would also substantially reduce the intensity, mass, and grading depth of the proposed development compared to the CEQA Proposed Project and was considered and rejected from further analysis in this joint EIR/EIS for reasons similar to those discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative*.

5.5.6.6 Tribal Cultural Stewardship Preserve Alternative

This alternative was recommended by the Tamien Nation to address the CEQA Proposed Project's significant and unavoidable impact associated with archaeological resources and TCRs by designating portions of the Limits of Work and areas outside of the Limits of Work most sensitive for tribal cultural resources as a permanent Tribal Cultural Preserve. As requested by the Tamien Nation, the Tribal Cultural Stewardship Preserve Alternative would include:

- Formal, binding stewardship authority to the Tamien Nation
- Permanent land use restrictions
- Exclusion of incompatible recreational, commercial, or institutional uses within the Limits of Work
- Active stewardship by the Tamien Nation of the ecological and hydrological features of the proposed Tribal Cultural Preserve
- Non-discretionary, sustained funding for stewardship staffing and operations by the Tamien Nation within the proposed Tribal Cultural Preserve

The recommendation from the Tamien Nation notes that this alternative could be implemented in combination with the Clustered Development Alternative discussed in Section 5.5.6.5, with concentrated development in lower-sensitivity areas and a proposed Tribal Cultural Preserve over the highest-sensitivity ground. The proposed Tribal Cultural Preserve boundaries are currently unknown.

Under this alternative, the stewardship authority would enforce preservation standards, approve or deny incompatible uses, conduct cultural monitoring, and conduct stewardship activities within the

proposed Tribal Cultural Preserve. In addition, under this alternative, permanent land use restrictions would ensure that potential alterations of the cultural landscape are approved by the stewardship authority. Furthermore, the proposed Tribal Cultural Preserve would exclude incompatible uses that would degrade its integrity or restrict access of the stewardship authority. As a result, this alternative would reduce or avoid the potential to result in impacts to archaeological sites identified within the Project Site and identified as TCRs by the tribes. In addition, this alternative would reduce or avoid impacts to a cultural landscape, identified as a TCR by the Tamien Nation, when compared to the CEQA Proposed Project. The Tribal Cultural Stewardship Preserve Alternative would substantially reduce impacts related to archaeological resources under Impact CEQA-CUL-2, human remains under Impact CEQA-CUL-3, and TCRs under Impact CEQA-TCR-1 compared to the CEQA Proposed Project.

A Tribal Cultural Preserve would be a substantial change to the proposed project, NASA's NADP, and would require a new site layout and building and infrastructure configurations, beyond the Limits of Work. Such changes would substantially reduce the amount of Class A office, R&D, and academic space, reducing the ability to support a variety of research functions and tenant types, similar to the Cultural Resource High-Sensitivity Zones Avoidance Alternative. As a result, the Tribal Cultural Stewardship Preserve Alternative would not satisfy many of the basic objectives for reasons similar to those discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative*. In addition, as discussed in Section 5.5.6.1, *Off-Site Alternative*, the Project Proponent does not control areas outside of the Project Site. To the extent that the Tribal Cultural Stewardship Preserve Alternative would affect areas outside of the Limits of Work, any off-site locations for the proposed project within the vicinity of NASA ARC (to the extent they exist and are available) would not meet any of the project objectives, which are primarily concerned with redevelopment of the Project Site as well as the benefits of the proposed project's location at NASA ARC. In addition, off-site locations within NASA ARC are bound by the 2002 programmatic EIS (PEIS), by NASA's NADP, and by existing tenants' leaseholds and other federal regulations that would prevent reclassification of lands outside of the of the project's Limits of Work.

This alternative would be infeasible due to site constraints, technical constraints, and economic constraints, similar to those discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative.* This alternative would also be infeasible due to the additional constraints discussed below.

- Soil and groundwater at the Project Site have been affected by contamination associated with the Middlefield-Ellis-Whisman (MEW) Superfund Site and the U.S. Navy's operations at Naval Air Station Moffett Field, which is no longer in operation. As a result, the Project Site is located within the MEW Superfund Site and former Naval Air Station Moffett Field Superfund Site. Responsibility for remediation of the contaminated soil and groundwater is allocated among the MEW Regional Groundwater Remediation Program, the Navy, and NASA, referred to as the Responsible Parties. Ongoing remediation activities in the vicinity of the Project Site continue to be implemented under the jurisdictions of the U.S. Environmental Protection Agency (EPA) and California Regional Water Quality Control Board (RWQCB). The Project Proponent is working with EPA, the RWQCB, San Francisco Bay Regional Water Quality Control Board Regional Water Board (Regional Water Board), and NASA on an Environmental Issues Management Plan (EIMP). The Project Proponent Enhanced Use Lease requires implementation of a project specific Environmental Issues Management Plan (EIMP) and A Settlement Agreement and Covenant Not to Sue (currently in draft form) with the EPA. The EPA, RWQCB and the regulatory agencies that will approve of the Spring 2026 project-specific EIMP. The Spring 2026 project-specific EIMP

includes required procedures that must be followed to address the known remaining environmental conditions within the Limits of Work and contingency actions to be taken in the event previously-unknown environmental conditions are encountered during development in the Limits of Work. Based on the above, stewardship of the hydrological features of the proposed Tribal Cultural Preserve by the Tamien Nation, which would be included as part of this alternative, is not technically feasible due to the requirements assigned to the Responsible Parties, the EPA, and RWQCB in associated RODs. Additionally, the Project Proponent's requirements in the Enhanced Use Lease to implement the Spring 2026 project-specific EIMP and agreements with the EPA are not transferable to the Tamien Nation.

- As discussed in Section 2.2, *Context*, in Chapter 2, on November 1, 2020, the UC Regents and NASA entered into an Enhanced Use Lease for approximately 36 acres in the NRP area of NASA ARC for the purpose of facilitating development and long-term operation of a collaborative research environment on the premises, as contemplated in the 2002 PEIS that analyzed the environmental impact of implementation of the NADP, in support of various activities. Under the NADP, allowed development within the NRP planning area includes laboratories, office space, classrooms, auditoriums, museums, a conference center, open space, a burrowing owl preserve, parking, housing, and limited retail facilities. The Project Site is located within the NRP planning area on parcels designated for educational and research and development/office facilities, consistent with the uses included as part of the CEQA Proposed Project. The Limits of Work is located on ARC jurisdictional property and NASA retains exclusive federal jurisdiction to develop the land uses designated in the NADP for the Project Site (as discussed above). Any substantial changes to the NADP would be evaluated through NASA's environmental review process and NRP Design Review Board process in connection with NASA's approval of the proposed changes, pursuant to APR 8822.1.
- As a tribe that is not federally recognized (and therefore given different status under Section 106 consultation and other applicable federal regulations), granting formal, binding stewardship authority to the Tamien Nation as part of this alternative is infeasible.
- Public access to certain parts of the Limits of Work are within the controlled perimeter fence of NASA ARC, as shown in Figure 2-11, Open Campus, in Chapter 2. Thus, this alternative would be infeasible due to access restrictions to secure areas within NASA's federally controlled property that are within the proposed Tribal Cultural Preserve boundaries.

For these reasons, the Tribal Cultural Stewardship Preserve Alternative was not considered further in this joint EIR/EIS.

5.5.6.7 Infrastructure Realignment Alternative

This alternative was recommended by the Tamien Nation to address the CEQA Proposed Project's significant and unavoidable impact associated with archaeological resources and TCRs by realigning the proposed roads, utilities, drainage systems, stormwater infrastructure, and other below-grade components. Specifically, as requested by the Tamien Nation, the Infrastructure Realignment Alternative would redesign the proposed infrastructure to avoid TCRs/TCPs. Additional detailed analysis of this alternative is included in confidential Appendix 5-1 of this joint EIR/EIS.

Realigning the proposed infrastructure to avoid archaeological deposits and eliminate deep trenching would reduce or avoid the potential to result in impacts to archaeological sites identified within the Project Site and identified as TCRs by the tribes. In addition, this alternative would reduce

or avoid impacts to a cultural landscape, identified as a TCR by the Tamien Nation, when compared to the CEQA Proposed Project. The Infrastructure Realignment Alternative would substantially reduce impacts related to archaeological resources under Impact CEQA-CUL-2, human remains under Impact CEQA-CUL-3, and TCRs under Impact CEQA-TCR-1 compared to the CEQA Proposed Project.

The Project Site is currently covered with a substantial amount of impervious hardscape, as discussed in Chapter 2. This includes buildings, building pads, roads, surface parking lots, streets, and paths, and existing infrastructure which, in total, cover approximately 70 percent of the Project Site. As recommended by the Tamien Nation, re-routing proposed underground infrastructure as a mitigation strategy would be implemented as feasible as part of Mitigation Measure CUL-4. However, large-scale realignment of the proposed infrastructure would be a substantial change to the proposed project and would require a new site layout and building, roadway, and infrastructure configurations, similar to the Cultural Resource High-Sensitivity Zones Avoidance Alternative. As a result, the Infrastructure Realignment Alternative would not satisfy many of the basic objectives for reasons similar to those discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative*. In addition, if deep trenching is eliminated as part of this alternative (which could include ground disturbance required for the CUP Option, the demolition of the steam tunnel, and the below-grade sewer lift station), it is possible these key features of the CEQA Proposed Project would not be implemented. It should be noted that avoiding the introduction of impervious surface and drainage modifications would substantially reduce the CEQA Proposed Project's ability to implement stormwater system improvements to maintain existing stormwater flows to and volumes leave the Project Site, which is a requirement of NASA ARC. As a result, this alternative would not satisfy the basic project objective related improving ecological functions such as stormwater management (Objective 4).

This alternative would be infeasible due to site constraints, technical constraints, and economic constraints, similar to those discussed in Section 5.5.6.4, *Cultural Resource High-Sensitivity Zones Avoidance Alternative.*

For these reasons, the Infrastructure Realignment Alternative was not considered further in this joint EIR/EIS.

5.5.7 Additional CEQA Alternatives Impact Assessment

This section evaluates whether the CEQA No-Project/Existing Conditions Alternative and CEQA Reduced Height Alternative would avoid or substantially lessen the significant impacts of the CEQA Proposed Project and/or generate impacts other than those identified for the CEQA Proposed Project. Where relevant, the analysis references the appropriate CEQA Proposed Project mitigation measures. These mitigation measures are fully described in each resource section in Chapter 3, *Affected Environment/Environmental Setting and Environmental Impacts*.

As described in Section 5.1, *Introduction*, above, the CEQA Reduced Density Alternative (with and without the Variant) are evaluated in detail throughout Chapter 3, and the NEPA No-Action Alternative is evaluated in detail in Chapter 4.

Section 5.5.8, *Comparison of Impacts of the CEQA Proposed Project Alternatives and Variant*, below, provides a comparative analysis of all CEQA alternatives: the CEQA Proposed Project (with and without Variant), the CEQA Reduced Project Alternative (with and without Variant), the CEQA Reduced Height Alternative, and the CEQA No-Project/Existing Conditions Alternative.

5.5.7.1 CEQA No-Project/Existing Conditions Alternative

Air Quality

Conflict with Air Quality Plans

The CEQA No-Project/Existing Conditions Alternative would not involve any new construction or changes to existing uses on the Project Site and, therefore, would not generate air pollutant emissions beyond existing conditions. As a result, this alternative would not exceed the Bay Area Air District's (Air District's) daily significance thresholds for criteria pollutants during either construction or operation and would not conflict with any air quality plans. However, without the proposed project, the existing Project Site would remain underutilized and underdeveloped. The Plan Bay Area 2050 Final Blueprint Growth Geographies identifies the Project Site within a Transit-Rich Area and High Resource Area. These areas are intended to improve the region's ability to meet challenging emission reduction, housing, and equity requirements. Failing to develop the Project Site consistent with this development potential would conflict with the transportation goals of the 2017 Clean Air Plan, which target investment in transit priority sites, such as the Project Site. Although this impact would be less than the impact of the CEQA Proposed Project, it would be a significant impact.

Criteria Pollutants

Under the CEQA No-Project/Existing Conditions Alternative, there would be no changes in criteria pollutant emissions. Because the project would not be implemented, no construction activity or emissions would occur. The on-site buildings that are currently operational would continue to be operational and would generate criteria pollutants.

Table 5-3 provides existing operational emissions for the CEQA No-Project/Existing Conditions Alternative. As shown in the table, emissions under this alternative would not exceed the Air District's thresholds. Accordingly, this impact would be less than that of the CEQA Proposed Project and less than significant.

Table 5-3. Estimated Average Daily and Annual Criteria Pollutant Emissions under Existing Conditions

Source	Average Daily (pounds per day) [a]				Annual (tons per years [a]			
	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]	ROG	NO_X	PM_{10} (total)[b]	$PM_{2.5}$ (total)[b]
Mobile	0.4	0.3	0.6	0.2	0.1	0.1	0.1	< 0.1
Area	1.5	< 0.1	< 0.1	< 0.1	0.3	< 0.1	< 0.1	< 0.1
Stationary	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total	**1.9**	**0.6**	**0.7**	**0.2**	**0.3**	**0.1**	**0.1**	**< 0.1**
Air District [c]	54	54	82	54	10	10	15	10

Source: Appendix 3.3-1

Notes: Mobile source emissions of ROG, NOx, and PM have been adjusted to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations.

NO_X = nitrogen oxides; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; PM_{10} = particulate matter 10 microns or less in diameter; ROG = reactive organic gas.

a. Exceedances of thresholds (if any) are shown in **bold** with underline.

b. Total emissions consist of exhaust and fugitive dust emissions.

c. In developing the thresholds, the Air District considered levels at which project emissions are cumulatively considerable. Consequently, exceedances of project-level thresholds would be cumulatively considerable under CEQA.

Substantial Pollutant Concentrations

There would be no changes to localized emissions in the Regional Air Quality Study Area[9] beyond those from already-planned construction and development. Because the CEQA Proposed Project would not be implemented, no construction activity or emissions would occur, and there would be no construction impacts on receptors. The existing on-site buildings that are currently operational would continue to be operational and generate localized pollutant emissions. However, the existing buildings do not include any major sources of air pollution, and as such, operational health risks from existing on-site buildings would not be substantial. This impact would be less than significant and less than that of the CEQA Proposed Project.

Other Emissions (such as those leading to odors)

Under the CEQA No-Project/Existing Conditions Alternative, no new buildings would be constructed. Thus, no construction activity or odors would occur. The existing on-site buildings that are currently operational would continue to be operational, although these buildings are not considered a source of substantial odor emissions. There would be no impact, and impacts would be reduced compared to those of the CEQA Proposed Project.

Biological Resources

Under the CEQA No-Project/Existing Conditions Alternative, existing conditions would continue on the Project Site. Therefore, this alternative would result in no impact on special-status species, sensitive natural communities, wetlands, and terrestrial wildlife movement. In addition, because there would be no change to existing conditions, there would be no impacts related to conflicts with local policies or ordinances that protect biological resources or conflicts with an adopted habitat conservation plans (HCPs) or natural community conservation plans (NCCPs). Impacts would be reduced compared to those of the CEQA Proposed Project.

Cultural Resources

Historical Resources

Under the CEQA No-Project/Existing Conditions Alternative, because demolition of existing buildings within the Project Site would not occur and roadway improvements, new utility corridors, and new facilities would not be constructed, the current conditions on the Project Site, as well as the setting of nearby built-environment historical resources, would remain the same. Therefore, the No-Project/Existing Conditions Alternative would have no impact on built-environment historical resources. Impacts would be reduced compared to those of the CEQA Proposed Project.

Archaeological Resources

Because no demolition, grading, excavation, or construction activities would take place under this alternative, known and unknown archaeological resources within the Project Site would not be affected. The CEQA No-Project/Existing Conditions Alternative would have no impact on archaeological resources. Impacts would be reduced compared to those of the CEQA Proposed Project.

[9] For the purposes of this analysis, the Regional Air Quality Study Area is the San Francisco Bay Area Air Basin (SFBAAB).

Human Remains

No demolition, grading, excavation, or construction activities would take place under the CEQA No-Project/Existing Conditions Alternative. Therefore, known and unknown human remains within the Project Site would not be affected. This alternative would have no impact on human remains. Impacts would be reduced compared to those of the CEQA Proposed Project.

Energy

Energy Consumption

Under the CEQA No-Project/Existing Conditions Alternative, the approximately 185,600 square feet of existing uses would remain operational. Only a small amount of energy usage would occur from continued occupation of existing buildings. There would be no sustainability or transportation demand management (TDM) features implemented as part of the No-Project/Existing Conditions Alternative, and any sustainability requirements applicable to new buildings would not be implemented. Impacts of energy use under this alternative would be substantially less compared to the CEQA Proposed Project because the CEQA Proposed Project would increase development on-site, which would increase the number of employees and residents and overall energy usage. As a result, there would be less-than-significant impacts related to energy. Impacts would be reduced compared to those of the CEQA Proposed Project.

Conflicts with Energy Plans

No sustainability, energy-saving, or TDM features would be incorporated as part of the CEQA No-Project/Existing Conditions Alternative, and any sustainability requirements applicable to new buildings would not be implemented because there would be no physical change to existing conditions. The absence of new sustainability features under the CEQA No-Project/Existing Conditions Alternative would continue to conflict with State or local plans for renewable energy or energy efficiency to a greater degree than the CEQA Proposed Project.

Geology, Soils, and Paleontology

Geologic Hazards

Under the CEQA No-Project/Existing Conditions Alternative, the Project Site would remain in its current condition and no demolition, grading, excavation, or construction would take place. Therefore, no impacts related to fault rupture, ground shaking, liquefaction, or landslides would occur. Impacts would be less than those of the CEQA Proposed Project.

Soil Erosion

Under the CEQA No-Project/Existing Conditions Alternative, because the Project Site would remain in its current condition, no ground-disturbing activities such as grading or excavation would take place. Therefore, no impact related to erosion or loss of topsoil would occur. Impacts associated with soil erosion would be less than those of the CEQA Proposed Project.

Unstable Geologic Unit or Soil

Because the Project Site would remain in its current condition under the CEQA No-Project/Existing Conditions Alternative, no new structures or improvements would be placed on unstable geologic units or units that would become unstable because of new construction or operational activities.

Therefore, there would be no impact associated with unstable geologic units or soil as result of this alternative. Impacts would be less than those of the CEQA Proposed Project.

Septic Tanks

Under the CEQA No-Project/Existing Conditions Alternative, the Project Site would remain connected to the existing sewer and stormwater collection and treatment system. No septic or alternative water disposal system would be needed. Therefore, there would be no impact related to such systems. Impacts would be equivalent to those of the CEQA Proposed Project.

Expansive Soil

Under the CEQA No-Project/Existing Conditions Alternative, because no new structures would be constructed, there would be no impacts related to foundations, floor slabs, utilities, or pavement as a result of underlying expansive soils. Therefore, this alternative would have no impact related to expansive soils. Impacts would be less than those of the CEQA Proposed Project.

Paleontological Resources

Under the CEQA No-Project/Existing Conditions Alternative, because there would be no ground disturbance, this alternative would have no impact related to paleontological resources. Impacts would be less than those of the CEQA Proposed Project.

Greenhouse Gas Emissions

Generate Greenhouse Gas Emissions

Under the CEQA No-Project/Existing Conditions Alternative, there would be no change in greenhouse gas (GHG) emissions. No construction-related emissions would occur, and the existing on-site buildings that are currently operational would continue to generate GHG emissions. Table 5-4 shows the existing operational emissions for the CEQA No-Project/Existing Conditions Alternative.

