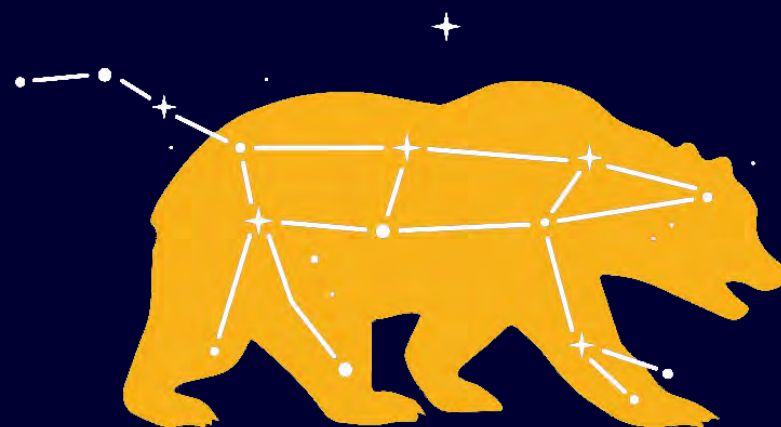


Appendix 2-1

Proposed Master Plan, Development Guidelines, and Standards



BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

MASTERPLAN
SPRING 2026

Berkeley UNIVERSITY OF CALIFORNIA SKS

BERKELEY SPACE CENTER

MASTER PLAN

Issued Spring 2026

PROJECT TEAM



fieldoperations

LANGAN



LMS^A

eki environment
& water

ARUP

FEHR & PEERS



TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1
2. LAND USE	8
3. MOBILITY	26
4. OPEN SPACE	32
5. BUILDING TYPOLOGIES	42
6. PHASING	45
7. PARKING	51

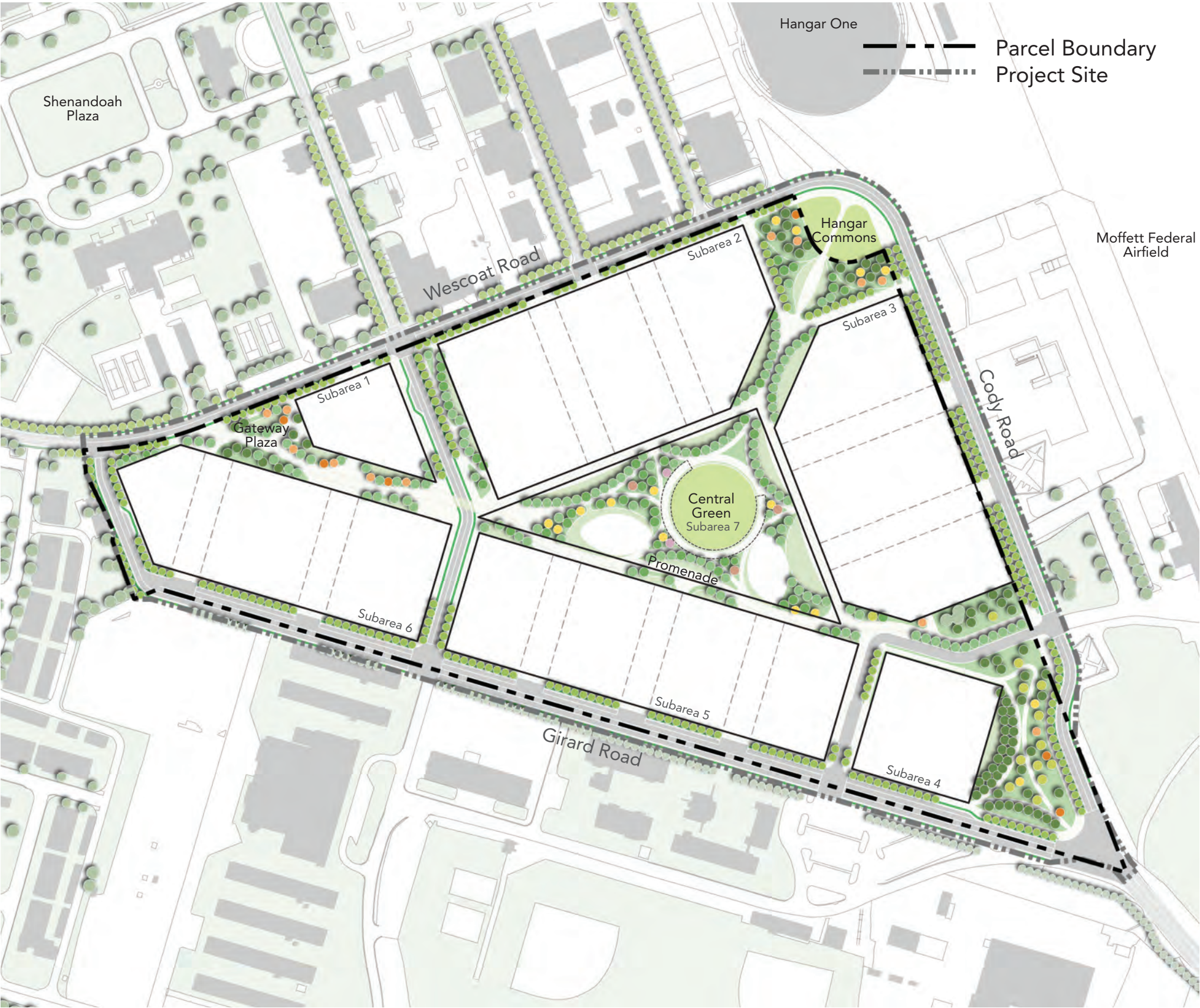
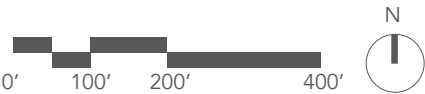
EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

PROJECT SITE PLAN

While there are a number of available development parcels throughout NASA ARC, the NASA Research Park (NRP) site stands out as the obvious location for the deployment of a new research and innovation-oriented development – the Berkeley Space Center at NASA Research Park. Beyond its strategic location adjacent to Shenandoah Plaza and Moffett Federal Airfield, there are a number of reasons for the site’s desirability including its connectivity to U.S. 101 and the regional transit system; the fact that the parcel is currently publicly held; and its sheer size, with a 39-acre Project Site. However, perhaps the most appealing feature of the Project Site is its adjacency to both an established research campus at NASA ARC with remarkable, largest-of-their-kind facilities including wind tunnels and supercomputers, as well as a private-industry pioneer with Google's Planetary Ventures in Hangar One.

Indeed, what distinguishes the Berkeley Space Center from other global research developments is both physical and logistical. Every development of this type must offer state-of-the-art lab and office facilities; cultural and lifestyle amenities; adjacencies to recognized centers of innovation; partnerships with institutions of academic excellence; a defined industry cluster that provides the critical mass of infrastructure, facilities, people and amenities; and a location that offers attractive live/work options to draw global talent. The Master Plan provides a vision to achieve all of the above, by leveraging its strategic position within a growing aerospace cluster and providing a compelling spatial framework for a world-class research environment.



Site Context Illustrative Plan

EXECUTIVE SUMMARY

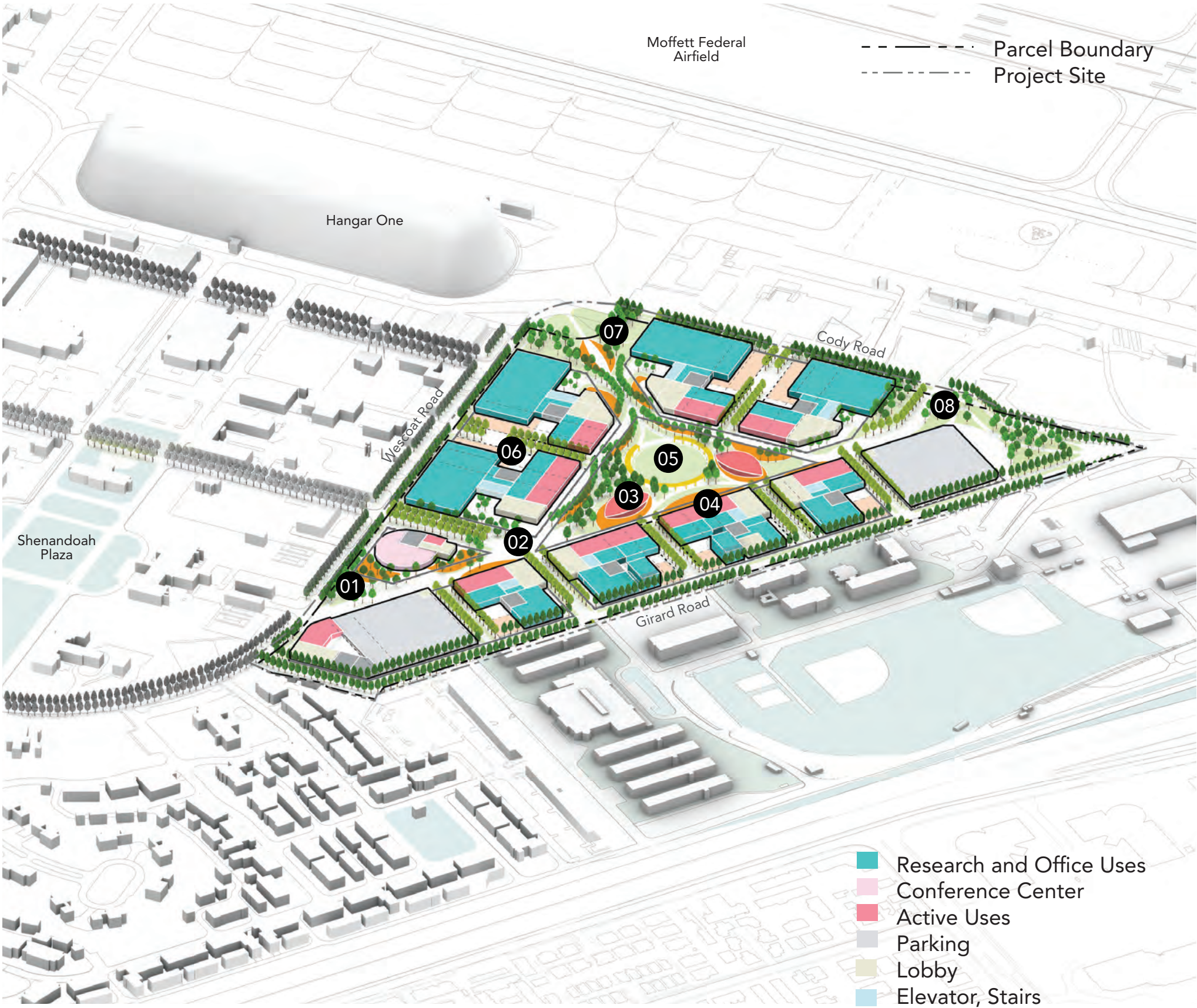
PROGRAMMING & PLACEMAKING

The Berkeley Space Center is envisioned as part of a larger research and innovation ecosystem; therefore, any redevelopment will have a transformative effect on the broader social, intellectual and economic dynamics of NASA ARC and Moffett community. We believe that programming, in particular the ground level programming of interior and exterior spaces, is as much about creating a place as it is about organizing use, circulation and other logistics.

We hold that science and research work best in an environment that forces interaction. The Master Plan for Berkeley Space Center seeks to create such a place, with a critical mass of people that’s needed for productive and innovative research.

LEGEND

- 01. Welcoming Gateway Plaza is activated by conference facility.
- 02. Shaded pedestrian Promenade extends through the site to link buildings and program spaces.
- 03. Amenity pavilions animate the Central Green with retail, food and beverage, and exhibition functions.
- 04. Active ground floor uses extend outdoors into patios around the Central Green.
- 05. The open Central Green area, framed by a solar shade canopy, provides a flexible platform for activity and exhibition.
- 06. Outdoor, multi-purpose service yards adjacent to high bay facilities increase the site's functionality.
- 07. Hangar Commons provides necessary environmental functions and a striking view of Hangar One.
- 08. Strategic vehicular entrance and parking provide efficient access and ensure a pedestrian-oriented district.



Illustrative Ground Floor Uses Diagram

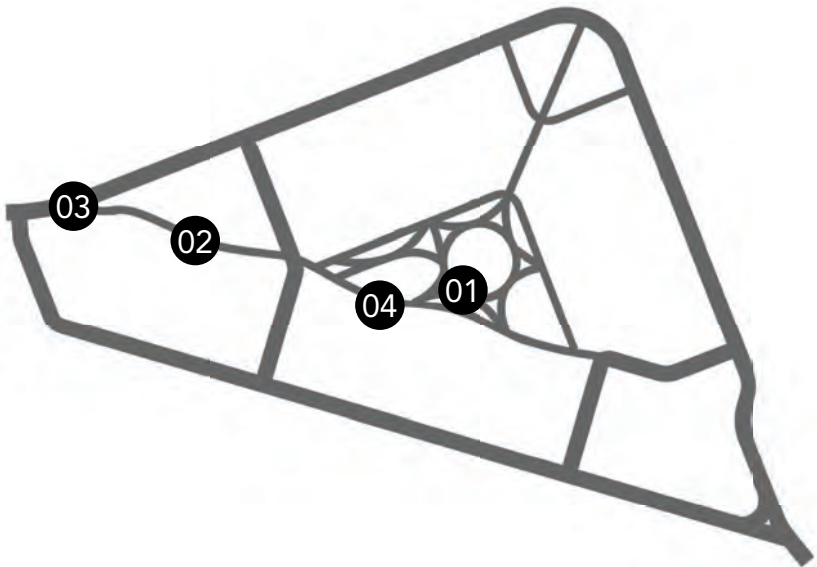
EXECUTIVE SUMMARY

THE PLACES

With the goal of fostering a collaborative "knowledge community" for advanced technological research and development, it is critical to note that state of the art offices and lab facilities alone cannot engender great research and promote the development of a strong collaborative culture. The setting in which cutting edge research and innovation takes place is as critical a component of a successful research community as the facilities themselves.

In this Master Plan, we outline a comprehensive vision, linking building, landscape, movement, environment, sustainability and larger social and intellectual missions into one. The Berkeley Space Center is much more than a research facility; it is a bustling hub of innovation, creativity, and inspiration. The design vision choreographs the environment for communal interaction, enhancing the possibility for new synergies and ideas and building a truly urban community.

As any research scientist can tell you, technological innovations rarely last more than a decade. Great public spaces and their impact though, can last a lifetime.



Public Spaces Key Map Diagram



Illustrative Renderings of Public Spaces

EXECUTIVE SUMMARY

BERKELEY SPACE CENTER'S CENTRAL GREEN



The Central Green and Solar Canopy at Berkeley Space Center with Hangar One beyond

EXECUTIVE SUMMARY

HANGAR VIEW AT THE CENTRAL GREEN



The Solar Canopy provides dappled shade over the walking path encircling the Central Green and opens up with views to Hangar One

EXECUTIVE SUMMARY

HANGAR VIEW AT THE CENTRAL GREEN



The Solar Canopy provides activation and interest at night with a programmable or interactive display

LAND USE

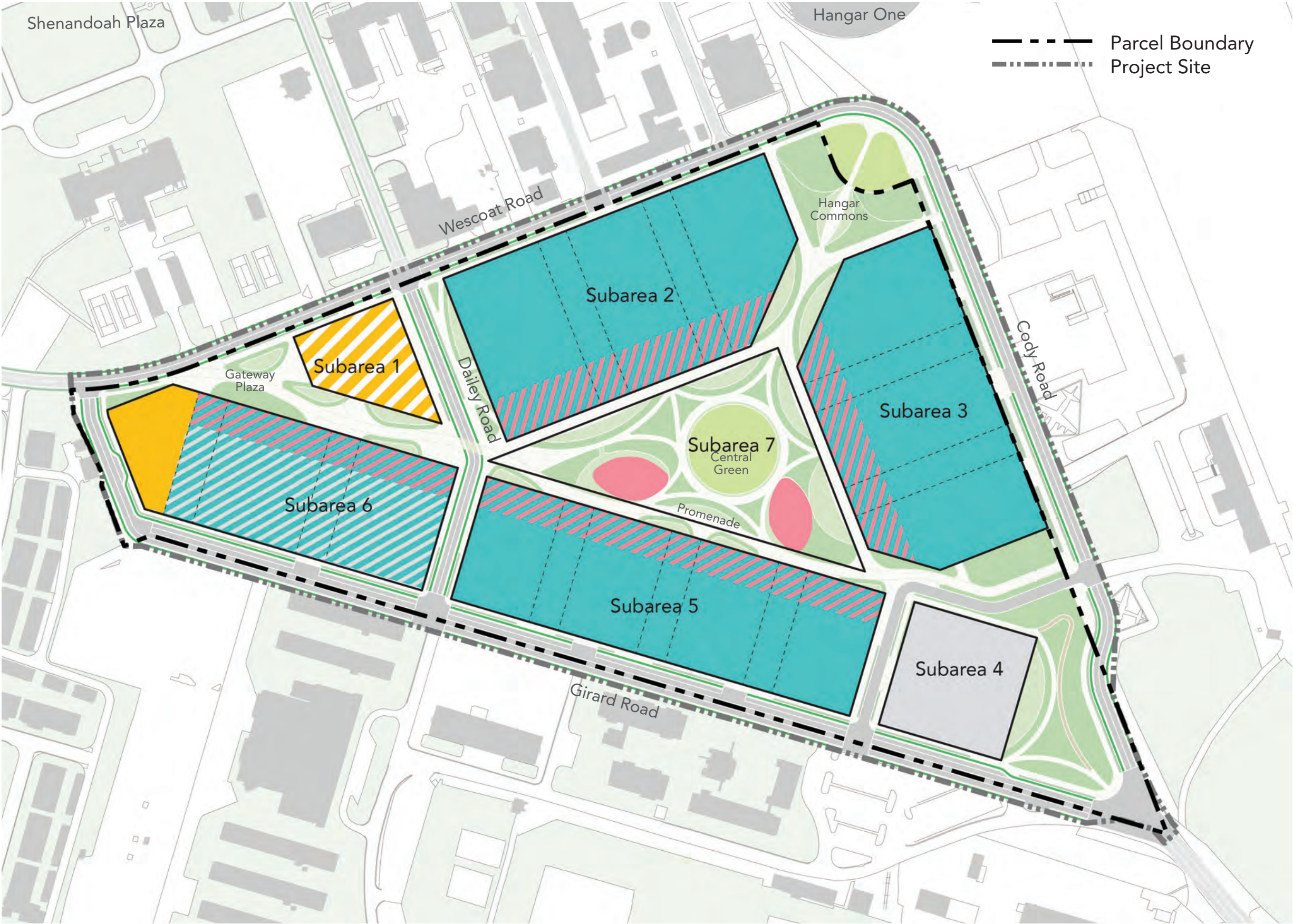
LAND USE

LAND USE

Research and Office Uses frame the Project Site, including along the north-western boundary with Shenandoah Plaza to create positive synergies. Active Uses are around the Central Green, with additional active uses located at the center to create a focal point for this large open space. Student /Faculty Housing is concentrated at the south-western corner of the Project Site.

LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking
- Open Space



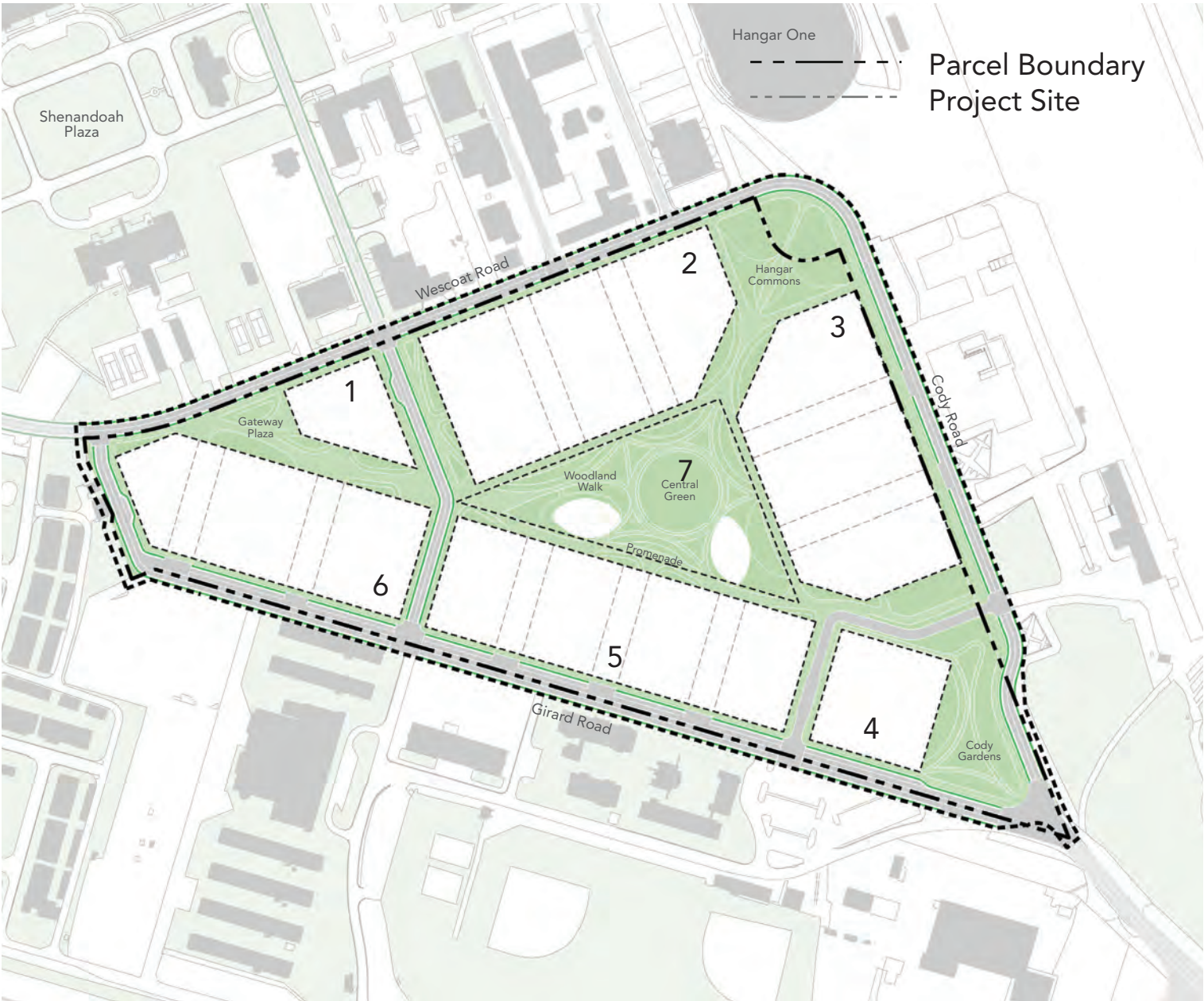
Conceptual Project Site Plan

LAND USE

PARCEL COVERAGE

Site Area	Acres*	Square Feet	%
Subarea Area	20.84	907,962	60%
Subareas 1-6 Coverage			100%
Subareas 7 Coverage			11%
Streets (Curb-Curb)	3.19	138,941	9%
Open Space	10.89	474,225	31%
Pervious Impervious Area	Acres*	Square Feet	%
Pervious Area			
Includes Landscaping, Vegetation, Open Space, Permeable Paving, Rooftop Landscaping	7.41	322,795	21%
Impervious Area			
Includes building footprints, surface parking, infrastructure	27.51	1,198,333	79%

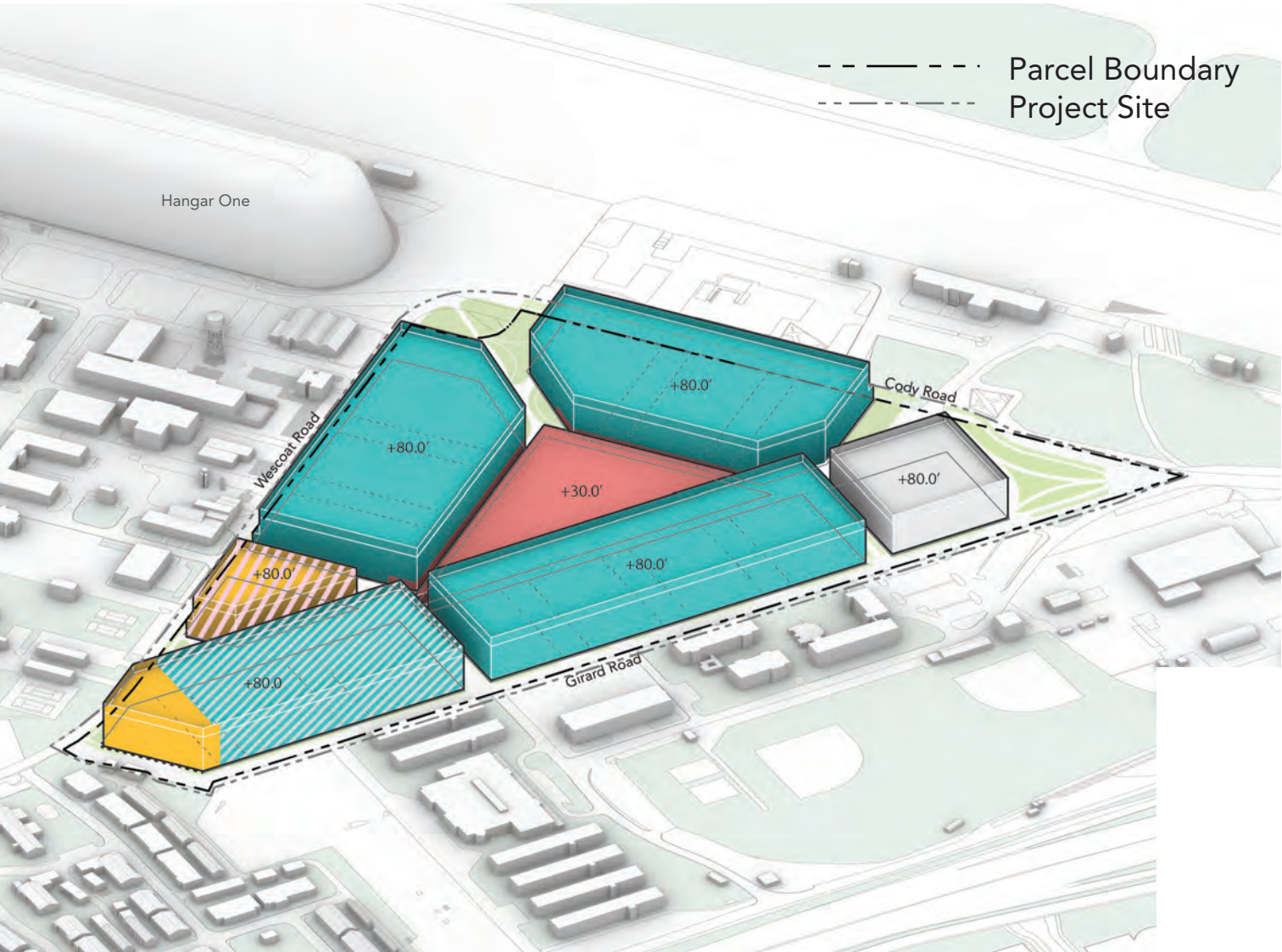
* 34.9 Acres used for Premise Calculations



Illustrative Project Site Plan

LAND USE

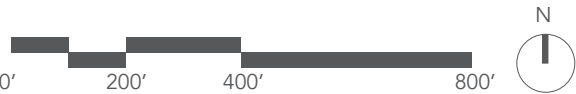
DEVELOPMENT PROGRAM



Illustrative Full Development in Project Site

LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking



PROPOSED PROJECT (BUILD ALTERNATIVE 1)

DEVELOPMENT PROGRAM	TOTAL Gross Floor Area	% of Program	Total Net New Employees	Guests / Residents
Existing Employees or Tenants on the Project Site			42	
Research and Office Uses	2,000,000	86%	5,798	
Office	350,000	15%	1,254	
Laboratory and R&D	1,390,000	60%	3,432	
Academic	260,000	11%	1111 employees + 177 students	
Conference Uses	25,000	1%	20	
Active Uses	90,000	4%	180	
Housing and Lodging	205,000	9%		563
Short-Term Lodging	75,000	3%		200
Student/Faculty Housing	130,000	6%		363
Parcel Buildable Area Total (Gross Square Feet)	2,320,000	100%	6,132	563

REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM	TOTAL GFA	% of Program	Total Net New Employees	Guests / Residents
Existing Employees or Tenants on the Project Site			42	
Research and Office Uses	1,080,000	77%	3,131	
Office	190,000	14%	681	
Laboratory and R&D	750,000	54%	1,852	
Academic	140,000	10%	598 employees + 95 students	
Conference Center	25,000	2%	20	
Active Uses	90,000	6%	180	
Housing and Lodging	205,000	15%		563
Short-Term Lodging	75,000	5%		200
Student/Faculty Housing	130,000	9%		363
Parcel Buildable Area Total (Gross Square Feet)	1,400,000	100%	3,384	563

LAND USE

DATA BY SUBAREA - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

DEVELOPMENT PROGRAM	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	TOTAL Gross Floor Area	% of Program	Total Net New Employees	Guests / Residents
Existing Employees or Tenants on the Project Site										42	
Research and Office Uses	0	680,000	600,000	0	550,000	170,000	0	2,000,000	86%	5,798	
Office	0	120,000	100,000	0	100,000	30,000	0	350,000	15%	1,254	
Laboratory and R&D	0	470,000	420,000	0	380,000	120,000	0	1,390,000	60%	3,432	
Academic	0	90,000	80,000	0	70,000	20,000	0	260,000	11%	1111 employees + 177 students	
Conference Uses	25,000	0	0	0	0	0	0	25,000	1%	20	
Active Uses	5,000	15,000	15,000	0	30,000	10,000	15,000	90,000	4%	180	
Housing and Lodging								205,000	9%		563
Short-Term Lodging	75,000	0	0	0	0	0	0	75,000	3%		200
Student/Faculty Housing	0	0	0	0	0	130,000	0	130,000	6%		363
Parcel Buildable Area Total (Gross Square Feet)	105,000	695,000	615,000	0	580,000	310,000	15,000	2,320,000	100%	6,132	563
Parking GSF	0	0	0	555,000	0	525,000	0	1,080,000			

DATA	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	DATA (BY SITE)
Parcel Site Area (AC)	0.9	5.1	4.6	1.5	4.7	3.7	0.3	20.8
Parcel Site Area (SF)	38,651	221,330	202,258	63,504	206,640	160,579	15,000	907,962
Max. Height by Parcel (ft)	80'	80'	80'	80'	80'	80'	30'	80'
DU/AC by Parcel	113	0	0	0	0	39	0	7.02

POPULATION	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Total Net New Employees	Guests / Residents	Ratio (BY SITE)
Existing Employees or Tenants on the Project Site								42		
Research and Office Uses (Employees)	0	1,975	1,737	0	1,596	489	0	5,797		
Office (Employees)	0	430	358	0	358	108	0	1,254		
Laboratory and R&D (Employees)	0	1,160	1,037	0	938	296	0	3,432		
Academic (Employees)	0	385	342	0	299	85	0	1,111		
Conference Center (Employees)	20	0	0	0	0	0	0	20		
Active Use (Employees)	10	30	30	0	60	20	30	180		
Total Employees (Jobs)	30	2,005	1,767	0	1,656	509	30	5,997		
Total Academic (Students)	0	61	55	0	48	14	0	177		
Total Net New Employees and Students	30	2,066	1,822	0	1,704	523	30	6,132		
Short-Term Lodging (Residents)	200	0	0	0	0	0	0		200	
Student/Faculty Housing (Residents)	0	0	0	0	0	363	0		363	
Total Residents	200	0	0	0	0	363	0		563.13	
Open Space (Acres) / 1,000 Employees										1.82
Open Space (Acres) / 1,000 Residents										19.33
Total Population	460	4,132	3,644	0	3,407	1,772	60	6,132	563	

LAND USE

NARRATIVES: RESEARCH AND OFFICE USES

Intended to promote collaborative research and development activities among NASA ARC, UC Berkeley, private industry, and non-profit organizations.

OFFICE

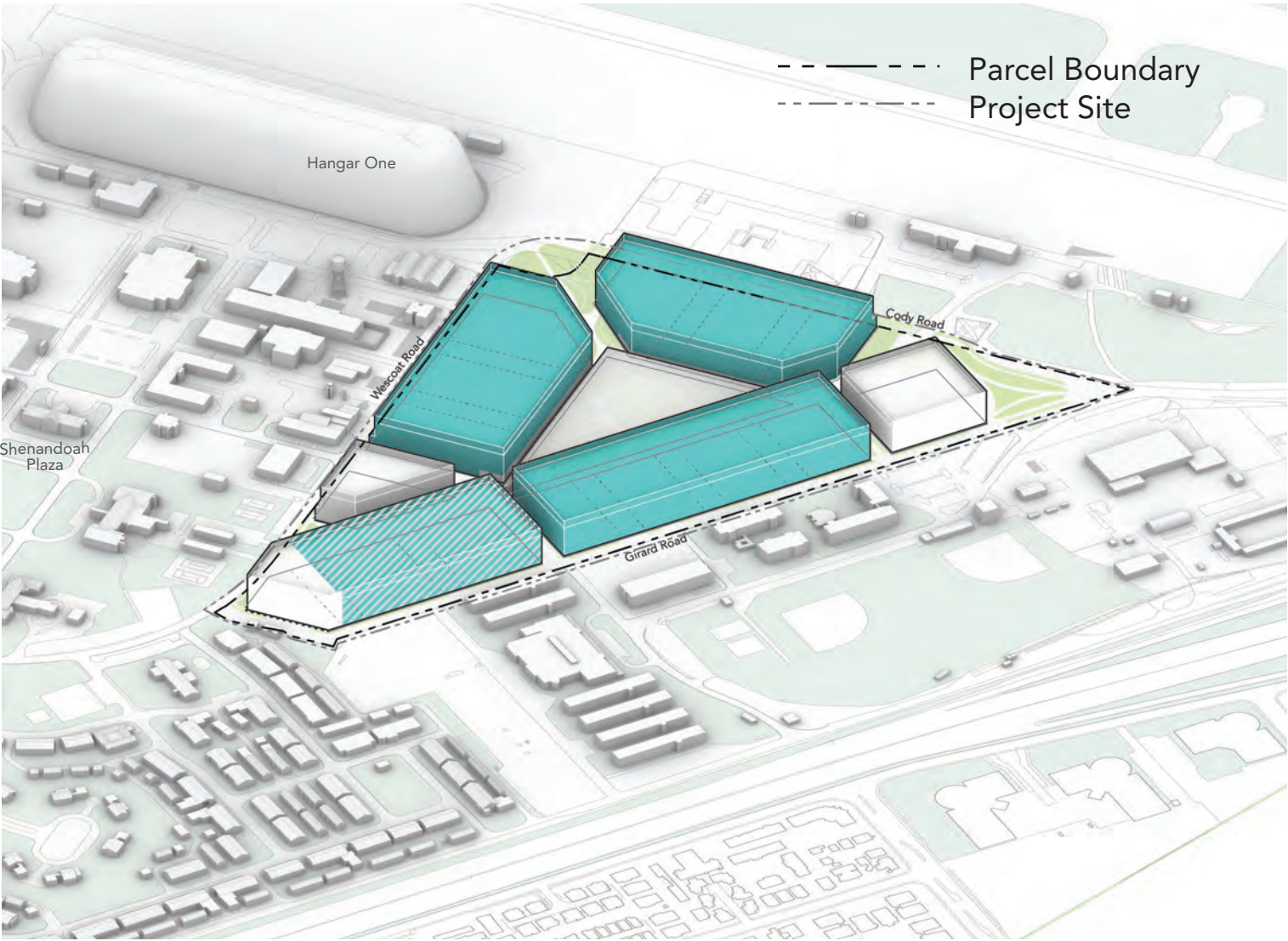
Corporate and general offices that include multi-tenant spaces for research and technology, administrative and professional office use.