Table 5-4. Estimated GHG Emissions under Existing Conditions [a]

Source	CO_2	CH_4	N_2O	HFCs	CO_2e
Existing (2024)					
Mobile	114	< 1	< 1	< 1	116
Area	1	< 1	< 1	0	1
Energy	48	< 1	< 1	0	48
Water	4	< 1	< 1	0	16
Waste	5	< 1	0	0	16
Fugitive	0	0	0	< 1	< 1
Vegetation[b]	-17	0	0	0	-17
Total	**154**	**1**	**< 1**	**1**	**180**

Source: Appendix 3.3-1

Notes: CARB has not published GHG adjustment factors to account for congressional disapproval of the ACT, Warranty Phase 1, and Omnibus regulations. Application of the adjustment factors across all operational air quality analyses for the project resulted in a less than 1 percent to 22 percent increase in mobile source emissions, depending on the analysis year and pollutant (i.e., ROG, NOx, or PM). It is reasonable to conclude removal of the regulations may affect estimated GHG emissions by the same magnitude.

CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalent; HFCs = hydrofluorocarbons; N_2O = nitrous oxide

a. Values are rounded to the nearest whole number.
b. Sequestration benefits from 227 trees. These trees would be removed under the project, but under the CEQA No-Project Alternative, they would remain and continue to sequester GHGs. Emissions results are annualized over a 40-year tree lifetime.

Under this alternative, the Project Site would remain underutilized and underdeveloped. Existing buildings would continue to use natural gas and investments in electric-vehicle charging infrastructure would not be made. The CEQA No-Project/Existing Conditions Alternative would therefore be inconsistent with Air District Threshold Option A and the State's long-term emission reduction goals. This would be a significant impact. Impacts would be greater than those of the CEQA Proposed Project.

Conflict with Greenhouse Gas Plan

Under the CEQA No-Project/Existing Conditions Alternative, the Project Site would remain underutilized and underdeveloped. This would conflict with transportation goals of the 2022 Scoping Plan, Plan Bay Area, and the 2017 Clean Air Plan, which target investment in transit priority sites such as the Project Site. Thus, this alternative would conflict with State and regional GHG reduction plans and would not contribute to long-term emission reduction goals. This would be a significant impact. Impacts would be greater than those of the CEQA Proposed Project.

Hazards and Hazardous Materials

Routine Transport, Use, or Disposal of Hazardous Materials

Under the CEQA No-Project/Existing Conditions Alternative, because there would be no demolition, grading, excavation, or construction activities, including construction dewatering, at the Project Site, there would be no additional routine use, handling, or disposal of hazardous materials beyond what already occurs. The Project Site would remain in its current condition, and existing remediation activities currently being undertaken would continue. The mitigation measures required for the CEQA Proposed Project would not be required under this alternative. Thus, there would be no impact associated with the routine transport, use, or disposal of hazardous materials. Impacts would be less than those of the CEQA Proposed Project.

Accidental Release of Hazardous Materials

Under the CEQA No-Project/Existing Conditions Alternative, because there would be no demolition, grading, excavation, or construction activities, including construction dewatering at the Project Site, there would be no additional handling of hazardous materials or disturbance of existing remediation infrastructure, contaminated soil, groundwater, or hazardous building materials. The Project Site would remain in its current condition, and existing remediation activities currently being undertaken would continue to occur. The mitigation measures required for the CEQA Proposed Project would not be required under this alternative. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Hazardous Materials Site

Under the CEQA No-Project/Existing Conditions Alternative, there would be no disturbance of contaminated soil or groundwater. The Project Site would remain in its current condition, and existing remediation activities currently being undertaken at the Project Site would continue to occur. The project features and mitigation measures required to remediate existing site conditions

for the CEQA Proposed Project would not be required under this alternative. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Airport Conflict

Under this alternative, the existing on-site buildings would remain. No new construction would occur, and the Project Site would remain in its current condition. Therefore, a Determination of No Hazard would not be required from the Federal Aviation Administration (FAA). The CEQA No-Project/Existing Conditions Alternative would remain consistent with applicable safety- and noise-related policies of Moffett Federal Airfield. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Emergency Response

Under the CEQA No-Project/Existing Conditions Alternative, the Project Site would remain in its current condition. Therefore, this alternative would result in no impact on adopted emergency response plans or emergency evacuation plans. Impacts would be less than those of the CEQA Proposed Project.

Hydrology and Water Quality

Water Quality

Under the CEQA No-Project/Existing Conditions Alternative, there would be no demolition, grading, excavation, or construction activities, including construction dewatering, at the Project Site. There would be no potential to affect water quality, including through mobilization of a contaminated groundwater plume. Because the Project Site would remain in its current condition, remediation activities that include groundwater extraction and treatment to control and remove volatile organic compounds (VOCs) that are migrating beyond the source-control recovery wells would continue and phytoremediation trees would not be installed. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Groundwater Supply and Recharge

Under the CEQA No-Project/Existing Conditions Alternative, there would be no construction activities, including construction dewatering, at the Project Site. There would be no potential to affect groundwater resources, supply, or recharge. The Project Site would remain in its current condition, and there would be no change in the area of impervious cover or groundwater recharge potential. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Drainage and Flooding

Under the CEQA No-Project/Existing Conditions Alternative, because there would be no construction activities, including grading, excavation, or ground-disturbing activitites, at the Project Site, there would be no potential to alter drainage patterns, change the area of impervious cover, or result in erosion or siltation on- or off-site. Because the Project Site would remain in its current condition, no new stormwater treatment or low-impact development (LID) measures would be implemented, and no changes to the on-site drainage system would occur. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Risk Release of Pollutants

Under the CEQA No-Project/Existing Conditions Alternative, the Project Site would remain in its current condition. Although there are known flooding issues north of the Project Site, the expected 2-, 100-, and 500-year flood limits are also north of the Project Site. There are no known flooding issues within the Project Site. Therefore, the site would not be subject to inundation by flooding. The Project Site is not within a planned tsunami inundation area, and there would be minimal to no risk of inundation from a seiche event in the project vicinity. There would be no impact. Impacts would be the same as those of the CEQA Proposed Project.

Conflict with Water Resource Management Plan

Under the CEQA No-Project/Existing Conditions Alternative, there would be no construction activities or distrubed surface areas, construction-related site runoff, or construction dewatering at the Project Site. There would be no potential to affect water quality standards or water quality objectives that protect designated beneficial uses of surface water and groundwater, as defined in the Basin Plan. The amount of impervious area within the Project Site would remain the same as under existing conditions, and there would be no affect on groundwater recharge or supplies. The Project Site would remain in its current condition. Continued operation of the on-site buildings would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. There would be no impact. Impacts would be less than those of the CEQA Proposed Project.

Land Use and Planning

The CEQA No-Project/Existing Conditions Alternative would not alter the existing buildings at the Project Site and, therefore, would not change the existing land uses. Mitigation Measure HAZ-1 would not be required under this alternative. The CEQA No-Project/Existing Conditions Alternative would result in no impact related to consistency with the NADP land use designation for the site, NADP planning principles, Ames Policy Directives (APDs), Ames Procedural Requirements (APRs), or Federal Aviation Regulation Part 77. Impacts would be less than those of the CEQA Proposed Project.

Noise

Substantial Temporary or Permanent Increase in Noise Levels during Construction

Because project-related construction would not occur under this alternative, the CEQA No-Project/Existing Conditions Alternative would result in no impact related to construction noise. Impacts would be less than those of the CEQA Proposed Project.

Substantial Temporary or Permanent Increase in Noise Levels during Operation

Because no additional traffic would be added to the local roadway network, no new buildings would be constructed, and no new operational sources of noise would be created under this alternative, the CEQA No-Project/Existing Conditions Alternative would result in no impact related to operational noise. Impacts would be less than those of the CEQA Proposed Project.

Groundborne Vibration or Noise

Because no project-related construction would occur under this alternative, the CEQA No-Project/Existing Conditions Alternative would result in no impact related to construction vibration. Impacts would be less than those of the CEQA Proposed Project.

Airport Noise

Under this alternative, the existing on-site buildings that are currently operational would continue to be operational, and the existing vacant buildings would remain vacant. Therefore, there would be no impact related to aircraft noise under the CEQA No-Project/Existing Conditions Alternative. Impacts would be less than those of the CEQA Proposed Project.

Population and Housing

Construction

There would be no construction under the CEQA No-Project/Existing Conditions Alternative; therefore, no construction workers would be hired. There would be no impacts related to indirect construction-related population growth. Impacts would be less than those of the CEQA Proposed Project.

Operation

Under this alternative, no new Student/Faculty Housing, Short-Term Lodging, Research and Office Uses, Conference Uses, or Active Uses would be constructed, and no additional employee-generating uses would be added to the Project Site. Unlike the CEQA Proposed Project, the CEQA No-Project/Existing Conditions Alternative would not result in a direct population increase from new on-site residents because no new housing would be constructed at the Project Site. In addition, because this alternative would continue the existing use at the Project Site, it would not require additional employees beyond those already employed on the Project Site. As such, the CEQA No-Project/Existing Conditions Alternative would not result in increased housing demand or new residents in the city and region. Therefore, this alternative would result in no new demand for new housing and no impacts on population and housing. In addition, because existing uses would continue at the Project Site, the CEQA No-Project/Existing Conditions Alternative would not result in the displacement of people or housing. There would be no impacts related to population and housing. Impacts would be less than those of the CEQA Proposed Project.

Public Services

Under the CEQA No-Project/Existing Conditions Alternative, there would be no demolition or construction and therefore no land use changes that could generate additional employment or add to the population. Because this alternative would maintain the Project Site in its current condition, without an increase in population, it would not result in impacts related to the need for new or expanded fire, police, school, or library services or facilities. Impacts would be less than those of the CEQA Proposed Project.

Recreation

Under the CEQA No-Project/Existing Conditions Alternative, no new housing would be built and no employee-generating uses would be added on the Project Site. With no additional housing or

employees, there would be no increase in the use of existing park facilities or demand for new park facilities. Therefore, this alternative would result in no impacts associated with the provision of or need for new, expanded, or physically altered parks or recreational facilities or substantial physical deterioration of park or recreational facilities. The impacts would be less than those of the CEQA Proposed Project.

Transportation

The CEQA No-Project/Existing Conditions Alternative would not introduce additional employees or residents to the Project Site, and existing internal transportation conditions would continue. Therefore, the CEQA No-Project/Existing Conditions Alternative would result in no impacts related to transportation plan or policy consistency, nor would it introduce any design hazards or affect emergency access. Because the CEQA No-Project/Existing Conditions Alternative would not result in an increase in the number of on-site employees or the population, there would be no change in the number, length, or direction of vehicle trips to or from the Project Site. There would be no impacts. These impacts would be less than those of the CEQA Proposed Project.

Tribal Cultural Resources

Under the CEQA No-Project/Existing Conditions Alternative, because the CEQA Proposed Project would not be constructed at the Project Site, there would be no change to the TCRs or any other aspects of a cultural landscape that are in the APE. Because no ground-disturbing excavation or grading activities would occur under this alternative, there would be no disturbance of TCRs on the Project Site. Therefore, the CEQA No-Project/Existing Conditions Alternative would have no impact on TCRs. The impacts would be less than those of the CEQA Proposed Project.

Utilities and Service Systems

Under the CEQA No-Project/Existing Conditions Alternative, because the CEQA Proposed Project would not be constructed or operated at the Project Site, there would be no increase in the number of employees, students, or short-term residents and no increase in building square footage beyond current conditions. Existing utility connections to the occupied on-site buildings would be maintained. There would be no additional demand for utilities or service systems. Therefore, there would be no impact associated with an increase in demand for water, new or expanded wastewater treatment facilities, or stormwater drainage, solid waste, electric, natural gas, or telecommunications facilities. The impacts would be reduced compared to the impacts of the proposed project.

5.5.7.2 CEQA Reduced Height Alternative

Air Quality

Conflict with Air Quality Plans

The CEQA Reduced Height Alternative would incorporate all applicable control measures of the Air District's 2017 Clean Air Plan; it would not disrupt or hinder any control measures. The same sustainability strategies described for the CEQA Proposed Project would be implemented under the CEQA Reduced Height Alternative. However, like the CEQA Proposed Project, the CEQA Reduced Height Alternative would result in criteria pollutant emissions (see discussion under *Criteria Pollutants*) and cancer risks as well as fine particulate matter ($PM_{2.5}$) concentrations that would be

above Air District thresholds (see discussion under *Substantial Pollutant Concentrations*). Mitigation Measures AQ-1 through AQ-9 identified in Section 3.3, *Air Quality*; Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards*; Mitigation Measure GHG-1, identified in Section 3.8, *Greenhouse Gas Emissions*; and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to reduce emissions, but the potential to impede the protection of regional air quality and elimination of health-related disparities with State standards would remain, resulting in a significant unavoidable impact. Impacts would be the same as those of the CEQA Proposed Project, either with or without the Variant.

Criteria Pollutants

As with the CEQA Proposed Project, the construction of new buildings would generate criteria pollutant emissions that could exceed the Air District's significance thresholds. The CEQA Reduced Height Alternative proposes a smaller buildout compared to the CEQA Proposed Project. The CEQA Reduced Height Alternative would therefore require less construction equipment and fewer vehicles compared with the CEQA Proposed Project, resulting in a minor reduction in construction-related criteria pollutant emission sources. Because construction of the CEQA Proposed Project would result in uncontrolled fugitive dust and nitrogen oxide (NO_X) emissions that would be above Air District thresholds, the CEQA Reduced Height Alternative would result in the same conditions. Mitigation Measures AQ-1 through AQ-4, identified in Section 3.3, *Air Quality*; Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards*; and Mitigation Measure GHG-1, identified in Section 3.8, *Greenhouse Gas Emissions*, would be implemented to control fugitive dust and reduce NO_X emissions. With implementation of these mitigation measures, impacts related to construction emissions would be less than significant.

The same operational sources proposed and evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Height Alternative. The CEQA Reduced Height Alternative includes the same conference uses, active uses, and lodging uses as the CEQA Proposed Project but with slightly reduced housing, research, and office space. Operational emissions, particularly reactive organic gases (ROGs) from research activities, would therefore be slightly less than under the CEQA Proposed Project. Because the CEQA Proposed Project and CEQA Reduced Height Alternative would result in ROG and coarse particulate matter (PM_{10}) emissions that would be above Air District thresholds, the CEQA Reduced Height Alternative would result in the same conditions. Mitigation Measures AQ-5 and AQ-6, identified in Section 3.3, *Air Quality*, and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to reduce emissions. However, the potential to exceed Air District thresholds would remain, resulting in a significant impact. Impacts would be less than those of the CEQA Proposed Project, either with or without the Variant.

Buildout and occupancy of buildings constructed under the CEQA Reduced Height Alternative would occur concurrently during Phases 2 through 4. For the reasons described above for the analysis of construction and operational emissions, concurrent construction and partial operational emissions under the CEQA Reduced Height Alternative would be slightly less than those quantified for the CEQA Proposed Project but slightly greater than quantified for the CEQA Reduced Density Alternative. Because the CEQA Proposed Project and CEQA Reduced Density Alternative would result in ROG, NO_X, and PM_{10} emissions that would be above Air District thresholds, the CEQA Reduced Height Alternative would result in the same conditions; however, they would be less than those of the CEQA Proposed Project. Mitigation Measures AQ-1 through AQ-7, identified in Section 3.3, *Air Quality*; Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards*; Mitigation

Measure GHG-1, identified in Section 3.8, *Greenhouse Gas Emissions*; and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to reduce emissions. With implementation of the mitigation measures, impacts related to concurrent construction and partial operational emissions would be less than significant.

Substantial Pollutant Concentrations

Additional vehicle traffic associated with the CEQA Reduced Height Alternative could result in elevated localized carbon monoxide (CO) concentrations. Traffic conditions under the CEQA Proposed Project, either with or without the Variant, would meet the Air District's screening criteria and would not result in substantial CO concentrations. The same conclusion would be expected for the CEQA Reduced Height Alternative, which would most likely result in fewer vehicle trips and less congestion due to a smaller buildout. Accordingly, localized CO concentrations would result in a less-than-significant impact.

Multiple sensitive receptors are within 1,000 feet of the Project Site, including residential, educational, and worker receptors. These receptors may be exposed to toxic air contaminants (TACs) and localized $PM_{2.5}$ during construction and operation of the CEQA Reduced Height Alternative. As discussed above under *Criteria Pollutants*, construction and operational activity and resulting emissions under the CEQA Reduced Height Alternative would be slightly less than under the CEQA Proposed Project and slightly greater than under the CEQA Reduced Density Alternative. Because the CEQA Proposed Project would result in an increased cancer risk and annual $PM_{2.5}$ concentrations that would be above Air District thresholds at some existing off-site residential and future onsite worker receptor locations, the CEQA Reduced Height Alternative would result in the same conditions. Mitigation Measures AQ-1 through AQ-3 and AQ-9, identified in Section 3.3, *Air Quality*; Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards*; Mitigation Measure GHG-1, identified in Section 3.8, *Greenhouse Gas Emissions*; and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to reduce emissions and associated receptor exposure. Impacts would be less than those of the CEQA Proposed Project, either with or without the Variant. However, even with mitigation, the potential to exceed the Air District's $PM_{2.5}$ threshold would remain, resulting in a significant localized impact.

Other Emissions (such as those leading to odors)

The same odor sources evaluated under the CEQA Proposed Project would occur under the CEQA Reduced Height Alternative. Like the CEQA Proposed Project, the CEQA Reduced Height Alternative would not result in new or worsened odors that would affect a substantial number of people, and odor impacts would be less than significant. Impacts would be the same as those of the CEQA Proposed Project, either with or without the Variant.

Biological Resources

Special-Status Plants and Wildlife

Although the square footage dedicated to Research and Office Uses and the number of Student/Faculty Housing units would be less than under the CEQA Proposed Project, the CEQA Reduced Height Alternative would occur in the same Limits of Work as the CEQA Proposed Project. With the exception of lower building heights for Subareas 1, 2, and 6 along Wescoat Road, the maximum building height would also be the same as under the CEQA Proposed Project. As with the CEQA Proposed Project, this alternative could have a significant impact on special-status plants

because of the permanent or temporary loss of habitat and potential for injury and mortality. Further, both the CEQA Proposed Project and the CEQA Reduced Height Alternative could result in significant impacts on monarch butterfly, Crotch's bumble bee, special-status bats, and burrowing owl because of the permanent or temporary loss of habitat, potential for injury and mortality, and disruption of normal behaviors. Both the CEQA Proposed Project and this alternative could result in significant impacts on other special-status birds and northwestern pond turtle because of the potential for injury and mortality as well as the disruption of normal behaviors.

Mitigation Measures BIO-1 through BIO-13, identified in Section 3.4, *Biological Resources*, would be implemented to reduce impacts to less-than-significant levels. Because construction activities under the CEQA Reduced Height Alternative, including the area of ground-disturbing activities and depth of excavation, would be the same as under the CEQA Proposed Project, the impacts on special-status plants and wildlife would be the same as those of the CEQA Proposed Project and would require the same mitigation.

Riparian Habitat or Sensitive Natural Communities

The CEQA Reduced Height Alternative would occur in the same Limits of Work and involve the same construction activities, including ground-disturbing activities and excavation, as the CEQA Proposed Project. As such, impacts on perennial grassland, a sensitive natural community, through the temporary effects of sidecasting would be the same as those of the CEQA Proposed Project and would require the same mitigation. Mitigation Measures BIO-1 and BIO-3, identified in Section 3.4, *Biological Resources*, would be implemented to minimize potential impacts on a sensitive natural community. As a result, impacts related to a sensitive natural community would be less than significant with mitigation, the same as the proposed project.

Wetlands

Because construction of the CEQA Reduced Height Alternative would result in the same land uses, Limits of Work, area of ground-disturbing activities, and depth of excavation as the CEQA Proposed Project, this alternative would result in similar significant impacts on State or federally protected wetlands through the temporary effects of sidecasting and pollution during construction. During construction, sidecasting of excavated material could encroach on the wetland resource. Therefore, like the CEQA Proposed Project, this alternative could have a similarly significant impact on a wetland and require the same mitigation. Mitigation Measures BIO-1, BIO-3, BIO-14, and BIO-15, identified in Section 3.4, *Biological Resources*, would be implemented to minimize potential impacts on a sensitive natural community, avoid or minimize impacts on wetlands to the extent possible, and compensate for any losses of wetlands. As a result, impacts related to wetlands would be less than significant with mitigation, the same as the proposed project.

Native Resident or Migratory Fish or Wildlife Species

Because construction of the CEQA Reduced Height Alternative would result in the same land uses, Limits of Work, area of ground-disturbing activities, and depth of excavation as the CEQA Proposed Project, this alternative would result in similar significant impacts on terrestrial wildlife movement. Further, construction under this alternative could result in significant impacts on non-special-status nesting birds and roosting bats, similar to impacts under the CEQA Proposed Project because of the potential for injury and mortality and the disruption of normal behaviors during nesting season. Mitigation Measures BIO-1, BIO-12, and BIO-13, identified in Section 3.4, *Biological Resources*, would be implemented to require environmental awareness training for construction personnel,

preconstruction surveys during the breeding season, avoidance measures if nesting birds are present during construction, and avoidance measures if roosting bats are present. As a result, impacts on terrestrial wildlife movement would be less than significant with mitigation, the same as the proposed project.

Conflict With Local Policies or Ordinances

As noted in Section 3.4, *Biological Resources*, the Biological Resources Study Area[10] is within the area covered by the Pacific Gas and Electric Company (PG&E) Bay Area Operations and Maintenance Habitat Conservation Plan. The CEQA Proposed Project would not interfere with or affect any covered activities or conservation actions associated with operation and maintenance of PG&E utility infrastructure. Because the CEQA Reduced Height Alternative would involve the same construction methods and occur in the same Limits of Work as the CEQA Proposed Project, with the same land uses, it, too, would not conflict with the provisions of the plan.

As described in Appendix 3.4-1, construction, operations, and maintenance under the CEQA Proposed Project could conflict with the provisions of the Santa Clara Valley HCP/NCCP related to burrowing owl. Because it would involve the same construction methods and occur in the same Limits of Work as the CEQA Proposed Project, with the same land uses, construction-related noise and vibration associated with the CEQA Reduced Height Alternative could conflict with conservation and management actions for burrowing owl under the HCP/NCCP, which could result in a significant impact. Mitigation Measures BIO-1, BIO-8, BIO-9, BIO-10, and BIO-11, identified in Section 3.4, *Biological Resources*, would be implemented to minimize potential impacts on burrowing owl and burrowing owl–specific conservation actions of the Santa Clara Valley HCP/NCCP. As a result, impacts related to conflicts with an applicable adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant with mitigation, the same as the proposed project.

Cultural Resources

Historical Resources

The CEQA Reduced Height Alternative would introduce buildings within the Project Site that would result in a lesser degree of visual change to the setting of the NAS Sunnyvale Historic District compared to the CEQA Proposed Project. The different massing scheme along Wescoat Road under the CEQA Reduced Height Alternative would create a more gradual change in building heights between the Project Site and the NAS Sunnyvale Historic District, where most buildings are no more than approximately 30 feet tall. This would be apparent near the Wescoat Road corridor, where the increased step-down depth would support a scale of development similar to that between the new buildings and district contributors to the north. The impact on built-environment historical resources under the CEQA Reduced Height Alternative would be substantially reduced compared to the CEQA Proposed Project.

The CEQA Reduced Height Alternative would also be less visible when seen from Shenandoah Plaza, which is the open space area that forms the core of the NAS Sunnyvale Historic District. New building masses south and southeast of Building 20, a district contributor along the south side of Shenandoah Plaza, could be as tall as 75 feet (including mechanical screens) compared to 105 feet under the CEQA Proposed Project. Existing buildings and vegetation would partially screen the new building masses

[10] For the purposes of analyzing biological resources, the Biological Resources Study Area is defined as the Limits of Work plus a 50-foot buffer.

from Shenandoah Plaza, but as with the CEQA Proposed Project, new development under the CEQA Reduced Height Alternative would remain visible above the roof of the two-story Building 20 when viewed facing south from North Akron Road. However, less of the new building masses would be visible from Shenandoah Plaza compared with the CEQA Proposed Project; the CEQA Reduced Height Alternative would have a less intense visual impact on the setting of the NAS Sunnyvale Historic District.

Although the massing of the CEQA Reduced Height Alternative along Wescoat Road would be more compatibly scaled to the NAS Sunnyvale Historic District and less distracting when viewed from Shenandoah Plaza, the alternative would still introduce new building masses within the Project Site that would be more than twice the height of many contributors to the NAS Sunnyvale Historic District. Even with the change in massing, the CEQA Reduced Height Alternative would represent a substantial and distracting change to the setting of the NAS Sunnyvale Historic District, which is currently characterized by one- and two-story facilities. See Figure 5-4, Visual Simulation Locations, and Figures 5-5 through 5-10, which represent the views of the CEQA Reduced Height Alternative from each of the locations identified in Figure 5-4. Furthermore, the CEQA Reduced Height Alternative would involve the same construction activities, which have the potential to result in inadvertent direct and vibration-related damage to district contributing buildings and streetlights adjacent to the Project Site. For these reasons, the CEQA Reduced Height Alternative would result in a significant and unavoidable impact on the NAS Sunnyvale Historic District, even with implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and NOI-5, which are also required for the CEQA Proposed Project. Although impacts under the CEQA Reduced Height Alternative would be less than under the CEQA Proposed Project, impacts on historical resources would remain significant and unavoidable.

Archaeological Resources

Because the CEQA Reduced Height Alternative would occur in the same Limits of Work and have the same construction methods as the CEQA Proposed Project, the APE/ADI would be the same as under the CEQA Proposed Project. Both the APE and API have a history of intensive precontact and historic-period use; physical remnants from these former uses still exist within the APE and ADI. Therefore, as with the CEQA Proposed Project, the alternative's grading and excavation may substantially disturb, damage, or degrade archaeological resources. As a result, construction may cause a substantial adverse change in the significance of an archaeological resource, pursuant to Section 15064.5 of the CEQA Guidelines. Mitigation Measures CUL-4, CUL-5, and CUL-6, identified in Section 3.5, *Cultural Resources*, would be implemented, requiring preparation and implementation of a CRTMP, cultural resources monitoring and sensitivity training, and protocols for inadvertent discoveries of archaeological resources. However, there is no feasible mitigation beyond these measures and the project design features to prevent physical damage to archaeological resources CA-SCL-1145 and CA-SCL-1146 that has the potential to materially impair site significance. Impacts under the CEQA Reduced Height Alternative would be the same as the CEQA Proposed Project, impacts on archaeological resources would remain significant and unavoidable.

Human Remains

As with the CEQA Proposed Project, the CEQA Reduced Height Alternative would have a significant impact if it were to disturb human remains, including those interred outside of dedicated cemeteries. The results of the records search from the Northwest Information Center indicated that human remains have been recorded within the APE and ADI and within a 0.5-mile radius. Moreover, it is possible that original construction of the former and existing uses at the Project Site has

A text description of this figure is provided in Chapter 9, *Descriptions of Figures*



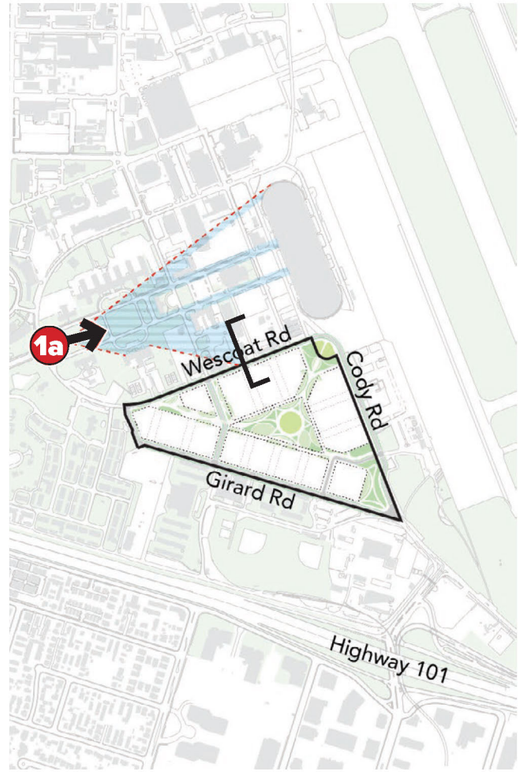
Graphics ... 104894 (2-6-2026)

Figure 5-4
Visual Simulation Locations for the CEQA Reduced Height Alternative
Berkeley Space Center at NASA Research Park

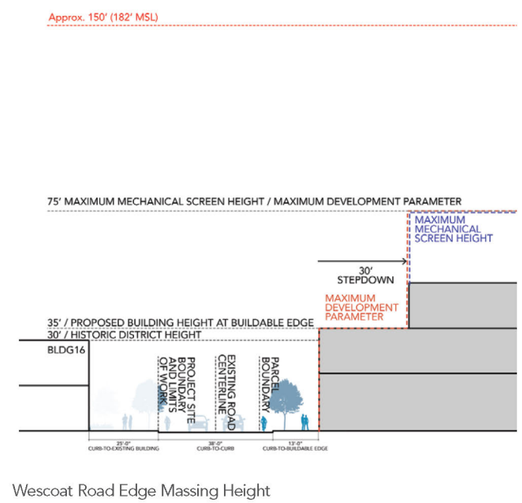
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*







Key Plan



Wescoat Road Edge Massing Height

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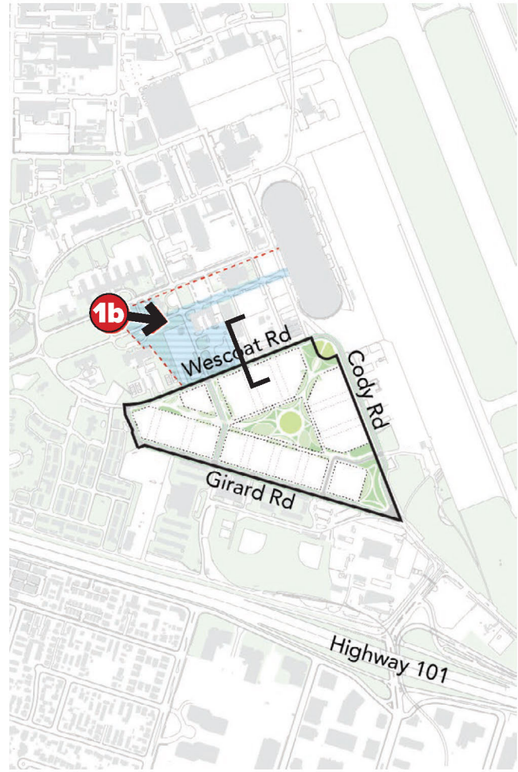
Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

Figure 5-5
Viewpoint 1a: Shenandoah Plaza Panorama Facing East
Berkeley Space Center at NASA Research Park

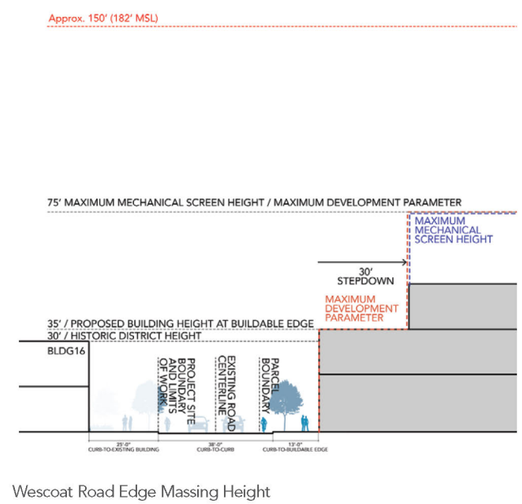
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*







Key Plan



Wescoat Road Edge Massing Height

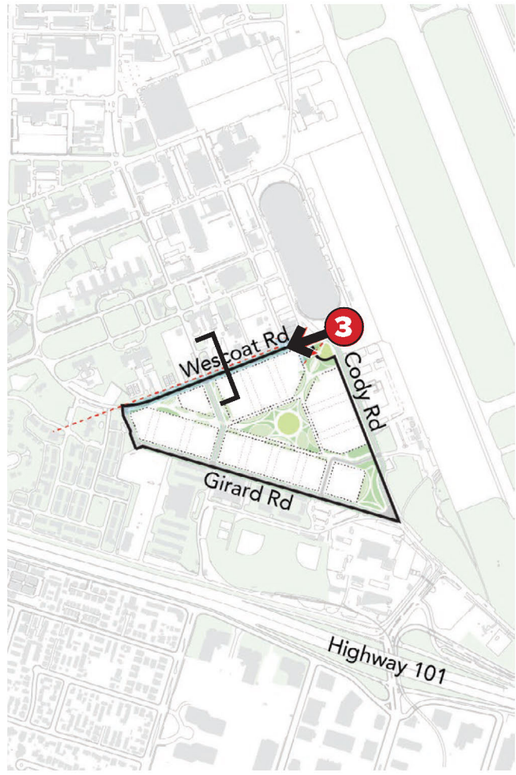
Graphics ... 104894 (9-10-2025)

Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

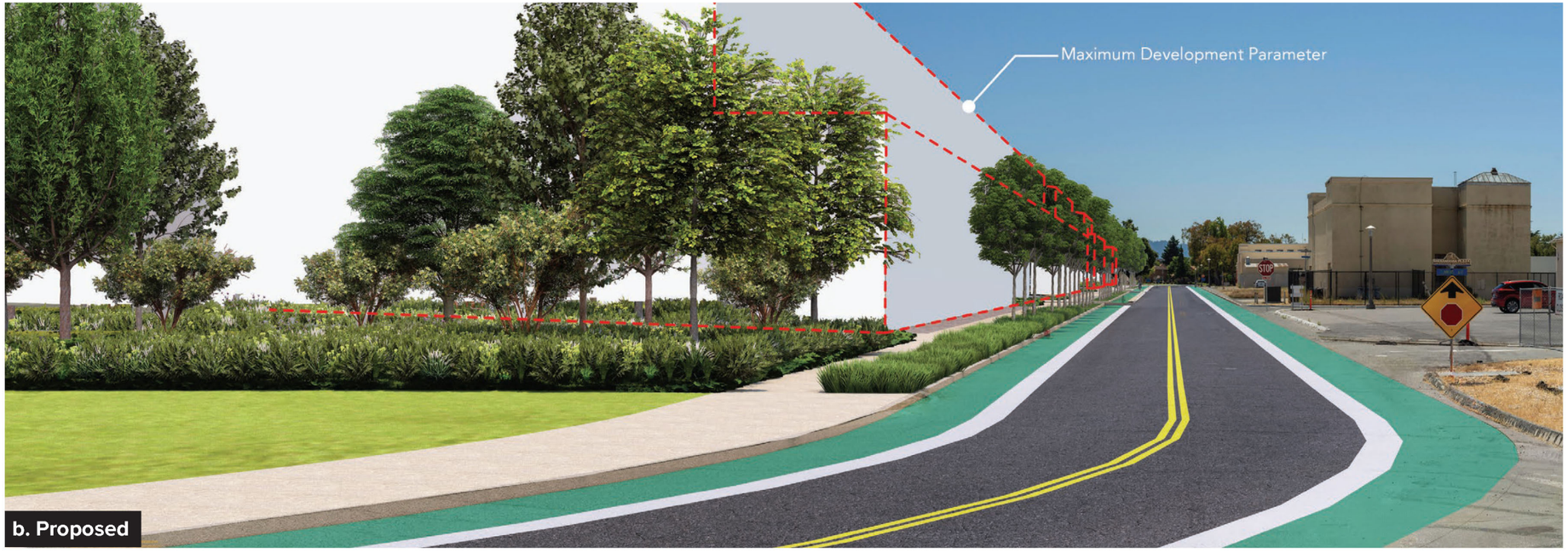
Figure 5-6
Viewpoint 1b: Shenandoah Plaza Panorama Facing East
Berkeley Space Center at NASA Research Park

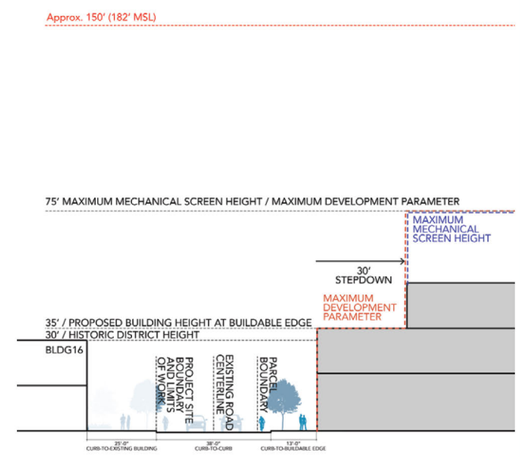
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*





Key Plan





Wescoat Road Edge Massing Height

Graphics ... 104894 (9-10-2025)

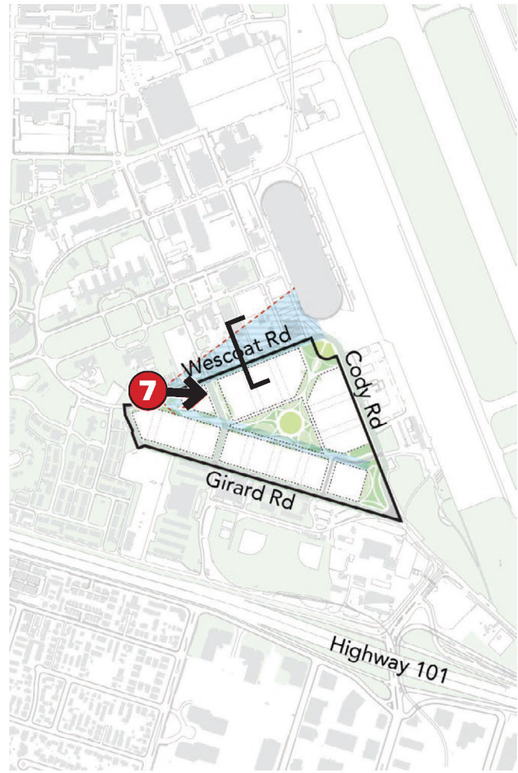
Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

Figure 5-7
Viewpoint 3: Wescoat Road Facing West
Berkeley Space Center at NASA Research Park

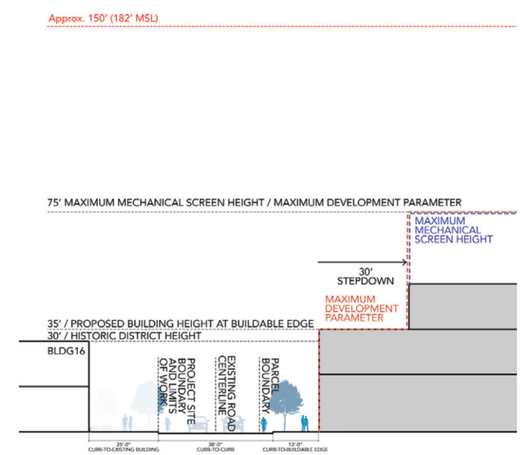
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*