LABORATORY AND RESEARCH & DEVELOPMENT (R&D)

Specific types of businesses within this use category can vary significantly. Tenants are likely to be engaged in the pursuit of knowledge (advanced research and process design) or creation of products (prototyping, testing and development) in science, engineering and technology-intensive fields including but not limited to electric vehicles (manned and unmanned), telecommunications, remote sensing, space missions, defense and military, biology and physics, bioengineering and aerosciences. These activities are most likely to be aligned with on-going NASA and UC Berkeley research programs in support of scientific missions. Functional spaces may include labs, supportive administrative offices, meeting rooms and light manufacturing or fabrication spaces as part of the overall research and development use. Private lab and R&D activities will be conducted within high security zones due to for any number of reasons, up to and including air quality and/or other hazard containment, intellectual property protection, and property security, and will not be accessible to the general public.

ACADEMIC

Educational space to be shared by different educational users and utilized for testing, analysis, instruction research or other academic pursuits.



Illustrative Research and Office Uses in the Project Site

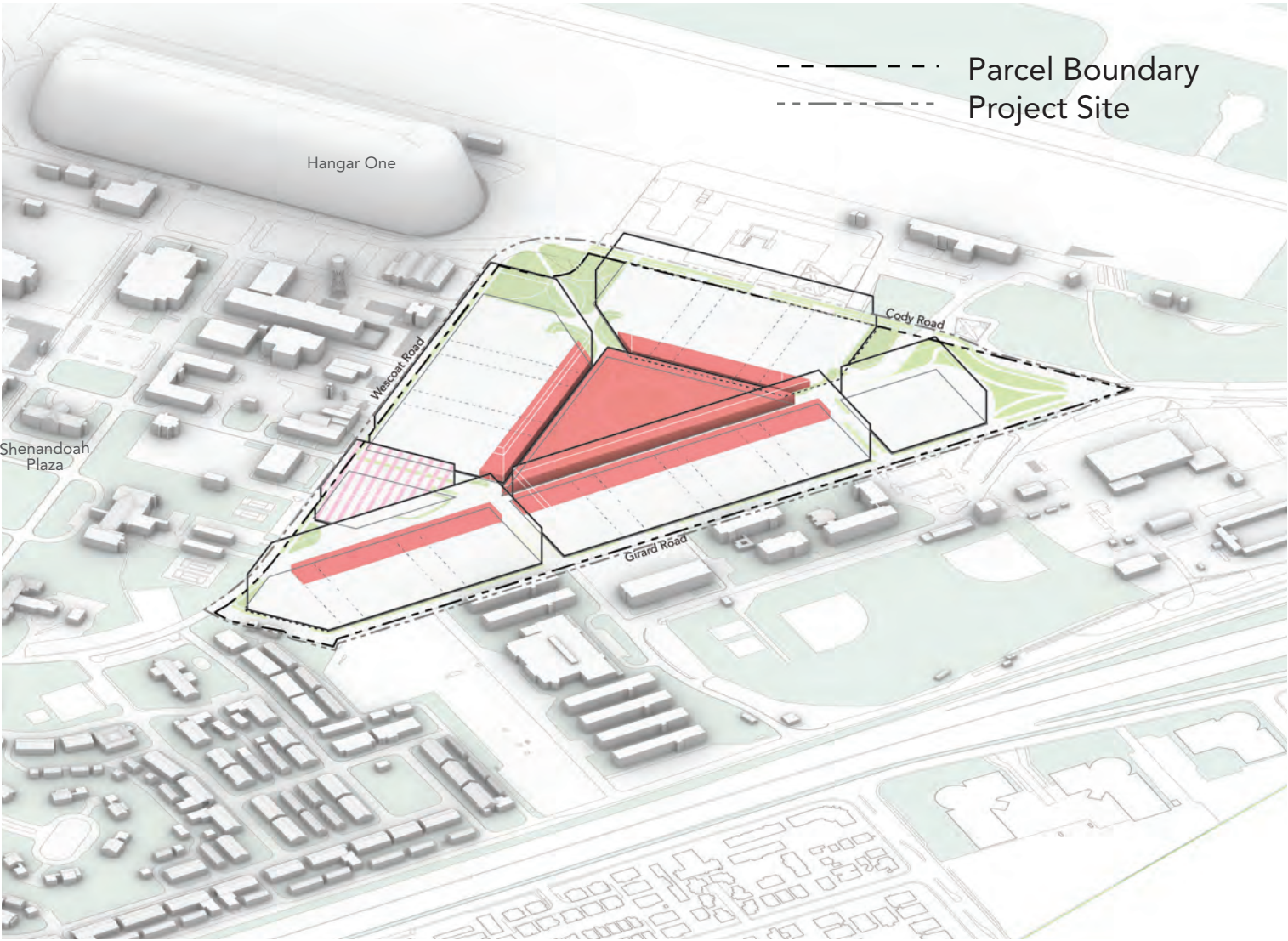
NARRATIVES: DISTRICT SUPPORTING USES

CONFERENCE CENTER

Temporary meeting space, shared by UC Berkeley, and other affiliated parties, other public agencies, private industry and non-profit organizations. Number of rooms and amount of space dedicated to meeting and presentation varies. The Conference Center could include active uses such as restaurants and a gym.

ACTIVE USES

These ground floor Active Uses are occupied spaces that are accessible by pedestrians via sidewalk or other site pathway. Active Uses could include display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, gym or other amenity facilities, shared maker spaces and fabrication workshops, co-working spaces, restaurants, community-serving retail, personal services, along with retail uses. The allocated square footage of active uses can occur anywhere in Subarea 7.



Illustrative Active Uses in the Site

NARRATIVES: HOUSING AND LODGING

Intended to provide convenient academic year and short-term housing options to primarily support faculty, students and visiting researchers.

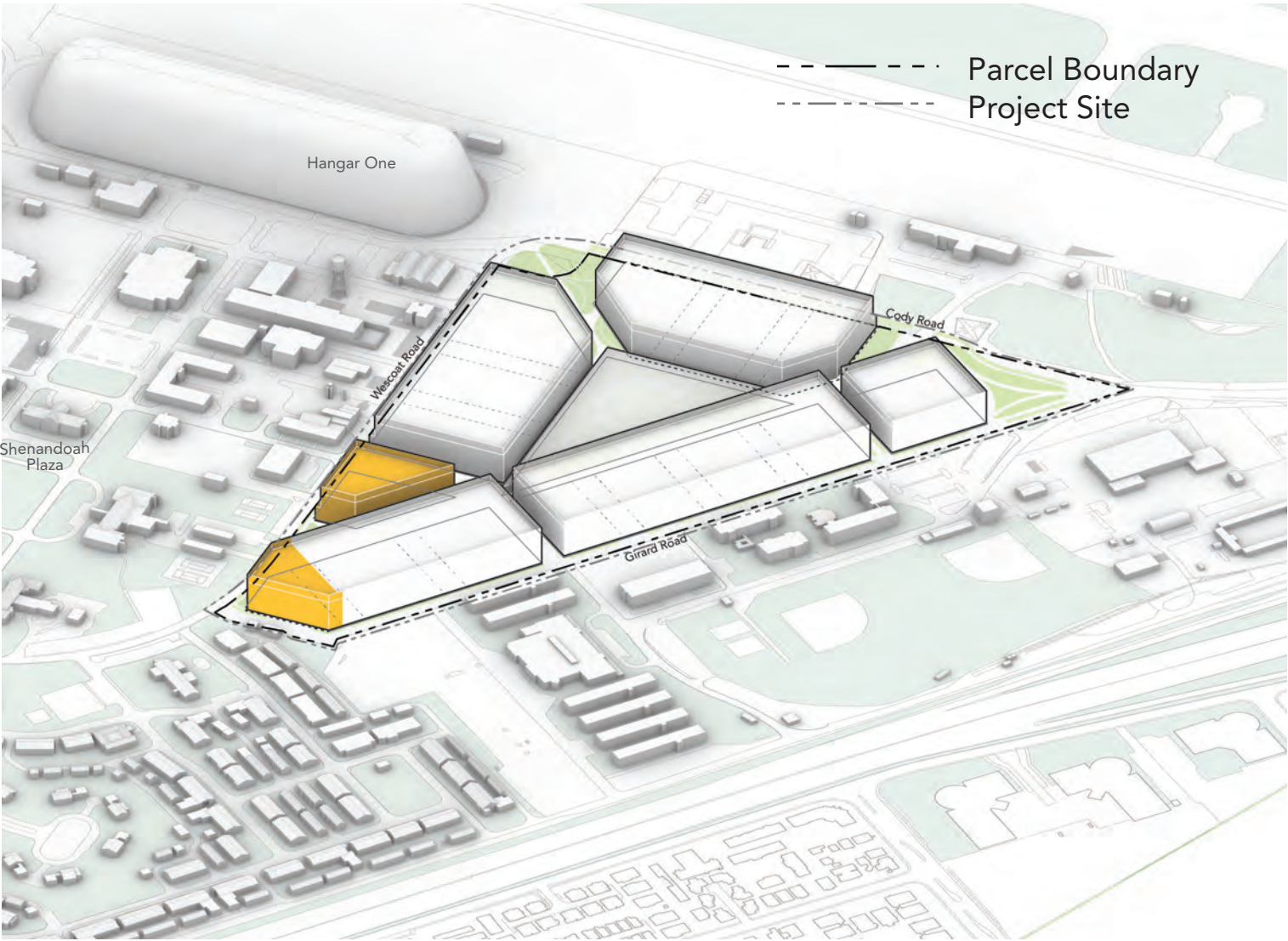
SHORT-TERM LODGING

Short-Term Lodging rented on a short-term basis as temporary lodging for staff, researchers, academics, tenants, and their families. 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 facility includes studio suite-style guest rooms, with a kitchen, ensuite bathroom, and small living area. Common area program includes a lobby, laundry, and support / back-of-house space, including management offices. This program would not share the amenities and active uses within the Conference Uses and with other users of the site, including restaurant and gym/fitness center uses. However, parking would be shared with the conference facility in a shared parking garage.

STUDENT / FACULTY HOUSING

Student / Faculty Housing rented on an academic year basis to UC Berkeley students, faculty, as well as on-site federal employees and student interns on a short-term basis. The Student/Faculty Housing would include a mix of studio, one-bedroom, and two-bedroom apartments, as well as amenities, suitable primarily for graduate students, and faculty. Amenity space includes lobby, laundry, mail room, bike storage room, office, meeting space, game rooms, theaters, dog wash, gym and support / back-of-the house space. Additional amenities, like fitness centers, shared entertainment space with shared kitchen, business center, and leasing/administrative office space could be provided as part of the Student/Faculty Housing, and would not be shared with other campus facilities. Parking is located in the adjacent parking garage. Outdoor private and common outdoor open space would be provided on the ground and on decks, balconies, porches and roofs podium level, roof, or balconies, or a combination thereof. Nearby jurisdictions (San Francisco, Mountain View, and Sunnyvale) require private open space in a range from 40 square feet per unit to 80 square feet per unit; the project is recommended to include approximately 60 square feet per unit of common open space, which could include areas on the ground and on decks, balconies, porches and roofs that are safe and suitably surfaced and screened.



Illustrative Housing and Lodging Uses in Project Site

LAND USE

DATA BY SUBAREA - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	TOTAL GFA	% of Program	Total Net New Employees	Guests / Residents
Existing Employees or Tenants on the Project Site										42	
Research and Office Uses	0	340,000	310,000	0	310,000	120,000	0	1,080,000	77%	3,131	
Office	0	60,000	55,000	0	55,000	20,000	0	190,000	14%	681	
Laboratory and R&D	0	235,000	215,000	0	215,000	85,000	0	750,000	54%	1,852	
Academic	0	45,000	40,000	0	40,000	15,000	0	140,000	10%	598 employees + 95 students	
Conference Center	25,000	0	0	0	0	0	0	25,000	2%	20	
Active Uses	5,000	15,000	15,000	0	30,000	10,000	15,000	90,000	6%	180	
Housing and Lodging								205,000	15%		563
Short-Term Lodging	75,000	0	0	0	0	0	0	75,000	5%		200
Student/Faculty Housing	0	0	0	0	0	130,000	0	130,000	9%		363
Parcel Buildable Area Total (Gross Square Feet)	105,000	355,000	325,000	0	340,000	260,000	15,000	1,400,000	100%	3,384	563
Parking GSF	0	0	0	555,000	0	525,000	0				

DATA	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	DATA (BY SITE)
Parcel Site Area (AC)	0.9	5.1	4.6	1.5	4.7	3.7	0.3	20.8
Parcel Site Area (SF)	38,651	221,330	202,258	63,504	206,640	160,579	15,000	907,962
Max. Height by Parcel (ft)	80'	80'	80'	80'	80'	80'	30'	80'
DU/AC by Parcel	114	0	0	0	0	39	0	7.06

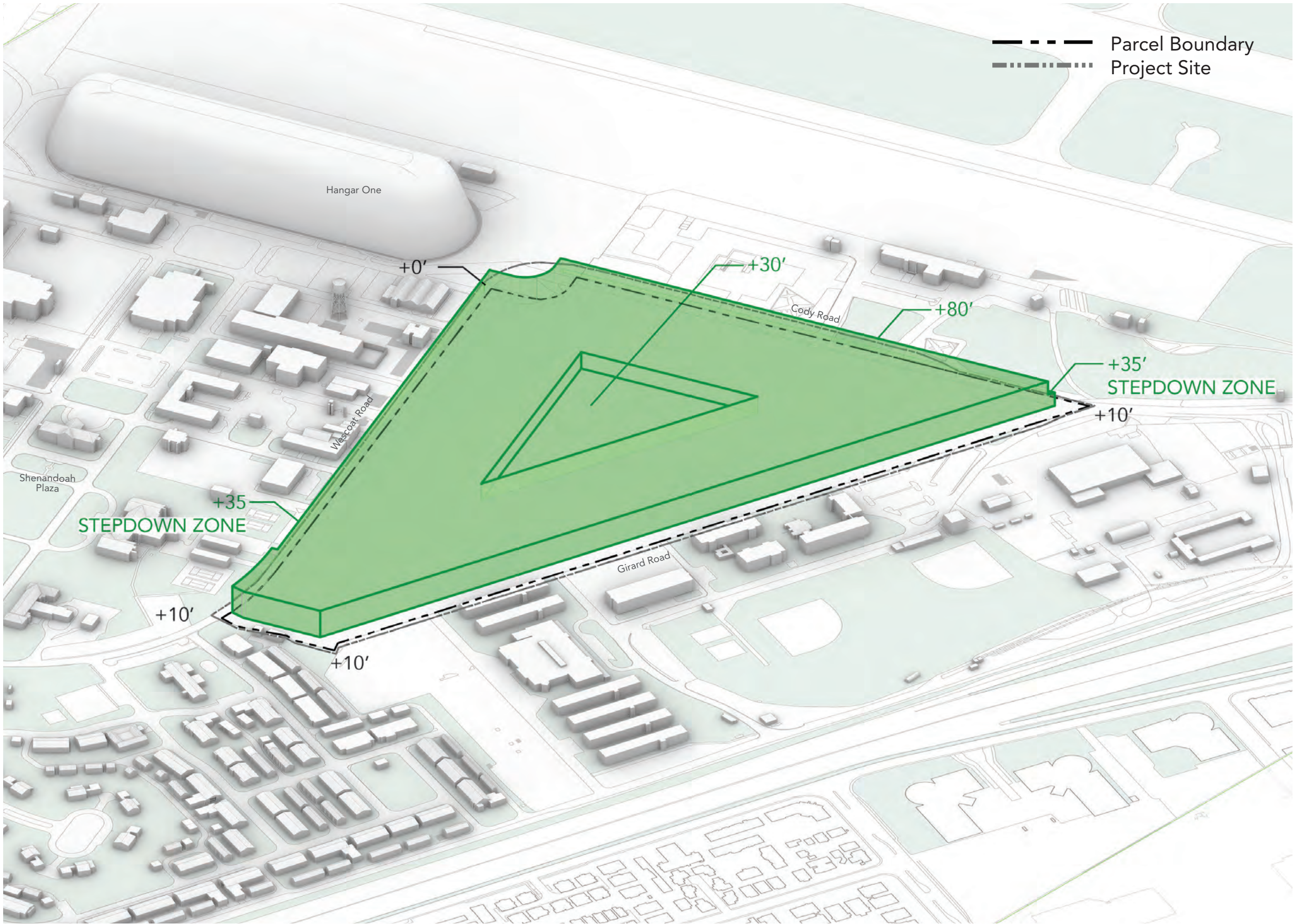
POPULATION	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Total Net New Employees	Guests / Residents	Ratio (BY SITE)
Existing Employees or Tenants on the Project Site								42		
Research and Office Uses (Employees)	0	988	899	0	899	346	0	3,131		
Office (Employees)	0	215	197	0	197	72	0	681		
Lab and R&D (Employees)	0	580	531	0	531	210	0	1,852		
Academic (Employees)	0	192	171	0	171	64	0	598		
Conference Center (Employees)	20	0	0	0	0	0	0	20		
Active Use (Employees)	10	30	30	0	60	20	30	180		
Total Employees (Jobs)	30	1,018	929	0	959	366	30	3,331		
Total Academic (Students)	0	31	27	0	27	10	0	95		
Total Net New Employees and Students	30	1,048	956	0	986	376	30	3,426		
Short-Term Lodging (Residents)	200	0	0	0	0	0	0		200	
Student/Faculty Housing (Residents)	0	0	0	0	0	363	0		363	
Total Residents	200	0	0	0	0	363	0		563	
Open Space (AC) / 1,000 Employees										3.27
Open Space (AC) / 1,000 Residents										19.33
Total Population	460	2,097	1,913	0	1,973	1,478	60	3,384	563	

LAND USE
DEVELOPMENT
ENVELOPE

LAND USE

DEVELOPABLE ENVELOPE

The Project Site's maximum development envelope is set at 80 feet in height. The stepdown zones along Wescoat Road and Cody Road are intended to relate to the historic fabric of Shenandoah Plaza and open up view corridors to Hangar One.

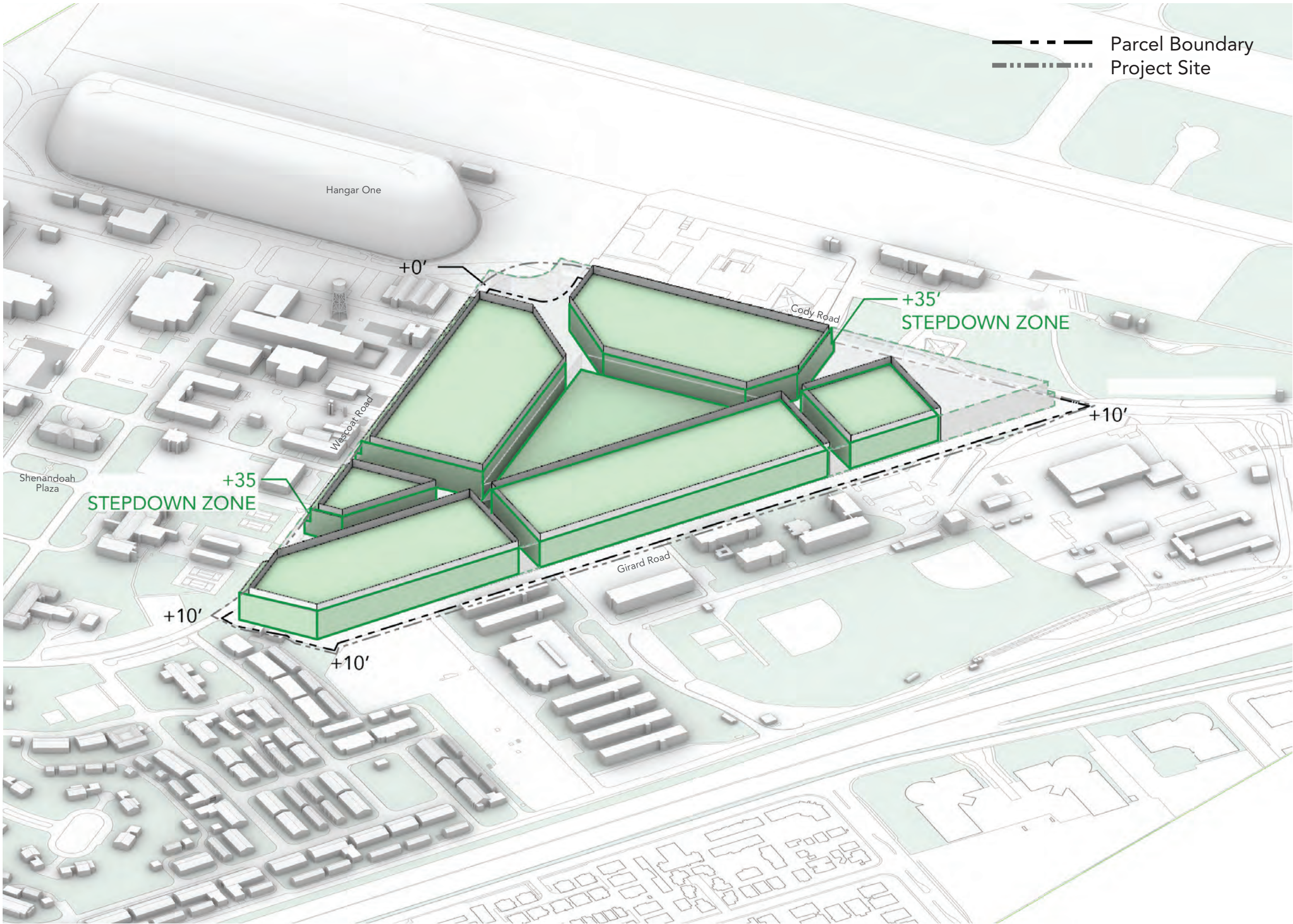


Illustrative Maximum Development Parameters of Entire Site

LAND USE

BUILDABLE PARCELS

Illustrated here are each buildable parcel's maximum developable envelope set within the overall developable envelope of the project. Each Subarea allows for flexibility within the white mass shown to form architectural massing.



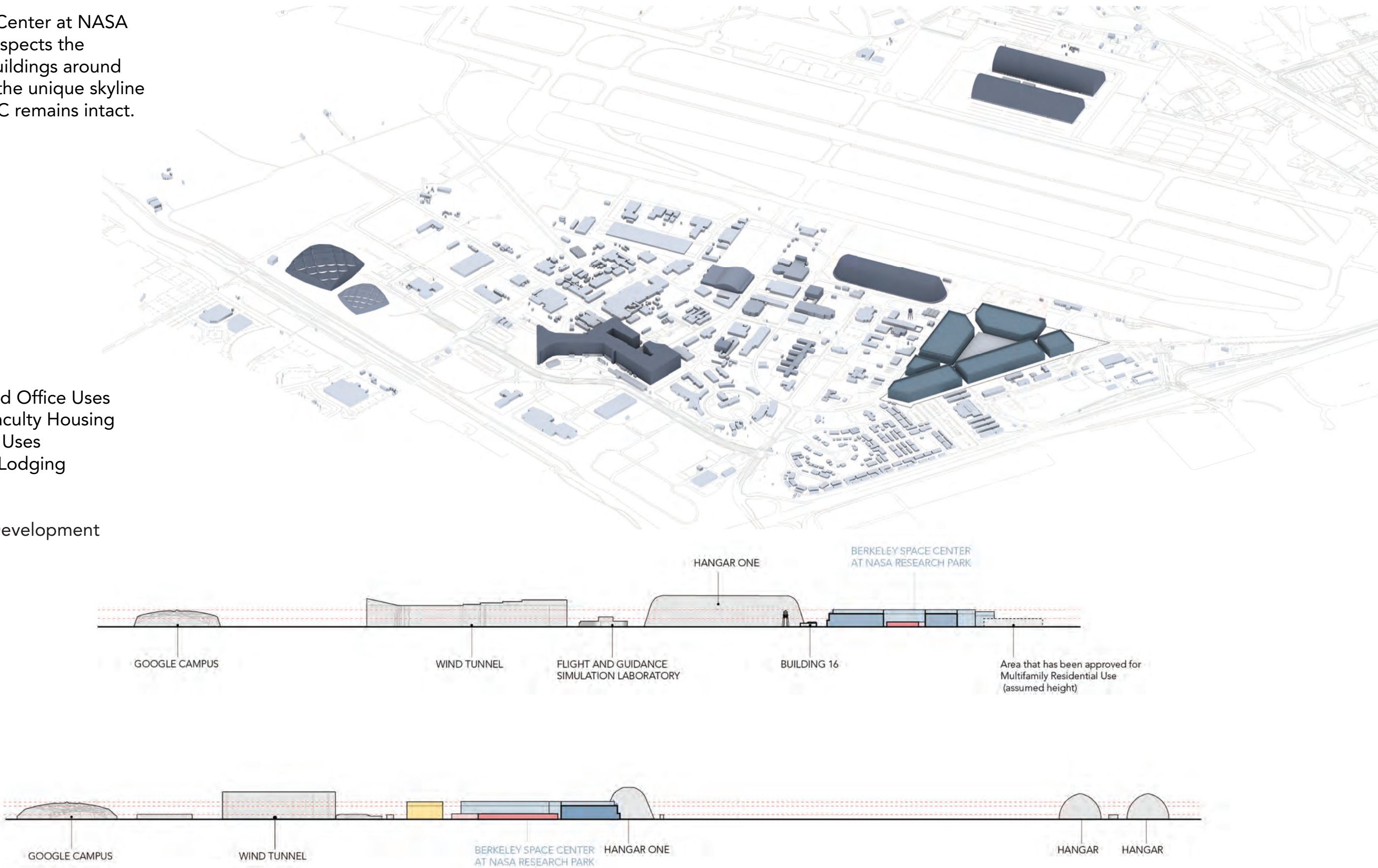
Conceptual Maximum Development Parameters of Each Subarea

LAND USE

RESPECTING CONTEXT BUILDING HEIGHTS

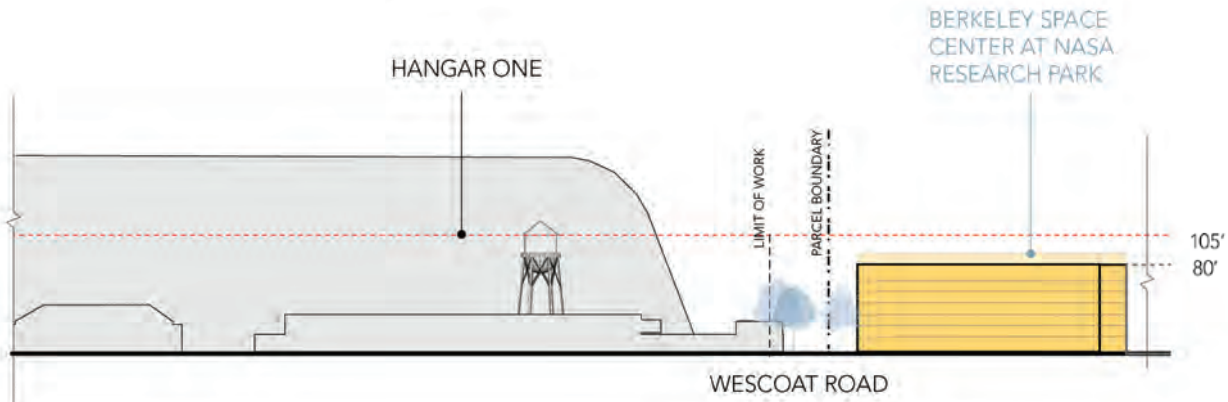
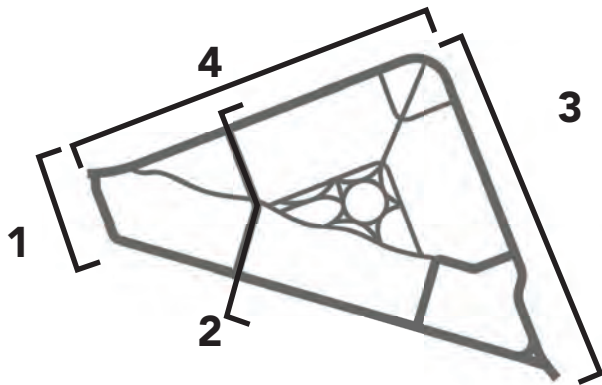
Berkeley Space Center at NASA Research Park respects the heights of the buildings around the site, so that the unique skyline of the NASA ARC remains intact.

- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters

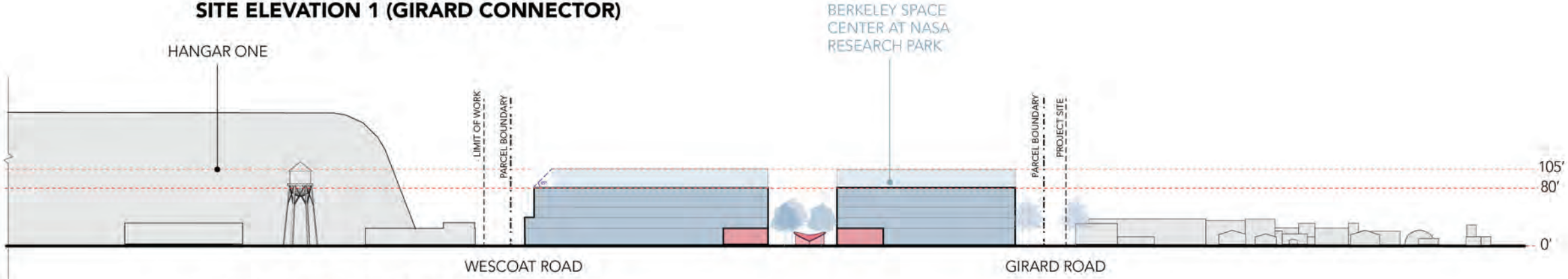


LAND USE

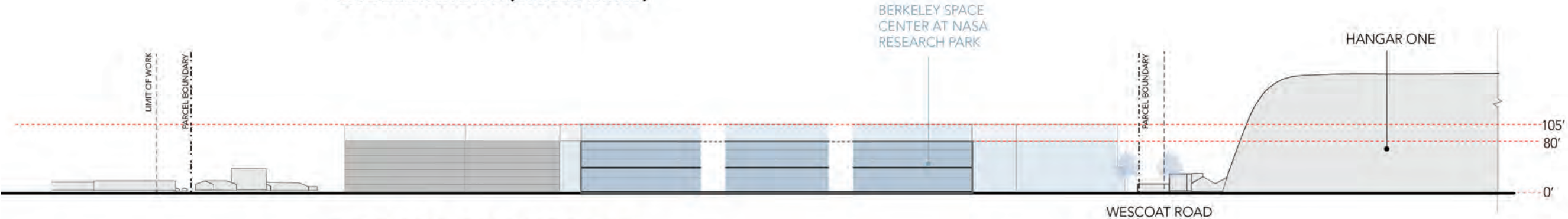
DISTRICT ELEVATIONS



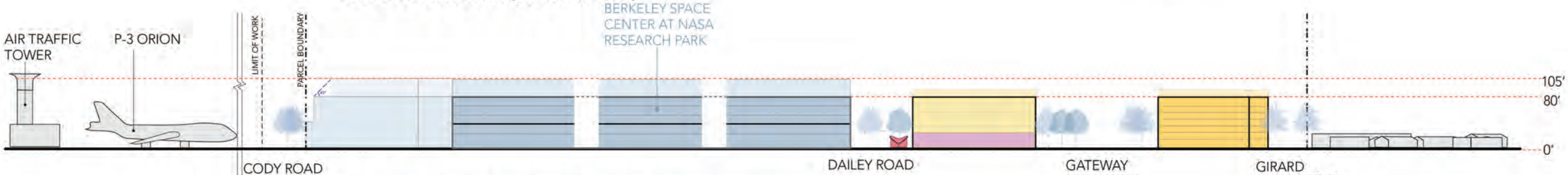
SITE ELEVATION 1 (GIRARD CONNECTOR)



SITE ELEVATION 2 (DAILEY ROAD)



SITE ELEVATION 3 (CODY ROAD)



SITE ELEVATION 4 (WESCOAT ROAD)

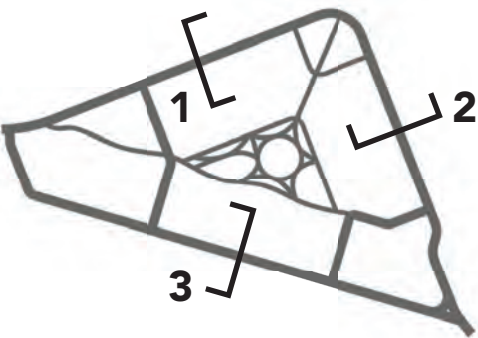
- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters

LAND USE

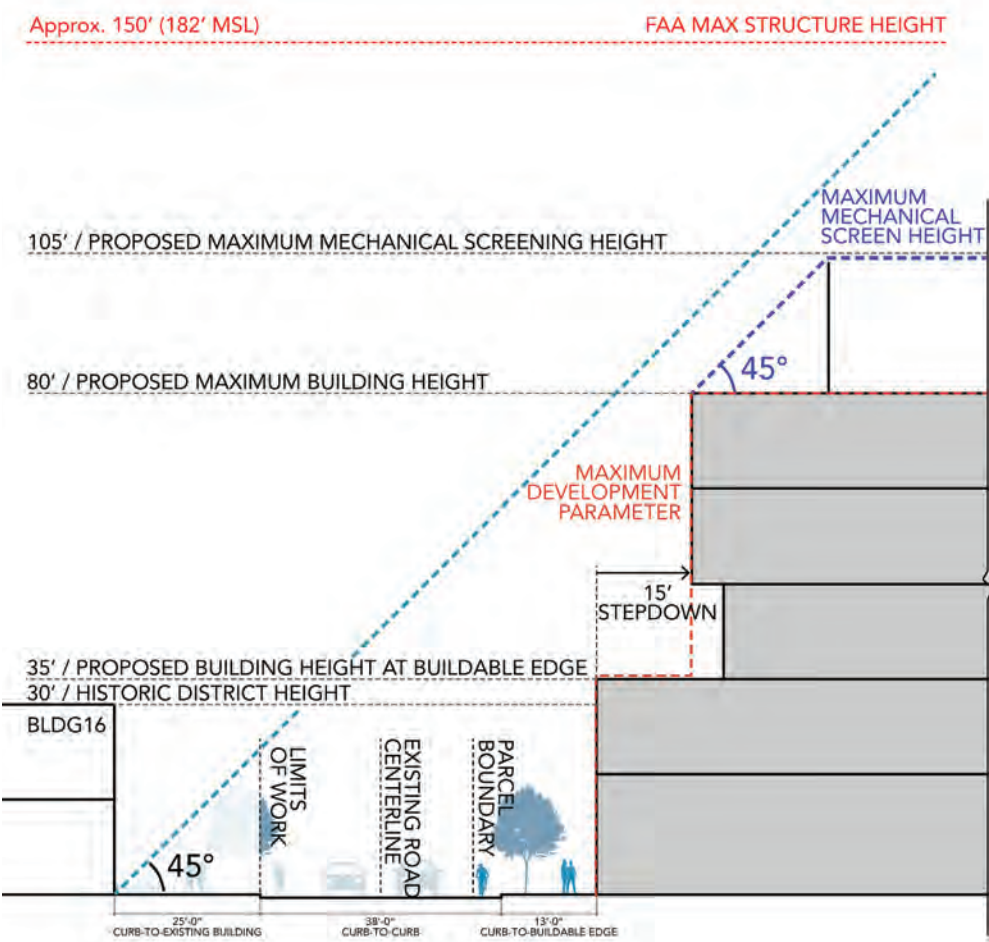
DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

PROPOSED PROJECT (BUILD ALTERNATIVE 1)

The maximum development parameters has been studied in terms of height, setbacks, and stepbacks across the site to ensure compliance with FAA requirements while also respecting and complementing the existing historic scale and view corridors. Overall maximum building heights are well below FAA restrictions.