Key Plan



Wescoat Road Edge Massing Height

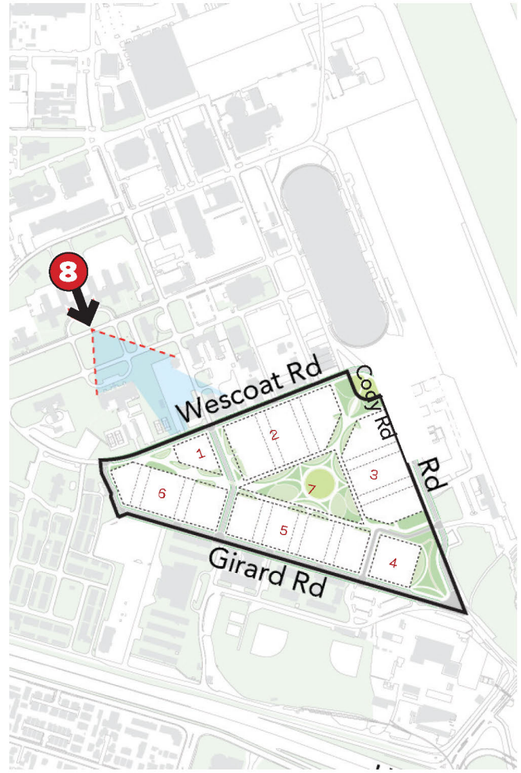
Graphics... 104894 (9-10-2025)

Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

Figure 5-8
Viewpoint 7: Wescoat Road Facing East
Berkeley Space Center at NASA Research Park

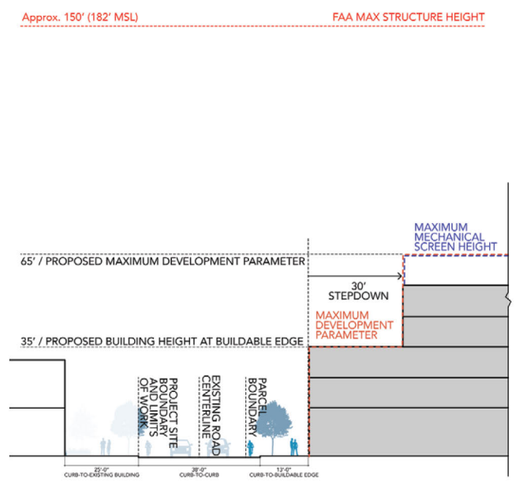
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*





Key Plan





Wescoat Road Edge Massing Height

Graphics... 104894 (9-10-2025)

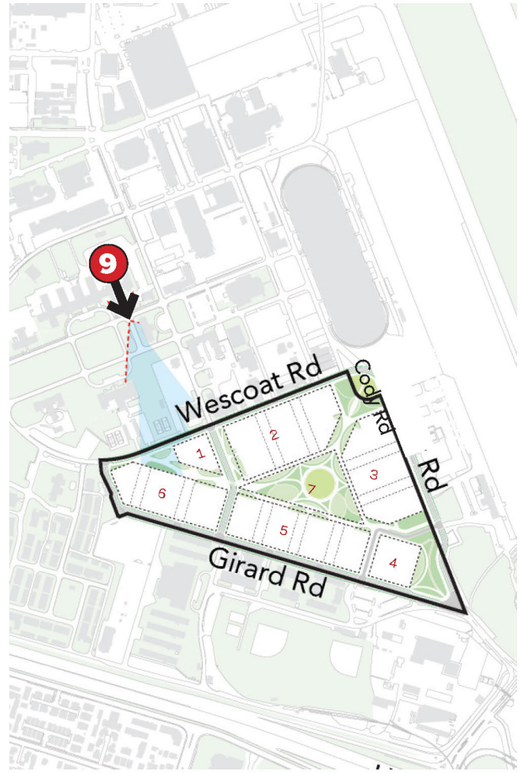
Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

Figure 5-9
Viewpoint 8: Shenandoah Plaza Facing South
Berkeley Space Center at NASA Research Park

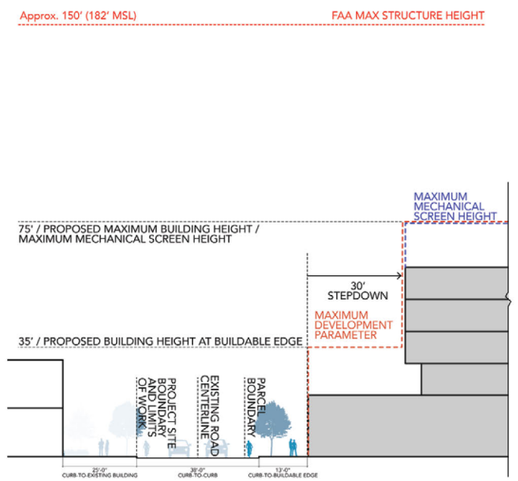
A text description of this figure is provided in Chapter 9, *Descriptions of Figures*







Key Plan



Wescoat Road Edge Massing Height

Graphics ... 104894 (9-10-2025)

Note: Images are conceptual until after project approval. The visual simulations show an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. This is one possible example of the CEQA Reduced Height Alternative that would substantially conform to massing, scale, height and other applicable standards (i.e., the maximum mechanical screen height and the Maximum and Minimum Development Parameters). The Maximum Development Parameters (depicted in Figure 5-3) illustrate the conceptual horizontal and vertical dimensions for each Subarea. The CEQA Reduced Height Alternative would not be built to the full extent of the Maximum Development Parameters in each Subarea due to square footage and applicable standard limitations. In addition, the proposed mechanical screens and building facades are indicated with the same graphical style in the visual simulations. Furthermore, the proposed project would include utility improvements and building demolition outside of the Project Site, but within the Limits of Work; the Limits of Work are depicted on Figure 2-2. This figure shows the parcel boundary, which includes the leased premises; it is provided for informational purposes only. Source: Project Proponent 2025.

Figure 5-10
Viewpoint 9: Shenandoah Plaza Facing South
Berkeley Space Center at NASA Research Park

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displaced human remains or other types of cultural resources. Because construction of the CEQA Reduced Height Alternative would include the same ground disturbance and excavation as the CEQA Proposed Project, potential impacts related to the disturbance of human remains would be the same as under the CEQA Proposed Project. Therefore, the CEQA Reduced Height Alternative would have a potentially significant impact on human remains and require the same mitigation. Mitigation Measure CUL-7, identified in Section 3.5, *Cultural Resources*, would be implemented to incorporate protocols for the discovery of previously unknown human remains in the event that they are encountered during construction. Implementation of Mitigation Measure CUL-7 would reduce impacts, but, as discussed in Section 3.5, there are differences between the treatment of human remains under federal regulations (Native American Graves Protection and Repatriation Act) compared to state regulations and associated mitigation protocols for human remains. NASA, as the AHJ, makes the final determination as to all resources within its exclusive federal jurisdiction. Therefore, the impact on human remains would remain significant and unavoidable with the implementation of mitigation. This would be the same as under the CEQA Proposed Project.

Energy

Energy Consumption

Although the CEQA Reduced Height Alternative would yield 335,000 fewer square feet of Research and Office Uses and 30,000 fewer square feet of Student/Faculty Housing, as with the CEQA Proposed Project, construction of this alternative would result in the temporary usage and consumption of energy resources on the Project Site, which could result in a significant impact if construction measures or practices are not implemented to improve the energy efficiency of construction equipment, as well as subsequent construction activities, and reduce overall energy consumption to the greatest extent feasible.

Once operational, the CEQA Reduced Height Alternative would generate approximately the same number of vehicle trips as the CEQA Proposed Project; vehicles would consume gasoline, diesel, natural gas, and electricity. Both the alternative and the CEQA Proposed Project, either with or without the Variant, would incorporate environmentally sustainable features, using the latest strategies to improve environmental conditions throughout the site; however, both would result in the consumption of electricity and diesel for operational uses (e.g., power, emergency generator operations, heating, cooling, R&D uses, life science lab uses, landscaping). Despite these features, as demonstrated in Tables 3.6-4 through 3.6-6 of Section 3.6, *Energy*, energy consumption during operation of the CEQA Proposed Project could result in a significant impact if additional measures or practices are not implemented to improve the energy efficiency of operational activities and reduce overall energy consumption to the greatest extent feasible. Mitigation Measures AQ-1, AQ-2, and AQ-6, identified in Section 3.2, *Air Quality*, and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Traffic*, would be implemented to reduce the potential for the wasteful, inefficient, or unnecessary consumption of energy resources during construction and operations. This impact would be less than significant with mitigation. Because it would include the same types of facilities as the CEQA Proposed Project, the CEQA Reduced Height Alternative would be expected to result in a similar, albeit slightly reduced, significant impact and require the same mitigation.

Conflicts with Energy Plans

As discussed under Impact CEQA-ENE-1, the CEQA Proposed Project would incorporate multiple sustainability, energy-saving, and TDM features. Because construction and operation of the CEQA

Reduced Height Alternative would largely be the same as under the CEQA Proposed Project, except for a 335,000-square-foot reduction in Research and Office Uses and 30,000-square-foot reduction in Student/Faculty Housing space, there would be no discernible difference in the impact or conclusion between the CEQA Proposed Project and the CEQA Reduced Height Alternative. The same sustainability, energy-saving, and TDM features described for the CEQA Proposed Project, either with or without the Variant, would be implemented under the alternative. The CEQA Reduced Height Alternative would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be the same as for the CEQA Proposed Project, either with or without the Variant, and would be less than significant.

Geology, Soils, and Paleontology

Geologic Hazards

Because the CEQA Reduced Height Alternative would be constructed and operated within the same Limits of Work as the CEQA Proposed Project, it would be subject to the same risks related to earthquake fault rupture, ground shaking, liquefaction, and landslides. The impact would be the same as under the CEQA Proposed Project and would require the same mitigation. Therefore, Mitigation Measure GEO-1, identified in Section 3.7, *Geology, Soils, and Paleontological Resources*, would be implemented to reduce impacts associated with geologic hazards to less-than-significant levels, the same as the CEQA Proposed Project.

Soil Erosion

Construction of the CEQA Reduced Height Alternative would entail the same ground-disturbing activities, including excavation and grading, as under the CEQA Proposed Project. Although these activities could result in soil erosion or the loss of topsoil, as described for the CEQA Proposed Project, the alternative would be required to comply with the State Water Resources Control Board's Construction General Permit; erosion or loss of topsoil during construction would be reduced to a less-than-significant impact with the permit's required stormwater pollution prevention plan. Operation of the CEQA Reduced Height Alternative would also include landscaped areas, buildings, and pavement, which would minimize the potential for post-development erosion. The impact would be the same as under the CEQA Proposed Project, less than significant.

Expansive Soil

Because the CEQA Reduced Height Alternative would occupy the same location as the CEQA Proposed Project, it would have the same impacts related to potentially unstable geologic units and soils. As with the CEQA Proposed Project, the risk of lateral spreading under this alternative would be less than significant. There would be no impact related to risks from a landslide. Impacts from other risks related to unstable geologic units, such as settlement, would be reduced to a less-than-significant level with implementation of Mitigation Measure GEO-1 and Mitigation Measure HAZ-1, identified in Section 3.7, *Geology, Soils, and Paleontological Resources*, and adherence to design-level recommendations. The impact would be the same as for the CEQA Proposed Project and would require the same mitigation.

Paleontological Resources

As described in Section 3.7, *Geology, Soils, and Paleontological Resources*, the Project Site is in an area underlain by Quaternary alluvium of the Santa Clara Valley (Q), which has yielded scientifically

important fossil finds, including vertebrate remains. Disturbance of, damage to, or loss of paleontological resources with high paleontological potential would constitute a significant impact. Because the CEQA Reduced Height Alternative would occur in the same Limits of Work and involve the same excavation as the CEQA Proposed Project, it is possible that project-related excavation could encounter significant paleontological resources. Accordingly, as with the CEQA Proposed Project, this alternative could have a significant impact on significant paleontological resources. Mitigation Measure GEO-2, identified in Section 3.7, *Geology, Soils, and Paleontological Resources*, would be implemented to reduce impacts on paleontological resources to a less-than-significant level. The impact would be the same as under the CEQA Proposed Project and would require the same mitigation.

Greenhouse Gas Emissions

Generate Greenhouse Gas Emissions

Like the criteria air pollutant emissions analyzed above under *Air Quality*, construction and operational GHG emissions associated with the CEQA Reduced Height Alternative would most likely be less than those estimated for the CEQA Proposed Project because of the smaller buildout. The Air District has not adopted numeric GHG thresholds; instead, it recommends analyzing the significance of GHG emissions, based on project consistency with construction best management practices (BMPs) and operational design elements to help achieve the State's long-term climate goals. The CEQA Reduced Height Alternative would have an all-electric design, meet the California Green Building Standards Code (CALGreen) Tier 2 nonresidential electric-vehicle voluntary requirement, and implement the same sustainability strategies as the CEQA Proposed Project. Given the proposed buildout, vehicle miles traveled (VMT) per service population under the CEQA Reduced Height Alternative would most likely be slightly less than under the CEQA Proposed Project, either with or without the Variant. Because VMT per service population under the CEQA Proposed Project would exceed the Air Districts' design criteria, the CEQA Reduced Height Alternative would result in the same condition without mitigation. Construction-related GHG emissions under the CEQA Reduced Height Alternative would also be uncontrolled.

Mitigation Measure GHG-1, identified in Section 3.8, *Greenhouse Gas Emissions*; Mitigation Measures AQ-1 and AQ-2, identified in Section 3.3, *Air Quality*; and Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to control construction GHGs and reduce regional VMT. With implementation of these mitigation measures, construction GHG emissions would be less than significant. However, Mitigation Measure TRAN-1 would not reduce VMT enough to meet the threshold under the CEQA Reduced Height Alternative, resulting in a significant and unavoidable impact (see discussion below under *Transportation*). This would be the same as under the CEQA Reduced Density Alternative, either with or without the Variant.

Conflict with Greenhouse Gas Plan

The same sustainability strategies described for the CEQA Proposed Project would be implemented under the CEQA Reduced Height Alternative. Like the CEQA Proposed Project, the CEQA Reduced Height Alternative would be consistent with the California Air Resources Board's 2022 Scoping Plan but exceed the regaionl VMT per service population target, thereby conflicting with *Plan Bay Area* and the *2017 Clean Air Plan*. Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Circulation*, would be implemented to reduce VMT per service population. However, the CEQA Reduced Height Alternative would not achieve the per service population VMT target for the Bay

Area, and would not be consistent with *Plan Bay Area* or *2017 Clean Air Plan*, resulting in a significant and unavoidable impact. This would be the same as under the CEQA Reduced Density Alternative, either with or without the Variant.

Hazards and Hazardous Materials

Routine Transport, Use, or Disposal of Hazardous Materials

The CEQA Reduced Height Alternative would be conducted within the same Limits of Work as the CEQA Proposed Project and include the same land uses but with a 335,000-square-foot reduction in Research and Office space and 30,000-square-foot reduction in Student/Faculty Housing space. Construction and operation of the alternative would incorporate the basic characteristics of the CEQA Proposed Project, with the routine transport, use, and disposal of hazardous materials conducted in compliance with applicable federal, State and local regulations, as discussed in Section 3.9.3, *Plans, Policies, and Regulations,* of this joint EIR/EIS.

Because the CEQA Reduced Height Alternative proposes less Research and Office Uses than the CEQA Proposed Project, this alternative may require fewer hazardous materials and produce less hazardous waste. However, the impacts associated with handling hazardous materials would be the same as analyzed under the CEQA Proposed Project and require the same mitigation. Therefore, Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards and Hazardous Materials*, would be implemented to require compliance with the Spring 2026 project-specific EIMP and reduce impacts associated with handling hazardous materials to a less-than-significant level. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Accidental Release of Hazardous Materials

Although Research and Office Uses would be reduced by 335,000 square feet and Student/Faculty Housing would be reduced by 30,000 square feet, the CEQA Reduced Height Alternative would not change the basic characteristics, Limits of Work, or land uses of the CEQA Proposed Project. As described in Section 3.9, *Hazards and Hazardous Materials*, the Project Site is within the footprints of two Superfund sites that are undergoing active remediation efforts. Section 3.9 further notes that many of the buildings within the Project Site contain hazardous materials, such as ACM and lead-based paint, and electrical equipment with PCBs. Like the CEQA Proposed Project, because of existing site issues, the CEQA Reduced Height Alternative could have a significant impact related to vapor intrusion, active remediation infrastructure, affected soil and groundwater, and hazardous building materials. As such, the potential for an accidental release of hazardous materials under this alternative would be the same as under the CEQA Proposed Project and would require the same mitigation. Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards and Hazardous Materials*, would be implemented to require compliance with the Spring 2026 project-specific EIMP and protect human health and the environment. Based on the above, impacts related to creating a hazard for the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials would be less than significant with mitigation. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Hazardous Materials Site

As described in Section 3.9, *Hazards and Hazardous Materials*, the Project Site has a long history of environmental releases, investigations, and remediation activities, which have resulted in multiple environmental listings, including those that meet Cortese List requirements. Because the CEQA

Reduced Height Alternative would be conducted within the same Limits of Work as the CEQA Proposed Project and include the same land uses, impacts associated with an exposure to contaminated media as a result of project implementation within a Cortese List site would be the same as under the CEQA Proposed Project and would require the same mitigation. Therefore, Mitigation Measure HAZ-1, identified in Section 3.9, *Hazards and Hazardous Materials*, would be implemented to address potential short-term and long-term exposure to affected soil, soil vapor (in the form of vapor intrusion), and groundwater as a result of project implementation on a contaminated site. Impacts associated with an exposure to contaminated media as a result of project implementation within a Cortese List site would be less than significant with mitigation. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Airport Conflict

As described in Section 3.9, *Hazards and Hazardous Materials*, due to its proximity to Moffett Federal Airfield, the Project Site is within an FAA notification area and a height restriction area. Although the CEQA Reduced Height Alternative proposes lower building heights along Westcoat Road, the maximum building heights associated with the rest of the Project Site would be the same as under the CEQA Proposed Project. Because the CEQA Reduced Height Alternative would be conducted within the same Limits of Work, would include the same construction activities, and would develop the same land uses as the CEQA Proposed Project, the proposed building heights of this alternative, like those of the CEQA Proposed Project, would comply with FAA requirements. As such, impacts under the CEQA Reduced Height Alternative would be the same as under the CEQA Proposed Project. Impacts would be less than significant, either with or without the Variant.

Emergency Response

Although Research and Office Uses would be reduced by 335,000 square feet and Student/Faculty housing would be reduced by 30,000 square feet, the CEQA Reduced Height Alternative would not change the basic characteristics, Limits of Work, or land uses of the CEQA Proposed Project. Project Site development under this alternative would not include any permanent changes to existing public roadways that provide emergency access to the Project Site or surrounding area.

As with the CEQA Proposed Project, this alternative would not modify public streets outside the Project Site or involve any permanent features that would impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Instead, it would include street improvements that would enhance vehicular access through the Project Site, thereby improving access for police, fire, and emergency medical service vehicles. Therefore, the CEQA Reduced Height Alternative is not expected to interfere with the Santa Clara County Operational Area Hazard Mitigation Plan or any evacuation route. Rather, access to the Project Site would be improved with the incorporation of internal street improvements. As such, the CEQA Reduced Height Alternative would not impair implementation of or interfere with an adopted emergency response plan or emergency evacuation plan. This impact would be the same as under the CEQA Proposed Project, either with or without the Variant. The impact would be less than significant.

Hydrology and Water Quality

The CEQA Reduced Height Alternative would result in the same types of land uses as the CEQA Proposed Project and at the same locations. The maximum building height and Limits of Work would also be the same, except for a lower maximum building height along Westcoat Road. Because the alternative's Limits of Work would be the same as under the CEQA Proposed Project, the impervious

surface area would also be the same. As with the CEQA Proposed Project, stormwater runoff under this alternative would be treated prior to discharge to the bay, using the same methods proposed for the CEQA Proposed Project, such as bioretention areas, flow-through planters, green roofs, rainwater cisterns, media filters, permeable pavement/pavers, self-treating landscaped areas, constructed wetlands, and Silva Cells. Operational impacts would be the same for the CEQA Reduced Height Alternative as under the CEQA Proposed Project, either with or without the Variant.

Construction activities under the CEQA Reduced Height Alternative, including ground-disturbing activities and excavation, would be the same as under the CEQA Proposed Project. Temporary construction dewatering may be required. Dewatering could result in an exposure to pollutants from spills or the mobilization of existing groundwater contaminant plumes. Construction would comply with dewatering regulations, ensuring that dewatering activities would be monitored and treatment would take place as required. However, due to the presence of groundwater contaminant plumes in the area, construction dewatering activities may result in a potentially significant impact on groundwater quality. The potential for these types of impacts would be the same as analyzed under the CEQA Proposed Project and would require the same mitigation. Therefore, Mitigation Measure HAZ-1 identified in Section 3.9, *Hazards and Hazardous Materials*, would be implemented to reduce this impact to less than significant. Potentially significant impacts on groundwater quality would be reduced by requiring ongoing monitoring and remediation during dewatering activities. Protocols would be in place to address any potential exposure to affected groundwater as a result of project implementation. Impacts on groundwater quality during construction would be less than significant with mitigation. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Land Use and Planning

Impacts under this alternative would be similar to those under the CEQA Proposed Project because both would involve similar levels of development, the same land uses, and therefore the same level of consistency with existing land use plans, policies, and regulations.

As with the CEQA Proposed Project, the use of construction equipment (such as cranes) or the construction of buildings with heights in excess of 55 feet above ground level under the CEQA Reduced Height Alternative could pose a safety hazard for construction workers and future residents. With issuance of a determination of no hazard from the FAA, project construction and operation would comply with Moffett CLUP safety guidelines and pose no risk to aviation safety. Impacts would be the same as those of the CEQA Proposed Project, either with or without the Variant.

Noise

Substantial Temporary or Permanent Increase in Noise Levels during Construction

Under the CEQA Reduced Height Alternative, there would be a slight reduction in the development square footage compared to the project. However, the Limits of Work would not change, resulting in the same worst-case distances between project construction activities and sensitive receptors. Because the amount of new development under this alternative would be slightly reduced, the overall construction schedule may also be slightly reduced. However, because the worst-case construction noise levels at nearby receptors would be the same, worst-case construction noise

impacts would be the same as described for the proposed project (with the potential for the duration of exposure to be slightly reduced).

In conclusion, daytime construction noise levels from both on- and off-site (in-street) construction for this alternative would be expected to exceed County of Santa Clara construction noise thresholds at the nearest noise-sensitive uses. In addition, a 10-decibel (dB) increase (or greater) over the existing ambient noise level would be expected to occur at the nearest noise-sensitive uses. Daytime construction noise impacts would be considered potentially significant. Similarly, concrete pour activities and off-site/in-street construction activities that take place during nighttime hours may result in noise levels that exceed the applicable construction noise thresholds and may result in a 10 dB or greater increase in the ambient nighttime noise level. Nighttime construction noise impacts would also be considered potentially significant. Mitigation Measures NOI-1 and NOI-2 have been identified to reduce construction noise levels during both daytime and nighttime hours. However, even with implementation of all feasible mitigation measures, construction noise impacts during daytime and nighttime would be significant and unavoidable under the CEQA Reduced Height Alternative. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Substantial Temporary or Permanent Increase in Noise Levels during Operation

During operations, this alternative would be expected to generate slightly fewer vehicle trips than the CEQA Proposed Project because of its slightly lower development square footage overall. Therefore, traffic noise impacts from the CEQA Reduced Height Alternative would be reduced compared to project-related impacts. Because project-related traffic noise impacts were determined to be less than significant, traffic noise impacts from the CEQA Reduced Height Alternative would also be less than significant.

The types of mechanical equipment installed under the CEQA Reduced Height Alternative (e.g., rooftop heating and cooling equipment, a battery energy storage system (BESS), sewer lift station equipment) would most likely be the same as evaluated under the project. Due to the slightly reduced development square footage, the potential exists for the amount of rooftop heating and cooling equipment installed under this alternative to be slightly reduced. However, the buildings that would be reduced in height under this alternative (and therefore may have less equipment) are not the buildings closest to off-site sensitive uses (e.g., Westcoat Village residences and the future residential development to the south). In conclusion, because the types, locations, and amount of mechanical equipment installed under this alternative would very likely be similar to that installed under the CEQA Proposed Project, noise levels from mechanical equipment under this alternative would be expected to exceed the applicable noise standards at the nearest noise-sensitive land uses. Mechanical equipment noise impacts would be considered potentially significant under this alternative, and mitigation would be required. Mitigation Measure NOI-3 has been identified to reduce noise levels from mechanical equipment. Although the exact makes and models of project mechanical equipment are not currently known, noise-reduction options are available to reduce mechanical equipment noise levels to below the significance thresholds used in this assessment, including selecting and installing quieter equipment models, upgrading equipment acoustical enclosures, orienting or shielding equipment to protect noise-sensitive receptors to the greatest extent feasible, increasing the distance between the equipment and noise-sensitive receptors, and/or placing noise-attenuating barriers around equipment. For that reason, noise impacts from project mechanical equipment under the CEQA Reduced Height Alternative would be less than significant with mitigation.

With regard to emergency generator testing, the CEQA Reduced Height Alternative would most likely include a similar number of on-site emergency generators, or slightly fewer, due to the slightly reduced development square footage. Therefore, emergency generator noise impacts would most likely be similar to those of the CEQA Proposed Project. As with the project, even though the testing of emergency generators would be short term (i.e., 30 to 60 minutes each time) and intermittent (i.e., approximately once per month), noise from the testing of emergency generators under this alternative would most likely result in noise levels in excess of applicable standards. Mitigation Measure NOI-4 has been identified to reduce noise levels from emergency generator testing. Noise impacts from emergency generator testing under this alternative would be less than significant with mitigation.

Usage at each project loading dock or loading zone under the CEQA Reduced Height Alternative would be similar to usage under the CEQA Proposed Project; overall, total deliveries across the Project Site may be somewhat reduced due to the reduction in overall development square footage. With this potential decrease, the analysis and findings for the CEQA Proposed Project, either with or without the Variant, which concluded that loading activities associated with the project would not be expected to result in substantial increases in noise in the project area, can conservatively be applied to the CEQA Reduced Height Alternative. Noise impacts associated with loading activities under the CEQA Reduced Height Alternative would be less than significant.

Under the CEQA Reduced Height Alternative, a similar number of parking spaces, or slightly fewer, would be developed at the Project Site compared to the CEQA Proposed Project. Because modeled parking garage noise levels under the CEQA Proposed Project are 15 to 28 dB lower than the existing average daytime noise levels at nearby noise-sensitive land uses (resulting in negligible increases in ambient noise levels of 0.2 dB or less), and parking garage noise under this alternative would very likely be similar to noise under the CEQA Proposed Project, or somewhat reduced, noise impacts related to parking garage activity would be less than significant.

Potential effects related to amplified music or speech would be the same under the CEQA Reduced Height Alternative as described for the CEQA Proposed Project. Therefore, the same analysis would apply and the same results would occur. Noise levels from sound-amplifying equipment at project-related programming or events under the CEQA Reduced Height Alternative would be below the existing average daytime noise levels at the nearest noise-sensitive uses and would not substantially increase existing ambient noise levels. In addition, events, including outdoor events with amplified sound at the project's Central Green, would be infrequent (approximately 12 per year). For these reasons, noise impacts associated with amplified sound would be less than significant. This would be the same as under the CEQA Proposed Project, either with or without the Variant.

Groundborne Vibration or Noise

Potential impacts related to vibration would be the same under the CEQA Reduced Height Alternative as those presented for the CEQA Proposed Project because the equipment proposed for use and the Limits of Work would be the same. Therefore, as was the case for the CEQA Proposed Project, vibration-related annoyance impacts would be considered less than significant, and vibration-induced damage impacts and effects on vibration-sensitive research equipment would be considered potentially significant. As described for the CEQA Proposed Project, Mitigation Measure NOI-5 would be expected to avoid or reduce vibration-related damage impacts (e.g., by returning damaged structures to pre-construction conditions). Vibration-related damage impacts would be less than significant with mitigation for the CEQA Proposed Project and for this alternative. With

respect to impacts on vibration-sensitive equipment at nearby laboratory buildings, Mitigation Measure NOI-6 has been identified to reduce the impacts. However, even with implementation of all feasible mitigation, it may not be possible to fully reduce impacts related to interference with vibration-sensitive equipment for nearby sensitive laboratory or research equipment. Construction vibration impacts on nearby sensitive research equipment would be significant and unavoidable with mitigation under this alternative. This would be the same as under the CEQA Proposed Project.

Airport Noise

The aircraft noise analysis and findings for the CEQA Reduced Height Alternative are the same as described for the CEQA Proposed Project because the Limits of Work would be the same, and the exterior noise levels from aircraft at the Project Site would be the same. As such, impacts related to aircraft noise under the CEQA Reduced Height Alternative would be less than significant, the same as under the CEQA Proposed Project.

Population and Housing

Construction

Construction of the CEQA Reduced Height Alternative is anticipated to require a smaller labor force than the CEQA Proposed Project, given the 335,000-square-foot reduction in Research and Office space and 33 fewer Student/Faculty Housing units. Therefore, impacts related to population growth during construction of the CEQA Reduced Height Alternative would be less than under the CEQA Proposed Project. The impact would be less than significant.

Operation

The CEQA Reduced Height Alternative would have impacts similar to those of the CEQA Proposed Project with respect to housing supply and demand. The CEQA Reduced Height Alternative would result in additional housing supply and demand, compared with existing conditions, but less than under the CEQA Proposed Project. Under this alternative, there would be 827 fewer employees, 33 fewer Student/Faculty Housing units, and 84 fewer residents than expected under the CEQA Proposed Project. Therefore, impacts related to population growth during construction of the CEQA Reduced Height Alternative would be less than under the CEQA Proposed Project. The impact would be less than significant.

Public Services

Police Services

The CEQA Reduced Height Alternative would result in 827 fewer employees, 33 fewer Student/Faculty Housing units, and 84 fewer residents compared with the CEQA Proposed Project. Therefore, as with the CEQA Proposed Project, this alternative would not result in substantial adverse physical impacts associated with the need for new or physically altered police facilities, the construction of which could cause significant environmental impacts. The impact would be slightly less than under the CEQA Proposed Project. The impact would be less than significant.

Fire Protection Services

The CEQA Reduced Height Alternative would result in 827 fewer employees and 84 fewer residents than the CEQA Proposed Project because fewer Student/Faculty Housing units would be constructed

on the Project Site. Specifically, this alternative would reduce the number of Student/Faculty Housing units by 33 (i.e., 112 units to be provided), and the amount of space dedicated to Research and Office Uses would be reduced by 335,000 square feet. However, as with the CEQA Proposed Project, this alternative would add to the population on the Project Site and include buildings that would be up to 80 feet in height.

Fire protection and emergency medical services would be provided by the NASA Ames Fire Department and the County of Santa Clara Emergency Medical Services Agency. As was the case for the CEQA Proposed Project, the CEQA Reduced Height Alternative would increase the demand for fire and emergency medical services, potentially reducing service levels below existing conditions due to the anticipated increase in employees, Short-Term Lodging guests, and on-site residents. Similar to the CEQA Proposed Project, the proposed buildings under this alternative would have a maximum height of approximately 80 feet, which is comparable to some of the existing tallest buildings at ARC. The NASA Ames Fire Department has identified the need for a larger ladder truck to ensure safe and effective emergency response to both existing and proposed buildings. To provide effective rooftop and upper-floor access for emergency operations, NASA intends to procure a minimum 100-foot aerial apparatus, which would be funded by the ISP fees. The existing NASA Ames Fire Station cannot accommodate the size and operational needs of a larger aerial ladder truck due to limited bay dimensions and the outdated design of the existing facility, and would need to be modified (i.e., the bay would need to be expanded) to accommodate a larger aerial ladder truck. Although payment of the ISP fees by the CEQA Reduced Height Alternative would contribute towards new fire service equipment and the construction or expansion of fire facilities, any future construction or expansion of fire facilities proposed by NASA would not be a direct result of the CEQA Reduced Height Alternative, and would be required to undergo a separate environmental review process. As such, impacts under the CEQA Reduced Height Alternative would be the same as under the CEQA Proposed Project. The impact would be less than significant.

Schools

As with the CEQA Proposed Project, the CEQA Reduced Height Alternative would include Student/Faculty Housing, which could directly increase the demand for school services. The CEQA Reduced Height Alternative would provide 33 fewer Student/Faculty Housing units, generating slightly fewer than the approximately seven new elementary and middle school students and nine new high school students anticipated under the CEQA Proposed Project. Because the increase in enrollment across the local school districts resulting from the CEQA Proposed Project is anticipated to amount to 1.0 percent or less, and because this alternative would not exceed the number of students expected under the CEQA Proposed Project, the CEQA Reduced Height Alternative would not result in a substantial increase in demand for public school services or require the construction or expansion of educational facilities. This impact would be slightly less than that of the CEQA Proposed Project. The impact would be less than significant.

Libraries

Under the CEQA Reduced Height Alternative, impacts related to the demand for library services from the increase in student/faculty housing would be similar to those of the CEQA Proposed Project. However, the increased demand for library services from new employees would be substantially less than under the CEQA Proposed Project because the CEQA Reduced Height Alternative would result in fewer employees and students working at the Project Site. The CEQA

Reduced Height Alternative would result in approximately 827 fewer employees and 84 fewer residents. than the CEQA Proposed Project.

The anticipated population growth associated with the alternative is not expected to be substantial, and the increase in demand for library services is expected to be minimal. Both the NASA ARC Library and Mountain View Public Library have adequate capacity and would be able to service the project-related increase in demand from new Student/Faculty Housing units and employees. Therefore, as with the CEQA Proposed Project, the CEQA Reduced Height Alternative would not result in a substantial increase in library use or require the construction of new or expanded library facilities, which could result in environmental impacts. This impact would be slightly less than that of the CEQA Proposed Project. The impact would be less than significant.

Recreation

The CEQA Reduced Height Alternative would have the same amount of acreage for publicly accessible open space as the CEQA Proposed Project as well as the same square footage for active uses (e.g., display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, a gym or other amenities, shared maker spaces and fabrication workshops, co-working spaces, restaurants, community-serving retail, and personal services). The CEQA Reduced Height Alternative would not include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

The CEQA Reduced Height Alternative would result in 827 fewer employees and 84 fewer residents than the CEQA Proposed Project; however, as with the CEQA Proposed Project, this alternative would add to the Project Site's population and the associated demand for recreational resources. As such, under the CEQA Reduced Height Alternative, increased use of recreational resources by employees, students/faculty, and Short-Term Lodging guests would be slightly lower than under the CEQA Proposed Project because there would be fewer employees and student/faculty residents. Further, as with the CEQA Proposed Project, this alternative would not increase the use of existing park and recreational facilities such that substantial physical deterioration would occur or be accelerated. Impacts would be less than as those of the CEQA Proposed Project. The impact would be less than significant.

Transportation

Plan Conflicts

The CEQA Reduced Height Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Height Alternative would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, potential impacts related to plan consistency under the CEQA Reduced Height Alternative would be the same as under the CEQA Proposed Project and less than significant for both full operation and construction.

Vehicle Miles Traveled

The CEQA Reduced Height Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to

those under the CEQA Proposed Project. However, fewer Student/Faculty Housing units on the Project Site, would result in more employees and students driving to and from the site. Therefore, the CEQA Reduced Height Alternative would result in increased total VMT per service population, with a commensurately increased magnitude of the VMT impact compared to the CEQA Proposed Project. Even with implementation of Mitigation Measure TRAN-1, identified in Section 3.16, *Transportation and Traffic*, VMT impacts would remain significant and unavoidable. This impact would be greater than under the CEQA Proposed Project.

Hazards

The CEQA Reduced Height Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Height Alternative would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, the potential impacts related to transportation hazards under the CEQA Reduced Height Alternative would be the same as under the CEQA Proposed Project and less than significant for both full operation and construction.

Emergency Access

The CEQA Reduced Height Alternative would have the same multi-modal transportation network and infrastructure, the same parking ratios, the same TDM strategies, and a mix of uses similar to those under the CEQA Proposed Project. In addition, the CEQA Reduced Height Alternative would include the same demolition, ground disturbance and excavation, schedule and phasing, haul route, construction equipment, and construction hours as the CEQA Proposed Project. Therefore, the potential impacts on emergency access under the CEQA Reduced Height Alternative would be the same as under the CEQA Proposed Project and less than significant for both full operation and construction.

Tribal Cultural Resources

Through consultation with the tribes, multiple tribes identified the twelve known tribal archaeological sites in the APE as potential TCRs. The Tamien Nation also identified a cultural landscape and its multiple contributing components as potential TCRs. Under PRC Section 21074(a)(1)(2), the CEQA lead agency has determined, in its discretion and supported by substantial evidence, the archaeological resources located within the APE/ADI are significant for the purpose of CEQA. In addition, the CEQA lead agency has determined that the cultural landscape and its contributing components identified by the Tamien Nation that are located within the APE/ADI are significant for the purpose of CEQA. The entire ADI also has the potential to contain as yet unidentified TCRs. The CEQA Reduced Height Alternative would occur in the same Limits of Work and have the same construction methods as the CEQA Proposed Project; thus, the APE/ADI would be the same as under the CEQA Proposed Project and the impacts of the CEQA Reduced Height Alternative on TCRs would be the same as those of the CEQA Proposed Project. Mitigation Measures CUL-4, CUL-5, CUL-6, and CUL-7, identified in Section 3.17, *Tribal Cultural Resources*, require preparation and implementation of a CRTMP, tribal cultual resources monitoring and sensitivity training, protocols for inadvertent discoveries of cultural resources, and protocols for the discovery of previously unknown human remains, which would reduce the impacts to TCRs. However, there is no feasible mitigation beyond these measures to prevent destruction of the subsurface deposits, which the tribes have identified as TCRs, or the cultural landscape, which the Tamien Nation has

identified as a TCR. Therefore, the impact on TCRs would remain significant and unavoidable with the implementation of mitigation. This would be the same as the CEQA Proposed Project.

Utilities and Service Systems

New or Expanded Water Facilities

Under the CEQA Reduced Height Alternative, space for Research and Office Uses would be reduced by 335,000 square feet and Student/Faculty Housing would be reduced by 30,000 square feet compared with the CEQA Proposed Project. The CEQA Reduced Height Alternative would occur in the same Limits of Work as the CEQA Proposed Project, be similar in scale, and require the same construction activities; therefore, impacts related to the relocation of existing or construction of new or expanded water facilities would be similar to those under the CEQA Proposed Project. Impacts would be less than significant.

Available Water Supplies

Under the CEQA Reduced Height Alternative, water demand would be lower than under the CEQA Proposed Project due to the reduced number of employees and residents on the Project Site. Therefore, available water supplies would be adequate and able to serve the Project Site and reasonably foreseeable future development during normal years. However, current SFPUC potable water demand exceeds available supply in single dry through multiple dry year scenarios, with supply shortfall relative to demand ranging from 27 to 37 percent. As with the CEQA Proposed Project, this shortfall would occur with or without the CEQA Reduced Height Alternative. Impacts in all water year types would be slightly less than those of the CEQA Proposed Project under the same circumstances. As with the CEQA Proposed Project, the CEQA Reduced Height Alternative would implement Mitigation Measures UTIL-1 and UTIL-2, identified in Section 3.18, *Utility and Service Systems*. The impact would remain significant and unavoidable with the implementation of mitigation. Although impacts under the CEQA Reduced Height Alternative would be less than under the CEQA Proposed Project, impacts on water supply would remain significant and unavoidable.