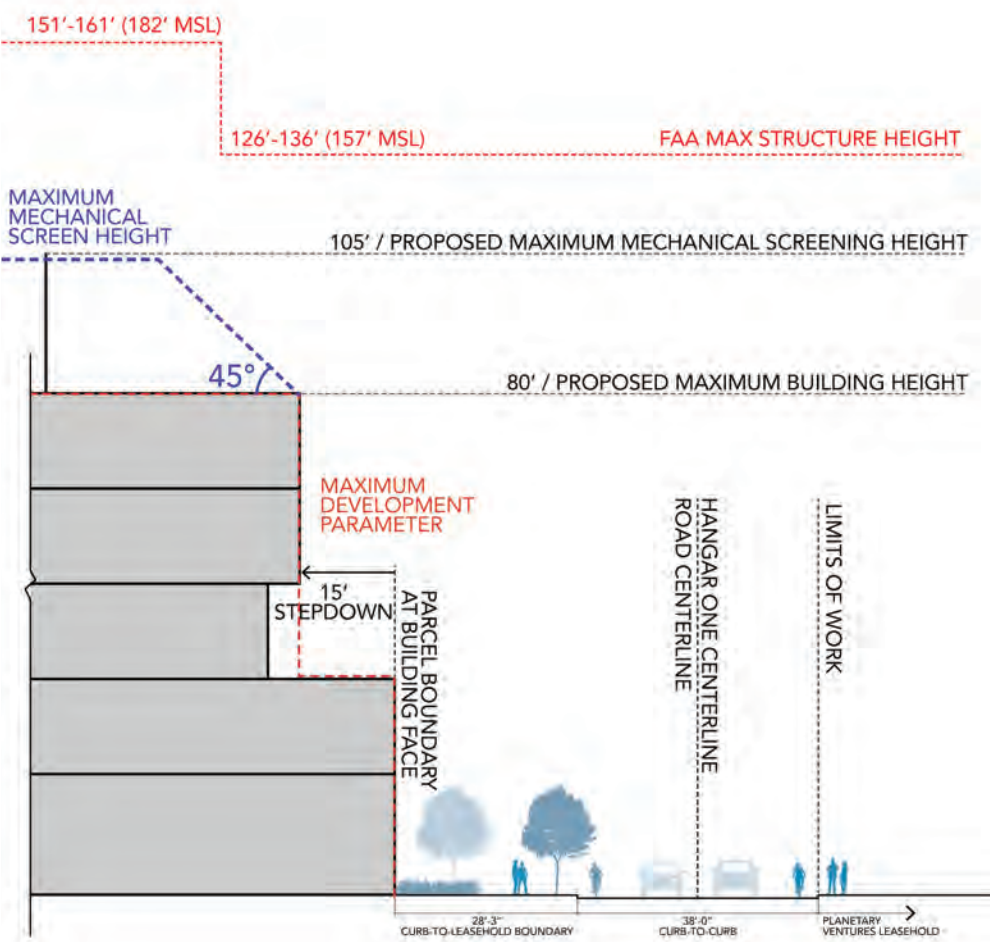


1. WESCOAT ROAD



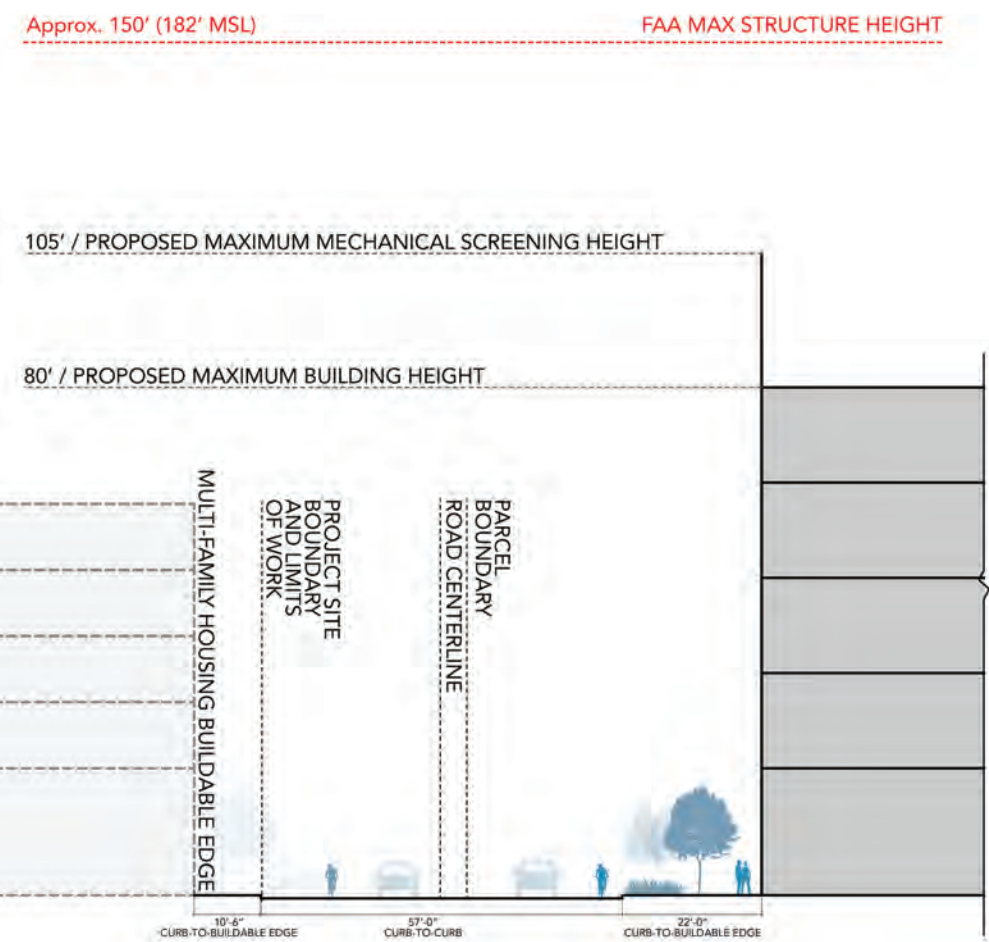
Wescoat Road is the threshold between the project and historic Shenandoah Plaza. The project defines a stepback zone to create a two story scale along the base of the buildings that relates directly to the scale of the buildings across the street.

2. CODY ROAD



Cody Road has been realigned to be on axis with Hangar One, according to the 2001 NASA Research Park Design Guide. It serves as a primary visual corridor to Hangar One from the south-eastern entrance and separates the project and the airfield. The two story stepback zone continues from Wescoat Road around to Cody Road to maintain a cohesive scale along these two primary roads, while also serving to further open the view corridor to Hangar One.

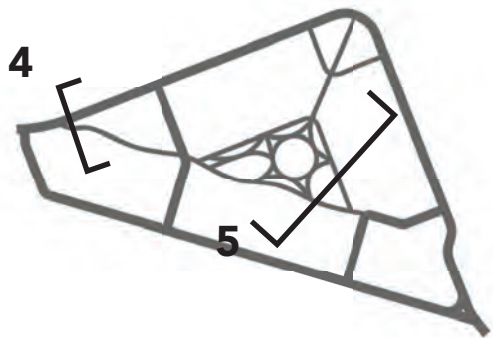
3. GIRARD ROAD



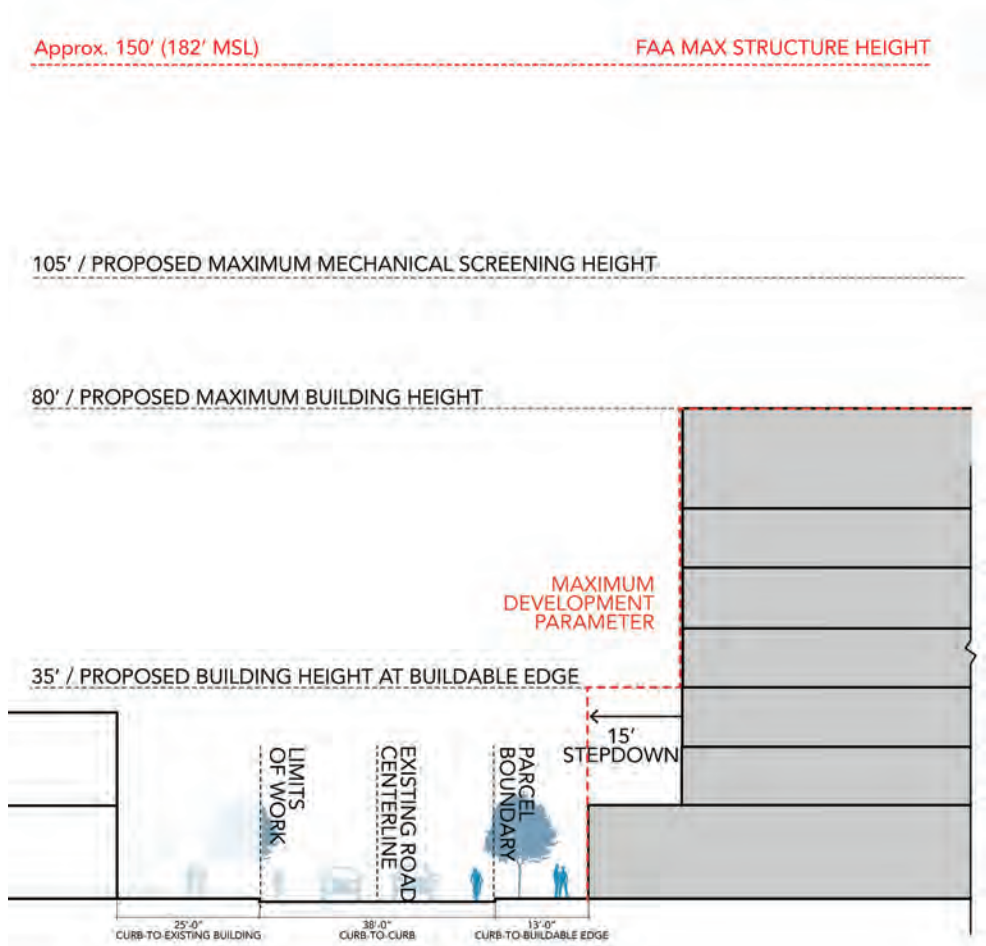
Along Girard Road buildable sites sit 22 feet back from the roadway, allowing for loading zones and generous planted bulbout zones. The generous right-of-way between the two proposed developments alleviates any need to prescribe stepbacks.

LAND USE

DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

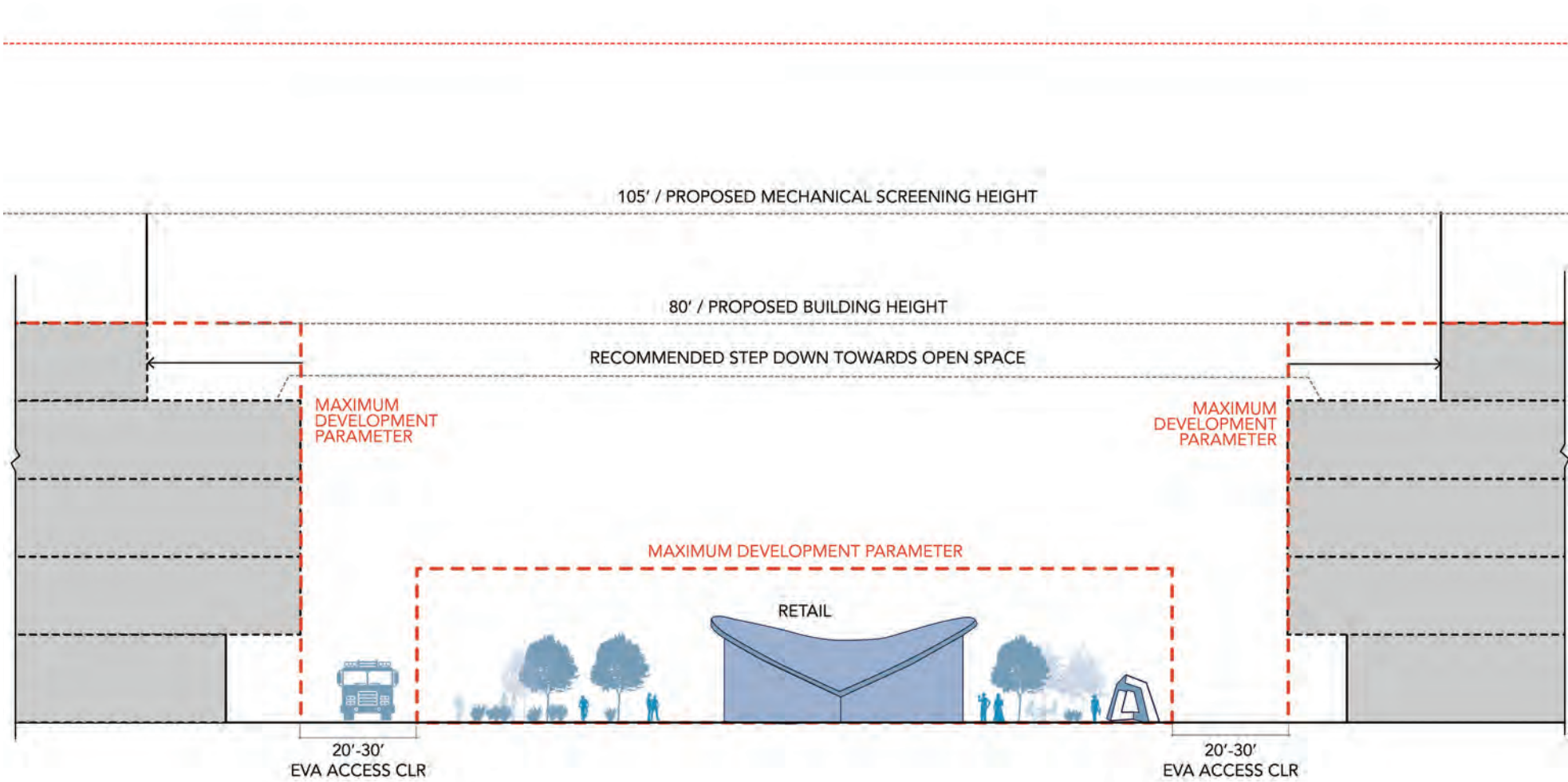


4. SECTION THROUGH RESIDENTIAL AT BLOCK 6



At the western corner of the project site where Wescoat Road begins to turn toward Shenandoah Plaza, our parcel boundary is held back in line with the rest of the frontage along Wescoat Road toward Hangar One. This opens up the view corridors at that arrival point, and given the wider view corridor, the residential development is allowed to build up to the parcel line with no stepback condition.

5. SECTION THROUGH CENTRAL GREEN



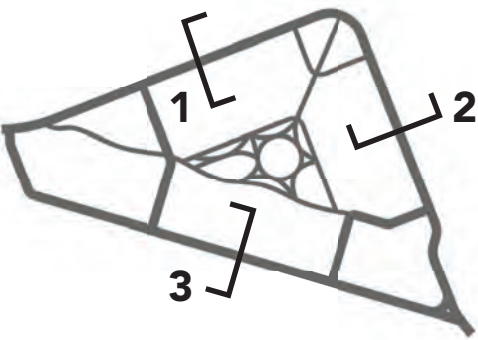
Along the Central Green, buildings front the open space, stepbacks are recommended to provide daylight access and soften the edge, providing a pedestrian scaled environment. The Central Green provides a space for active use pavilions, which are capped at 30 feet in height and 20 percent site coverage.

LAND USE

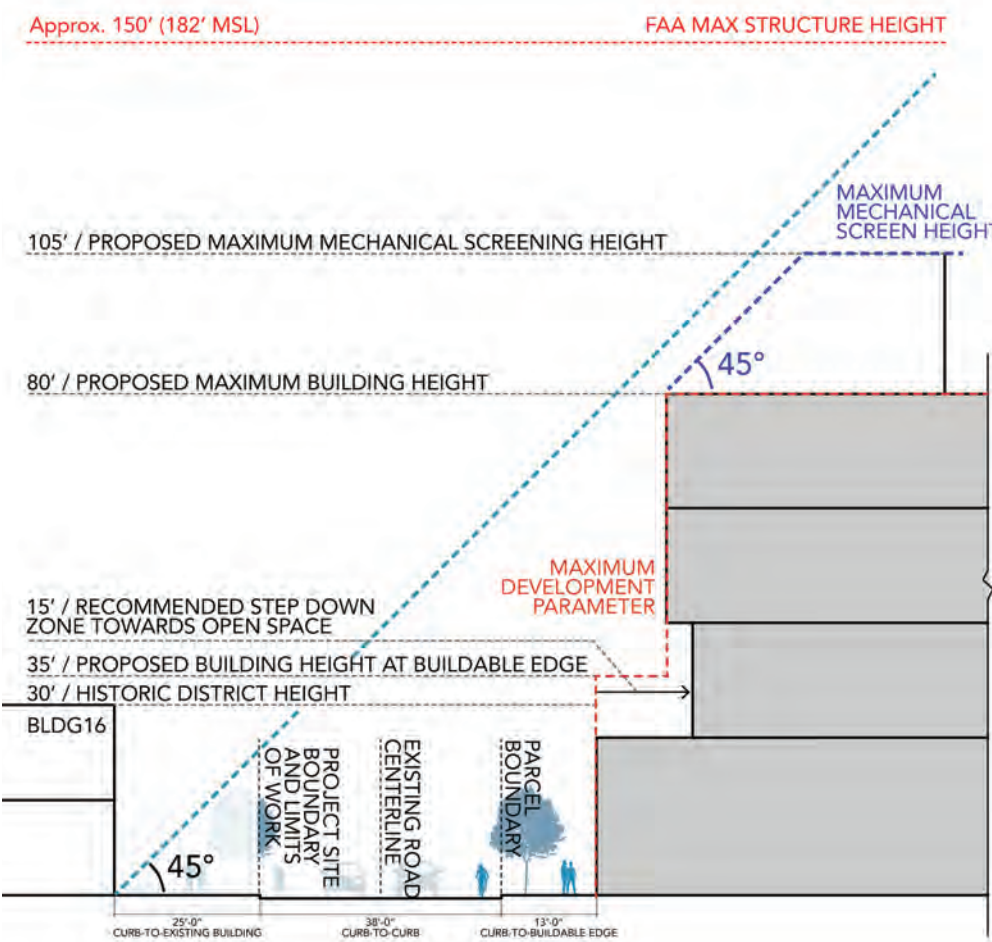
DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

The maximum development parameters has been studied in terms of height, setbacks, and stepbacks across the site to ensure compliance with FAA requirements while also respecting and complementing the existing historic scale and view corridors. Overall maximum building heights are well below FAA restrictions.

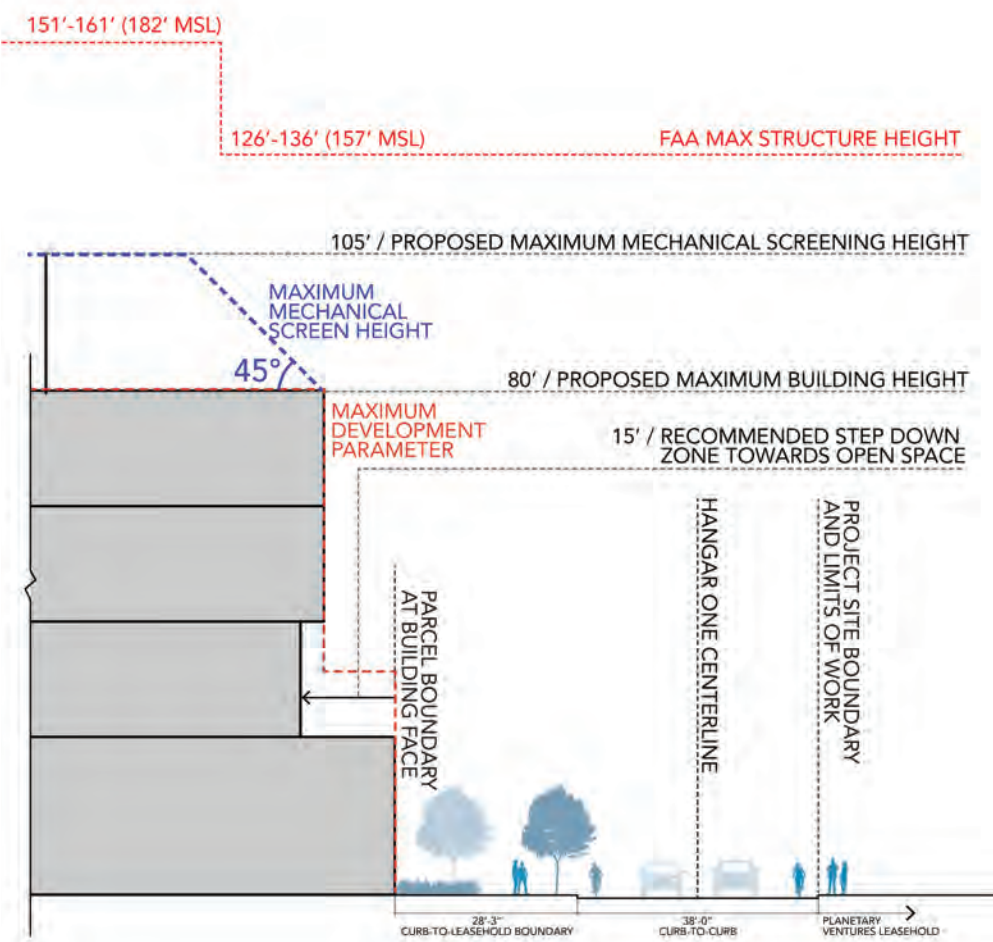


1. WESCOAT ROAD



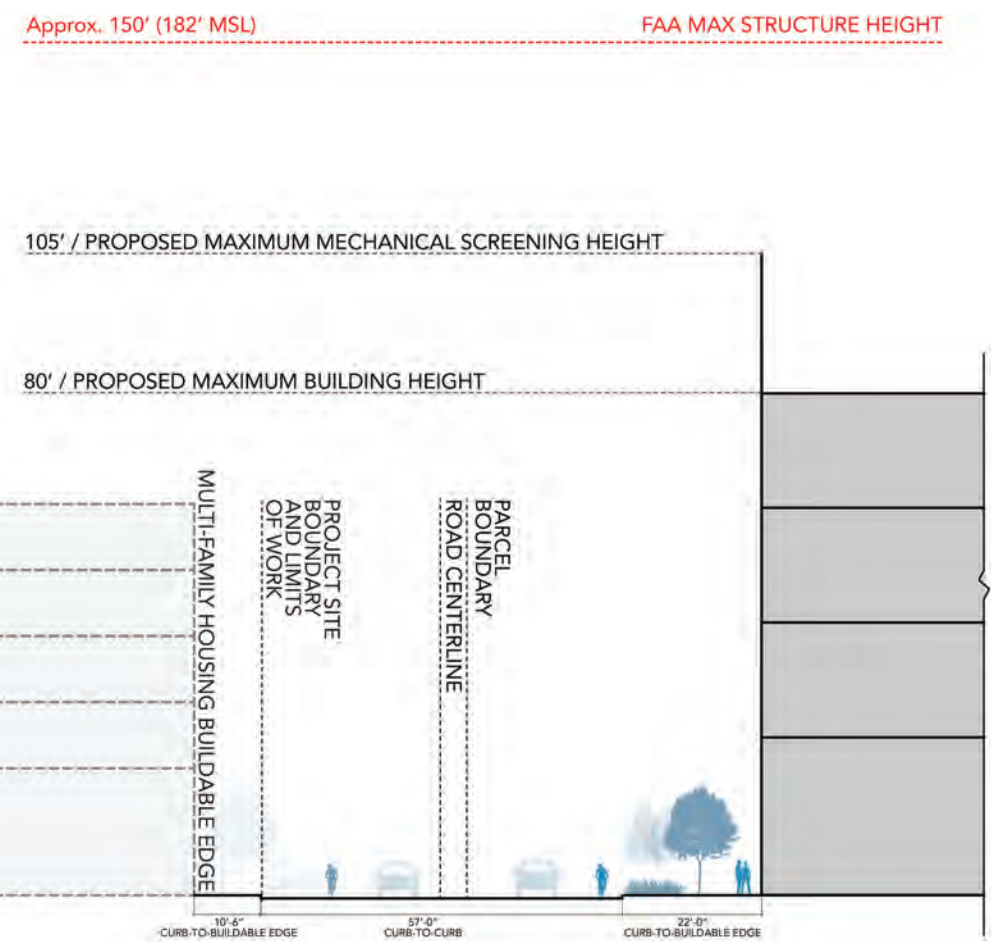
Wescoat Road is the threshold between the project and historic Shenandoah Plaza. The Project Site defines a stepback zone to create a two story scale along the base of the buildings that relates directly to the scale of the buildings across the street.

2. CODY ROAD



Cody Road has been realigned to be on axis with Hangar One, according to the 2001 NASA Research Park Design Guide. It serves as a primary visual corridor to Hangar One from the south-eastern entrance and separates the project and the airfield. The two story stepback zone continues from Wescoat Road around to Cody Road to maintain a cohesive scale along these two primary roads, while also serving to further open the view corridor to Hangar One.

3. GIRARD ROAD

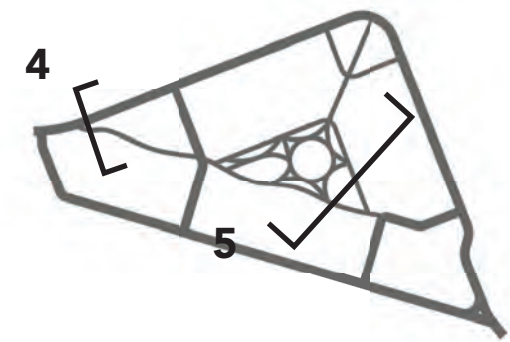


Along Girard Road buildable sites sit 22 feet back from the roadway, allowing for loading zones and generous planted bulbout zones. The generous right-of-way between the two proposed developments alleviates any need to prescribe stepbacks.

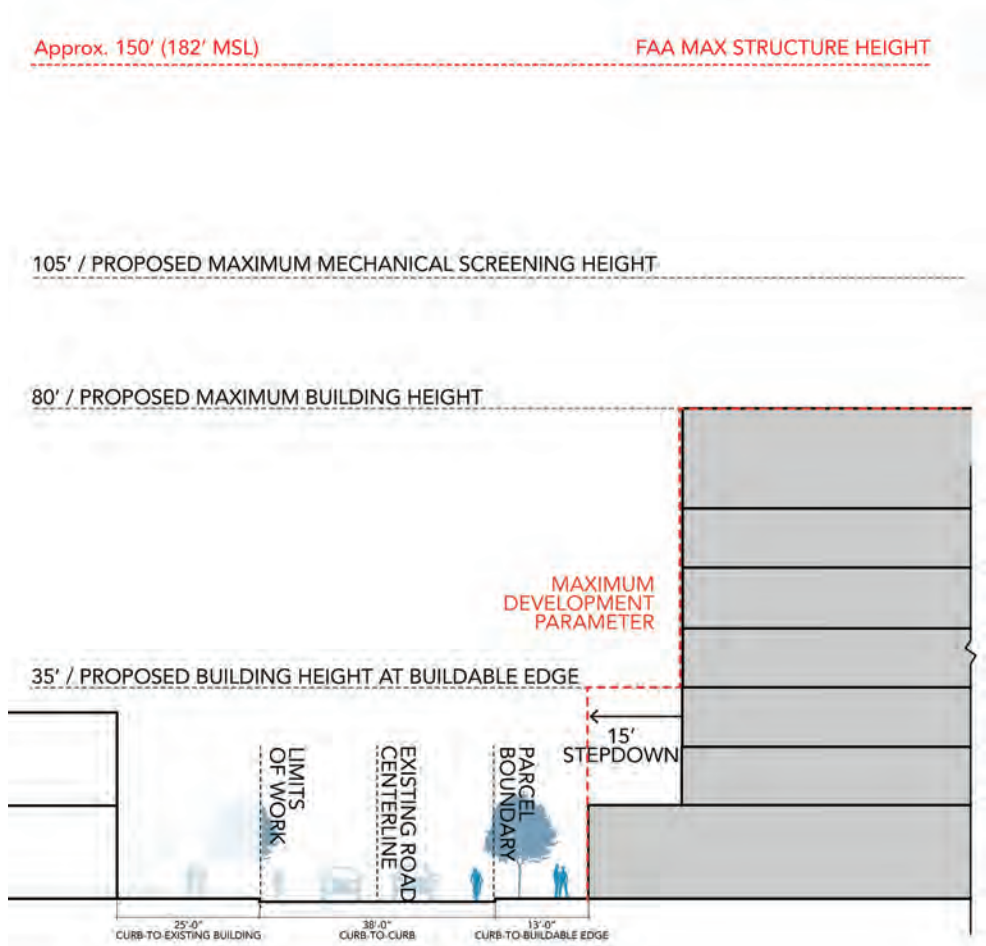
LAND USE

DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

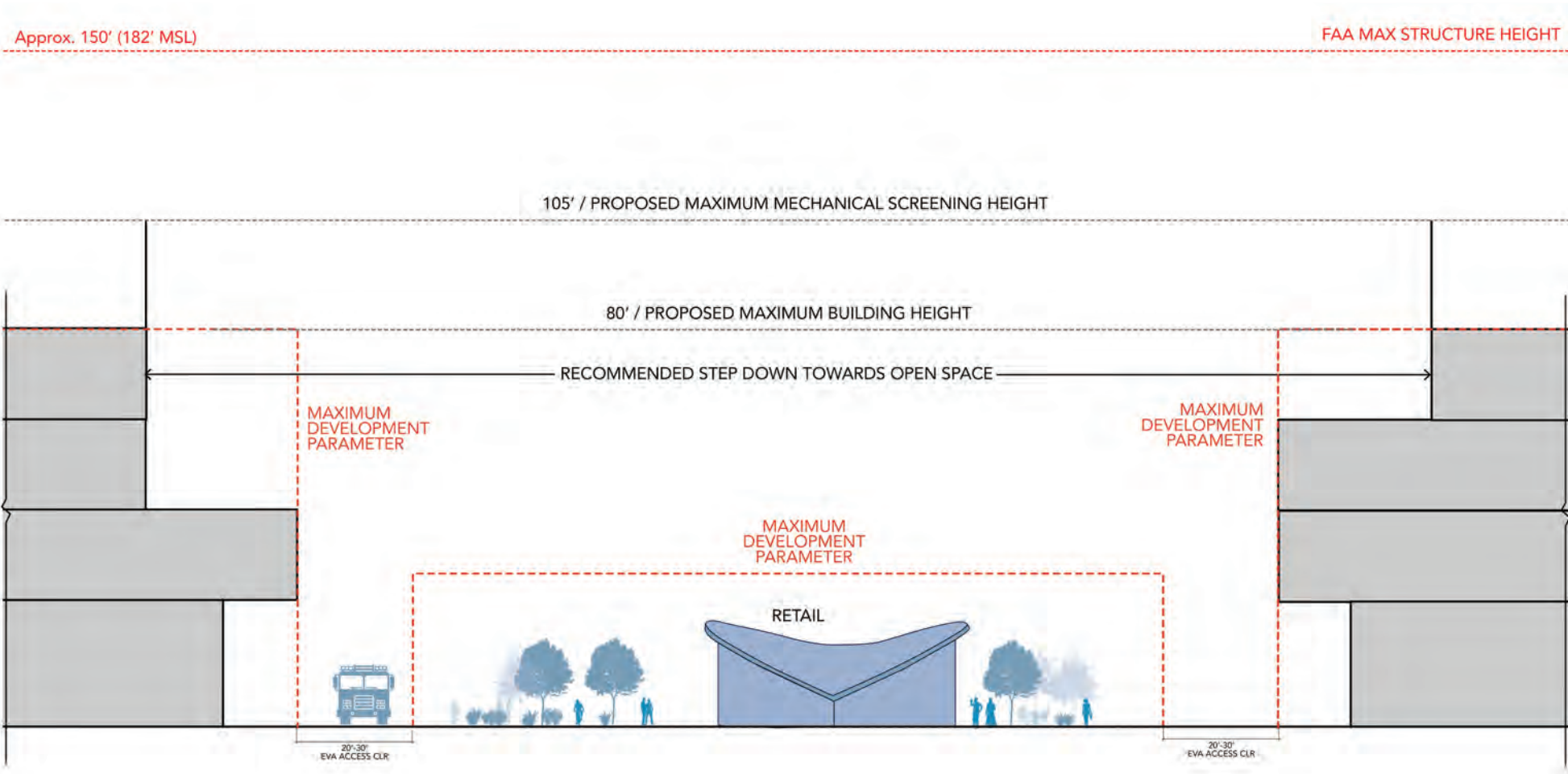


4. SECTION THROUGH RESIDENTIAL AT BLOCK 6



At the Western corner of the project site where Wescoat Road begins to turn toward Shenandoah Plaza, our parcel boundary is held back in line with the rest of the frontage along Wescoat Road toward Hangar One. This opens up the view corridors at that arrival point, and given the wider view corridor, the residential development is allowed to build up to the parcel line with no stepback condition.