New or Expanded Wastewater

As with the CEQA Proposed Project, this alternative would include sewer lines throughout the Project Site to serve the proposed buildings. Wastewater generated on the Project Site would be routed off-site through an on-site sewer lift station to the City of Mountain View's wastewater main in RT Jones Road for treatment at the Palo Alto Regional Water Quality Control Plant (PARWQCP). Under the CEQA Reduced Height Alternative, wastewater infrastructure impacts would be the same as under the CEQA Proposed Project. As with the CEQA Proposed Project, the CEQA Reduced Height Alternative would implement Mitigation Measure UTIL-3, identified in Section 3.18, *Utility and Service Systems*. The impact would be less than significant.

Wastewater Capacity

Because of its slightly lower square footage and occupancy, the CEQA Reduced Height Alternative is expected to generate fewer gallons per day of wastewater than the CEQA Proposed Project. As discussed for the CEQA Proposed Project, the PARWQCP has the capacity to accommodate the increase in wastewater from the CEQA Reduced Height Alternative. As with the CEQA Proposed Project, this alternative would not result in a determination by the wastewater treatment provider that it has inadequate capacity to serve the project's projected demand in addition to the

provider's existing commitments. The impact would be slightly less than that of the CEQA Proposed Project. The impact would be less than significant.

New or Expanded Stormwater

Both the CEQA Proposed Project and the CEQA Reduced Height Alternative would occur within the same Limits of Work. Thus, both would increase the impervious surface area on the Project Site from 70 percent to approximately 79 percent, or a 9 percent increase from existing conditions, and both would meter flows leaving the Project Site so that the peak discharge rate would not exceed the combined existing discharge rate of 18.29 cfs. Because the impervious surface area under this alternative would be the same as under the CEQA Proposed Project, the impact would be the same. The impact would be less than significant.

Solid Waste

Under the CEQA Reduced Height Alternative, construction impacts would be the same as under the CEQA Proposed Project because the Limits of Work, as well as construction and excavation activities, would be the same. Because the CEQA Reduced Height Alternative would have fewer employees and fewer residents than the CEQA Proposed Project, it would generate less waste than the CEQA Proposed Project. As described in Section 3.18, *Utility and Service Systems*, the CEQA Proposed Project would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair attainment of solid waste reduction goals. Impacts of the CEQA Reduced Height Alternative would be slightly less than those of the CEQA Proposed Project. The impact would be less than significant.

Solid Waste Compliance

As discussed under Impact CEQA-UTIL-7 in Section 3.18, *Utility and Service Systems*, development associated with the CEQA Proposed Project would comply with the requirements of the 2025 California Green Building Standards Code, Assembly Bill 341, Assembly Bill 1826, and Senate Bill 1383. Because the CEQA Reduced Height Alternative would have fewer employees and fewer residents than the CEQA Proposed Project, it would generate less waste than the CEQA Proposed Project. Development associated with the CEQA Reduced Height Alternative would comply with all applicable federal, State, and local solid waste regulations. Impacts would be the same as those of the CEQA Proposed Project. The impact would be less than significant.

Natural Gas, Electricity, and Telecommunications Facilities

As with the CEQA Proposed Project, the CEQA Reduced Height Alternative would require the installation of new connections to the surrounding PG&E grid, relocation of existing gas infrastructure and the construction of new gas infrastructure, and the installation of generators, photovoltaic systems, and battery storage systems to provide service to future buildings throughout the Project Site. Additional telecommunication services to the Project Site would connect to the existing subsurface NASA critical telecommunication system. Similar to the CEQA Proposed Project, construction of the proposed energy infrastructure improvements and the associated ground-disturbing activities under the CEQA Reduced Height Alternative would have the potential to cause significant adverse environmental impacts, such as fugitive dust, noise, sedimentation, and erosion. The potential impacts resulting from tie-ins to PG&E's existing electrical infrastructure, relocation of gas and electricity infrastructure, and the installation of generators, photovoltaic systems, and battery storage systems are evaluated throughout this joint EIR/EIS. In addition, as required by law,

utility connections would be constructed in accordance with all applicable building codes and standards, ensuring an adequately sized and properly constructed transmission and conveyance system. Any necessary connections would be built prior to building occupancy and in a manner that would minimize the potential for utility service disruptions for existing users. Impacts would be the same as those of the CEQA Proposed Project. The impact would be less than significant.

5.5.8 Comparison of Impacts of the CEQA Proposed Project Alternatives and Variant

Tables 5-5 through 5-20 summarize and compare the impact determinations for the CEQA Proposed Project, CEQA Proposed Project with No Student/Faculty Housing Variant, CEQA Reduced Density Alternative, CEQA Reduced Density Alternative with No Student/Faculty Housing Variant, CEQA Reduced Height Alternative, and CEQA No-Project Alternative. Each table includes impact conclusions by subtopic, along with a comparison of impacts to the CEQA Proposed Project. Impacts of the alternatives and Variant are either reduced, the same as, or greater than those of the CEQA Proposed Project. These differences are indicated in the tables with a +, -, or =, where + signifies an alternative's greater impact than the CEQA Proposed Project's, - signifies less impact of an alternative than the CEQA Proposed Project, and = signifies the same level of impact as CEQA Proposed Project.

The CEQA Proposed Project with the No Student/Faculty Housing Variant would replace the 130,000 square feet of Student/Faculty Housing in Subarea 6 with 130,000 square feet of Research and Office Uses, but would otherwise differ from the CEQA Proposed Project in limited ways. The Variant would still provide flexibility in the project's design, would have the same Limits of Work as the CEQA Proposed Project and CEQA Reduced Density Alternative, and would have the same objectives, purpose and need, background, and development controls, with only specific changes related to land use but not the physical characteristics of the project. As shown in the summary tables in this section, the impacts of the CEQA Proposed Project with the Variant and without the Variant are essentially the same. Because the Variant would not change the basic physical characteristics of the CEQA Proposed Project, impacts related to the following topics would not be different from those of the CEQA Proposed Project (i.e., the alternatives analysis does not assess impacts of the CEQA Proposed Project with and without the Variant separately):

- Biological Resources
- Cultural Resources
- Geology, Soils, and Paleontological Resources
- Tribal Cultural Resources

Impacts related to the topics listed below would vary slightly due to the small differences in land use, especially with the decrease in the number of residents and increase in employees. As shown in the summary tables in this section, the impacts of the CEQA Proposed Project with the Variant and without the Variant would result in the same level of significance.

- Air Quality
- Energy
- Greenhouse Gas Emissions

- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utility and Service Systems

Table 5-5. Summary Comparison of Air Quality CEQA Impact Findings

Alternative	Conflict with Air Quality Plans	Criteria Pollutants			Substantial Pollutant Concentrations	Other Emissions
		Construction	Operation	Combined[a]		
CEQA Proposed Project	SU	LTSM	SU	LTSM	SU	LTS
CEQA Proposed Project with Variant	SU	LTSM	SU	LTSM	SU	LTS
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*	*=*	*=*	*=*
CEQA Reduced Density Alternative	SU	LTSM	SU	LTSM	SU	LTS
Compared to CEQA Proposed Project)[b]	*=*	-	-	-	-	*=*
CEQA Reduced Density Alternative with Variant	SU	LTSM	SU	LTSM	SU	LTS
Compared to CEQA Proposed Project)[a]	*=*	-	-	-	-	*=*
CEQA Reduced Height Alternative	SU	LTSM	SU	LTSM	SU	LTS
Compared to CEQA Proposed Project)	*=*	-	-	-	-	*=*
CEQA No-Project/Existing Conditions Alternative	SU	NI	LTS	LTS	LTS	NI
Compared to CEQA Proposed Project)	*=*	-	-	-	-	-

Notes:

LTS = less than significant; LTSM = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Emissions from concurrent construction and partial operational activities.

b. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-6. Summary Comparison of Biological Resources CEQA Impact Findings

Alternative	Special-Status Species	Sensitive Natural Communities	Wetlands	Wildlife Movement or Nursery Sites	Conflict with Biological Resources Plans or Ordinances	Conflict with HCP/ NCCP
CEQA Proposed Project	LTSM	LTSM	LTSM	LTSM	NI	LTSM
CEQA Proposed Project with Variant	LTSM	LTSM	LTSM	LTSM	NI	LTSM
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*	*=*	*=*	*=*
CEQA Reduced Density Alternative	LTSM	LTSM	LTSM	LTSM	NI	LTSM
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*	*=*	*=*	*=*
CEQA Reduced Density Alternative with Variant	LTSM	LTSM	LTSM	LTSM	NI	LTSM
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*	*=*	*=*	*=*
CEQA Reduced Height Alternative	LTSM	LTSM	LTSM	LTSM	NI	LTSM
Compared to CEQA Proposed Project	*=*	*=*	*=*	*=*	*=*	*=*
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-	-	*=*	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-7. Summary Comparison of Cultural Resources CEQA Impact Findings

Alternative	Historical Resources	Archaeological Resources	Human Remains
CEQA Proposed Project	SU	SU	SU
CEQA Proposed Project with Variant	SU	SU	SU
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Density Alternative	SU	SU	SU
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Density Alternative with Variant	SU	SU	SU
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Height Alternative	SU	SU	SU
Compared to CEQA Proposed Project	-	*=*	*=*
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-8. Summary Comparison of Energy CEQA Impact Findings

	Wasteful Energy Consumption		Conflict with Energy Plan
Alternative	Construction	Operation	
CEQA Proposed Project	LTSM	LTSM	LTS
CEQA Proposed Project with Variant	LTSM	LTSM	LTS
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Density Alternative	LTSM	LTSM	LTS
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Density Alternative with Variant	LTSM	LTSM	LTS
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*
CEQA Reduced Height Alternative	LTSM	LTSM	LTS
Compared to CEQA Proposed Project	*=*	*=*	*=*
CEQA No-Project/Existing Conditions Alternative	LTS	LTS	SU
Compared to CEQA Proposed Project	-	-	*+*

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-9. Summary Comparison of Geology, Soils, and Paleontology CEQA Impact Findings

Alternative	Geologic Hazards	Soil Erosion	Unstable Geologic Unit or Soil	Septic Tanks	Expansive Soil	Paleontological Resources
CEQA Proposed Project	LTS	LTS	LTS	NI	LTS	LTSM
CEQA Proposed Project with Variant	LTS	LTS	LTS	NI	LTS	LTSM
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=
CEQA Reduced Density Alternative	LTS	LTS	LTS	NI	LTS	LTSM
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=
CEQA Reduced Density Alternative with Variant	LTS	LTS	LTS	NI	LTS	LTSM
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=
CEQA Reduced Height Alternative	LTSM	LTS	LTSM	NI	LTS	LTSM
Compared to CEQA Proposed Project	=	=	=	=	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-	=	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-10. Summary Comparison of Greenhouse Gas Emissions CEQA Impact Findings

Alternative	Generate Greenhouse Gas Emissions	Conflict with Greenhouse Gas Emissions Plan
CEQA Proposed Project	LTSM	LTSM
CEQA Proposed Project with Variant	LTSM	LTSM
Compared to CEQA Proposed Project[a]	=	=
CEQA Reduced Density Alternative	SU	SU
Compared to CEQA Proposed Project[a]	+	+
CEQA Reduced Density Alternative with Variant	SU	SU
Compared to CEQA Proposed Project[a]	+	+
CEQA Reduced Height Alternative	SU	SU
Compared to CEQA Proposed Project	+	+
CEQA No-Project/Existing Conditions Alternative	SU	SU
Compared to CEQA Proposed Project	+	+

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-11. Summary Comparison of Hazards CEQA Impact Findings

Alternative	Routine Hazardous Materials Use	Upset and Accident Conditions	Exposure to Schools	Cortese List	Airport Hazards	Emergency Response	Wildland Fires
CEQA Proposed Project	LTSM	LTSM	NI	LTSM	LTSM	LTS	NI
CEQA Proposed Project with Variant	LTSM	LTSM	NI	LTSM	LTSM	LTS	NI
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=	=
CEQA Reduced Density Alternative	LTSM	LTSM	NI	LTSM	LTSM	LTS	NI
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=	=
CEQA Reduced Density Alternative with Variant	LTSM	LTSM	NI	LTSM	LTSM	LTS	NI
Compared to CEQA Proposed Project[a]	=	=	=	=	=	=	=
CEQA Reduced Height Alternative	LTSM	LTSM	NI	LTSM	LTSM	LTS	LTS

Alternative	Routine Hazardous Materials Use	Upset and Accident Conditions	Exposure to Schools	Cortese List	Airport Hazards	Emergency Response	Wildland Fires
Compared to CEQA Proposed Project	=	=	=	=	=	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	=	-	-	-	=

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-12. Summary Comparison of Hydrology and Water Quality CEQA Impact Findings

Alternative	Water Quality	Groundwater Supply and Recharge	Drainage and Flooding	Risk Release of Pollutants	Conflict Water Resource Management Plan
CEQA Proposed Project	LTSM	LTS	LTS	NI	LTS
CEQA Proposed Project with Variant	LTSM	LTS	LTS	NI	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=	=
CEQA Reduced Density Alternative	LTSM	LTS	LTS	NI	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=	=
CEQA Reduced Density Alternative with Variant	LTSM	LTS	LTS	NI	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=	=
CEQA Reduced Height Alternative	LTSM	LTSM	LTSM	LTSM	LTSM
Compared to CEQA Proposed Project	=	=	=	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-	=	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-13. Summary Comparison of Land Use and Planning CEQA Impact Findings

Alternative	Division of Established Community	Conflict with Land Use Plans and Policies
CEQA Proposed Project	NI	LTSM
CEQA Proposed Project with Variant	NI	LTSM
Compared to CEQA Proposed Project[a]	=	=
CEQA Reduced Density Alternative	NI	LTSM
Compared to CEQA Proposed Project[a]	=	=
CEQA Reduced Density Alternative with Variant	NI	LTSM
Compared to CEQA Proposed Project[a]	=	=
CEQA Reduced Height Alternative	NI	LTSM
Compared to CEQA Proposed Project	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI
Compared to CEQA Proposed Project	=	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-14. Summary Comparison of Noise CEQA Impact Findings

Alternative	Construction Noise	Operational Noise	Ground-borne Vibration or Noise	Airport Noise
CEQA Proposed Project	SU	SU	LTSM	LTS
CEQA Proposed Project with Variant	SU	SU	LTSM	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=
CEQA Reduced Density Alternative	SU	SU	LTSM	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=
CEQA Reduced Density Alternative with Variant	SU	SU	LTSM	LTS
Compared to CEQA Proposed Project[a]	=	=	=	=
CEQA Reduced Height Alternative	SU	SU	LTSM	LTS
Compared to CEQA Proposed Project	=	=	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-15. Summary Comparison of Population and Housing CEQA Impact Findings

Alternative	Unplanned Population Growth	Displacement of People or Housing
CEQA Proposed Project	LTS	NI
CEQA Proposed Project with Variant	LTS	NI
Compared to CEQA Proposed Project[a]	*+*	*=*
CEQA Reduced Density Alternative	LTS	NI
Compared to CEQA Proposed Project[a]	-	*=*
CEQA Reduced Density Alternative with Variant	LTS	NI
Compared to CEQA Proposed Project[a]	-	*=*
CEQA Reduced Height Alternative	LTS	NI
Compared to CEQA Proposed Project	-	*=*
CEQA No-Project/Existing Conditions Alternative	LTS	NI
Compared to CEQA Proposed Project	-	*=*

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-16. Summary Comparison of Public Services CEQA Impact Findings

Alternative	Police Services	Fire Services	School Services	Library Services
CEQA Proposed Project	LTS	LTS	LTS	LTS
CEQA Proposed Project with Variant	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	*=*	*=*	*=*	*=*
CEQA Reduced Density Alternative	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	-	*=*	-	-
CEQA Reduced Density Alternative with Variant	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	-	*=*	-	-
CEQA Reduced Height Alternative	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project	-	*=*	-	-
CEQA No-Project/Existing Conditions Alternative	LTS	NI	LTS	NI
Compared to CEQA Proposed Project	-	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-17. Summary Comparison of Recreation CEQA Impact Findings

Alternative	New or Physically Altered Park Facilities	Deterioration of Existing Park Facilities	New Park Facilities or Construction or Expansion of Park Facilities
CEQA Proposed Project	LTS	LTS	LTS
CEQA Proposed Project with Variant	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	-	=	=
CEQA Reduced Density Alternative	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	-	-	=
CEQA Reduced Density Alternative with Variant	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	-	-	=
CEQA Reduced Height Alternative	LTS	LTS	LTS
Compared to CEQA Proposed Project	-	-	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-18. Summary Comparison of Transportation CEQA Impact Findings

Alternative	Conflict with Transportation Plan	VMT	Increase Hazards	Emergency Access
CEQA Proposed Project	LTS	LTSM	LTS	LTS
CEQA Proposed Project with Variant	LTS	LTSM	LTS	LTS
Compare to CEQA Proposed Project[a]	=	=	=	=
CEQA Reduced Density Alternative	LTS	SU	LTS	LTS
Compared to CEQA Proposed Project[a]	=	+	=	=
CEQA Reduced Density Alternative with Variant	LTS	SU	LTS	LTS
Compared to CEQA Proposed Project[a]	=	+	=	=
CEQA Reduced Height Alternative	LTS	SU	LTS	LTS
Compared to CEQA Proposed Project	=	+	=	=
CEQA No-Project/Existing Conditions Alternative	NI	NI	NI	NI
Compared to CEQA Proposed Project	-	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-19. Summary Comparison of Tribal Cultural Resources CEQA Impact Findings

Alternative	Tribal Cultural Resources
CEQA Proposed Project	SU
CEQA Proposed Project with Variant	SU
Compared to CEQA Proposed Project[a]	*=*
CEQA Reduced Density Alternative	SU
Compared to CEQA Proposed Project[a]	*=*
CEQA Reduced Density Alternative with Variant	SU
Compared to CEQA Proposed Project[a]	*=*
CEQA Reduced Height Alternative	SU
Compared to CEQA Proposed Project	*=*
CEQA No-Project/Existing Conditions Alternative	NI
Compared to CEQA Proposed Project	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

Table 5-20. Summary Comparison of Utilities CEQA Impact Findings

Alternative	Construction or Relocation of Water Facilities	Water Supply	Construction or Relocation of Wastewater Facilities	Generation of Wastewater	Construction or Relocation of Stormwater Facilities	Generation of Solid Waste	Compliance with Solid Waste Regulations	Construction or Relocation of Electric, Natural Gas, or Telecommunication Facilities
CEQA Proposed Project	LTS	SU	LTS	LTSM	LTS	LTS	LTS	LTS
CEQA Proposed Project with Variant	LTS	SU	LTS	LTSM	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	=	-	=	-	=	-	=	=
CEQA Reduced Density Alternative	LTS	SU	LTS	LTSM	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	=	-	=	-	=	-	=	=
CEQA Reduced Density Alternative with Variant	LTS	SU	LTS	LTSM	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project[a]	=	-	=	-	=	-	=	=
CEQA Reduced Height Alternative	LTS	SU	LTS	LTSM	LTS	LTS	LTS	LTS
Compared to CEQA Proposed Project	=	-	=	-	=	-	=	=
CEQA No-Project/Existing Conditions Alternative	NI	LTS	NI	LTS	NI	LTS	NI	NI
Compared to CEQA Proposed Project	-	-	-	-	-	-	-	-

Notes:

LTS = less than significant; LTS/M = less than significant with mitigation; NI = no impact; SU= significant and unavoidable

a. Compares the magnitude of the impact to the CEQA Proposed Project. The magnitude differences are identified as "-," "=," or "+," with "-" indicating the alternative would have a less severe (or lower) impact compared to the CEQA Proposed Project and "+" indicating a more severe (or greater) impact. "=" indicates that there would be no material difference relative to the CEQA Proposed Project.