5. SECTION THROUGH CENTRAL GREEN



Along the Central Green, buildings front the open space, stepbacks are recommended to provide daylight access and soften the edge, providing a pedestrian scaled environment. The Central Green provides a space for active use pavilions, which are capped at 30 feet in height and 20 percent site coverage.

MOBILITY

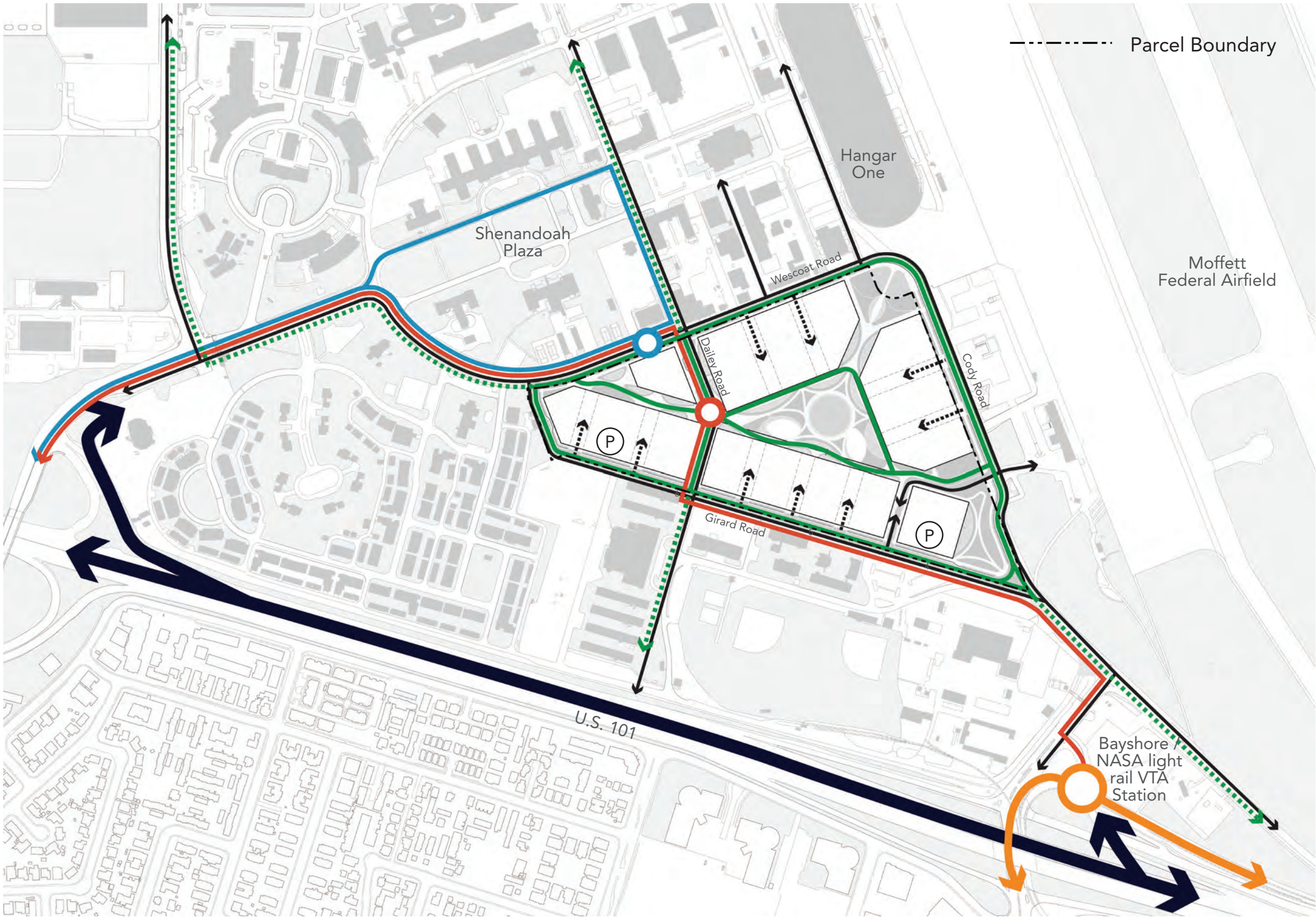
MOBILITY

CONNECTIVE NETWORK

The proposed mobility network includes a variety of transportation modes and systems of interchange including VTA, regional highway connections, consolidated vehicular routes, and safe routes for pedestrians and cyclists. This network ties the proposed project to the broader NASA ARC district.

The proposed revisions to the hierarchy of movement and renovations to the system will transform the interconnectivity of the entire campus. These renovations will not only reconfigure vehicular traffic movement in the Research Park, but will also reinforce the importance of movement at the pedestrian scale, allowing for more connectivity and a richer experience of the district.

- Project Proposed Shuttle Stop
- Project Proposed Shuttle Route
- Project Proposed VTA Bus Stop
- Project Proposed VTA Bus Route
- Project Proposed Bicycle Route
- Proposed Bicycle Route, by others
- Existing VTA Stop
- VTA Orange Line
- P Parking
- Vehicular Route
- Potential Shared Use Road



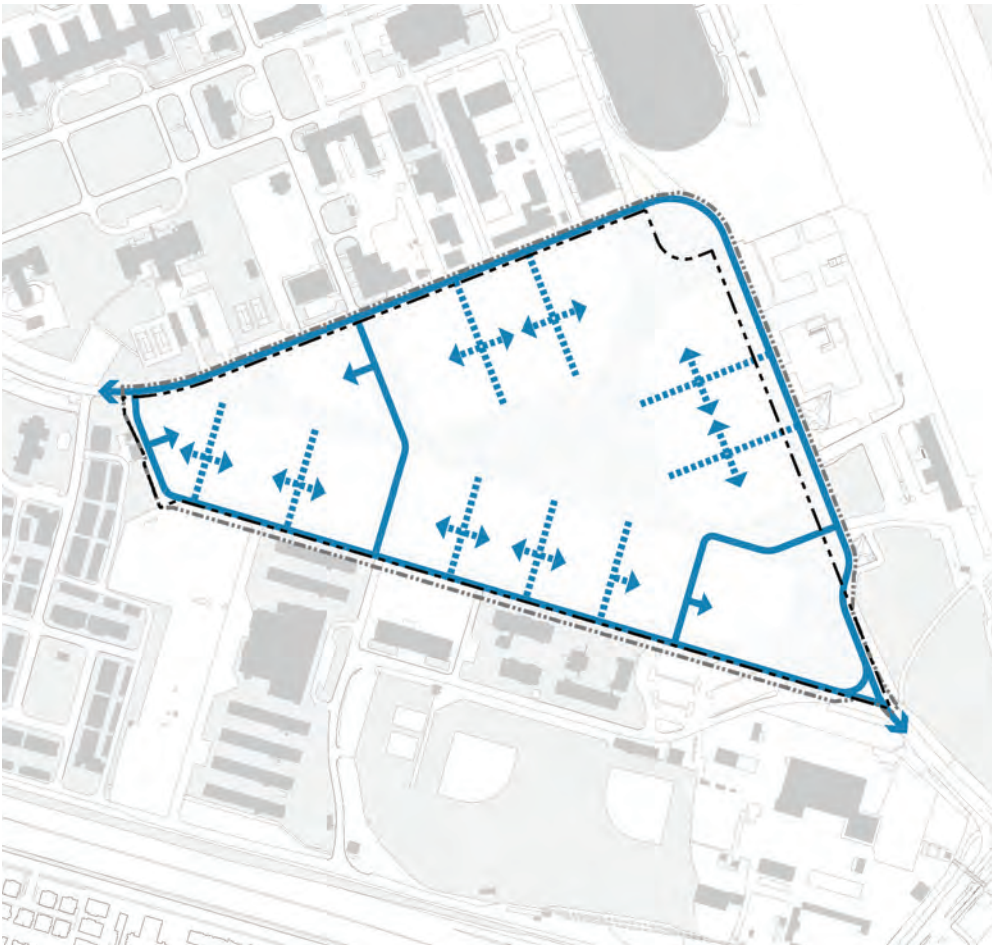
Connective Network Illustrative Diagram

MOBILITY

SITE ACCESS & CIRCULATION

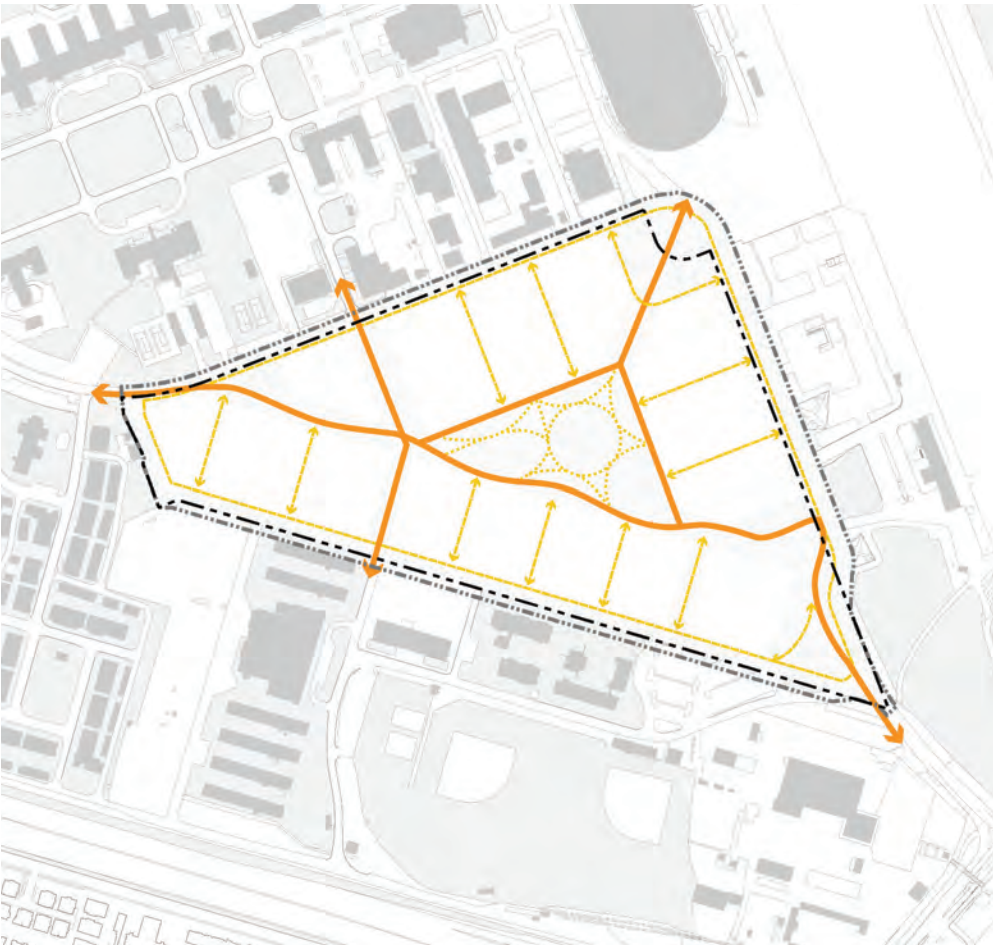
The mobility network provides physical connections and opportunities for intellectual interchange throughout NRP and the Project Site. The network prioritizes bicyclists and pedestrians at the heart of the Project Site, with vehicular access primarily along the perimeter.

1. VEHICLES



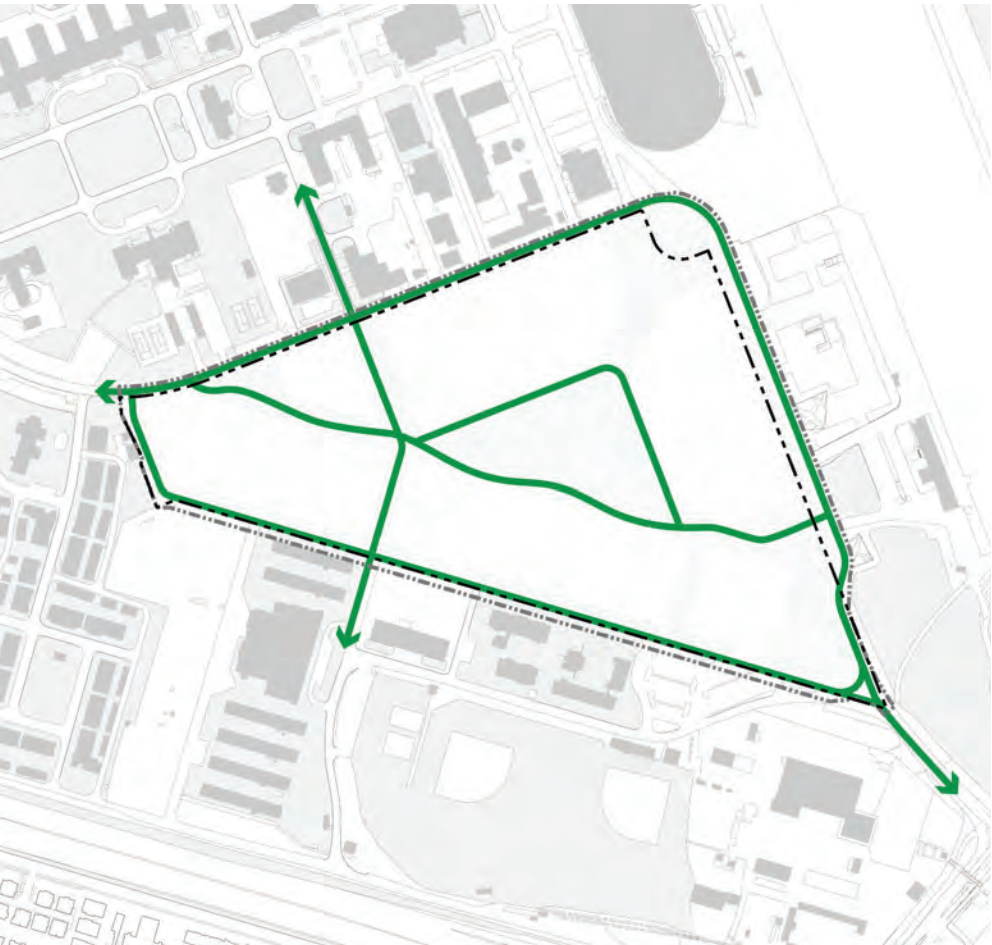
Main vehicular access to the Project Site is limited to the edges of the Project Site. Smaller side streets provide delivery and logistical nodes.

2. PEDESTRIANS



A network of pedestrianized green streets, trails, and occupiable landscapes defines the experience on the interior of the Project Site. This experience distinguishes Berkeley Space Center at NASA Research Park as a unique district within NRP by providing a memorable physicality – marking the territory as it transforms and grows. Primary pedestrian paths are shown in orange, and secondary routes are shown in yellow.

3. CYCLISTS



Connections for cyclists are made across the Project Site, as well as north to Shenandoah Plaza and NASA ARC, and south to the Bayshore / NASA light rail VTA Station shown on the connective network diagram on the previous page.

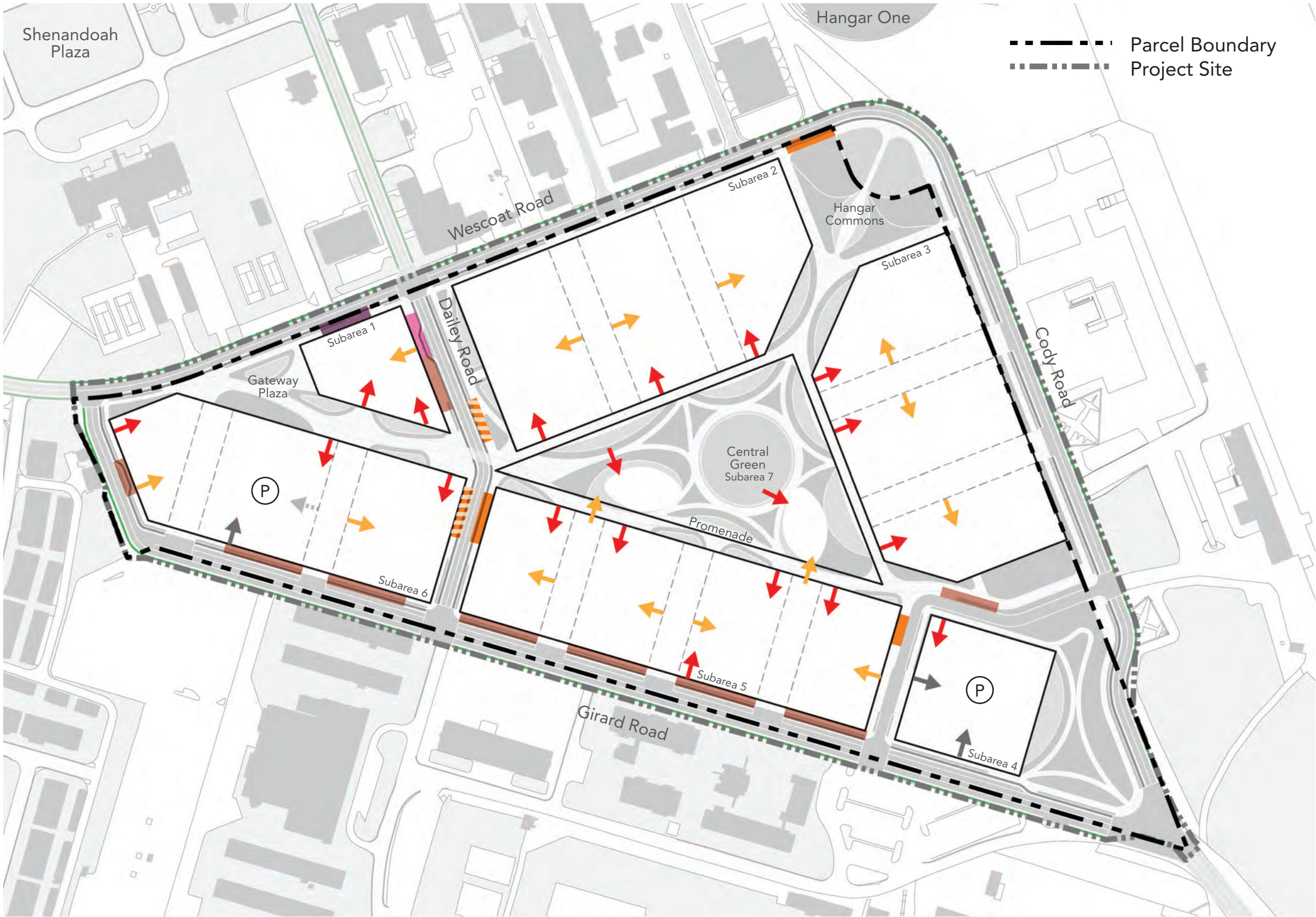
MOBILITY

CURB USE & BUILDING ACCESS

As a project where people are prioritized over cars, the access, logistics, and curb use strategies are optimized for flexible and overlapping uses to reduce competition for curb space and respond to peak demand for different user types.

Primary building entrances and lobbies are located along the frontages facing the Central Green to activate this large open space. Service entrances are located away from the Central Green; instead, loading and delivery hubs are located closer to the outer ring roads (Wescoat Road, Cody Road, and Girard Road) to ensure easy access for service vehicles.

- Project Proposed VTA Bus Stop
 - Passenger Pick Up/Drop Off with Project Proposed Shuttle Stop
 - Passenger Pick Up/Drop Off*
 - Flex Curb: Pick Up/Drop Off* or Loading
 - Loading Dedicated Curb Cuts
 - Potential Building Entrance
 - Potential Service Entrance
 - Potential Parking Entrance
 - Potential Parking or Service Entrance
- *including Ride Sharing



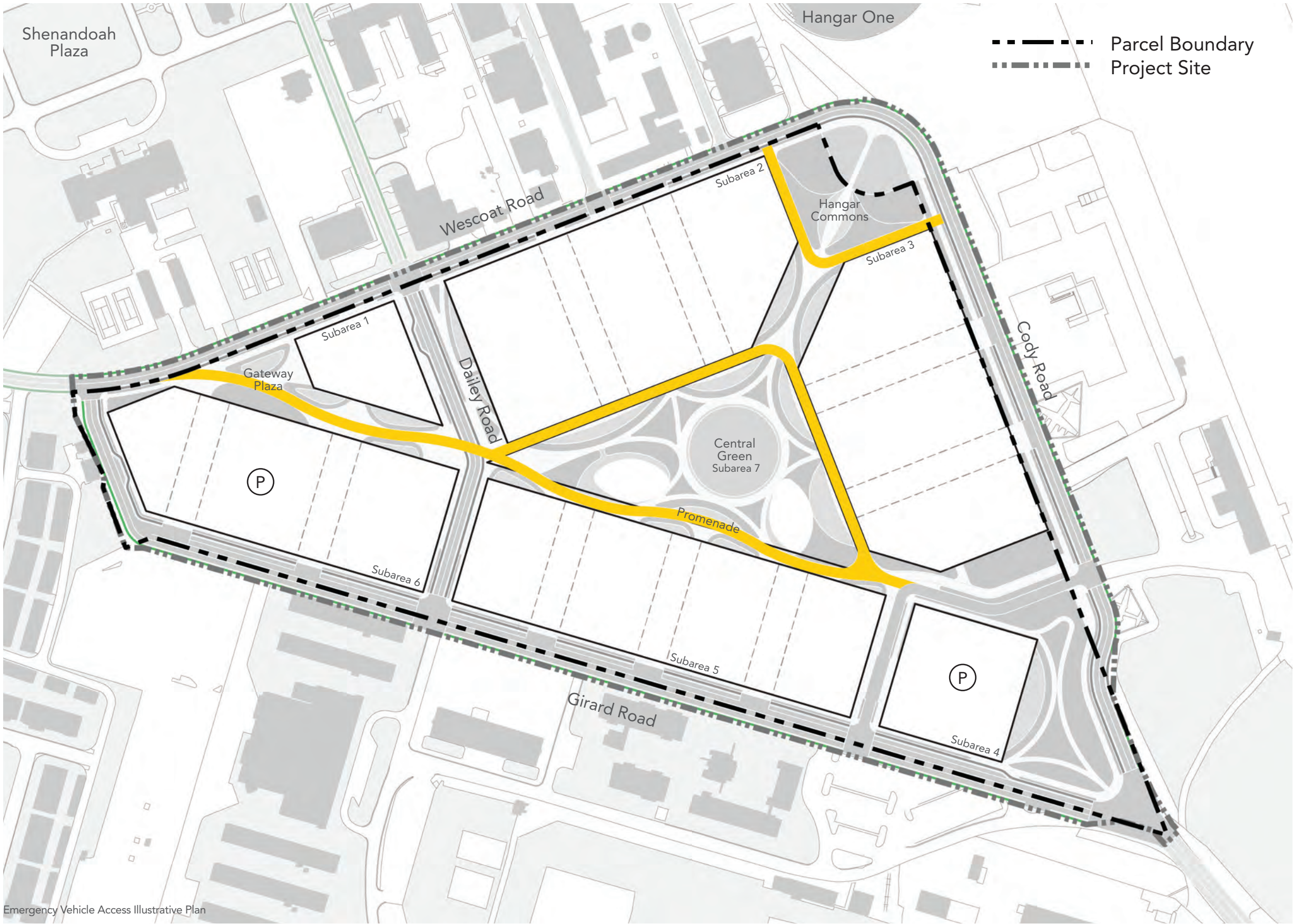
Curb Use and Building Access Illustrative Plan

MOBILITY

EMERGENCY VEHICLE ACCESS

The aerial apparatus zones for Fire Department access are located on the roads along the outer perimeter of the site on the longest sides of the parcels. An Emergency Vehicle Access (EVA) loop circles the outer perimeter of the Central Green, and services the interior faces of the buildings and the pavilions in the Central Green.

EVA access



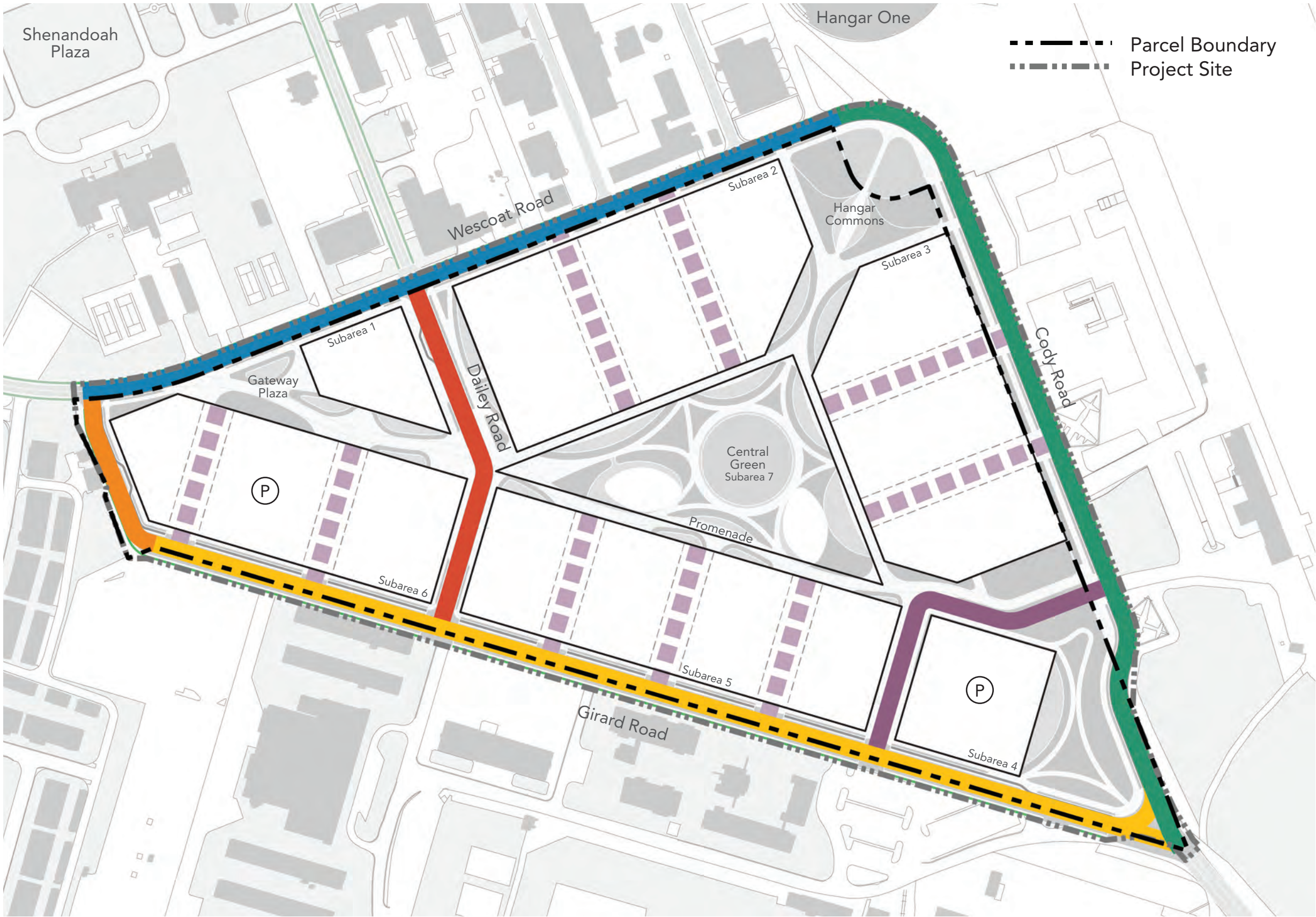
MOBILITY

STREET NETWORK

The landscape character extends and diffuses out from the Central Green along streets lined with trees, planting, and green infrastructure. These green streets prioritize cyclist and pedestrian movement, connect to the surrounding context, provide tree canopy and shade, control water runoff, and encourage active mobility throughout.

Vehicular access focused along Wescoat, Cody and Girard Roads at the Project Site's exterior and through Daily Road at the interior. Access from the area south of the Project Site is provided via new extension roads at the Project Site's western and eastern corners. Service and loading takes place within each Subarea on shared streets that terminate at the Central Green.

- Cody Road
- Wescoat Road
- Girard Connector
- Girard Road
- Dailey Road
- Shared Use Street
- Subarea 4 Street



Street Network Illustrative Plan

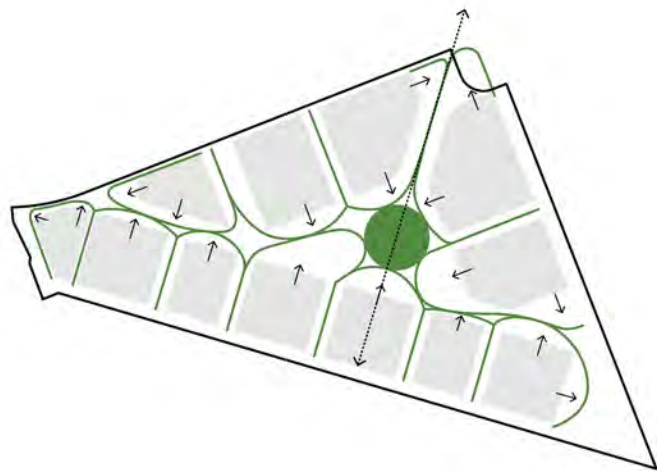
OPEN
SPACE

OPEN SPACE

ORGANIZING PRINCIPLES

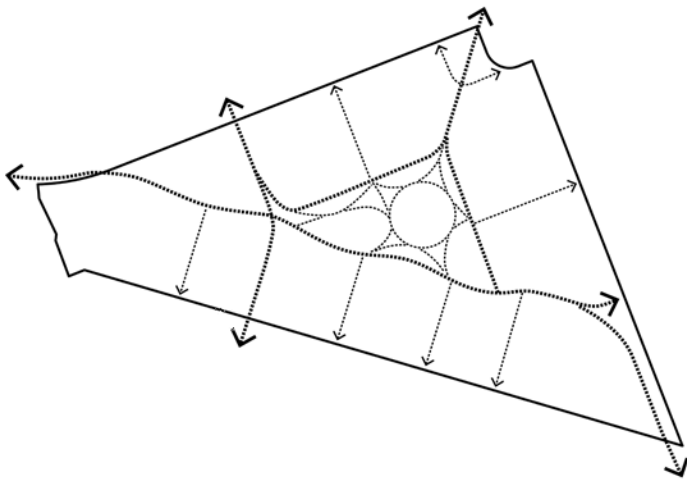
The social heart of the new district — the “Center-Point” — is achieved through the strategic choreography of urban fabric, site circulation, indoor-outdoor programming, and diverse planting environments that frame, shape and animate a central hub of activity.

1. CREATE THE CENTER-POINT



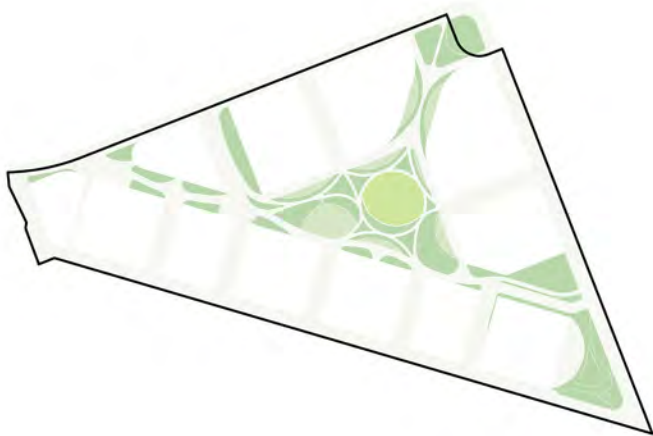
Building program and activity is intended to be pulled from the inside out to create a unique social environment in the landscape. An active center-point is created as a means to facilitate collisions of research, knowledge and innovation. The intent is for the central node of the project to be the active, shared heart.

2. MAXIMIZE CONNECTIVITY



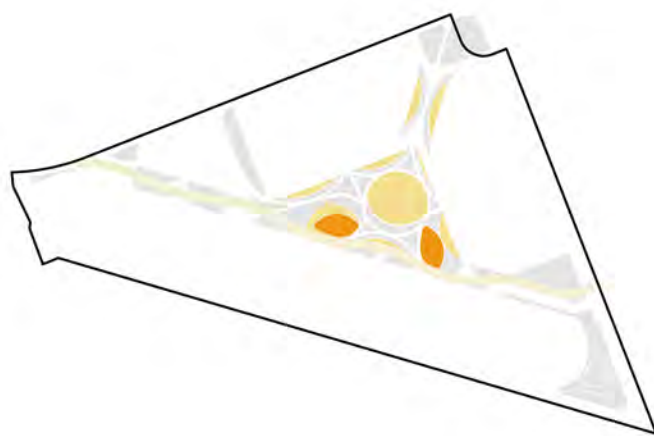
Connections are created around the site, and a direct relationship between the district’s street network and Shenandoah Plaza/Berkeley Space Center at NASA Research Park is maintained. View corridors to Hangar One and the Diablo Foothills are maintained and celebrated.

3. REGENERATE NATURE



Open space is clustered at the center and the north corner of the Project Site, with green fingers connecting out to the context. A meandering green promenade links the site to it's context at the east and west, and welcomes people in on both ends.

4. DIVERSIFY PROGRAMMING



The car-free core is the social magnet and meeting point for the district and beyond. Active social nodes and spines are connected by a network of multimodal paths that prioritize pedestrians and cyclists. The social green and promenade are activated by two amenity pavilions and the building frontages. All Subareas have dedicated spill out zones into the Central Green or Promenade for more personalized programming opportunities.