5.5.9 Environmentally Superior Alternative

Introduction

State CEQA Guidelines Section 15126.6 states that an EIR should identify the "environmentally superior" alternative. "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." Based on a comparison of impacts between the CEQA Proposed Alternative, the CEQA Reduced Density Alternative, the CEQA Reduced Height Alternative, and the CEQA No-Project/Existing Conditions Alternative, the CEQA No-Project/Existing Conditions Alternative would have the least environmental impact. As required, this analysis identifies another environmentally superior alternative from the other alternatives considered. The CEQA Reduced Density Alternative is the environmentally superior alternative for the reasons described below.

Comparison of Alternatives

Tables 5-5, *Summary Comparison of Air Quality CEQA Impact Findings,* through Table 5-20, *Summary Comparison of Utilities CEQA Impact Findings*, summarize the comparison of the impact determinations for the CEQA Proposed Project, CEQA Proposed Project with Variant, CEQA Reduced Density Alternative, CEQA Reduced Density Alternative with Variant, CEQA Reduced Height Alternative, and CEQA No-Project/Existing Conditions Alternative.

No Project Alternative Impacts

As shown in Tables 5-5 through 5-20, the No-Project/Existing Conditions Alternative would avoid all of the CEQA Proposed Project's significant impacts but would result in increased impacts from greenhouse gas emissions beyond those associated with the CEQA Proposed Project and other alternatives. This alternative would not meet any of the project objectives.

CEQA Reduced Density Alternative Compared to Other Alternatives

The Limits of Work would remain the same for the CEQA Proposed Project and CEQA Reduced Density Alternative; thus, impacts associated with ground disturbance would be the same. The primary differences between the CEQA Reduced Density Alternative and CEQA Reduced Height Alternative compared to the CEQA Proposed Project would be the differences associated with the reduction in project square footage (i.e., for Research and Office Uses, Student/Faculty Housing) and the associated reduction in Project Site occupancy. Due to the reduction in occupancy, the CEQA Reduced Density Alternative and the CEQA Reduced Height Alternative would have lesser impacts on recreational facilities and public services (e.g., police protection, schools, libraries) than the CEQA Proposed Project. Both the CEQA Reduced Density Alternative and CEQA Reduced Height Alternative would have slightly less criteria pollutant emissions as well as pollutant concentrations during both construction and operations compared to the CEQA Proposed Project; however, the CEQA Reduced Density Alternative would result in lower criteria pollutant emissions as well as pollutant concentrations during both construction and operations due to its reduced size and number of occupants compared to the CEQA Reduced Height Alternative. Although impacts of the CEQA Reduced Height Alternative on historical resources would be less than they would be under the CEQA Proposed Project and the CEQA Reduced Density Alternative, impacts on historical resources would remain significant and unavoidable. The CEQA Reduced Density Alternative would

result in less developed space and fewer occupants compared to the CEQA Reduced Height Alternative. The reduced number of residents on the Project Site under the CEQA Reduced Density Alternative and the CEQA Reduced Height Alternative would result in more travel to and from the Project Site, causing significant and unavoidable impacts associated with VMT, compared to the CEQA Proposed Project's VMT impacts that can be mitigated to a less-than-significant level.

As described in Section 5.5.5, *Attainment of Project Objectives under Project Alternatives*, the CEQA Reduced Density Alternative would meet most of the project objectives, although not to the same degree as the CEQA Proposed Project. More specifically, the CEQA Reduced Density Alternative would achieve Objectives 1, 2, 4, and 5, partially meet Objectives 3 and 7, and would not achieve Objective 6. It should be noted that the CEQA Reduced Density Alternative would advance Plan Bay Area 2050 objectives to provide dense, mixed-use development in proximity to transit; however, because the CEQA Reduced Density Alternative would provide less density than the CEQA Proposed Project, it would meet the Plan Bay Area 2050 objectives to a lesser extent than the CEQA Proposed Project.

Based on the above assessment, the CEQA Reduced Density Alternative is the environmentally superior alternative.

Chapter 6
Submitted Alternatives, Information and Analyses, Scoping Comments, and Areas of Controversy

Agency consultation and public participation for the Berkeley Space Center at NASA Research Park (proposed project/proposed action) has been accomplished through a variety of formal and informal methods. This chapter summarizes the alternatives, comments, and information and analyses provided by public agencies, organizations, and the public during the scoping process.

6.1 Scoping Comments

The California Environmental Quality Act (CEQA) public scoping period in response to the Notice of Preparation (NOP) was from June 21, 2024, to July 22, 2024. Seven comment letters were received from public agencies and local organizations. The National Environmental Policy Act (NEPA) public scoping period in response to the Notice of Intent (NOI) was from June 25, 2024, to July 26, 2024. Four comment letters were received from public agencies, local organizations, and individuals. In addition, comments for both the NOP and NOI were received during the July 10, 2024, scoping meeting, and one comment was received during the July 15, 2024, scoping meeting.

6.2 Areas of Controversy and Information and Analyses Provided

A summary of comments on CEQA and NEPA topics, and information and analyses received during both the CEQA and NEPA scoping periods is provided by topic below. Some topics are relevant to both NEPA and CEQA and some topics are relevant only to CEQA or NEPA, as indicated below. During the public scoping process for both CEQA and NEPA, no other alternatives to the proposed project were suggested. Appendix 1-1 of this joint environmental impact report/environmental impact statement (joint EIR/EIS) includes the scoping report, which provides copies of all written comment received through mail, email, or the online comment forms, along with comments received during the scoping meetings.

Project Description (CEQA and NEPA)

- Clarity needed on number of proposed housing units for both Alternative 1 and 2
- Alternatives should be evaluated at equal level of detail
- Identify all measures to reduce impacts related to project construction, including recycling, salvaging, and re-use
- Clarify the County of Santa Clara's jurisdiction, if any, over the Project Site
- Explain if Santa Clara County would be a responsible agency
- California Department of Fish and Wildlife is a trustee agency and responsible agency

Air Quality (CEQA and NEPA)

- Identify health/air quality impacts from construction and demolition activities, including potential to encounter asbestos, with application of mitigation, if necessary
- Disclose National Ambient Air Quality Standards and nonattainment status of the Project Site
- Analyze project-related emissions of particulate matter, carbon dioxide, nitrogen oxides, sulfur oxides, and fugitive dust
- Incorporate mitigation for construction and operational-related emissions
- Analyze spatial distribution of sensitive receptors around the Project Site and the engagement of such receptors throughout project process
- Disclose strategy to reduce construction-related impacts on sensitive receptors
- Evaluate and mitigate, as necessary, the impact of construction workers commuting to the Project Site

Biological Resources (CEQA and NEPA)

- Project should protect biological resources and minimize degradation of wildlife habitats
- Within environmental setting include full list or table that notes species common name, scientific name, state/federal listing status, habitat type preference, and determination on presence for all special-status species with potential to occur
- Recommend baseline habitat assessments
- Use California Natural Diversity Database (CNDDB) and previous studies performed in the area
- Project Site contains special-status species and has the potential to support other special-status species, and an Incidental Take Permit (ITP) consultation may be required
- Recommendations for mitigation for nesting birds
- Recommendations for mitigation for roosting bats
- Recommendations for mitigation for Crotch's bumble bee
- Recommendations for mitigation for western burrowing owl

Cultural Resources (CEQA and NEPA), Tribal Cultural Resources (CEQA), and Section 106 (NEPA)

- Section 106 to be completed for the proposed project/proposed action
- Potential historic impacts and cumulative impacts should be evaluated within the NEPA scope
- Impacts on historic properties, as well as other cultural resources, which could include archaeological and resources of significance to tribes and indigenous people should be evaluated
- Project does not fall within traditional territory of the Confederated Villages of Lisjan Nation

- Provided contact for Tamien Nation
- Requirements for Assembly Bill 52, Senate Bill 18, tribal consultation and cultural resources assessment

Energy (CEQA)

- Project should be designed to maximize renewable energy use and minimize use of fossil fuels

Greenhouse Gas Emissions (CEQA and NEPA)/Climate Change (CEQA)

- For CEQA, the project should minimize use of fossil fuels
- For CEQA, discuss context of climate change impacts on the setting of the project
- Discuss impacts related to extreme precipitation/storm events, temperature, and sea-level rise and project design features or mitigation measures that would be incorporated to address impacts
- Identify project design features and transportation improvements to reduce GHG emissions and increase energy efficiency as well as reliance on renewable energy
- Require zero-emission alternatives to backup when feasible (or require Tier 4 Final generators)
- Require compliance with Leadership in Energy and Environmental Design (LEED) Version 4 checklist and California Green Building Standards Code (CALGreen) mandatory measures; commit to LEED platinum or equivalent third-party green building certification
- Identify and quantify sources of carbon dioxide emissions during project construction and operation
- Add low embodied carbon materials

Hazards and Hazardous Materials (CEQA and NEPA)

- Describe how construction workers, project employees/visitors/residents, and ecological systems would not be adversely affected by potential hazards from Middlefield-Ellis-Whisman (MEW) Superfund Site
- Discuss project construction and operation activities in relation to ongoing cleanup activities
- Discuss potential contamination/hazmat material that may be encountered during project construction
- Detail any cleanup activities that the project would implement during construction or operation
- Provided EPA contact for coordination regarding MEW site
- San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) maintains oversight regarding hazmat sites and should be coordinated with to identify areas where SFBRWQCB would provide oversight

- Conduct surveys for lead-based paint, mercury, asbestos-containing materials, and polychlorinated biphenyl caulk for structures or buildings to be demolished
- Recommend testing imported soil or fill for contaminants of concern
- Evaluate direct impact on construction workers as well as indirect costs associated with exposure to hazards and hazardous materials

Hydrology and Water Quality (CEQA and NEPA)

- Analyze change in stormwater volume and potential changes in contaminants and/or pollutants
- Provide calculations for impervious/pervious surfaces on the Project Site

Land Use (CEQA and NEPA)

- EIR/EIS to describe local land use jurisdictional issues
- Identify which federal, state, and/or local plans/regulations would apply to the project

Population and Housing (CEQA)/Socioeconomics (NEPA)

- Project could add significant pressure to already-imbalanced housing market and provide little housing to off-set impacts
- Project could result in displacement of jobs, forcing workers to live farther away from workplaces, and environmental impacts from longer commutes related to traffic, greenhouse gas emissions, and socioeconomics
- Project should provide high-quality service jobs that offer a living wage and job security as a mitigation measure

Public Services (CEQA and NEPA)

- Clarify if project would request law enforcement services by the Santa Clara County Sherriff
- Identify any proposed public facilities and which providers would serve the Project Site

Transportation and Traffic (CEQA and NEPA)

- Provided city of Sunnyvale contacts for transportation-related questions
- Request to review the scope of the Transportation Impact Analysis (TIA) and a draft of the TIA
- Request to review the draft EIR/EIS, specifically analysis related to vehicle miles traveled (VMT) and proposed mitigation
- Request level of service (LOS) be evaluated for intersections located in Sunnyvale using Santa Clara Valley Transportation Authority (VTA) TIA guidelines and incorporate full-/pro-rate share financial contributions toward any identified improvements
- Need to consider approved and pending development projects in Sunnyvale as part of baseline and cumulative traffic analyses

- Need to consider the Valley Transportation Plan, Sunnyvale's Capital Improvement Program, and/or Sunnyvale's Traffic Impact Feed Study as part of cumulative analysis
- Evaluate alternative modes of transportation in accordance with VTA Congestion Management Program guidelines
- List potential transportation demand management measures
- Evaluate construction-related impacts on local and regional corridors
- EIR/EIS should identify and incorporate traffic-reducing measures for project-generated VMT

Utilities and Service Systems (CEQA and NEPA)

- Provided city of Sunnyvale contacts for water-and sewer-related questions
- Sunnyvale water pollution control plant does not have adequate capacity to serve the project
- Conduct sanitary sewer analysis for both alternatives
- Provide clarity on proposed sewer connections
- Provide flow estimates for both alternatives to evaluate sewer impacts
- Provide clarity on proposed recycled water connections and use
- City of Sunnyvale does not provide water or stormwater to the Project Site

Other[1]

- Project should incorporate labor standards and use a general contractor
- Individual requests to be included on list of interested parties to receive notices for environmental documents and hearings
- Disclose outreach and engagement efforts
- The joint climate action plan prepared for Santa Clara and San Benito Counties identified low-income and disadvantaged communities within Mountain View and Sunnyvale
- Provide detail on any environmental justice consideration incorporated as part of the project design, construction, and development
- Suggest using the EJScreen Tool and the Federal Interagency Working Group on Environmental Justice's Promising Analysis as part of the EJ methodologies in the NEPA analysis
- Disclose if the project would result in disproportionately high and adverse impacts on any communities that may not experience environmental justice

[1] The "Other" topic includes comments received during the scoping periods that are not related to the CEQA and NEPA analysis, including but not limited to previous resource topics required to be analyzed, such as environmental justice.

6.3 Submitted Alternatives

As noted above, no other alternatives were suggested during the public scoping process for both CEQA and NEPA.

Chapter 7
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Tim Youngberg, Parks and Open Space Manager, Community Services Department, City of Mountain View. Personal Communication. June 3, 2025.

Chapter 8
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Field Operations. Contribution: landscape architecture and urban design.

Arup. Contribution: planning and engineering.

Langan. Contribution: engineering.

BKF. Contribution: civil engineering, utility and infrastructure planning.

Leddy Maytum Stacy Architects. Contribution: architecture.

Sherwood Design Engineers. Contribution: engineering.

Fehr & Peers. Contribution: transportation planning.

EKI Environment & Water Inc. Contribution: hazardous materials compliance.

Chapter 9
Descriptions of Figures

9.1 Introduction

Descriptions of the figures presented in this joint environmental impact report/environmental impact statement (EIR/EIS) and associated appendices are provided below. The University of California, Berkeley (UC Berkeley) and the National Aeronautics and Space Administration (NASA) are committed to making this joint EIR/EIS equally accessible for all reviewers; therefore, this joint EIR/EIS was developed to comply with applicable accessibility laws. In furtherance of this objective and due to the complexity of certain maps, graphs, and other figures, descriptive text is included in this chapter specifically for readers who may benefit from descriptive text of figures but do not use assistive devices for screen reading. Descriptive text is not provided for graphs and figures where the same information is also provided in data tables. If you have difficulty accessing material in this joint EIR/EIS, please contact UC Berkeley at planning@berkeley.edu. This chapter is not required by the California Environmental Quality Act (CEQA) nor by the National Environmental Policy Act (NEPA) and is not used to support the findings in Chapters 3 through 5 of this joint EIR/EIS.

9.2 Chapter 1

Figure Number	Figure Title	Description of Figure
1-1	CEQA and NEPA Processes	Figure 1-1 shows a side-by-side flow chart comparison of the steps required under CEQA for preparation of an EIR, and the steps required under NEPA for preparation of an EIS. The left side of the figure shows the requirements for an EIR under CEQA in teal boxes, and the right side of the figure shows the requirements for an EIS under NEPA in blue boxes.

9.3 Chapter 2

Figure Number	Figure Title	Description of Figure
2-1	Project Location	Figure 2-1 shows a map of the location of the proposed project within the NASA Ames Research Center. The map also depicts the different four different development areas within NASA Ames Research Center (i.e., NASA Research Park [where the project site is located], Ames Campus, Eastside/Airfield [where Moffett Federal Airfield is located], and Bay View). The boundary for the City of Mountain View is also shown to the south and west of the Project Site, as well as the boundary for the City of Sunnyvale to the east of the Project Site.
2-2	Limits of Work	Figure 2-2 shows a map of the Limits of Work which extend as far north as the eastern and western diked marsh and as far south as U.S. 101.

Figure Number	Figure Title	Description of Figure
2-3	Existing Conditions (Project Site)	Figure 2-3 shows an aerial image of the existing conditions of the Project Site at NASA ARC overlayed with the Project Site boundaries. The Project Site is bounded by Wescoat Road to the north, Cody Road to the east, and an empty lot immediately west of Bailey Road. The southern boundary of the Project Site is between Edquiba Road and Girard Road.
2-4	Existing Conditions Site Plan (Limits of Work)	Figure 2-4 shows a site plan of the existing conditions within the project's Limits of Work. The site plan shows that existing conditions within the project's Limits of Work include buildings, surface parking lots, roadways, and utility infrastructure.
2-5	Conceptual Site Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-5 shows a conceptual site plan for the CEQA Proposed Project and CEQA Reduced Density Alternative. The conceptual site plan shows that the project would be divided into seven subareas. Subareas 1 through 6 would be oriented around Subarea 7, which would include the Central Green at the center of the Project Site.
2-6	Conceptual Land Use Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-6 shows a conceptual site plan, which identifies the anticipated locations of the proposed land uses for the CEQA Proposed Project and CEQA Reduced Density Alternative. The proposed land uses (i.e., Research and Office, Student/Faculty Housing, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be oriented around the Central Green in the center of the Project Site. The proposed land uses would be located within Subarea 1 through Subarea 6.
2-7	Conceptual Building Heights for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-7 shows a conceptual site plan depicting the building heights of the CEQA Proposed Project and CEQA Reduced Density Alternative for each of the subareas. The figure depicts that Subareas 1 through 6 would have a maximum building height of approximately 80 feet, and Subarea 7 would have a maximum building height of approximately 30 feet.
2-8	Conceptual Elevations for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-8 shows the conceptual building elevations for the CEQA Proposed Project and CEQA Reduced Density Alternative from four different roadways or elevations (Girard Connector, Dailey Road, Cody Road, and Wescoat Road). The four different elevations depict the height of proposed land uses (i.e., Research and Office, Student/Faculty Housing, and Active Uses) compared to existing buildings, including Hangar One, and the air traffic control tower. Dashed lines show the maximum development height parameters of approximately 80 feet and 105 feet.
2-9	Maximum and Minimum Development Parameters for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-9 shows a conceptual layout depicting the horizontal and vertical dimensions of the CEQA Proposed Project and CEQA Reduced Density Alternative based on the proposed Maximum and Minimum Development Parameters for each Subarea. The proposed buildings along Wescoat Road and Cody Road would include a stepdown zone. The stepdown zone would consist of a 15-foot stepback (i.e., a recession in the building exterior) for the portions of the buildings higher than 35 feet. In addition, mechanical screens along Cody Road and Wescoat Road would be set back and restricted in height at a 45-degree angle to the 25-foot maximum mechanical screen height.

Figure Number	Figure Title	Description of Figure
2-10	Conceptual Construction Phasing Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-10 shows a conceptual site plan that is overlayed with the conceptual construction phasing plan. The conceptual construction phasing plan divides construction of the proposed project into four phases. There are four smaller inset maps adjacent to the construction phasing plan which show what proposed land uses (i.e., Research and Office, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be constructed in the individual phases of construction.
2-11	Open Campus	Figure 2-11 shows a site plan of what access to the Project Site and surrounding NASA ARC would look like under open campus conditions. The figure shows that free-flowing site entry would be provided off of Clark Road and Ellis Street where the existing security and visitor checkpoints are currently located. Security fencing would still remain along the perimeter of NASA ARC property.
2-12	Conceptual Internal Vehicular Circulation Plan for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-12 shows a conceptual layout of the proposed internal vehicle circulation plan for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that there would be streets along the perimeter of the Project Site (Wescoat Road, Cody Road, Girard Road, and the Girard Connector) that would be accessible to vehicles, as well as through the Project Site from Daily Road and Subarea 4. The figure shows that there would also be smaller shared-use streets between the proposed buildings.
2-13	Conceptual Pedestrian and Bicycle Circulation Plans for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 2-13 shows two side by side maps that depict the conceptual pedestrian and bicycle plans for the CEQA Proposed Project and CEQA Reduced Density Alternative. The map on the left side depicts the pedestrian circulation plan which shows that pedestrian access would be provided along the perimeter of the Project Site, as well as internally through the subareas and between proposed buildings. The map on the right side depicts the bicycle circulation plan which shows that bicyclist access would be provided along the perimeter of the Project Site, and internally through the subareas.
2-14	Transit Priority Area Map	Figure 2-14 shows an aerial image of the Project Site and surrounding area, overlayed with Transit Priority Areas, one of which covers the majority of the Project Site. The Bayshore/NASA Santa Clara Valley Transportation Authority Light Rail Station is located southeast of the Project Site.
2-15a	Conceptual Utilities Plan (Water)	Figure 2-15a shows a conceptual layout of the proposed water plan for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The proposed water plan would include 10-inch and 12-inch water mains on-site that would be routed from the connection on the southwest side of the Project Site to the proposed buildings through a looped system that would extend east–west along Girard Road and north of the center of the Project Site.

Figure Number	Figure Title	Description of Figure
2-15b	Conceptual Utilities Plan (Tyrella Feed Water Main Connection Options 1 and 2)	Figure 2-15b shows the conceptual layouts of the two proposed options to connect to the Tyrella Feed Water Main for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that option 1 would connect to the existing Tyrella Feed through a line along Clark Road, Wescoat Road, and the Girard Road Connector. The figure shows that option 2 would connect to the existing Tyrella Feed through a line along South Perimeter Road and east of Bailey Road.
2-16a	Conceptual Utilities Plan (Recycled Water)	Figure 2-16a shows a conceptual layout of the proposed recycled water plan for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The proposed recycle water plan would include 6- to 12-inch recycled water mains on-site that would be looped internally with branches throughout the Project Site to serve each of the proposed buildings.
2-16b	Conceptual Utilities Plan (RT Jones Road Recycled Water Main Connection Options 1 and 2)	Figure 2-16b shows the conceptual layouts of the two proposed options to connect to the RT Jones Road Recycled Water Main for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that option 1 would connect to the existing recycled water main in RT Jones Road through a line along Clark Road and Wescoat Road. The figure shows that option 2 would connect to the existing recycled water main in RT Jones Road through a line in the parking lot near the main gate on Clark Road, and along South Perimeter Road and east of Bailey Road.
2-17	Conceptual Utilities Plan (Water Reuse Facility Option)	Figure 2-17 shows a conceptual layout of the proposed water reuse facility plan for the CEQA Proposed Project. The figure shows that the approximately 15,000 square foot water re-use facility would be located in Subarea 6 in the parking structure near Girard Road, and would include a 300-foot pressurized main along the Girard Road Connector that would connect to the recycled water distribution infrastructure throughout the rest of the Project Site.
2-18a	Conceptual Utilities Plan (Wastewater)	Figure 2-18a shows a conceptual layout of the proposed wastewater plan for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The proposed wastewater plan would include 8-inch, 10-inch, and 12-inch sewer lines throughout the Project Site to each subarea. Wastewater generated by the project would be routed off-site through an on-site sewer lift station in the southwest corner of the Project Site near Girard Road and the Girard Connector.
2-18b	Conceptual Utilities Plan (Mountain View Wastewater Main Connection Options 1 and 2)	Figure 2-18b shows the conceptual layouts of the two proposed options to connect to the existing Mountain View wastewater main in RT Jones Road for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that option 1 would connect to the existing Mountain View wastewater main through a line along Clark Road and Wescoat Road. The figure shows that option 2 would connect to the existing wastewater main in RT Jones Road through a line south of Clark Road and along Wescoat Road. Option 2 would cross over Army controlled land.

Figure Number	Figure Title	Description of Figure
2-19a	Conceptual Utilities Plan (Stormwater)	Figure 2-19a shows a conceptual layout of the proposed stormwater plan for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that the stormwater plan would consist of two subsystems: (1) subsystem 1 would make up the interior of the Project Site and would drain to the proposed 0.50-acre retention pond in the northeast corner of the Project Site and then into the eastern diked marsh trunk main; and (2) subsystem 2 would make up the perimeter of the Project Site and would discharge to the eastern diked marsh.
2-19b	Conceptual Utilities Plan (Stormwater—Eastern Diked Marsh Trunk Main)	Figure 2-19b shows a conceptual layout of the proposed stormwater plan to connect to the eastern diked marsh for the CEQA Proposed Project and the CEQA Reduced Density Alternative. The figure shows that the proposed stormwater line would connect to the eastern diked marsh through a line from the Project site along Cummins Road, Bushnell Road, Zook Road, and de France Avenue.
2-20	Conceptual Utilities Plan (Central Utility Plant Option)	Figure 2-20 shows a conceptual site plan for the Central Utility Plant (CUP) option for the CEQA Proposed Project. The figure shows that the CUP building would be located in Subarea 4 in the parking garage. The CUP system would also include thermal energy storage tanks adjacent to the building. The figure shows that from the CUP building, the distribution system would loop around Subarea 7, with larger distribution pipes concentrated along Subareas 4,5, and 6.
2-21	Conceptual Land Use Plan (No Student/Faculty Housing Variant)	Figure 2-21 shows a conceptual site plan, which identifies the anticipated locations of the proposed land uses for the No Student/Faculty Housing Variant. The proposed land uses (i.e., Research and Office, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be oriented around the Central Green in the center of the Project Site (i.e., Subarea 7). The proposed land uses would be located within Subarea 1 through Subarea 6.

9.4 Chapter 3

Figure Number	Figure Title	Description of Figure
3.1-1	Cumulative Projects	Figure 3.1-1 shows an aerial map of the Project Site, immediately adjacent surrounding area within NASA ARC, and the locations of the cumulative projects identified. The figure shows that there are 21 cumulative projects.
3.3-1	Receptor Types in the Local Air Quality Study Area	Figure 3.3-1 identifies existing buildings, land uses, and sensitive receptors located in the Local Air Quality Study Area (i.e., within 1,000 feet of the Project Site). The map provides the spatial context for evaluating potential localized air quality impacts from construction and operation of the project. Surrounding land uses—including park, residential, educational, and daycare uses —are highlighted to show where sensitive receptors are located relative to planned project activities. The figure also depicts worker receptors.

Figure Number	Figure Title	Description of Figure
3.4-1a	Biological Resources in the Study Area (Overview)	Figure 3.4-1a is a map of biological resources within and near the project site overlaid on an aerial image. The project Limits of Work and Biological Study Area (Biological Study Area) boundaries are shown for the entire project site. Land cover types within the Biological Study area are Developed, Disturbed, Palustrine Emergent Wetland, and Ruderal Annual Grassland. Field Observations of active western burrowing owl burrows from 2021-2025 occur outside of the Biological Study Area. Potentially suitable burrows, and existing buildings with nesting swallows are shown within and adjacent to the Biological Study Area. Four NASA Ames Research Center Burrowing Owl Preserves overlap the Biological Study Area; three of these preserves also overlap the Limits of Work.
3.4-1b	Biological Resources in the Study Area (North)	Figure 3.4-1b is a detailed map of biological resources within and near the northern portion of the Limits of Work and Biological Study Area overlaid on an aerial image. Land cover types within the Biological Study Area are Developed, Disturbed, Palustrine Emergent Wetland, and Ruderal Annual Grassland. Field Observations of active western burrowing owl burrows from 2021-2025 occur outside of the Biological Study Area. Four potentially suitable burrows occur within the Biological Study Area and five occur outside of the Biological Study Area. NASA Ames Research Center Burrowing Owl Preserves BV-6 and BV-7 overlap the northernmost Limits of Work and Biological Study Area; the ARC-2 preserve is adjacent and south of the Limits of Work along Zook Road but overlaps the Biological Study Area. Inset 1 shows detail of Palustrine Emergent Wetland and Ruderal Annual Grassland land cover that overlaps with the northern limit of the Biological Study Area adjacent to Burrowing Owl Preserve BV-6 and within 250 feet of the Limits of Work.
3.4-1c	Biological Resources in the Study Area (South)	Figure 3.4-1c shows a detailed map of biological resources within and near the southern portion of the Limits of Work and Biological Study Area (Biological Study Area) overlaid on an aerial image. Land cover types within the Biological Study Area are Developed, Disturbed, and Ruderal Annual Grassland. Nine potentially suitable burrows occur within the Biological Study Area and four occur outside of the Biological Study Area. NASA Ames Research Center Burrowing Owl Preserve NRP-19 overlaps the southernmost Limits of Work and Biological Study Area along Cody Road and Macon Road.
3.5-1	APE and ADI Map with Depths of Impact	Figure 3.5-1 shows a map of the Area of Potential Effects, Area of Direct Impacts, Built Environment Study Area, and all of the proposed ground disturbing activities (e.g., distribution pipes, roads, sewer lift station, open space and landscaping, utility work, and building foundations) overlayed on an aerial image.
3.9-1	Locations of MEW and Navy Monitoring Wells, Recovery Wells, and Treatment System Piping—Existing Layout	Figure 3.9-1 shows a map of the existing MEW and NAVY monitoring wells, recovery wells, and the treatment facility and system piping on and around the Project Site. Locations of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites as well as sanitary sewer and underground fuel lines are also shown throughout the project area.

Figure Number	Figure Title	Description of Figure
3.9-2	Installation Restoration Program Site Locations and Current and Former UST, AST, and/or Sump Locations	Figure 3.9-2 shows a map of the current and former locations of UST, AST, tanks, transformers, sump and/or pits on and around the Project Site. Locations of CERCLA sites, treatment facility and system piping, and sanitary sewer and underground fuel lines are also shown throughout the project area. The MEW Vapor Intrusion Study Area surrounding the Project Site is also identified in Figure 3.9-2.
3.9-3	Navy and MEW Companies Allocation Areas, Soil, and Groundwater	Figure 3.9-3 shows a conceptual map of the project and identifies the boundaries for the areas of responsibility for groundwater soil cleanup for the Navy and MEW companies.
3.9-4	NASA, Navy, and MEW Companies Areas of Responsibility, Vapor Intrusion	Figure 3.9-4 shows a conceptual map of the project and identifies the boundaries for the areas of responsibility for vapor intrusion for the Navy and MEW companies. The MEW Vapor Intrusion Study Area surrounding the Project Site is also identified.
3.10-1	FEMA Flood Zones	Figure 3.10-1 shows an aerial map of FEMA flood zones in the project area. The Project Site and the limits of work and areas north of the Project Site are within FEMA Zone D (areas with undetermined but possible flood hazard). Areas outside of Moffett Field (south and west of the Project Site) are within FEMA Flood Zone X (shaded), areas with reduced flood risk due to levees. North of Moffett Field is FEMA flood Zone AE, the 100-year floodplain where base flood elevations are known. A small area northwest of the Project Site is within FEMA Zone X, areas outside of the 100- and 500-year floodplain.
3.10-2	NASA Overall Existing Storm Drain System	Figure 3-10.2 shows an aerial map of the existing storm drain system, including storm drain connections, outfalls, and ditches, serving the project area. The boundary of the Western Drainage System and the Eastern Drainage System are shown as well as the location of the existing stormwater retention pond, and the Western Diked Marsh and Eastern Diked Marsh.
3.10-3	Groundwater Plume and Groundwater Wells	Figure 3.10-3 shows a map of the regional groundwater plume on and around the Project Site. Locations of groundwater monitoring wells, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) sites and petroleum sites are also shown throughout the project area.
3.12-1	Noise Measurement Locations	Figure 3-12.1 shows an aerial map of the Project Site and immediately adjacent surrounding area with the locations of where short-term and long-term noise measurements were taken. There are three short-term noise measurement locations, and seven long-term noise measurement locations.
3.12-2	Conceptual Building Locations for the CEQA Proposed Project and CEQA Reduced Density Alternative	Figure 3.12-2 shows a conceptual site plan, which identifies the anticipated locations of the proposed buildings for the CEQA Proposed Project and CEQA Reduced Density Alternative. The proposed buildings (numbered 1 through 12) would be oriented around the Central Green in the center of the Project Site
3.13-1	Housing Study Area	Figure 3.13-1 shows a map of several Bay Area Counties and the Project Site. The map depicts the Housing Impact Area for the proposed project which covers San Mateo County, Santa Clara County, and Alameda County.

Figure Number	Figure Title	Description of Figure
3.16-1	Existing Transit Service	Figure 3.16-1 shows the existing transit stations and routes. Transit stations include the Mountain View Caltrain station, VTA light rail stations, and VTA bus stops around the study area. VTA bus routes include routes 21, 40, 51, 52, 53, 523. Additional transit routes include VTA Orange Line, Caltrain, and ACE Shuttle Red Line.
3.16-2	Existing and Proposed Bicycle Infrastructure	Figure 3.16-2 shows existing and proposed Class I Bikeway (Shared-Use Path), Class II Bikeways (On-Street Bike Lanes), Class III Bikeways (Bike Routes), and Class IV Bikeways (Separated Bikeway) bicycle facilities approximately 1-mile around the study area.

9.5 Chapter 4

Figure Number	Figure Title	Description of Figure
4-1	Project Location	Figure 4-1 shows a map of the location of the project within the NASA Ames Research Center. The map also depicts the different four different development areas within NASA Ames Research Center (i.e., NASA Research Park [where the project site is located], Ames Campus, Eastside/Airfield [where Moffett Federal Airfield is located], and Bay View). The boundary for the City of Mountain View is also shown to the south and west of the Project Site, as well as the boundary for the City of Sunnyvale to the east of the Project Site.
4-2	Limits of Work	Figure 4-2 shows a map of the Limits of Work which extend as far north as the eastern and western diked marsh and as far south as U.S. 101.
4-3	Existing Conditions (Project Site)	Figure 4-3 shows an aerial image of the existing conditions of the Project Site at NASA ARC overlayed with the Project Site boundaries. The Project Site is bounded by Wescoat Road to the north, Cody Road to the east, and an empty lot immediately west of Bailey Road. The southern boundary of the Project Site is between Edquiba Road and Girard Road.
4-4	Conceptual Land Use Plan for the NEPA Build Alternatives	Figure 4-4 shows a conceptual site plan, which identifies the anticipated locations of the proposed land uses for the NEPA Build Alternatives. The proposed land uses (i.e., Research and Office, Student/Faculty Housing, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be oriented around the Central Green in the center of the Project Site. The proposed land uses would be located within Subarea 1 through Subarea 6.
4-5	Conceptual Land Use Plan (No Student/Faculty Housing Sub-Alternative)	Figure 4-5 shows a conceptual site plan, which identifies the anticipated locations of the proposed land uses for the No Student/Faculty Housing Sub-Alternative. The proposed land uses (i.e., Research and Office, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be oriented around the Central Green in the center of the Project Site (i.e., Subarea 7). The proposed land uses would be located within Subarea 1 through Subarea 6.

Figure Number	Figure Title	Description of Figure
4-6	Study Intersections and Freeway Segments	Figure 4-6 shows the 15 study intersections and 12 study freeway segments within the study area. The study intersections are along Moffett Boulevard, Ellis Street, Middlefield Road, Manila Drive, and Mathilda Avenue. The study freeway segments are along US-101, SR-85, and SR-237.

9.6 Chapter 5

Figure Number	Figure Title	Description of Figure
5-1	Conceptual Land Use Plan for the CEQA Reduced Height Alternative	Figure 5-1 shows a conceptual site plan, which identifies the anticipated locations of the proposed land uses for the CEQA Reduced Height Alternative. The proposed land uses (i.e., Research and Office, Student/Faculty Housing, Conference Uses, Short-Term Lodging, Active Uses, and parking) would be oriented around the Central Green in the center of the Project Site. The proposed land uses would be located within Subarea 1 through Subarea 6.
5-2	Conceptual Elevations	Figure 5-2 shows the conceptual building elevations for the CEQA Reduced Height Alternative from four different roadways or elevations (Girard Connector, Dailey Road, Cody Road, and Wescoat Road). The four different elevations depict the height of proposed land uses (i.e., Research and Office, Student/Faculty Housing, and Active Uses) compared to existing buildings, including Hangar One, and the air traffic control tower. Dashed lines show the maximum development height parameters of approximately 65 feet, 75 feet, 80 feet and 105 feet.
5-3	Maximum and Minimum Development Parameters for the CEQA Reduced Height Alternative	Figure 5-3 shows a conceptual layout depicting the horizontal and vertical dimensions of the CEQA Reduced Height Alternative based on the proposed Maximum and Minimum Development Parameters for each Subarea. The proposed buildings along Wescoat Road and Cody Road would include a stepdown zone. The stepdown zone would consist of a 30-foot stepback (i.e., a recession in the building exterior) for the portions of the buildings higher than 35 feet. In addition, mechanical screens along Cody Road would be set back and restricted in height at a 45-degree angle to the 25-foot maximum mechanical screen height.
5-4	Visual Simulation Locations for the CEQA Reduced Height Alternative	Figure 5-4 shows an aerial map of the project and surrounding area with the locations of the key viewpoint and direction of the view for where visual simulations for the CEQA Reduced Height Alternative were generated. There are 6 key view locations from which visual simulations were prepared for the CEQA Reduced Height Alternative.
5-5	Viewpoint 1a: Shenandoah Plaza Panorama Facing East	Figure 5-5 shows two photographs facing east from Shenandoah Plaza. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to convey the overall vision of the CEQA Reduced Height Alternative. Figure 5-5 also shows a map of the viewpoint location, as well as a conceptual building height and

Figure Number	Figure Title	Description of Figure
		illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.
5-6	Viewpoint 1b: Shenandoah Plaza Panorama Facing East	Figure 5-6 shows two photographs facing east from Shenandoah Plaza. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to depict what development under the CEQA Reduced Height Alternative could look like. Figure 5-6 also shows a map of the viewpoint location, as well as a conceptual building height and illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.
5-7	Viewpoint 3: Wescoat Road Facing West	Figure 5-7 shows two photographs facing west from Wescoat Road. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to depict what development under the CEQA Reduced Height Alternative could look like. Figure 5-7 also shows a map of the viewpoint location, as well as a conceptual building height and illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.
5-8	Viewpoint 7: Wescoat Road Facing East	Figure 5-8 shows two photographs facing east from Wescoat Road. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to depict what development under the CEQA Reduced Height Alternative could look like. Figure 5-8 also shows a map of the viewpoint location, as well as a conceptual building height and illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.
5-9	Viewpoint 8: Shenandoah Plaza Facing South	Figure 5-9 shows two photographs facing south from Shenandoah Plaza. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to depict what development under the CEQA Reduced Height Alternative could look like. Figure 5-8 also shows a map of the viewpoint location, as well as a conceptual building height and illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.
5-10	Viewpoint 9: Shenandoah Plaza Facing South	Figure 5-10 shows two photographs facing south from Shenandoah Plaza. The top photograph shows existing conditions. The bottom photograph shows a visual simulation of an illustrative rendering of representative buildings to depict what development under the CEQA Reduced Height Alternative could look like. Figure 5-10 also shows a map of the viewpoint location, as well as a conceptual building height and illustrative massing diagram from the edge of Wescoat Road under the CEQA Reduced Height Alternative.