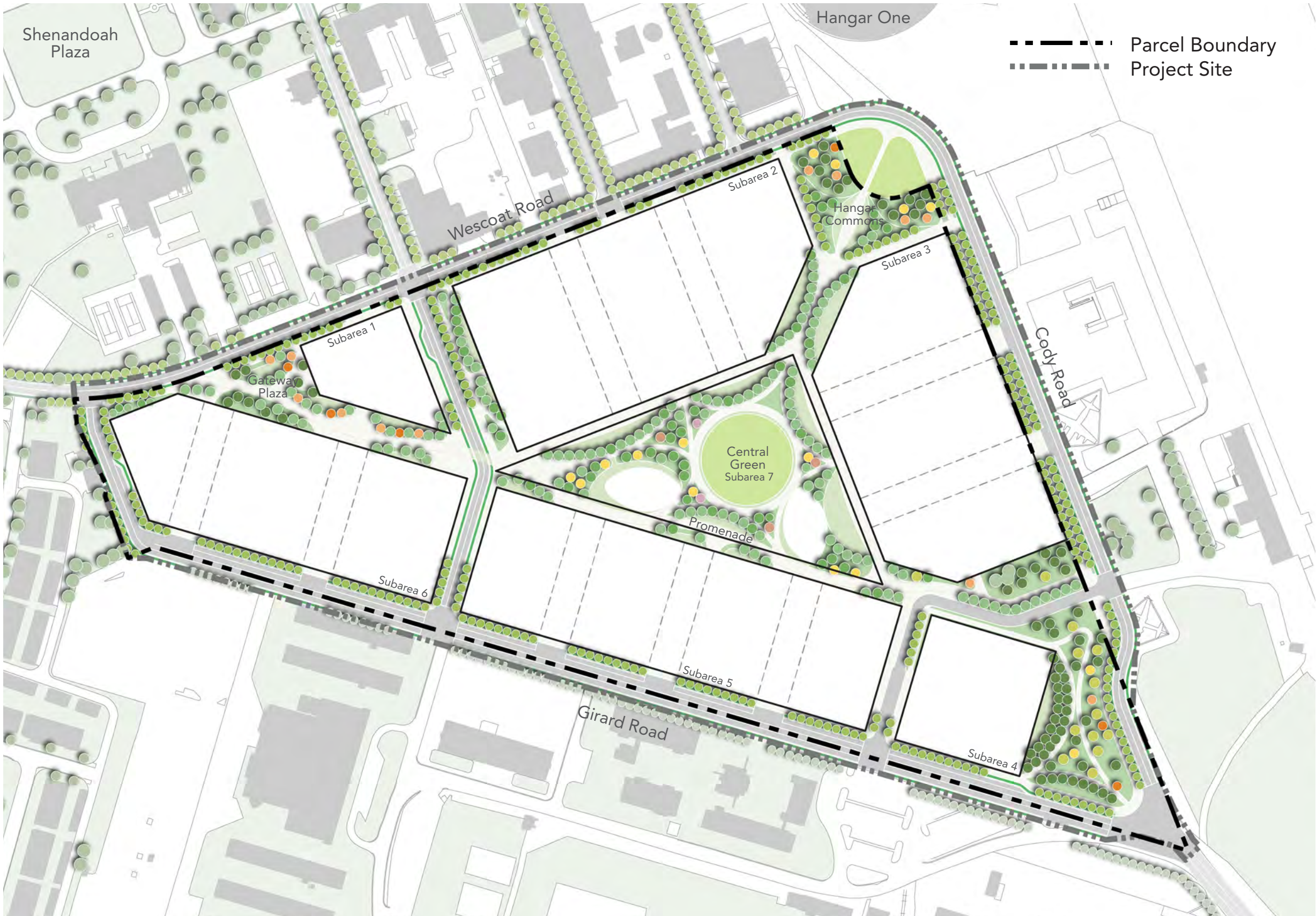
OPEN SPACE

OPEN SPACE NETWORK

Great open spaces make great campuses. There is an especially strong desire today for people to have a closer and more intimate connection with nature. Exposure to nature and gardens has demonstrably proven significant benefits to mental health and well-being, as well as improving micro-climate, biodiversity and ecological function.

The green framework of the center-point scheme links Shenandoah Plaza to Moffett Federal Airfield through vegetated promenades, paseos, patios, gardens, bosques, and hedgerows. In addition, some buildable sites incorporate outdoor research “yards”, expanding the functional possibilities of the site.

The Central Green hosts the shared amenity features, and is a focal point for activity and innovation that acts as a nexus at which people can gather and recreate. This scheme envisions a development that fully integrates buildings with landscape, pulling nature and people through the site, and connecting our project interior to the greater area.



Illustrative Open Space Network Plan

OPEN SPACE

PROGRAMMING & ACTIVATION

To support a diversity of experience and function, the open space incorporates a variety of gathering and programmable spaces of varying size and character: from small and intimate (for individuals and small groups), to larger spaces for exhibitions or all hands meetings.

These open-air spaces range from shaded patios adjacent to each building, programmed pavilions with large operable doors, and meandering gardens and intimate nooks for quiet work and retreat. The shaded hardscape patios and central lawn allow for flexible programming and use.

Linear open spaces connect the green core to Shenandoah Plaza, Hangar One, and Cody Road, drawing visitors into the center.

The details, scale, and quantities of these spaces remain flexible within the open space framework, but any future configuration should maintain the diversity and balance of functional uses with planting and natural beauty.

Amenity Pavilion

Promenade

Seating Terrace / Patio

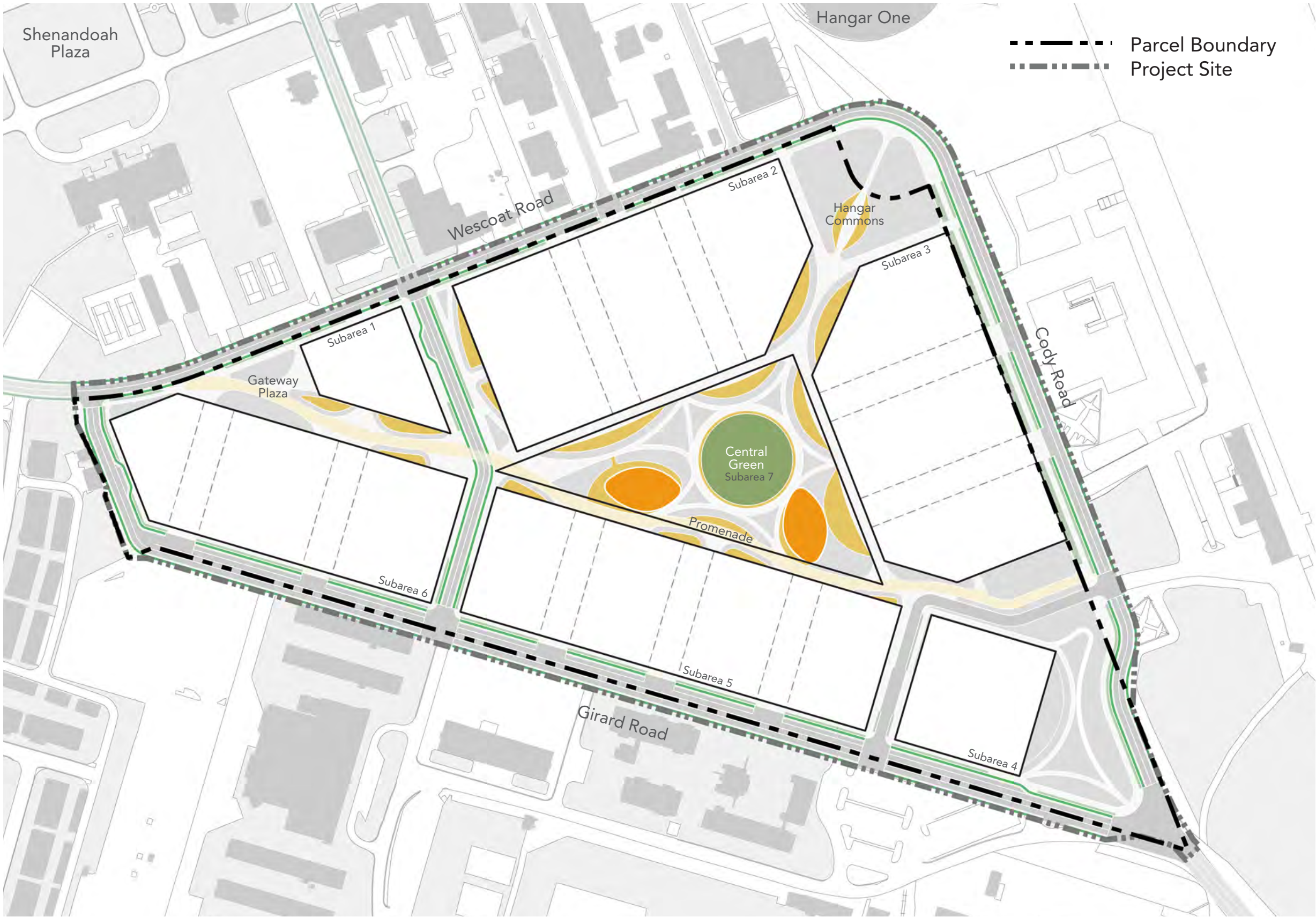
0'

100'

200'

400'

N



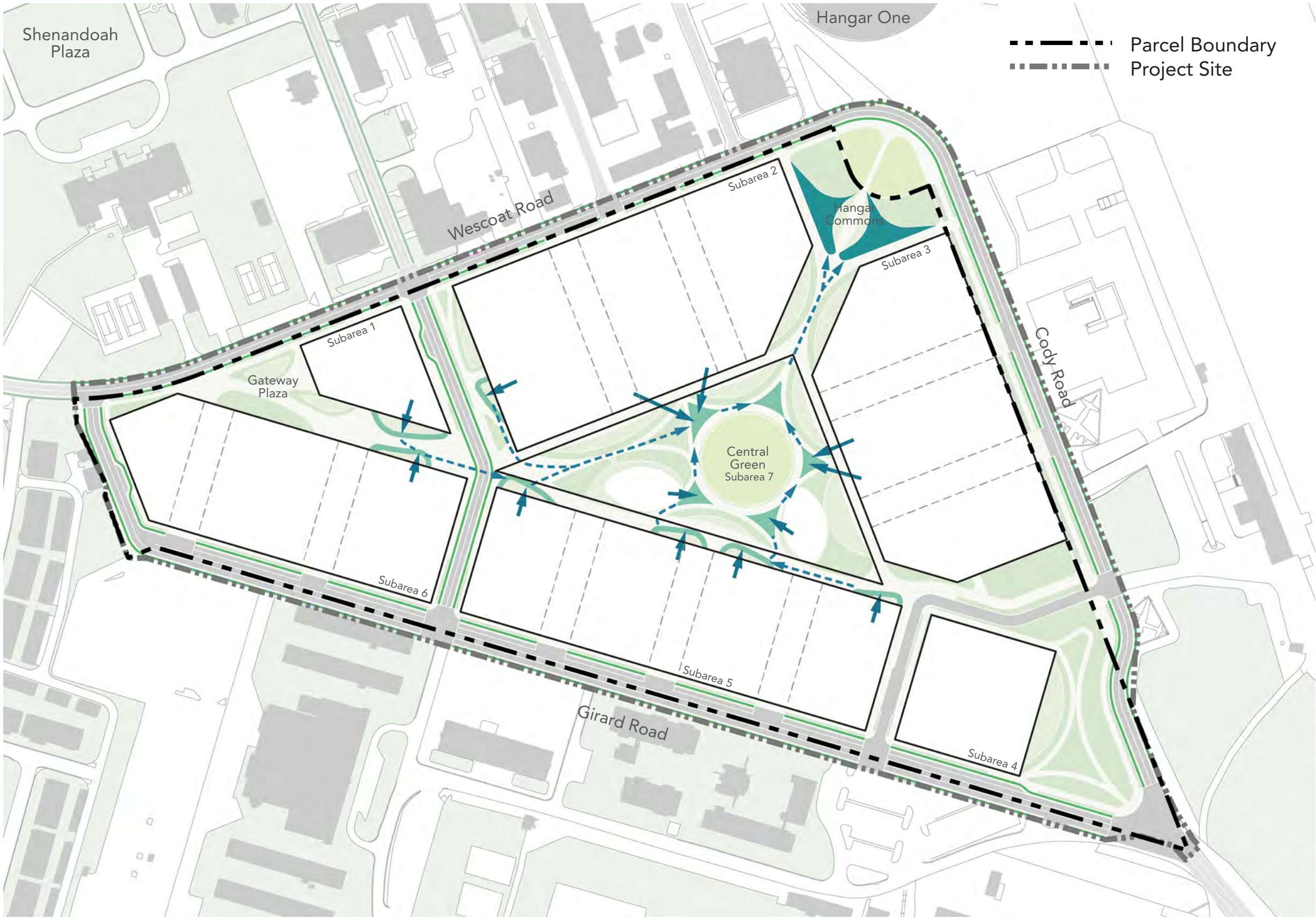
Illustrative Programming and Activation

OPEN SPACE

STORMWATER STRATEGIES

Stormwater infrastructure is integrated into the landscape framework in a distributed, decentralized network. Each Subarea has an adjacent treatment area, though a percentage of treatment will also be required within the buildable area as well to meet stormwater requirements. The locations of the treatment areas are designed to maximize overland conveyance, and are connected through an underground conveyance where required. Following the natural grading, stormwater will be directed through the central conveyance between Subareas 2 and 3 to the northern retention facility at the Project Site's low point.

- Retention Facility
- Treatment Area
- Runoff
- Conveyance



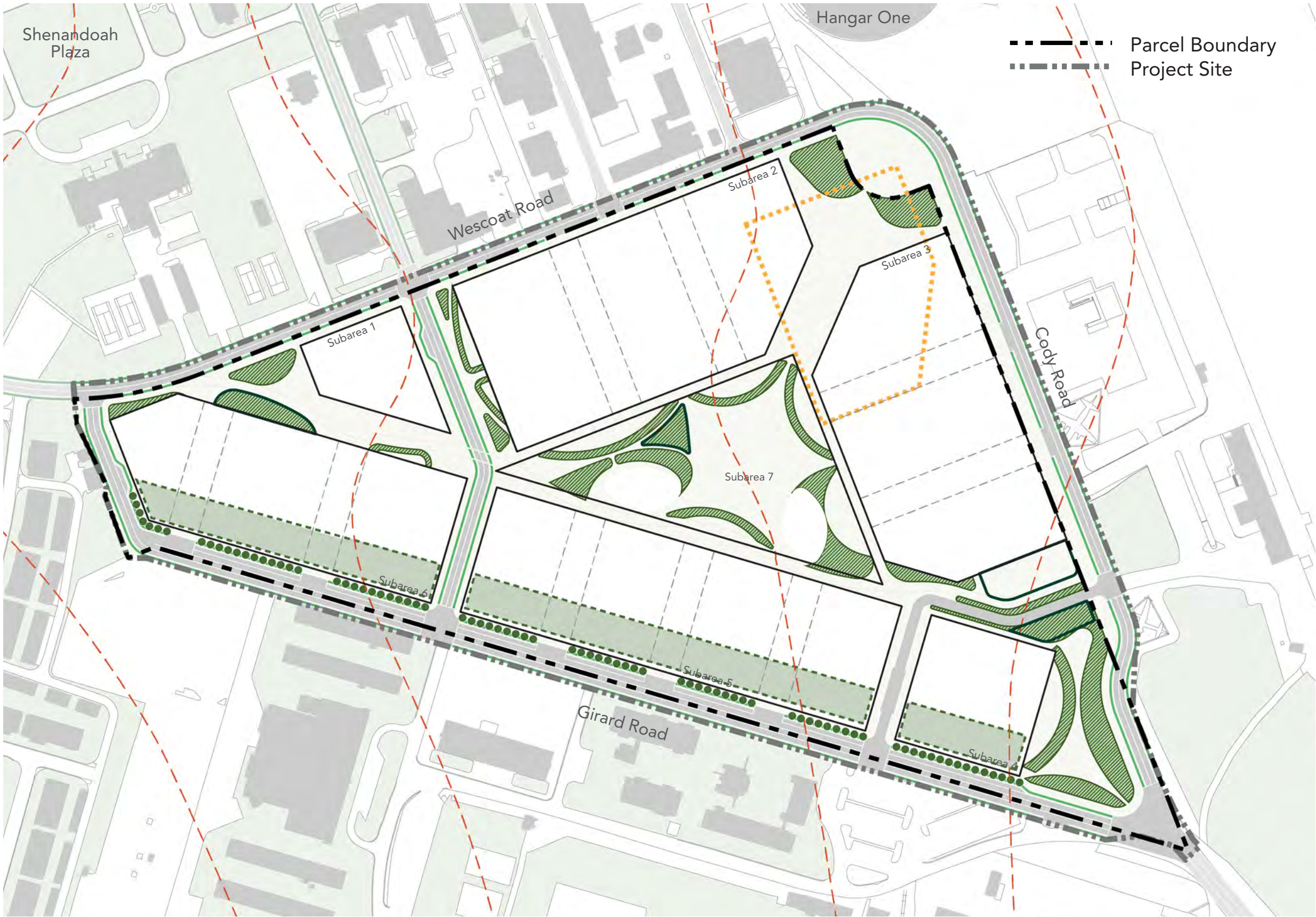
Illustrative Stormwater Strategies

OPEN SPACE

PHYTOREMEDIATION STRATEGIES

Industrial uses adjacent to and within the project boundaries have left behind a legacy of residual chemicals in the soil and groundwater. The landscape framework is flexible to allow for the inclusion of phytoremediation strategies, including: the planting of phytoremediation band(s) along Girard Road to intersect the flow of the plume; mixing phytoremediation species such as poplar, willow, and cottonwood, into the overall species palette; and planting temporary dense groves of phytoremediation trees on future building plots to improve soil and water in the near-term. Some of these plantings may take the form of "micro-forests": fast-growing, densely planted gardens that support more wildlife, sequester more carbon, and provide more soil and water enrichment than traditional plantings.

- Mixed Phyto Groves
- Potential Micro-Forests
- Phytoremediation Band
- Temporary Phyto Groves
- Isoconcentration Contour for Trichloroethylene (TCE) in Shallow Groundwater
- Area of Environmental Concern



Illustrative Phytoremediation Strategies

OPEN SPACE

PHYTOREMEDIATION TREE COUNTS

Site Coverage	Acres	SF					
Passive Use Areas	4.61	200,878	Trees/Acre	Tree TOTAL	% Phyto	Phyto TOTAL	Phyto ROUNDED
Stormwater	0.98	42,555	165	161	20%	32	30
Mixed Groves TOTAL	2.36	102,955					
Mixed Groves	1.96	85,353	165	323	20%	65	65
Micro Forests	0.40	17,602	1350	546	75%	409	410
Amenity/Street	Linear Feet	Spacing (ft)	% of Frontage	Tree TOTAL	% Phyto	Phyto TOTAL	Phyto ROUNDED
North	4,000	25	80%	128	10%	13	15
Shared-Use Streets	1,450	20	90%	65	30%	20	20
Girard Road	1,500	20	80%	60	100%	60	60
TOTAL TREE COUNTS				1,283	598		600

Notes:

165 trees per acre is approximately 17.5’ spacing in triangular configuration; intent is to provide mix of clusters/groves and groundcover areas.

1350 trees per acre is approximately 6' spacing in a triangular configuration; intent is to max out the density in Micro-Forests and temporary Phyto Groves, which will be coordinated with surface parking requirements throughout the construction of all four phases of the development.

Minimum phytoremediation tree quantity to be determined by agreements with EPA.

OPEN SPACE

PLANTING CHARACTER ZONES

A dynamic and varied planting palette enriches both the ecological and social functions of the landscape program. Iconic planting palettes strengthen the individual identities of landscape features within the site. A mix of native, climate adaptive, drought-tolerant, and memorable species provide flexibility for the palette to enrich one's experience across the site. All planting zones include phytoremediation species as part of the suggested palette.

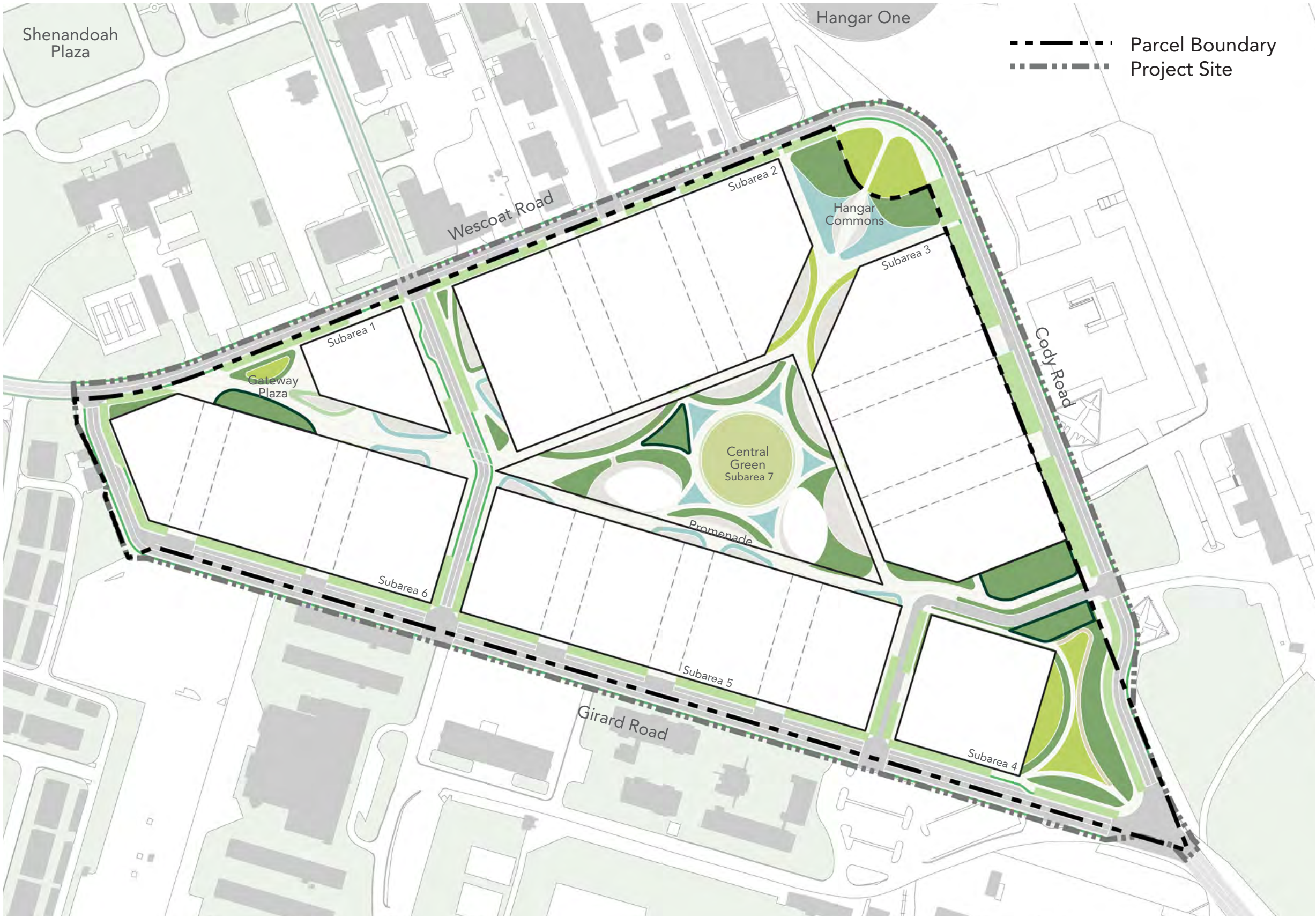
MICRO-FOREST STRATEGY

Micro-forest (Miyawaki Method) combined with phytoremediation Strategies.



LEGEND

- Woodlands
- Stormwater
- Gardens & Meadows
- Street Trees
- Lawn
- Potential Micro-Forest



Illustrative Planting Character Zones

OPEN SPACE

PLANTING CHARACTER ZONES



OPEN SPACE

PLANTING PALETTE

The 'Woodlands' palette will tie our site back to its native planting heritage of being an oak landscape. Oak and willow hummocks will provide dappled shade, and create a natural atmosphere.

The stormwater gardens are integral to the landscape design of the entire site, and will be both functional and beautiful. Species like cottonwoods and willows provide both stormwater remediation and phytoremediation.

The 'Gardens and Meadows' will enrich seating areas and active landscapes, providing color and texture.

The street tree palette will connect the site to its context, greet visitors and invite people into the center-point.

Note: specific planting species are shown as suggestions; final planting palettes to be determined in future project phases.

WOODLANDS



STORMWATER



GARDENS & MEADOWS



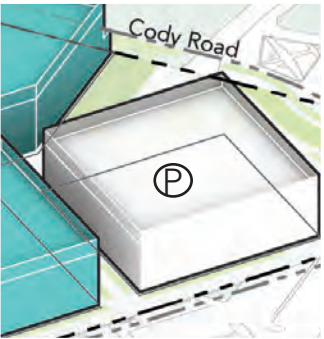
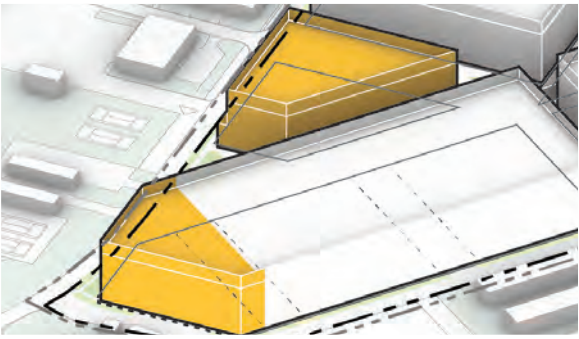
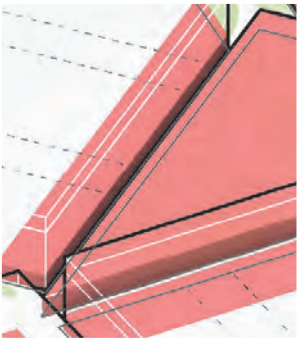
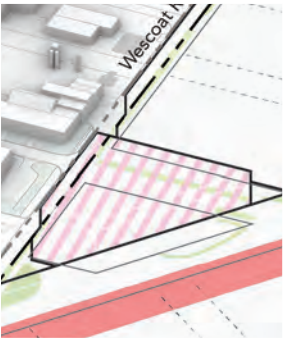
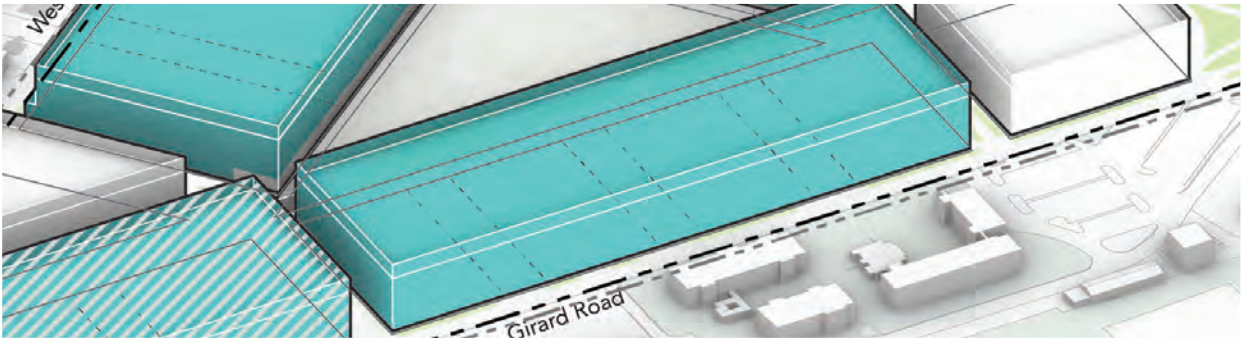
STREET TREES



BUILDING TYPOLOGIES

BUILDING TYPOLOGIES

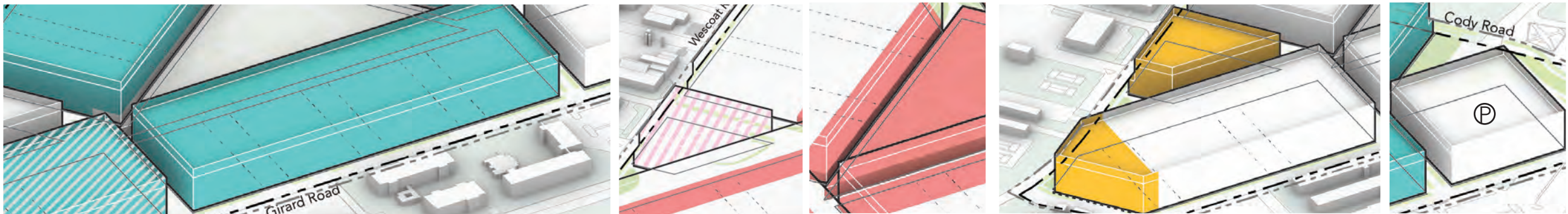
PROJECT ASSUMPTIONS



PROJECT ASSUMPTIONS	Research and Office Uses			Conference Center	Active Uses	Housing and Lodging		Garage
	Office	Lab and R&D	Academic			Short-Term Lodging	Student/Faculty Housing	
POPULATION AND EMPLOYMENT PROJECTION FACTORS	279 sqft per employee	405 sqft per employee	234 sqft per employee	1 employee per room /1100sqft* <i>*EIS 2002 (250 rooms mentioned for 275K conference GFA, which comes down to 1100sqft per room)</i>	500 sqft per employee	2.0 people per unit	2.5* people per unit <i>*Average of 2.5 occupants per unit is based on the= (2 occupants x 25 percent)+(2 occupants x 25 percent)+(3 occupants x 50percent) /100 percent</i>	N/A
TENANT ACTIVITIES AND HAZARD CONTAINMENT	N/A	For R&D purposes, the proposed research activities are not for commercial service shop purposes. There will be no production of parts or products for sales purposes by tenants. For negative externalities (i.e. noxious fumes), the R&D functions will be conducted within high security zones for multiple reasons such as air quality and/or other hazard containment, intellectual property protection, and property security and will not be accessible to the general public.	N/A	N/A	N/A	N/A	N/A	N/A
GENERATOR CAPACITY	← Assume each building would likely not exceed 500kW of generator capacity, which is Tier 3 per BAAQMS BACT requirements. For testing, assume 2-4 hours per month (up to 50 hours per BAAQMS AQ recommended assumption). Size provided is for emergency only, standby loads and backup as requested by tenants may impact this size. →			N/A	N/A	N/A	N/A	N/A
PARCELS CAPACITY ASSUMPTIONS	Ground Plane: 10% Working Yards, 90% Building Footprint Vertical: 75% Massing, 25% Sculpting Reduction			N/A	N/A	N/A	N/A	N/A
PROGRAM DISTRIBUTION	30% office and 70% Lab space			N/A	90% Mixed Amenities (retail, research, lobbies and seating area, small coffee bars, gym or other amenities, fabrication workshops, co-working spaces, etc.) Up to 10%kitchen (for utilities planning purposes)	Faculty Housing (Apartment): 36% Student Housing (Apartment): 64% <i>Note: 4% / 36% split was based on the student housing vs student/faculty housing square footage targets that were given to at the beginning of the project (80k for student housing, 45k for faculty/student housing)</i>		N/A
UNIT SIZE / TYPE ASSUMPTIONS	N/A			N/A	N/A	740 sqft per unit (Gross) Assumes 2 occupants per unit, 100% studios.	895 sqft per unit (Gross) Assumes average of 2.5 occupants per unit, for a unit mix of 25% studios at 2 occupants, 25% one-bedrooms at 2 occupants, and 50% two-bedrooms. at 3 occupants.	N/A
TYPICAL FLOOR HEIGHTS	Typical Ground Floor Height: 20ft-26ft Typical Floor Height: 15ft-18ft Maximum Development Parameter: 80ft+25ft mechanical screening=105ft			Typical Floor: 20ft	Typical Floor: 20ft	Typical Floor: 10ft		Typical Floor: 10ft 75ft (7 stories / 8 Levels)+5ft parapet=80ft 65ft (6 stories / 7 Levels)+5ft Parapet=70ft
FLOOR PLATE / DEPTH	Optimized Daylight: 105ft wide Flexible Office/Lab: 125ft wide R&D: 140ft wide				Typical Depth: 60ft	Typical Depth: 75ft	Typical Depth: 64ft	Typical Depth: 252ft
CONSTRUCTION TYPE	Type 1			Type 1	Type 1	Type 1 / Type 3		Type 1

BUILDING TYPOLOGIES

PROJECT ASSUMPTIONS

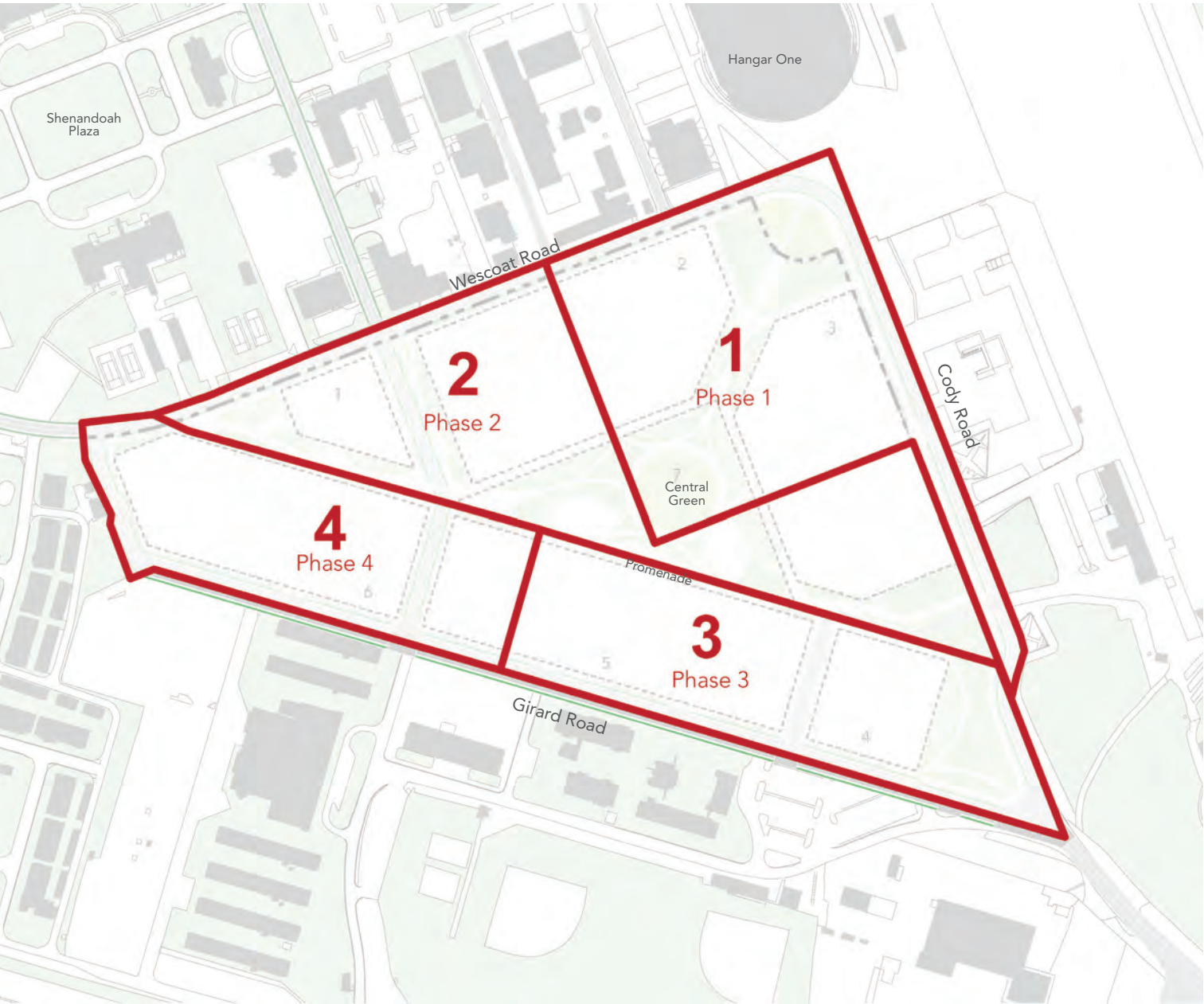


PARKING RATIOS		Research and Office Uses			Conference Center	Active Uses	Housing and Lodging		Garage
		Office	Lab and R&D	Academic			Short-Term Lodging	Student/Faculty Housing	
MINIMUM BICYCLE PARKING	Long-Term Bicycle Parking (Class I)	0.75 Spaces / 1,000 sf	0.345 Spaces / 1,000 sf	2.25 Spaces for each 10 employees plus 1.5 space for each 10 students	N/A	0.15 Spaces / 1,000 sf	1.5 Space / 1,000 sf	1.5 Space / 1,000 sf	N/A
	Short-Term Bicycle Parking (Class II)	0.1875 Spaces / 1,000 sf	0.1875 Spaces / 1,000 sf	1.5 Space / 10 students	N/A	0.75 Spaces / 1,000 sf	1.5 Space / 10 Unit	1.5 Space / 10 Unit	N/A
MAXIMUM VEHICULAR PARKING		1.5 Spaces / 1,000 sf	1.5 Spaces / 1,000 sf	1.3 Spaces / 1,000 sf	1.7 Spaces / 1,000 sf	1.7 Spaces / 1,000 sf	1.3 Spaces / Unit	1 Spaces / Unit	N/A

PHASING

PHASING

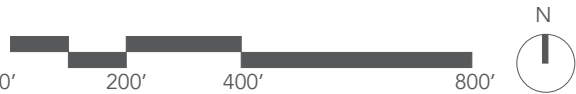
OVERALL PHASING



Phasing Plan

The phasing strategy builds out majority of the Research Uses with Office, Laboratory and Research & Development (R&D), along with academic in the first two phases. Phase two also includes Conference Center and Short-Term Lodging as well as the completion of the Central Green.

Surface parking is provided for the development in the first two phases, while phase three and four add two garage buildings to the project. Student / Faculty Housing comes at last as part of phase four.



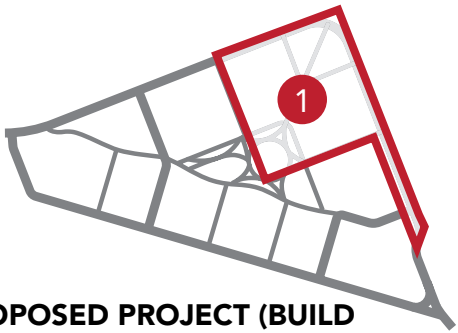
PROPOSED PROJECT (BUILD ALTERNATIVE 1)

DEVELOPMENT PROGRAM BY PHASE	Phase 1	Phase 2	Phase 3	Phase 4	Total GFA (square feet)
Research and Office Uses	640,000	640,000	412,500	307,500	2,000,000
Office	110,000	110,000	75,000	55,000	350,000
Laboratory and R&D	445,000	445,000	285,000	215,000	1,390,000
Academic	85,000	85,000	52,500	37,500	260,000
Conference Center	0	25,000	0	0	25,000
Active Uses	15,000	35,000	22,500	17,500	90,000
Housing and Lodging	0	0	0	0	205,000
Short-Term Lodging	0	75,000	0	0	75,000
Student/Faculty Housing	0	0	0	130,000	130,000
Total GFA* (square feet)	655,000	775,000	435,000	455,000	2,320,000

REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM BY PHASE	Phase 1	Phase 2	Phase 3	Phase 4	Total GFA
Research and Office Uses	325,000	325,000	232,500	197,500	1,080,000
Office	57,500	57,500	41,250	33,750	190,000
Laboratory and R&D	225,000	225,000	161,250	138,750	750,000
Academic	42,500	42,500	30,000	25,000	140,000
Conference Center	0	25,000	0	0	25,000
Active Uses	15,000	35,000	22,500	17,500	90,000
Housing and Lodging	0	0	0	0	
Short-Term Lodging	0	75,000	0	0	75,000
Student/Faculty Housing	0	0	0	130,000	130,000
Total GFA* (square feet)	340,000	460,000	255,000	345,000	1,400,000

PHASING
PHASE 1



PROPOSED PROJECT (BUILD
ALTERNATIVE 1)

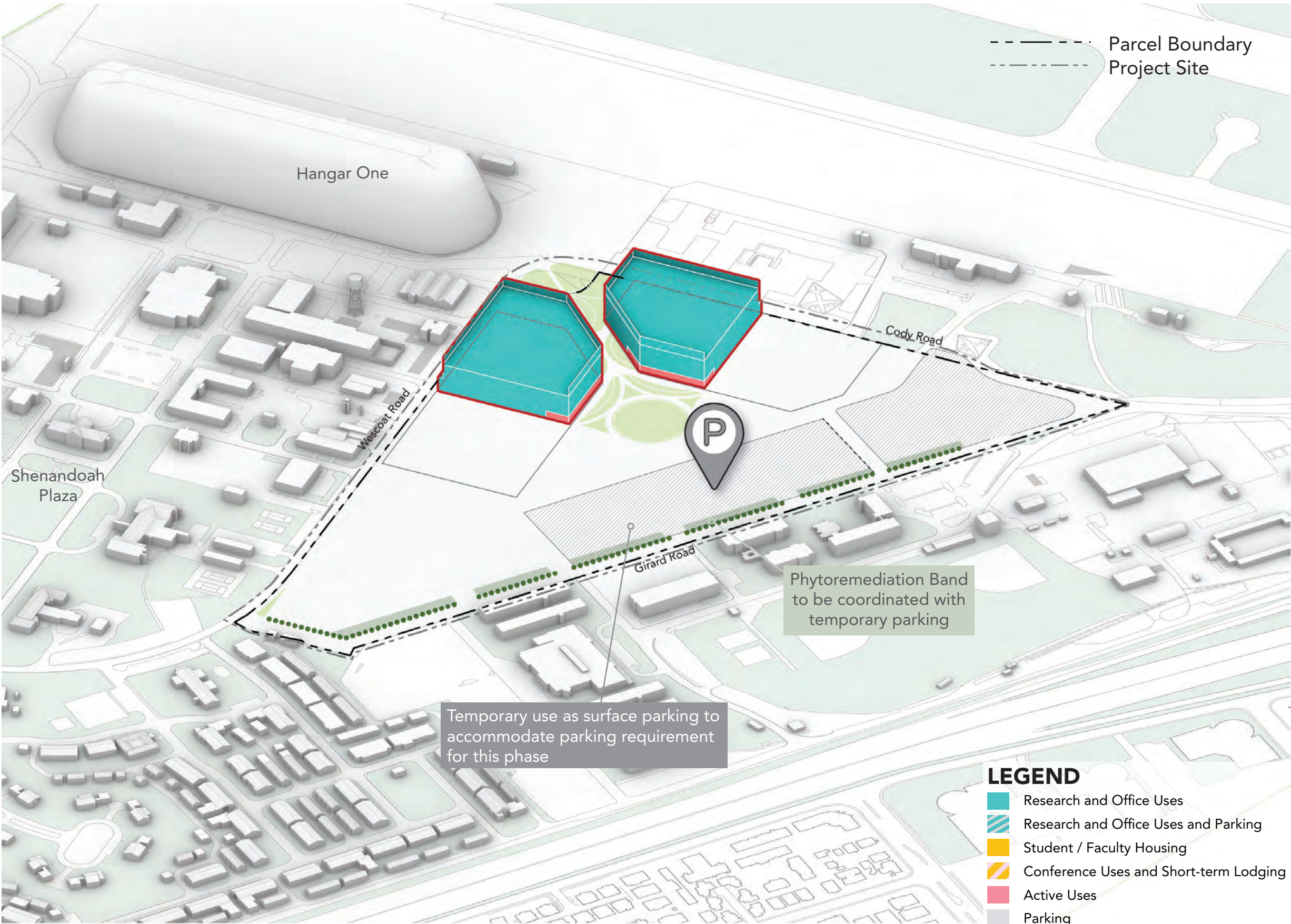
DEVELOPMENT PROGRAM BY PHASE	Phase 1
Research and Office Uses	640,000
Office	110,000
Laboratory and R&D	445,000
Academic	85,000
Conference Center	0
Active Uses	15,000
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	0
Total GFA* (square feet)	655,000

Total Jobs	1,886
Total Dwelling Units	0
Total Students	58
Total Residents	0

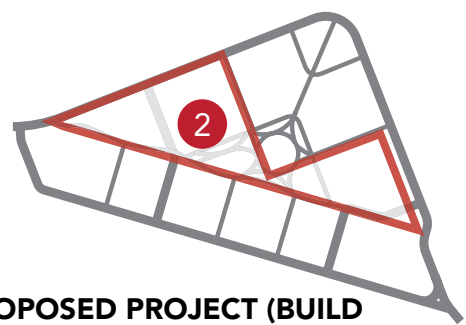
REDUCED DENSITY ALTERNATIVE
(BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM BY PHASE	Phase 1
Research and Office Uses	325,000
Office	57,500
Laboratory and R&D	225,000
Academic	42,500
Conference Center	0
Active Uses	15,000
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	0
Total GFA* (square feet)	340,000

Total Jobs	973
Total Dwelling Units	0
Total Students	29
Total Residents	0



PHASING
PHASE 2



PROPOSED PROJECT (BUILD
ALTERNATIVE 1)

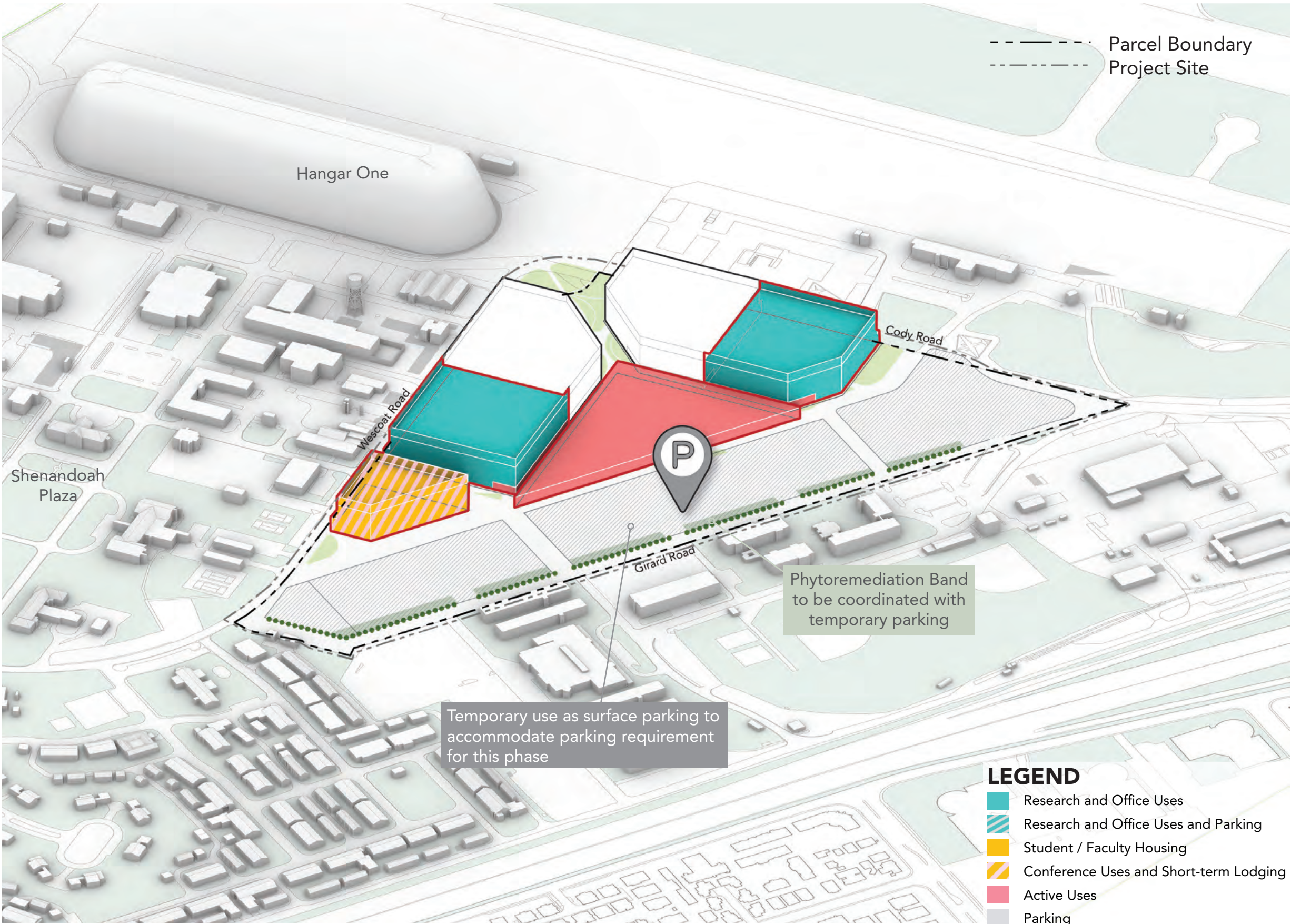
DEVELOPMENT PROGRAM BY PHASE	Phase 2
Research and Office Uses	640,000
Office	110,000
Laboratory and R&D	445,000
Academic	85,000
Conference Center	25,000
Active Uses	35,000
Housing and Lodging	0
Short-Term Lodging	75,000
Student/Faculty Housing	0
Total GFA* (square feet)	775,000

Total Jobs	1,946
Total Dwelling Units	100
Total Students	58
Total Residents	200

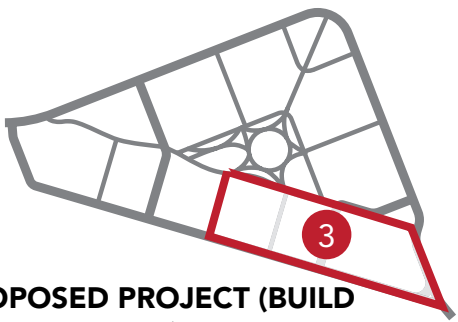
REDUCED DENSITY ALTERNATIVE
(BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM BY PHASE	Phase 2
Research and Office Uses	325,000
Office	57,500
Laboratory and R&D	225,000
Academic	42,500
Conference Center	25,000
Active Uses	35,000
Housing and Lodging	0
Short-Term Lodging	75,000
Student/Faculty Housing	0
Total GFA* (square feet)	460,000

Total Jobs	1,033
Total Dwelling Units	100
Total Students	29
Total Residents	200



PHASING
PHASE 3



PROPOSED PROJECT (BUILD
ALTERNATIVE 1)

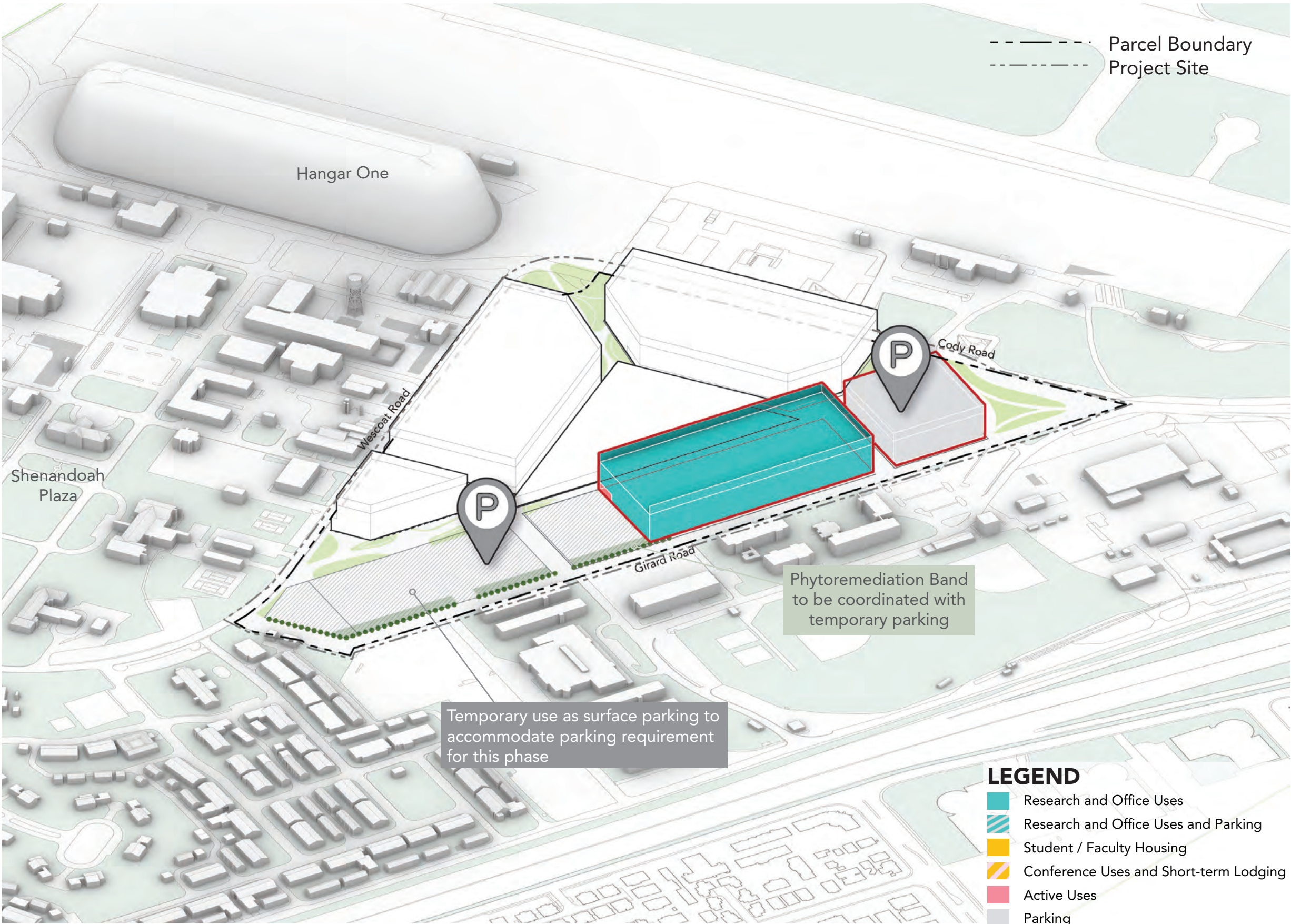
DEVELOPMENT PROGRAM BY PHASE	Phase 3
Research and Office Uses	412,500
Office	75,000
Laboratory and R&D	285,000
Academic	52,500
Conference Center	0
Active Uses	22,500
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	0
Total GFA* (square feet)	435,000

Total Jobs	1,242
Total Dwelling Units	0
Total Students	36
Total Residents	0

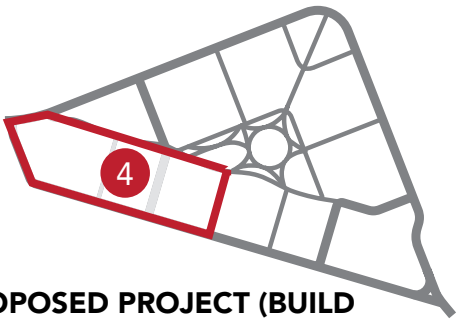
REDUCED DENSITY ALTERNATIVE
(BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM BY PHASE	Phase 3
Research and Office Uses	232,500
Office	41,250
Laboratory and R&D	161,250
Academic	30,000
Conference Center	0
Active Uses	22,500
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	0
Total GFA* (square feet)	255,000

Total Jobs	719
Total Dwelling Units	0
Total Students	21
Total Residents	0



PHASING
PHASE 4



PROPOSED PROJECT (BUILD
ALTERNATIVE 1)

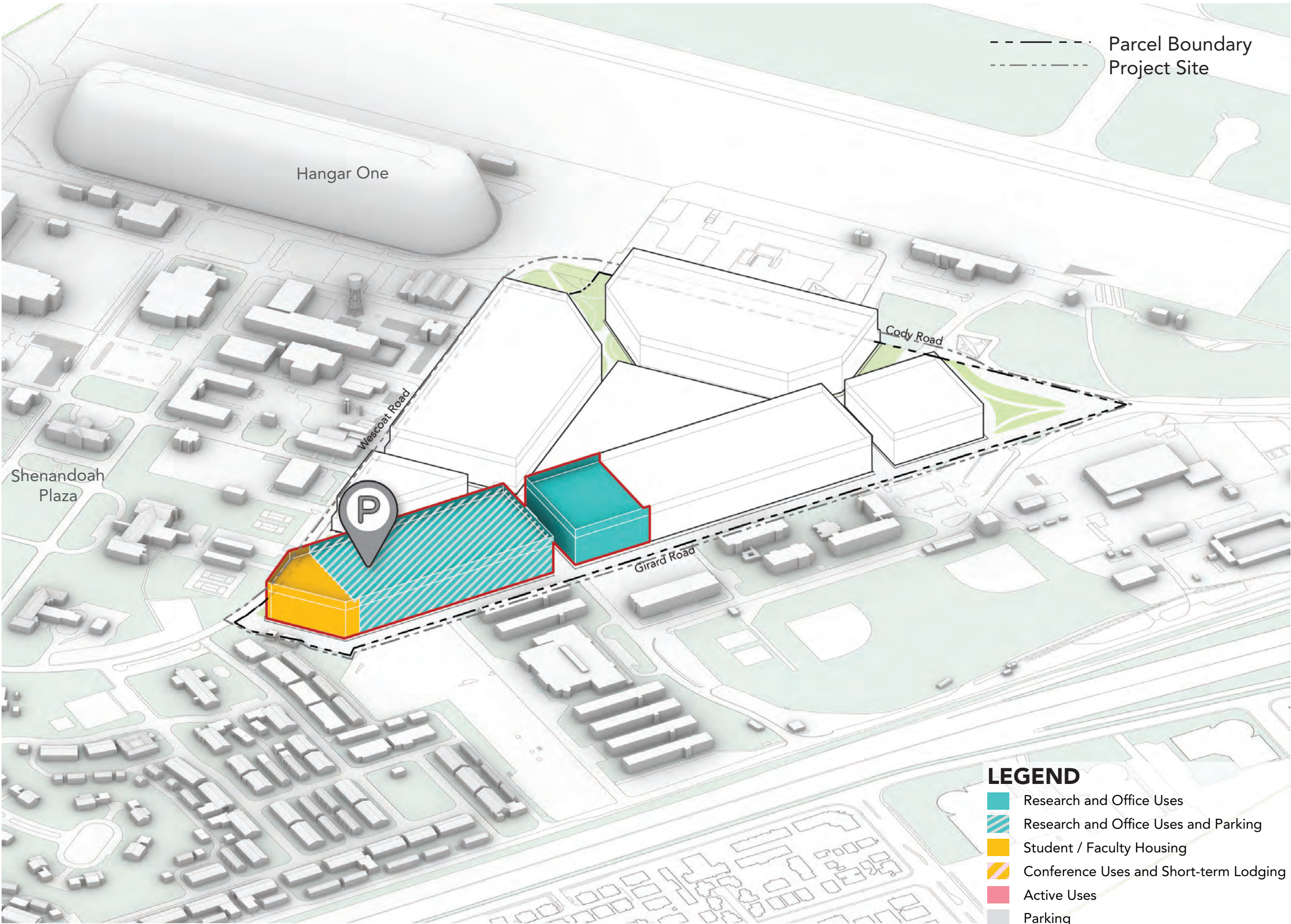
DEVELOPMENT PROGRAM BY PHASE	Phase 4
Research and Office Uses	307,500
Office	55,000
Laboratory and R&D	215,000
Academic	37,500
Conference Center	0
Active Uses	17,500
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	130,000
Total GFA* (square feet)	455,000

Total Jobs	923
Total Dwelling Units	145
Total Students	26
Total Residents	363

REDUCED DENSITY ALTERNATIVE
(BUILD ALTERNATIVE 2)

DEVELOPMENT PROGRAM BY PHASE	Phase 4
Research and Office Uses	197,500
Office	33,750
Laboratory and R&D	138,750
Academic	25,000
Conference Center	0
Active Uses	17,500
Housing and Lodging	0
Short-Term Lodging	0
Student/Faculty Housing	130,000
Total GFA* (square feet)	345,000

Total Jobs	605
Total Dwelling Units	145
Total Students	17
Total Residents	363

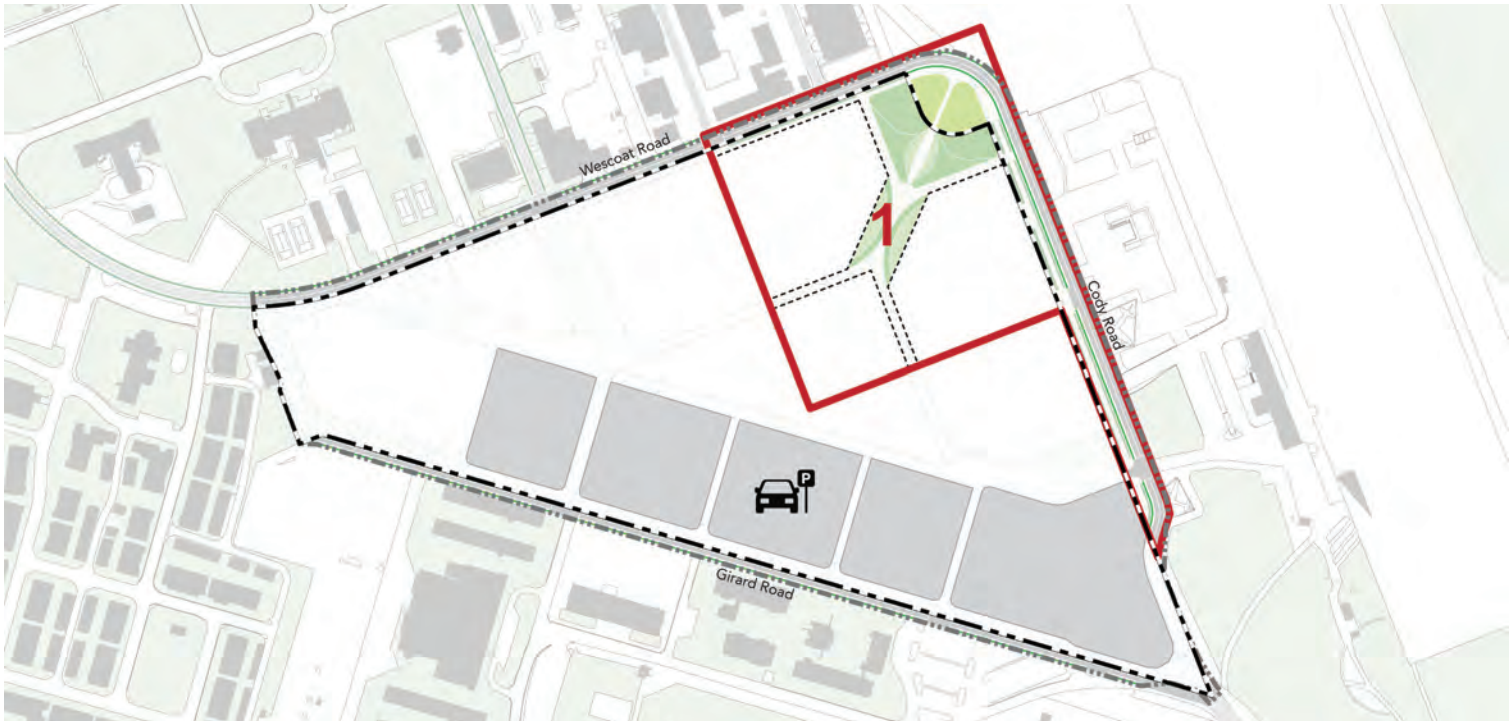


PARKING

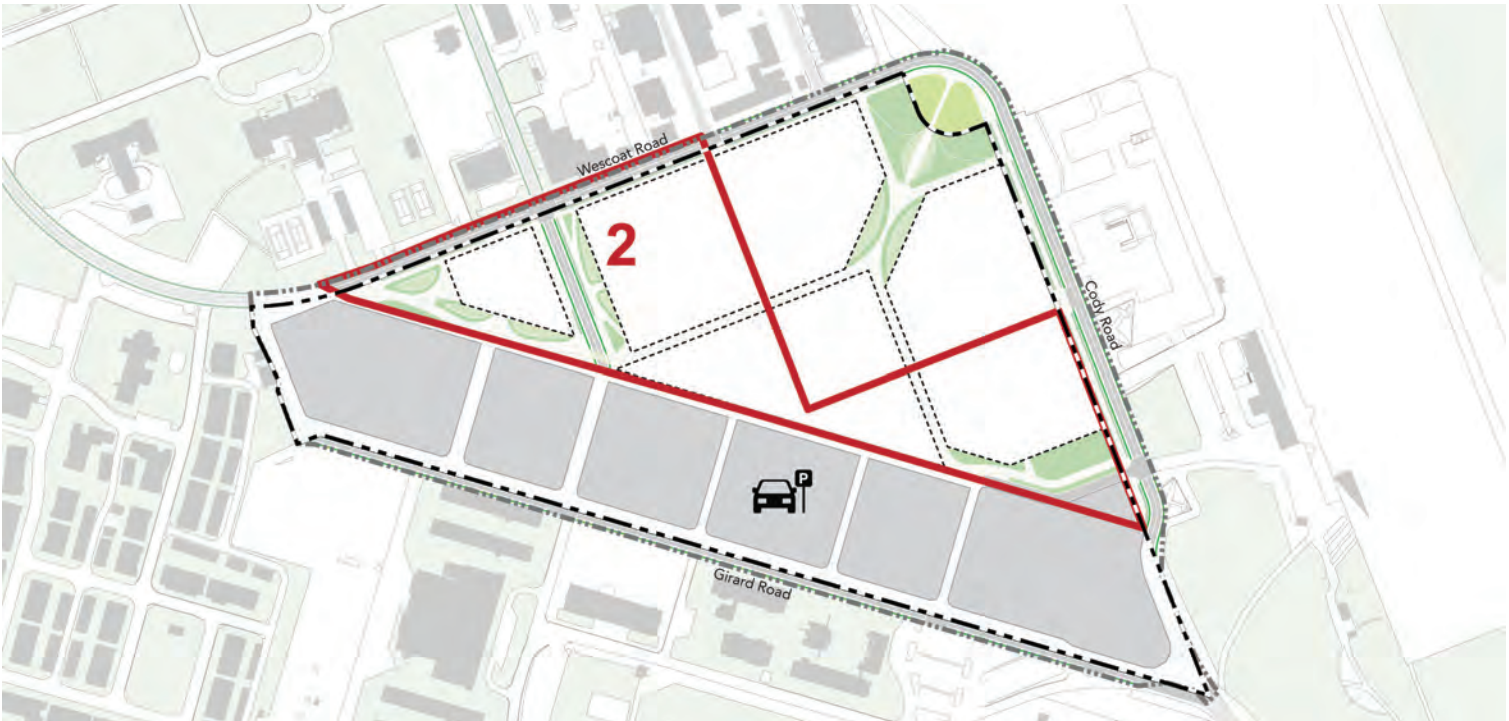
PARKING

SURFACE PARKING AND PHASING

PHASE 1

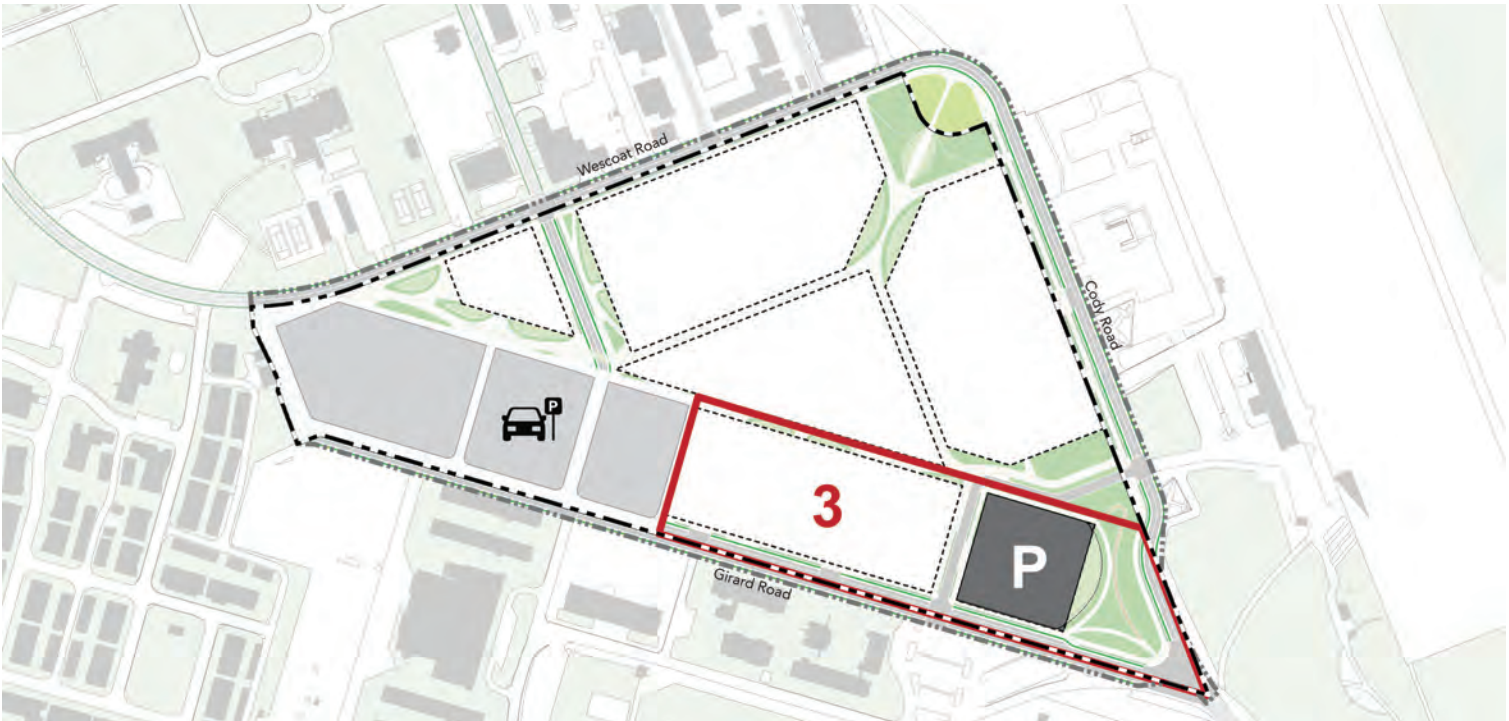


PHASE 2

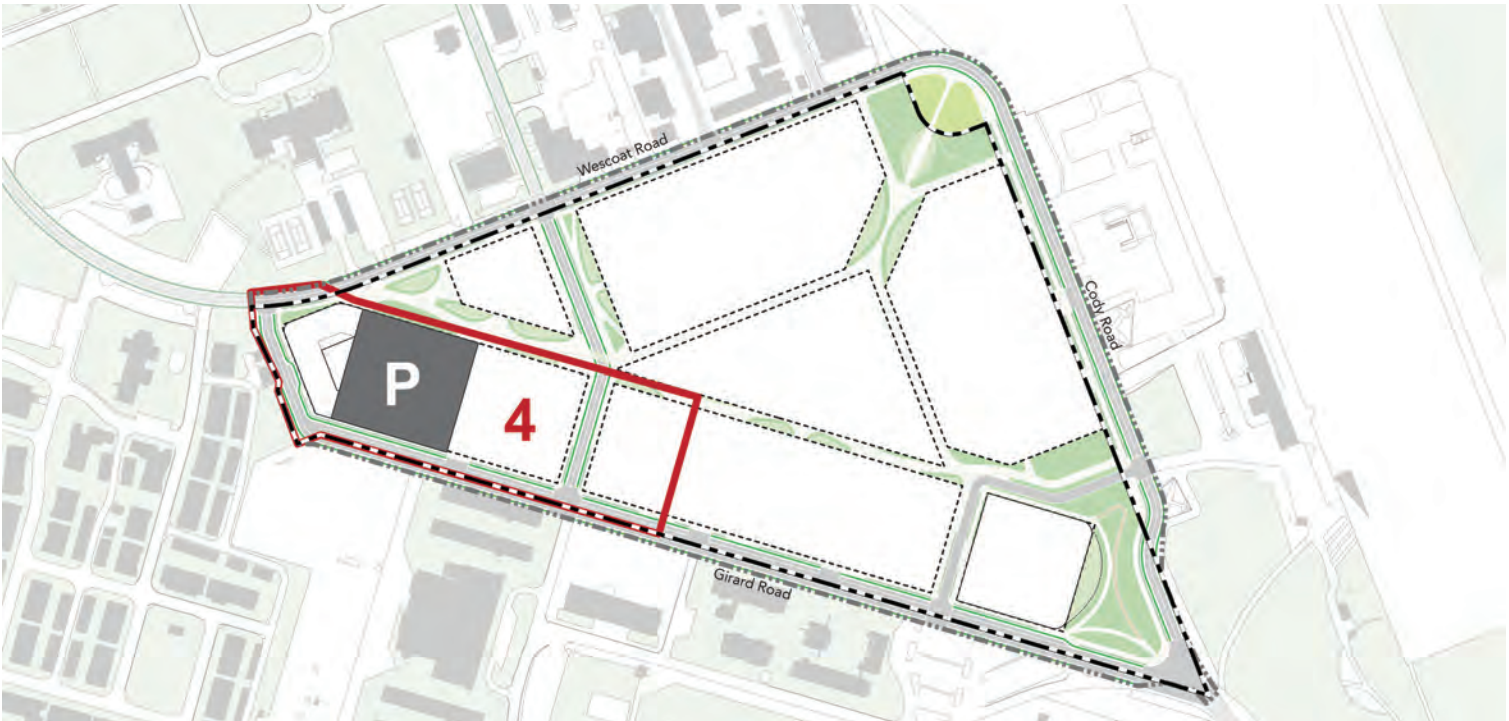


--- Parcel Boundary
- - - - - Project Site

PHASE 3



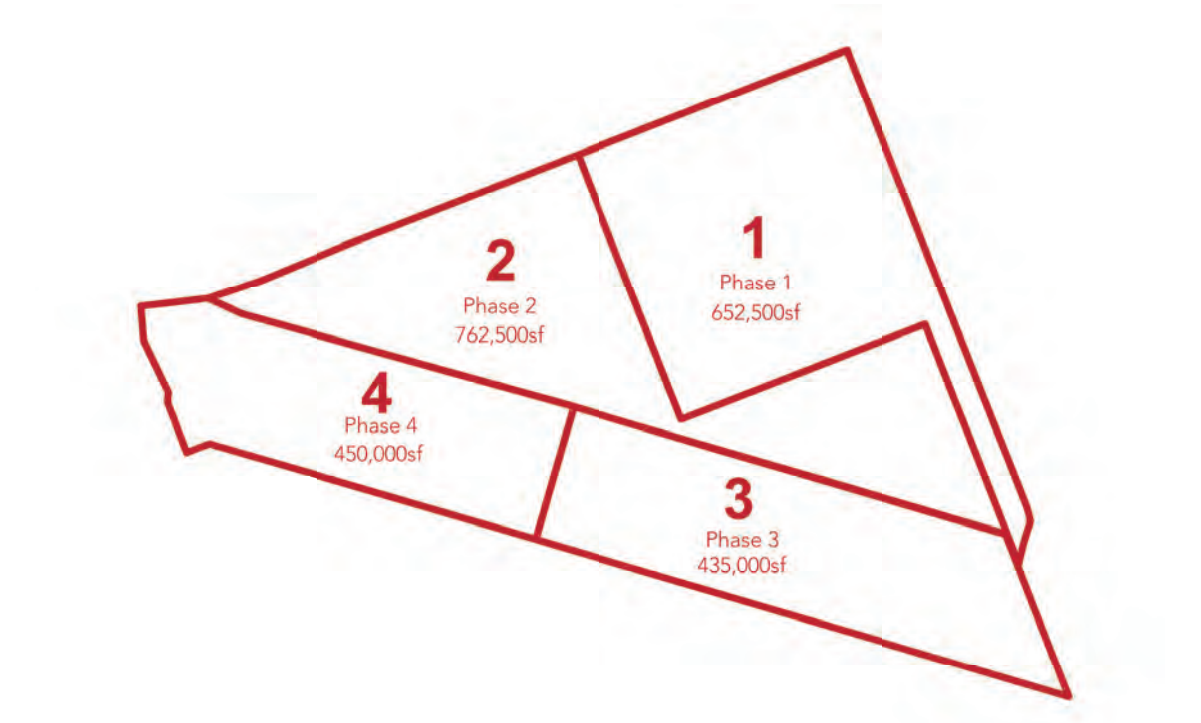
PHASE 4



PARKING

SURFACE PARKING AND PHASING - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

Parking by Phasing	Phase 1	Phase 2	Phase 3	Phase 4	Total Maximum Number of Stalls
Parking Demand (Number of Stalls)					
Research and Office Uses	943	943	608	454	2,948
Office	165	165	113	83	525
Laboratory and R&D	668	668	428	323	2,085
Academic	111	111	68	49	338
Conference Center	0	43	0	0	43
Active Uses	22	51	33	25	130
Housing and Lodging					
Short Term Stay	0	129	0	0	129
Student Faculty Housing	0	0	0	0	0
Total Number of Stalls by Phase	965	1,165	641	479	3,250
Cumulative Total Number of Stalls	965	2,130	2,771	3,250	N/A
Parking Supply (Number of Stalls)					
Multi-Story Parking					
GSF	0	0	555,000	525,000	
Number of Stalls by Phase	0	0	1,708	1,615	
Cumulative Number of Stalls	0	0		3,323	
Temporary Surface Parking					
Surface Parking Area (SF)	415,000	529,000	254,000	0	
Number of Stalls	922	1,176	564		
Number of Stall (with Attendant Assist)	1,227	1,563	751	0	
Number of Stall (with Full Valet)	1,614	2,057	988		
Total Number of Stalls by Phase	922	1,176	2,272	3,323	
Total Number of Stall with Attendant Assist (33% increase)	1,227	1,563	2,458	0	
Total Number of Stall with Full Valet(75% Increase)	1,614	2,057	2,695		
Delta without valet	-42	-954	-498		
Delta with Attendant Assist	262	-566	-312	0	
Delta with Full Valet		-73	0		



Surface Parking Valet Assumptions	
Attendant Assist Valet	Full Valet
33% efficiency increase=new, standard surface lots are designed for traditional self-parking then converted to valet as needed.	75% efficiency increase=new surface parking designed an built specific to valet use, no self-parking allowed.

PARKING

PARKING SPACE TYPES - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

VEHICULAR PARKING

VEHICULAR PARKING DEMAND (MAXIMUM) (w/ Share Reduction)		Subarea 1	Subarea 2	Subarea 3	Subareal 4	Subarea 5	Subarea 6	Subarea 7	Parking Stall By Use MAXIMUM	Ratio*
	Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	per 1000
Research and Office Uses										
Office		0	180	150	0	150	45	0	525	1.5
Laboratory and R&D		0	705	630	0	570	180	0	2,085	1.5
Academic		0	117	104	0	91	26	0	338	1.3
Conference Center		43	0	0	0	0	0	0	43	1.7
Active Uses		9	26	26	0	51	17	26	153	1.7
Short-Term Lodging (By Unit)		130	0	0	0	0	0	0	130	1.3
Student/Faculty Housing (by Unit)		0	0	0	0	0	145	0	145	1.0
Total Vehicular Space Demand/Req'd (w/ Share Reduction)									3,419	

*Ratio includes 15% target shared parking reduction applied evenly to each use.

BICYCLE PARKING

SHORT-TERM BICYCLE PARKING DEMAND (MINIMUM)		Subarea 1	Subarea 2	Subarea 3	Subareal 4	Subarea 5	Subarea 6	Subarea 7	Short-Term Bicycle Parking Stall MINIMUM
	Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses		0	120	106	0	97	30	0	345
Office		0	23	19	0	19	6	0	66
Laboratory and R&D		0	88	79	0	71	23	0	261
Academic		0	9	8	0	7	2	0	27
Conference Center		0	0	0	0	0	0	0	0
Active Uses		4	11	11	0	23	8	11	68
Short-Term Lodging (By Unit)		15	0	0	0	0	0	0	15
Student/Faculty Housing (by Unit)		0	0	0	0	0	22	0	22
Total Short-Term Bicycle Space Demand/Req'd									459

LONG-TERM BICYCLE PARKING DEMAND (MINIMUM)		Subarea 1	Subarea 2	Subarea 3	Subareal 4	Subarea 5	Subarea 6	Subarea 7	Long-Term Bicycle Parking Stall MINIMUM
	Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses		0	348	305	0	281	85	0	1,019
Office		0	90	75	0	75	23	0	263
Laboratory and R&D		0	162	145	0	131	41	0	480
Academic		0	96	85	0	74	21	0	277
Conference Center		0	0	0	0	0	0	0	0
Active Uses		1	2	2	0	5	2	2	14
Short-Term Lodging (By Unit)		113	0	0	0	0	0	0	113
Student/Faculty Housing (by Unit)		0	0	0	0	0	195	0	195
Total Long-Term Bicycle Space Demand/Req'd									1,342

SCOOTER AND CARGO E-BIKE PARKING

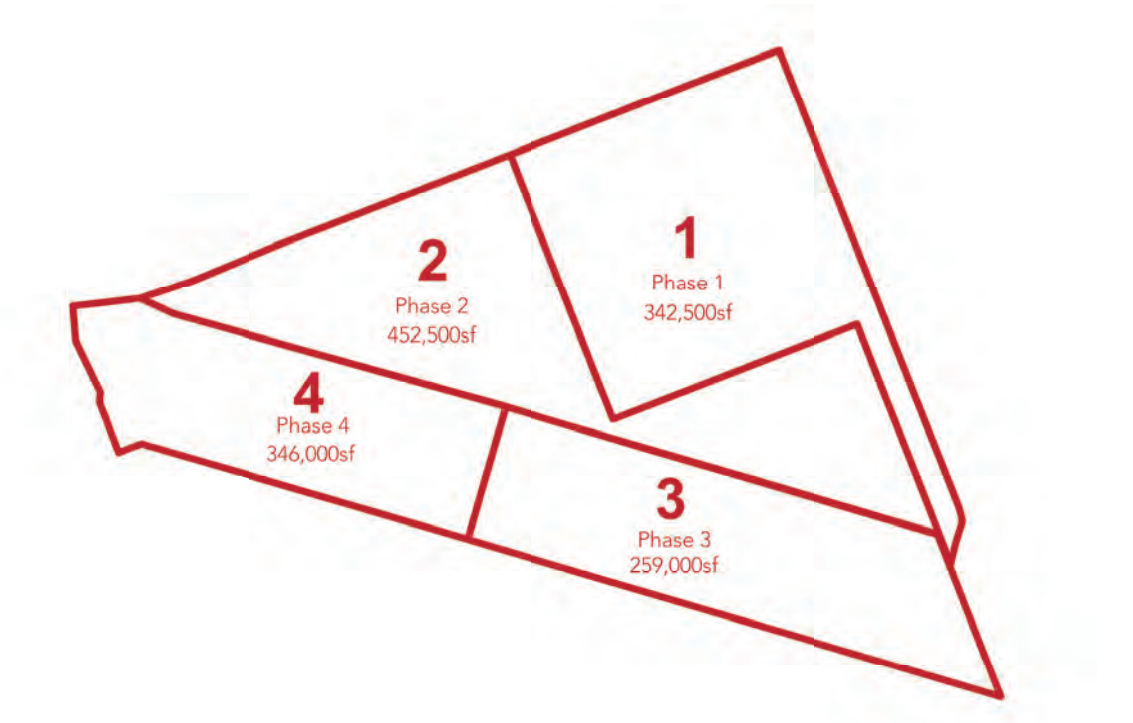
SCOOTER PARKING DEMAND (MINIMUM)		Subarea 1	Subarea 2	Subarea 3	Subareal 4	Subarea 5	Subarea 6	Subarea 7	Scooter Parking Stall MINIMUM
	Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses		0	94	82	0	76	23	0	274
Office		0	23	19	0	19	6	0	66
Laboratory and R&D		0	50	45	0	40	13	0	148
Academic		0	21	19	0	16	5	0	61
Conference Center		0	0	0	0	0	0	0	0
Active Uses		1	3	3	0	5	2	3	16
Short-Term Lodging (By Unit)		26	0	0	0	0	0	0	26
Student/Faculty Housing (by Unit)		0	0	0	0	0	43	0	43
Total Scooter Space Demand/Req'd									359

CARGO E-BIKE PARKING DEMAND (MINIMUM)		Subarea 1	Subarea 2	Subarea 3	Subareal 4	Subarea 5	Subarea 6	Subarea 7	Cargo E-Bike Parking Stall MINIMUM
	Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses		0	70	61	0	56	17	0	204
Office		0	18	15	0	15	5	0	53
Laboratory and R&D		0	32	29	0	26	8	0	96
Academic		0	19	17	0	15	4	0	55
Conference Center		0	0	0	0	0	0	0	0
Active Uses		1	0	0	0	0	0	0	2
Short-Term Lodging (By Unit)		23	0	0	0	0	0	0	23
Student/Faculty Housing (by Unit)		0	0	0	0	0	39	0	39
Total Cargo E-Bike Space Demand/Req'd									268

PARKING

SURFACE PARKING AND PHASING - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

Parking by Phasing	Phase 1	Phase 2	Phase 3	Phase 4	Total Maximum Number of Stalls
Parking Demand (Number of Stalls)					
Research and Office Uses	479	479	343	291	1,592
Office	86	86	62	51	285
Laboratory and R&D	338	338	242	208	1,125
Academic	55	55	39	33	182
Conference Center	0	43	0	0	43
Active Uses	26	60	38	30	153
Housing and Lodging					
Short-Term Lodging	0	130	0	0	130
Student/Faculty Housing	0	0	0	145	145
Total Number of Stalls by Phase	505	711	381	466	2,063
Cumulative Total Number of Stalls	505	1,216	1,597	2,063	N/A
Parking Supply (Number of Stalls)					
Multi-Story Parking					
GSF	0	0	555,000	525,000	
Number of Stalls by Phase	0	0	1,708	1,615	
Cumulative Number of Stalls	0	0		3,323	
Temporary Surface Parking					
Surface Parking Area (SF)	415,000	529,000	254,000	0	
Number of Stalls	922	1,176	564		
Number of Stall (with Attendant Assist)	1,227	1,563	751	0	
Number of Stall (with Full Valet)	1,614	2,057	988		
Total Number of Stalls by Phase	922	1,176	2,272	3,323	
Total Number of Stall with Attendant Assist (33% increase)	1,227	1,563	2,458	0	
Total Number of Stall with Full Valet(75% Increase)	1,614	2,057	2,695		
Delta without valet	418	-40	676		



PARKING

PARKING SPACE TYPES - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

VEHICULAR PARKING

VEHICULAR PARKING DEMAND (MAXIMUM) (w/ Share Reduction)	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Parking Stall By Use MAXIMUM	Ratio*
Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	per 1000
Research and Office Uses									
Office	0	90	83	0	83	30	0	285	1.5
Laboratory and R&D	0	353	323	0	323	128	0	1,125	1.5
Academic	0	59	52	0	52	20	0	182	1.3
Conference Center	43	0	0	0	0	0	0	43	1.7
Active Uses	9	26	26	0	51	17	26	153	1.7
Short-Term Lodging (By Unit)	130	0	0	0	0	0	0	130	1.3 per unit
Student/Faculty Housing (by Unit)	0	0	0	0	0	145	0	145	1 per unit
Total Vehicular Space Demand/Req'd (w/ Share Reduction)	181	527	483	0	508	339	26	2,063	

*Ratio includes 15% target shared parking reduction applied evenly to each use

BICYCLE PARKING

SHORT-TERM BICYCLE PARKING DEMAND (MINIMUM)	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Short-Term Bicycle Parking Stall MINIMUM
Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses	0	60	55	0	55	21	0	191
Office	0	11	10	0	10	4	0	36
Laboratory and R&D	0	44	40	0	40	16	0	141
Academic	0	5	4	0	4	2	0	14
Conference Center	0	0	0	0	0	0	0	0
Active Uses	4	11	11	0	23	8	11	68
Short-Term Lodging (By Unit)	15	0	0	0	0	0	0	15
Student/Faculty Housing (by Unit)	0	0	0	0	0	22	0	22
Total Short-Term Bicycle Space Demand/Req'd								296

LONG -TERM BICYCLE PARKING DEMAND (MINIMUM)	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Long-Term Bicycle Parking Stall MINIMUM
Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses	0	174	158	0	158	60	0	550
Office	0	45	41	0	41	15	0	143
Laboratory and R&D	0	81	74	0	74	29	0	259
Academic	0	48	43	0	43	16	0	149
Conference Center	0	0	0	0	0	0	0	0
Active Uses	1	2	2	0	5	2	2	14
Short-Term Lodging (By Unit)	113	0	0	0	0	0	0	113
Student/Faculty Housing (by Unit)	0	0	0	0	0	195	0	195
Total Long-Term Bicycle Space Demand/Req'd								873

SCOOTER AND CARGO E-BIKE PARKING

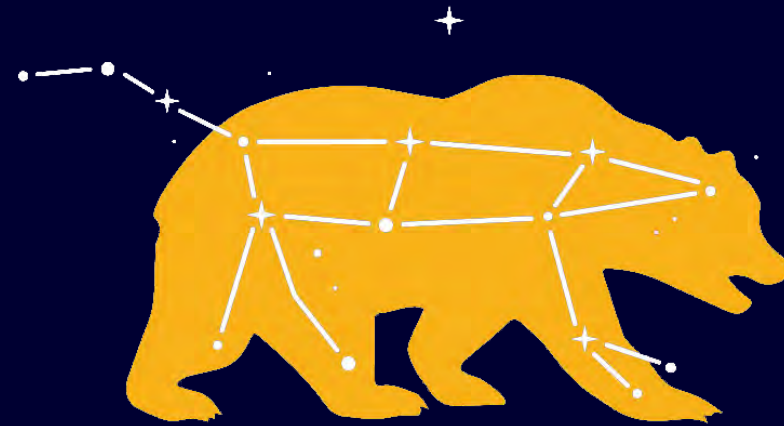
SCOOTER PARKING DEMAND (MINIMUM)	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5	Parcel 6	Parcel 7	Scooter Parking Stall MINIMUM
Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses	0	47	43	0	43	16	0	148
Office	0	11	10	0	10	4	0	36
Laboratory and R&D	0	25	23	0	23	9	0	80
Academic	0	11	9	0	9	4	0	33
Conference Center	0	0	0	0	0	0	0	0
Active Uses	1	3	3	0	5	2	3	16
Short-Term Lodging (By Unit)	26	0	0	0	0	0	0	26
Student/Faculty Housing (by Unit)	0	0	0	0	0	43	0	43
Total Scooter Space Demand/Req'd								234

CARGO E-BIKE PARKING DEMAND (MINIMUM)	Subarea 1	Subarea 2	Subarea 3	Subarea 4	Subarea 5	Subarea 6	Subarea 7	Cargo E-Bike Parking Stall MINIMUM
Units	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces	Spaces
Research and Office Uses	0	35	32	0	32	12	0	110
Office	0	9	8	0	8	3	0	29
Laboratory and R&D	0	16	15	0	15	6	0	52
Academic	0	10	9	0	9	3	0	30
Conference Center	0	0	0	0	0	0	0	0
Active Uses	0	0	0	0	1	0	0	3
Short-Term Lodging (By Unit)	23	0	0	0	0	0	0	23
Student/Faculty Housing (by Unit)	0	0	0	0	0	39	0	39
Total Cargo E-Bike Space Demand/Req'd								174



BERKELEY SPACE CENTER
AT NASA RESEARCH PARK

Berkeley **SKS**
UNIVERSITY OF CALIFORNIA



BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

DEVELOPMENT GUIDELINES SPRING 2026

DRAFT DEVELOPMENT GUIDELINES

Issued Spring 2026

PROJECT TEAM



fieldoperations

LANGAN



LMS^A

eki environment
& water



FEHR & PEERS



TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1	5. OPEN SPACE	46
SITE IN INNOVATION DISTRICT CONTEXT	2	PRINCIPLES / GOALS	47
PROJECT SITE PLAN	3	ORGANIZING FRAMEWORK	48
VISION & GOALS	4	OPEN SPACE NETWORK	49
GUIDING PRINCIPLES - TOWARDS A KNOWLEDGE COMMUNITY	5	PROGRAMMING & ACTIVATION	50
GUIDING PRINCIPLES - CONNECTION AND INTEGRATION.....	6	SOCIAL ROOMS: TERRACES, PATIOS, & SPILL OUT AREAS	51
GUIDING PRINCIPLES - COHESIVE PLACEMAKING	7	HARDSCAPE MATERIALS & CHARACTER.....	52
PURPOSE OF THIS DOCUMENT.....	8	SITE LIGHTING, FURNISHINGS, & FEATURES	55
PROGRAMMING & PLACEMAKING	10	OPEN SPACE STRATEGIES.....	57
THE PLACES	11	STORMWATER STRATEGIES	58
2. SUSTAINABILITY	12	PHYTOREMEDIATION STRATEGIES	59
INTRODUCTION	13	SENSITIVE HABITAT GUIDELINES	60
CLIMATE AND CONTEXTUAL DESIGN RESPONSES.....	14	PROTECTED TREES	61
SITE DRIVERS.....	16	PLANTING CHARACTER.....	62
3. SITE	20	PLANT PALETTE GUIDELINES	64
PRINCIPLES.....	21	PLANTING GUIDELINES	68
PRIORITIZED INTERIOR VIEWS	22	6. BUILDINGS	69
PRIORITIZED EXTERIOR VIEWS	24	PRINCIPLES.....	70
MAXIMUM DEVELOPMENT PARAMETERS.....	27	LAND USE AND PARKING STANDARDS SUMMARY	71
LAND USE PLAN	29	ARCHITECTURAL CHARACTER	72
FLEXIBILITY OF SUBAREAS	30	BIRD FRIENDLY DESIGN	78
DISTRIC EDGE HEIGHT, SETBACKS AND STEPBACKS	31	MECHANICAL SCREENING	79
RESEARCH BUILDING HEIGHTS	33	SERVICE ENTRIES AND LOADING	80
MAXIMUM DEVELOPMENT PARAMETER ELEVATIONS	34	WORKING YARDS	81
4. MOBILITY	35	VEHICULAR PARKING	82
PRINCIPLES / GOALS	36	BIKE AND SCOOTER PARKING	83
CONNECTIVE NETWORK	37	SHUTTLE STOP AND BIKE LANE CONFIGURATION	84
STREET NETWORK	38	LARGE DIESEL EMERGENCY STANDBY ENGINES	85
CURB USE & BUILDING ACCESS	39	PHOTOVOLTAIC AND BATTERY SYSTEMS.....	86
MASTER PLAN STREET SECTIONS	40	7. APPENDIX	87
SHARED STREET SECTIONS.....	44	STANDARDS SUMMARY	88

EXECUTIVE SUMMARY

SITE IN INNOVATION DISTRICT CONTEXT	2
PROJECT SITE PLAN	3
VISION & GOALS	4
GUIDING PRINCIPLES - TOWARDS A KNOWLEDGE COMMUNITY	5
GUIDING PRINCIPLES - CONNECTION AND INTEGRATION	6
GUIDING PRINCIPLES - COHESIVE PLACEMAKING	7
PURPOSE OF THIS DOCUMENT	8
PROGRAMMING & PLACEMAKING	10
THE PLACES	11

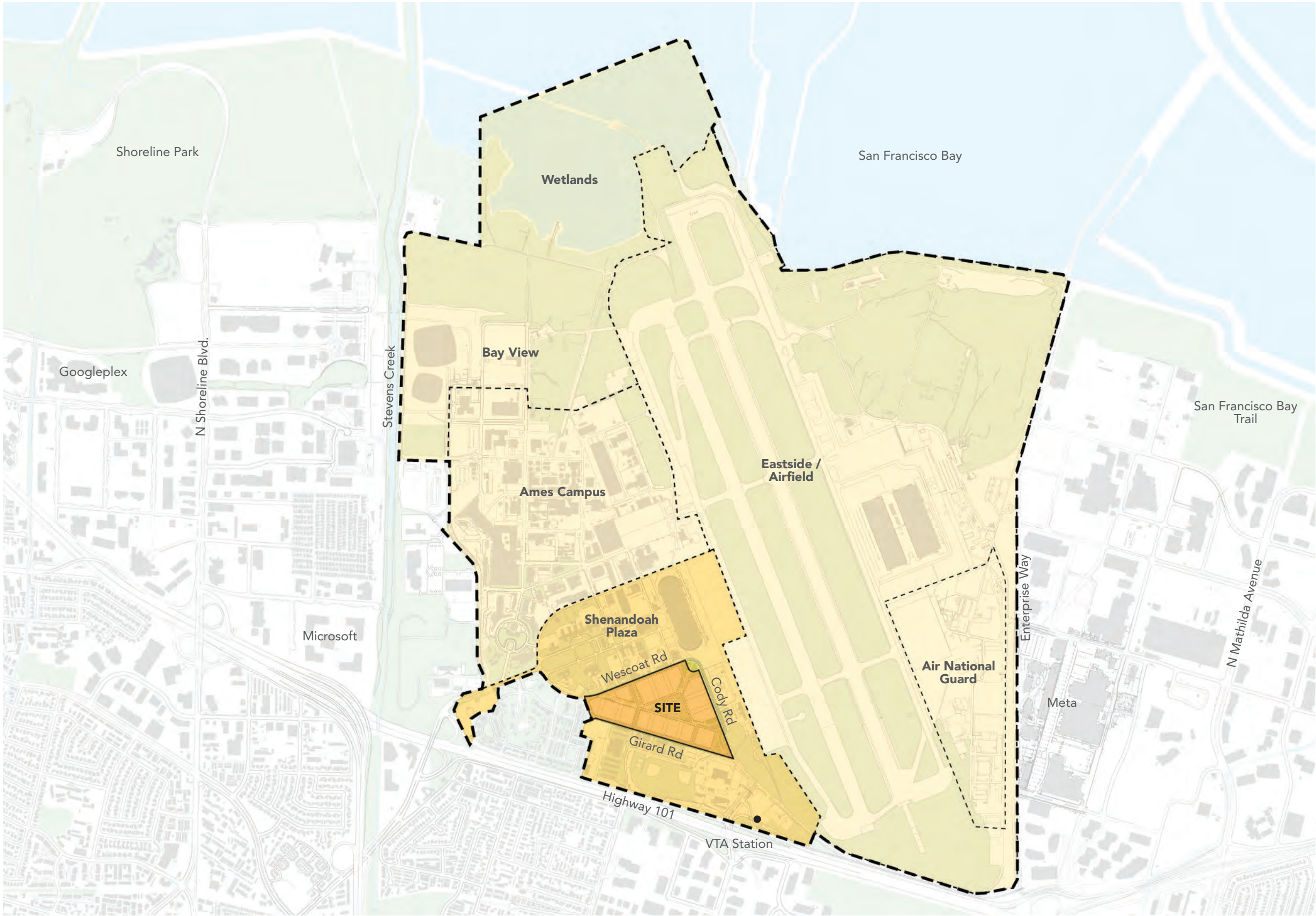
EXECUTIVE SUMMARY

SITE IN INNOVATION DISTRICT CONTEXT

The Berkeley Space Center at NASA Research Park is a part of the greater National Aeronautics and Space Administration Ames Research Center (NASA ARC) in Silicon Valley.

The Berkeley Space Center is boarded by Shenandoah Plaza to the north and the Moffett Federal Airfield to its east. North of NASA Research Park (NRP) district is the Ames Campus, Bay View and Wetlands, and U.S. 101 to its south to the NRP district.

- Site (Berkeley Space Center at NASA Research Park)
- NASA Research Park
- NASA Ames Research Center
- Other Districts within the NASA Ames Research Center



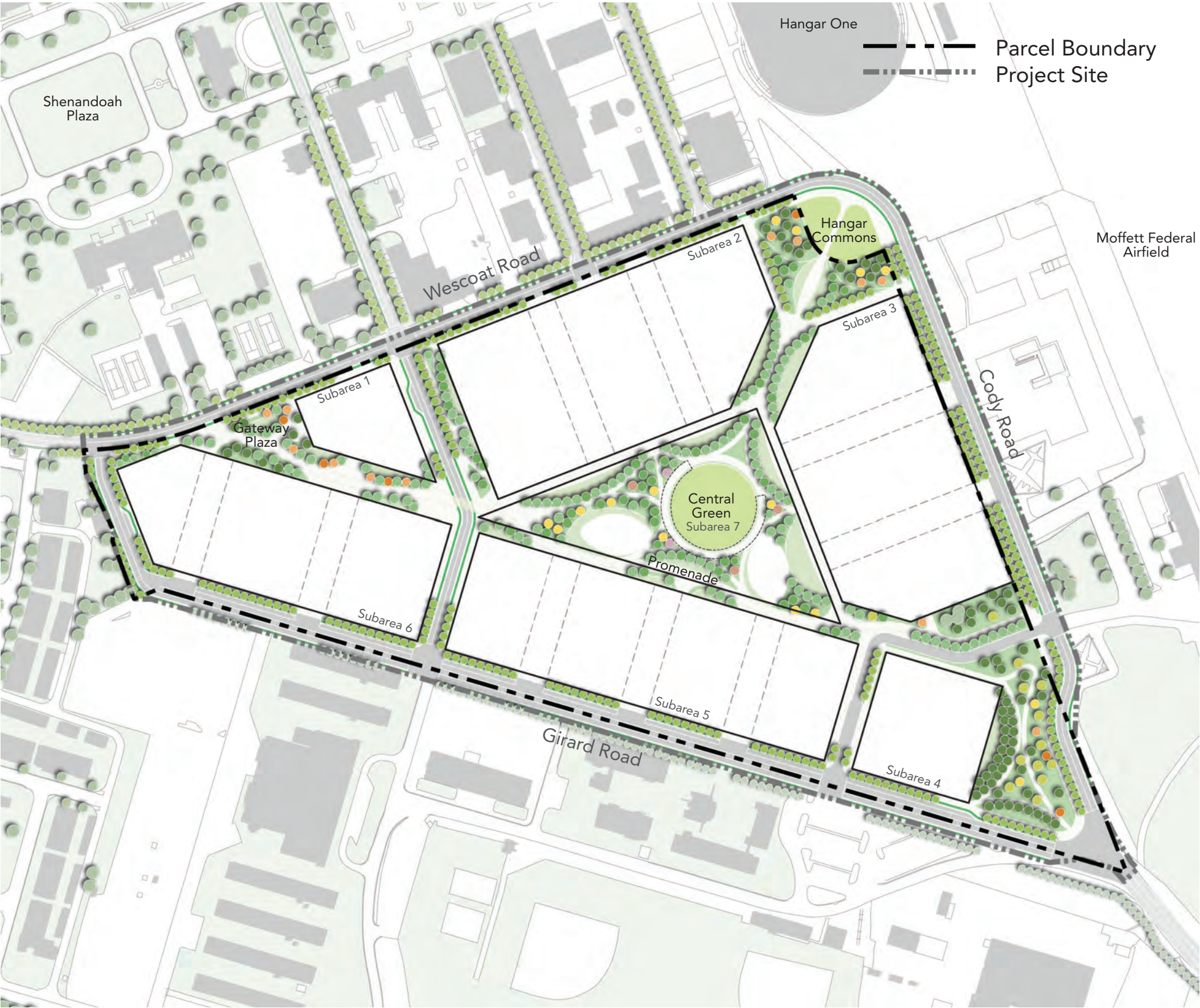
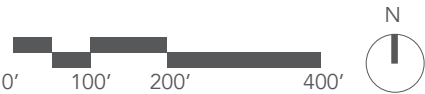
Site Context

EXECUTIVE SUMMARY

PROJECT SITE PLAN

While there are a number of available development parcels throughout NASA ARC, the NASA Research Park (NRP) site stands out as the obvious location for the deployment of a new research and innovation-oriented development – the Berkeley Space Center at NASA Research Park. Beyond its strategic location adjacent to Shenandoah Plaza and Moffett Federal Airfield, there are a number of reasons for the site’s desirability including its connectivity to U.S. 101 and the regional transit system; the fact that the parcel is currently publicly held; and its sheer size, with a 39-acre Project Site. However, perhaps the most appealing feature of the Project Site is its adjacency to both an established research campus at NASA ARC with remarkable, largest-of-their-kind facilities including wind tunnels and supercomputers, as well as a private-industry pioneer with Google's Planetary Ventures in Hangar One.

Indeed, what distinguishes the Berkeley Space Center from other global research developments is both physical and logistical. Every development of this type must offer state-of-the-art lab and office facilities; cultural and lifestyle amenities; adjacencies to recognized centers of innovation; partnerships with institutions of academic excellence; a defined industry cluster that provides the critical mass of infrastructure, facilities, people and amenities; and a location that offers attractive live/work options to draw global talent. The Master Plan provides a vision to achieve all of the above, by leveraging its strategic position within a growing aerospace cluster and providing a compelling spatial framework for a world-class research environment.



Site Context Illustrative Plan

EXECUTIVE SUMMARY

VISION & GOALS

BERKELEY SPACE CENTER AT NASA RESEARCH PARK

After nearly a century of fostering remarkable research achievements, National Aeronautics and Space Administration Ames Research Center (NASA ARC) in Silicon Valley is at once a place of historic significance and a nexus for collaborative, groundbreaking research, education and development. The research at NASA ARC has provided leadership in astrobiology; small satellites; robotic lunar exploration; the search for habitable planets; supercomputing; intelligent/adaptive systems; advanced thermal protection and airborne astronomy.

Now, with the introduction of the Berkeley Space Center Master Plan, NASA ARC and the NASA Research Park (NRP) are poised to further bolster the district’s position as a global center of aerospace and technological research and a model for collaborative research and education.

Note: The typology massing shown is for illustrative and informational purposes only, these are not building and landscape designs. They illustrate that the Subareas are capable of meeting the project metrics, while performing well from a daylighting, multi-tenanting, and functional perspective. The dimensions are guided by past experience with research buildings of similar program and site specific solar analysis.

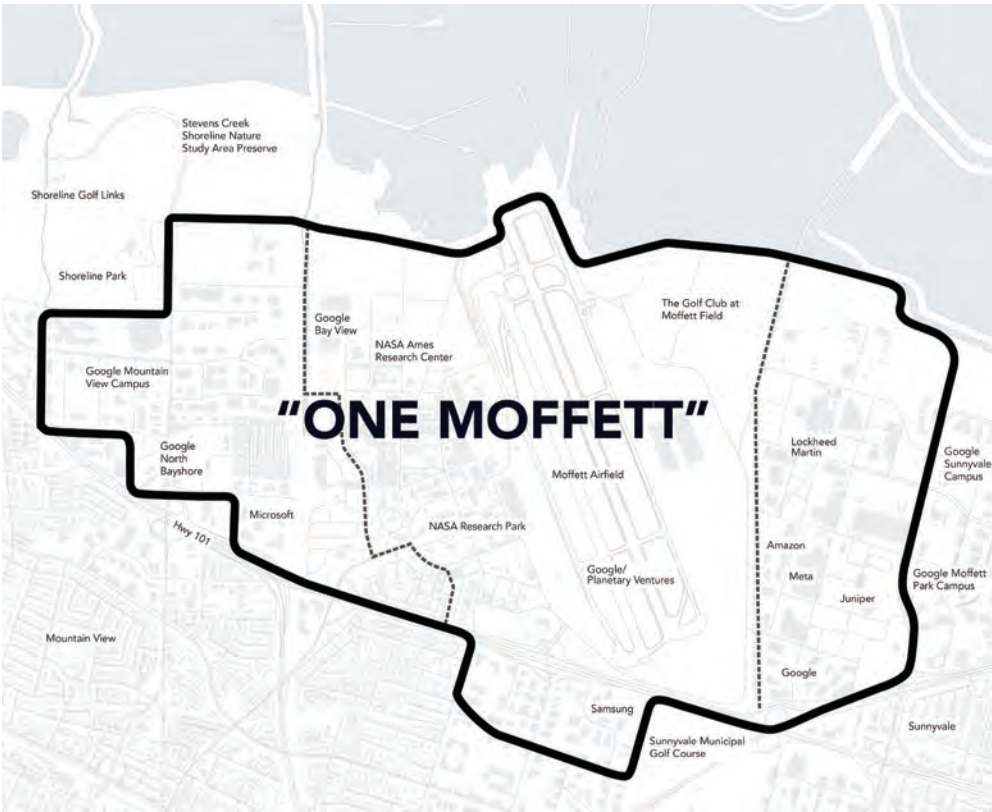


Illustrative District Aerial Rendering

EXECUTIVE SUMMARY

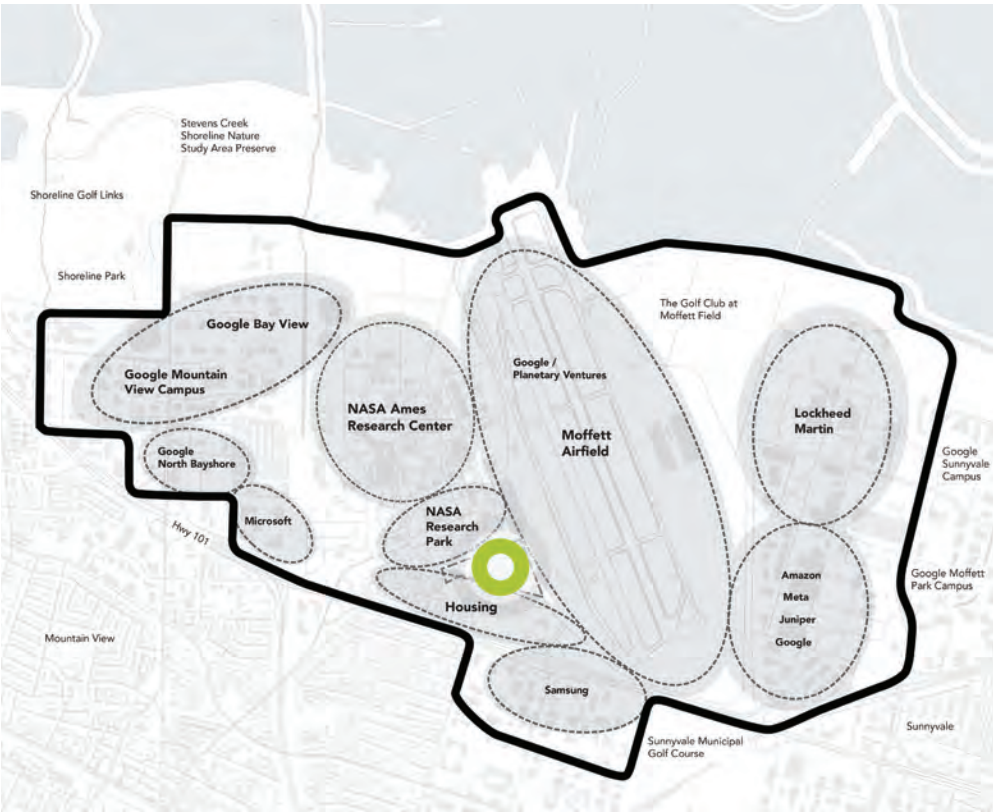
GUIDING PRINCIPLES - TOWARDS A KNOWLEDGE COMMUNITY

"ONE MOFFETT"



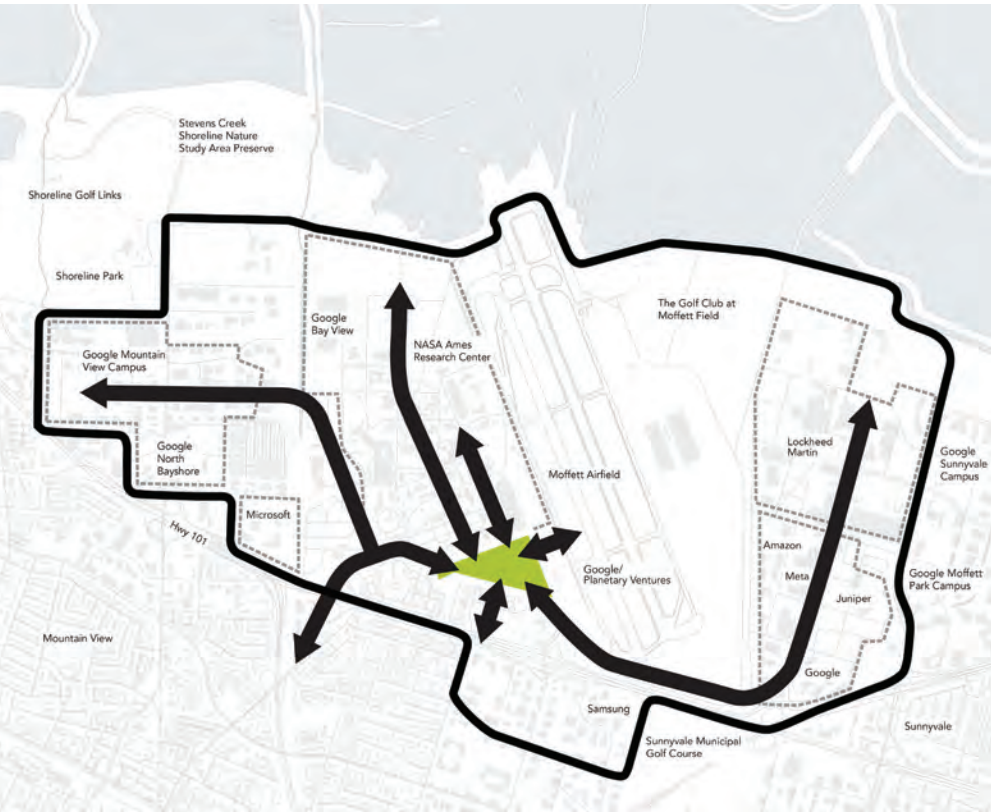
A major goal of the Berkeley Space Center is to adopt a comprehensive approach encompassing the entire district, merging detailed analysis with imaginative vision. This offers the opportunity to integrate architecture, landscape, transportation, environmental considerations, sustainability efforts, and broader social and intellectual goals into a unified concept known as a connected "Knowledge Community" or "One Moffett."

"CENTER-POINT"



Berkeley Space Center has an opportunity to become the de facto "center-point" of this broader knowledge community of NASA Research Park, with its open framework and protocols relative to the greater NASA ARC and the nearby private campuses.

"OPEN BORDERS"



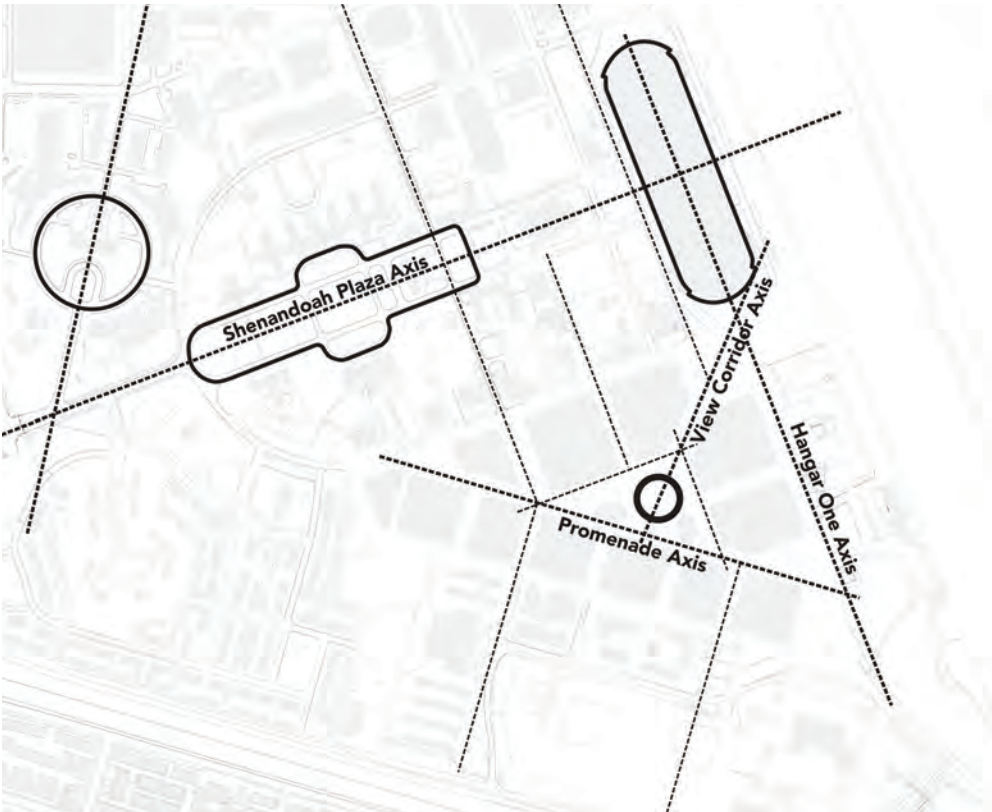
Berkeley Space Center presents an exciting prospect as the university partnership allows the Project Site to transform into a neutral and inclusive meeting place for the knowledge community. It can become a hub where industry, university, and government organizations come together to collaborate, exchange research, and push the boundaries of knowledge, fostering the development of fresh relationships and connections.

The Project Site and its immediate surroundings offer a remarkable opportunity to be envisioned as a "super-connector" of innovation. It can be a distinctive spatial and intellectual framework that effectively links individuals, technology, infrastructure, and knowledge, facilitating seamless interactions and advancements in various fields.

EXECUTIVE SUMMARY

GUIDING PRINCIPLES - CONNECTION AND INTEGRATION

CLASSICAL CONNECTIONS

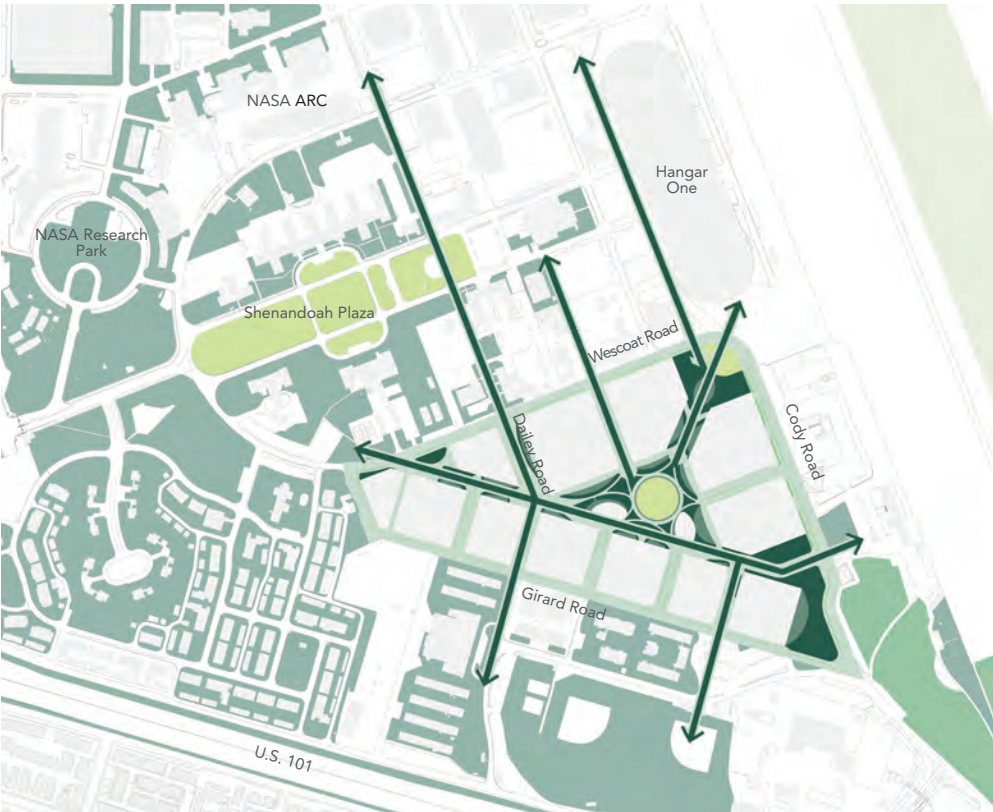


The Project Site is informed by its context spatially by historic iconic features like Hangar One, Moffett Federal Airfield, and Shenandoah Plaza.

Our Project Site can act as an iconic bridge to its context, layering in additional axial connections and acting as a center-point for new innovations and a new district hub.

By embracing and engaging with neighboring iconic structures, we can create a distinct place visually, programmatically, and socially.

PICTURESQUE CONNECTIONS

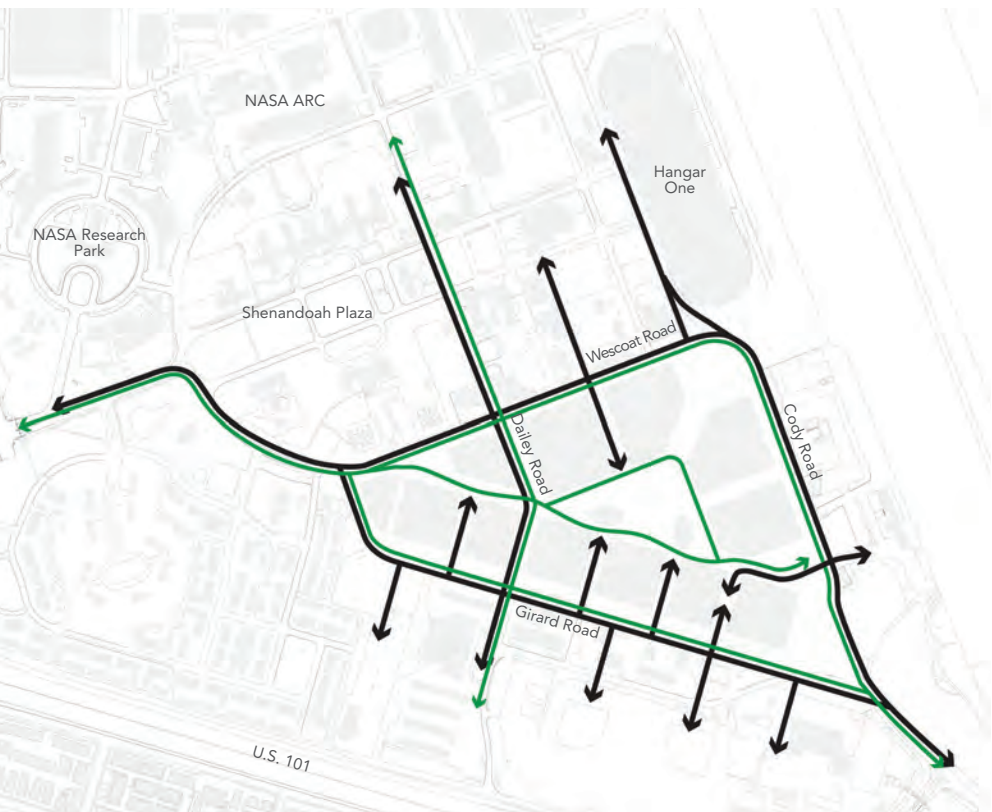


There is an opportunity to connect ecological corridors and remediate the Project Site using natural systems while also using the site to remediate the larger environmental context.

Nature can be a connector linking the project to its surrounds, and facilitating community access and interactions.

In doing this, we honor the Project Site's natural heritage and support the surrounding area's future by increasing resilience. Biodiversity is encouraged on the Project Site to establish a mutually beneficial relationship where living systems provide us ecological services.

PRACTICAL CONNECTIONS



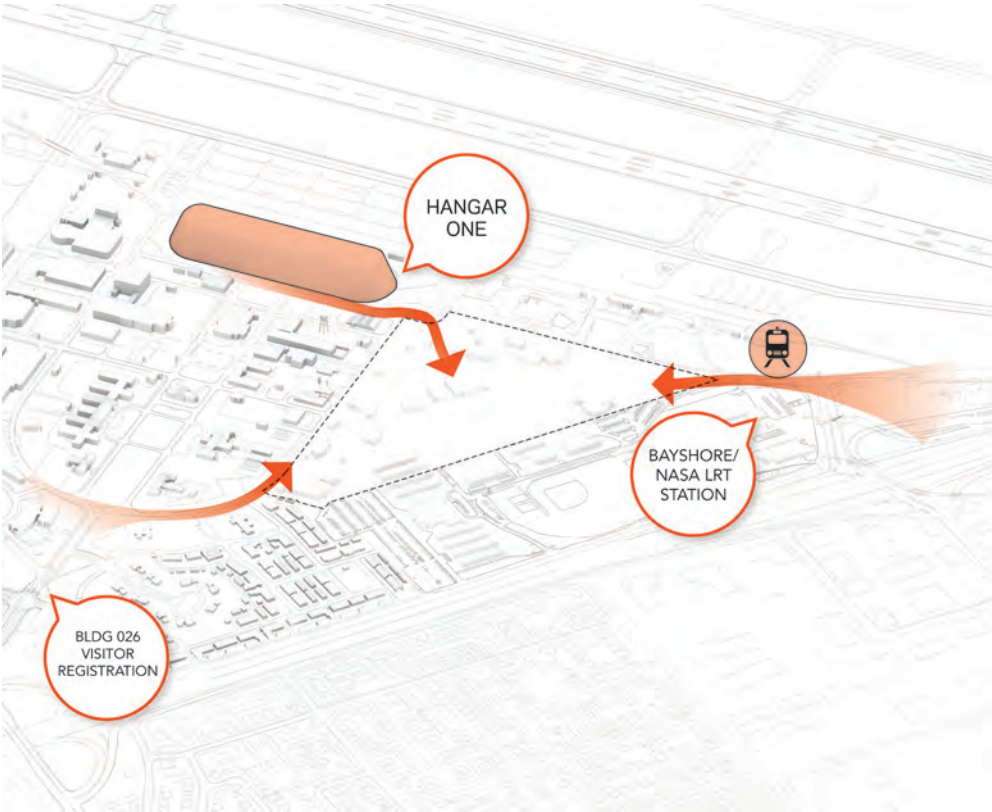
The orientation of the Master Plan strives to provide direct through connections for easy access on foot, bicycle, transit, or vehicle to the surrounding context.

On a district scale, the Project Site provides an additional and convenient connection between Mountain View and Sunnyvale, and aims to collaborate with neighboring stakeholders to encourage a regional network of connectivity that supports and encourages alternative and active transportation modes.

EXECUTIVE SUMMARY

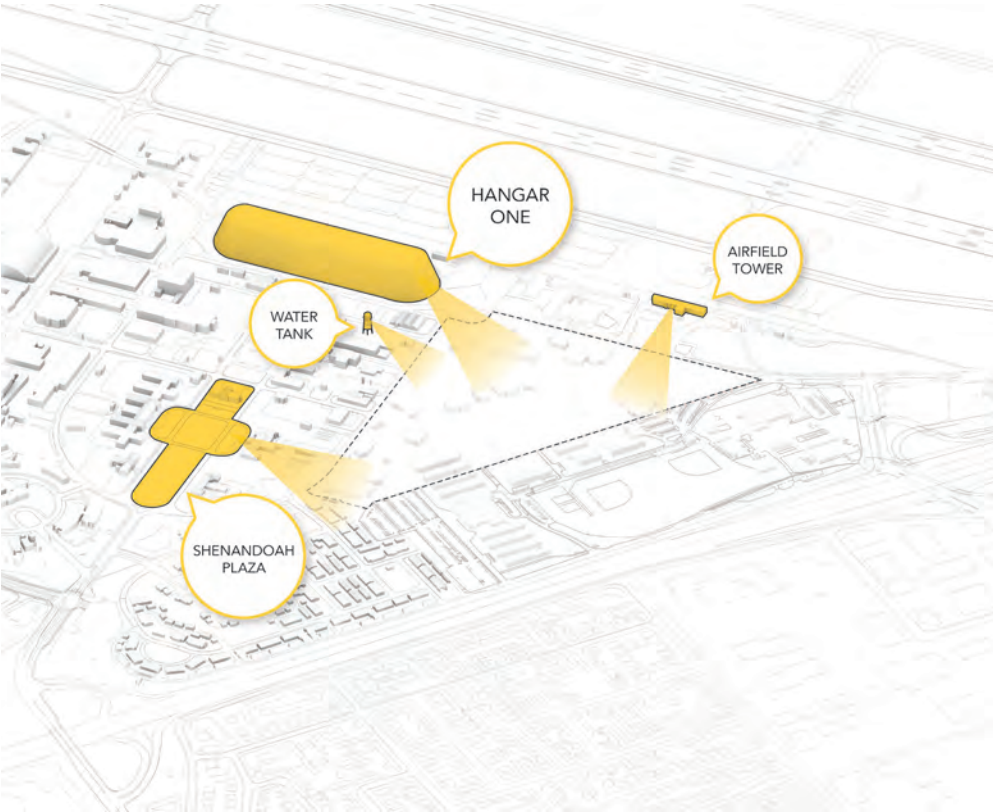
GUIDING PRINCIPLES - COHESIVE PLACEMAKING

GATEWAYS



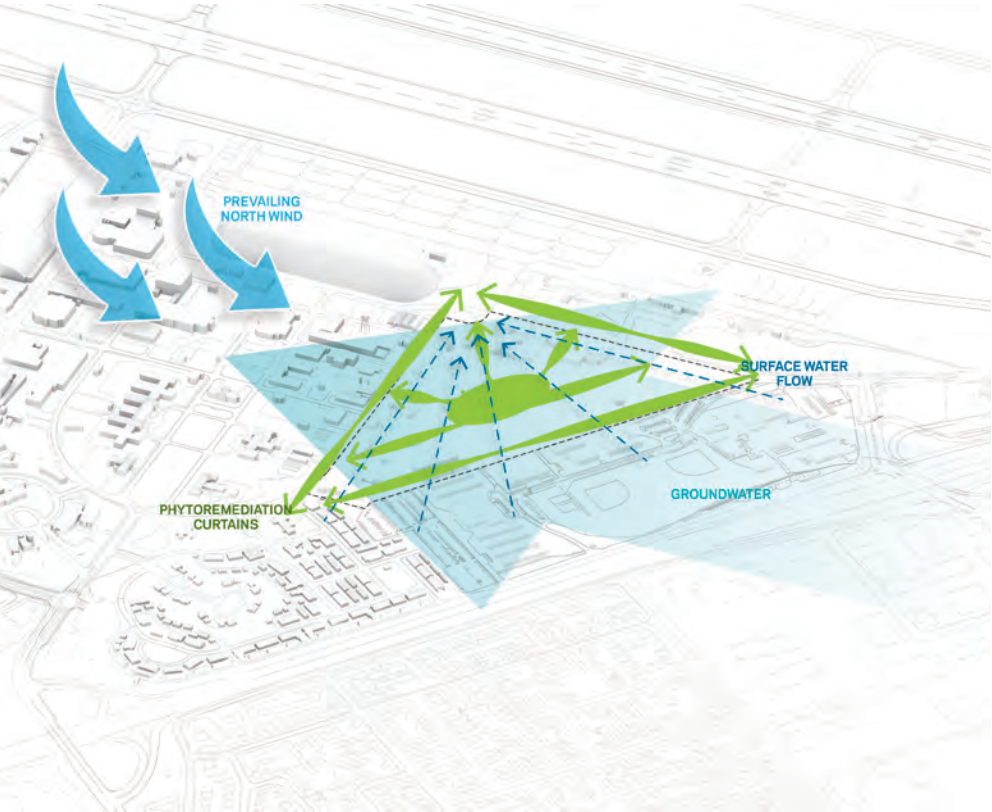
Building on the concept of “One Moffett,” the design utilizes the Project Site's gateways to encourage an open environment. Extending beyond physical entrances, gateways encapsulates introducing visitors at arrival to the unique identity, cultural and historical significance of the Berkeley Space Center at NASA Research Park and creating a memorable first impression. The Project Site's plan responds to it's three gateways – two physical (at the intersection of Cody Road / Girard Road proximate to the Bayshore / NASA Light Rail Transit (LRT) Station and the intersection of Wescoat Road / Girard Road proximate to the NASA Visitor Registration building along Clark Road) and one vista (Hangar One) – to establish a strong sense of arrival. These gateways support an open, accessible, and inclusive site with a Central Green, pedestrian and cyclist friendly pathways, and amenities to catalyze social and collaborative research interactions.

HISTORY



Respecting the extensive physical and research history of the greater NASA ARC and NASA Research Park district, the Master Plan intends to build on the surrounding architectural, landscape, and archeological resources to enhance the proposed development’s sense of place and better integrate it with its surrounds. Both individual resources and the collective district character, view corridors, and landscapes are intended to inform the visual and functional character of the proposed project.

REGENERATIVE NATURE



Capturing opportunities to remediate the site using natural systems while using the site to remediate the wider environmental context.

EXECUTIVE SUMMARY

PURPOSE OF THIS DOCUMENT

HIGH PERFORMANCE AND CONTEXTUAL DESIGN

Purpose of the Development Guidelines

The Berkeley Space Center Development Guidelines aim to create a cohesive framework that honors the rich history of the site, integrates high-performance design strategies, and allows for flexibility to accommodate future needs. The guidelines focus on three elements: the Project Site's historic functions and context, high performance strategies for new buildings and landscapes, and a flexible framework for development.

1. Site Historic Research Functions and Context

NASA ARC, established in 1939 at Moffett Federal Airfield, is deeply rooted in early aviation and situated in California's Silicon Valley – the world’s preeminent hub for technology and global byword for innovation. Initially focused on wind tunnel analysis for propeller-driven aircraft, NASA ARC's research scope has since expanded to include spaceflight, exploration and information technology, remote sensing, engineering, defense and inter-orbit communications. As part of the National Advisory Committee for Aeronautics, the laboratory became NASA Ames Research Center when NASA was formed in 1958 and encompasses uniquely large-scale research facilities such as Hangar One, the Flight and Guidance Simulation Laboratory and the National Full-Scale Aerodynamics Complex (world’s largest wind tunnel) within a short walk or bike distance to the Project Site. The Berkeley Space Center at NASA Research Park draws inspiration from this legacy of research and innovation, intending to create development guidelines for a collaborative and world-class research facility.

2. High-Performance Design Strategies for Buildings and Landscape

To ensure sustainability and comfort, the Berkeley Space Center incorporates various high-performance environmental systems strategies for both buildings and landscapes. These strategies focus on adapting to native environmental and climatic conditions, creating a sustainable and bioclimatic approach to habitat and environmental performance. Key design considerations include:

- Comfort: Utilizing thermal mass, courtyards, and radiant cooling for optimal indoor environments.
- Solar: Incorporating shading, daylight, and solar energy generation to reduce energy consumption.
- Wind: Balancing protection from gusts with access to fresh air and outdoor thermal comfort.
- Water: Using natural systems like bioswales for groundwater retention and phytoremediation gardens to improve soil and water quality.
- Habitat: Encouraging native canopy and understory species to support local wildlife and pollinators.

Sustainability is a core focus throughout these guidelines, both as reinforcing University of California, Berkeley (UC Berkeley)'s commitment to exceptional research and education and the Moffett Partners LLC (Project Proponent)'s commitment to ensuring resilient and sustainable practices. This approach contributes to improved health and well-being for all stakeholders and fostering a vibrant research environment that supports NASA ARC's ongoing mission.

3. Framework for Flexibility

The development guidelines are designed with flexibility in mind, taking cues from the diverse architecture formed by the spirit of continual evolution and reinvention at NASA ARC. By avoiding overly prescriptive styles, they allow for future creative architectural solutions to meet the evolving needs of a range of potential user groups, including researchers, short-term residents, visitors, private development tenants, startups, educators and students. The balance between control and flexibility ensures that the development stays true to the Project Site's identity while adapting to future technologies and research needs.

EXECUTIVE SUMMARY

PURPOSE OF THIS DOCUMENT

COMPLIANCE WITH STATE AND FEDERAL LAW

Project Entities
Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California and SKSP NRP, LLC, is proposing a mixed-use academic and research project, referred to as the Berkeley Space Center at NASA Research Park, on a site at NASA ARC.

Final Document
These Development Guidelines are draft until after the certification of the final environmental entitlement documents, at which time this document will be adopted by NASA for the Project Site.

MASTER PLAN DESCRIPTION

Conceptual plans serve as guidelines for the general site orientation and placement of land uses, open spaces, transportation, and infrastructure, as well as the general scale and massing of development, and overall architectural themes.

Illustrative renderings depict one possible example of development that would substantially conform to the applicable standards and be materially consistent with the vision and design intent conveyed by the conceptual plans. Illustrative renderings are not determinative of the ultimate configuration, building orientation, massing, architectural, landscaping details, or parking.

Definition of the Types of Development Controls Contained within this Document

This document contains a series of “development controls” that are categorized as principles, standards, and guidelines.

- **Principles** are aspirational targets that convey the design intent of the Master Plan. Where not mandated by federal, state, or local jurisdiction, principles are not required. However, vertical developers are encouraged to adhere to these principles to advance the concepts of the Master Plan. Principles are found at the beginning of each chapter.
- **Standards** are mandatory requirements that must be met by all development. Standards generally contain the word “shall,” which indicates that they are required. Within the body of the document text, standards are generally presented before guidelines.

- **Guidelines** are measures that are not required to be implemented for the proposed project but are advised or strongly encouraged. These advisory statements that should be carried out if feasible and generally contain the word “should.” Vertical developers may propose alternative methods to achieve the goals of a guideline or may demonstrate why compliance is not feasible. Guidelines are typically presented after standards.

Future development shall comply with mandatory requirements stipulated in California Building Standards Code, Title 24, and/or local ordinances adopted by NASA or other Authorities Having Jurisdiction (AHJs).

EXECUTIVE SUMMARY

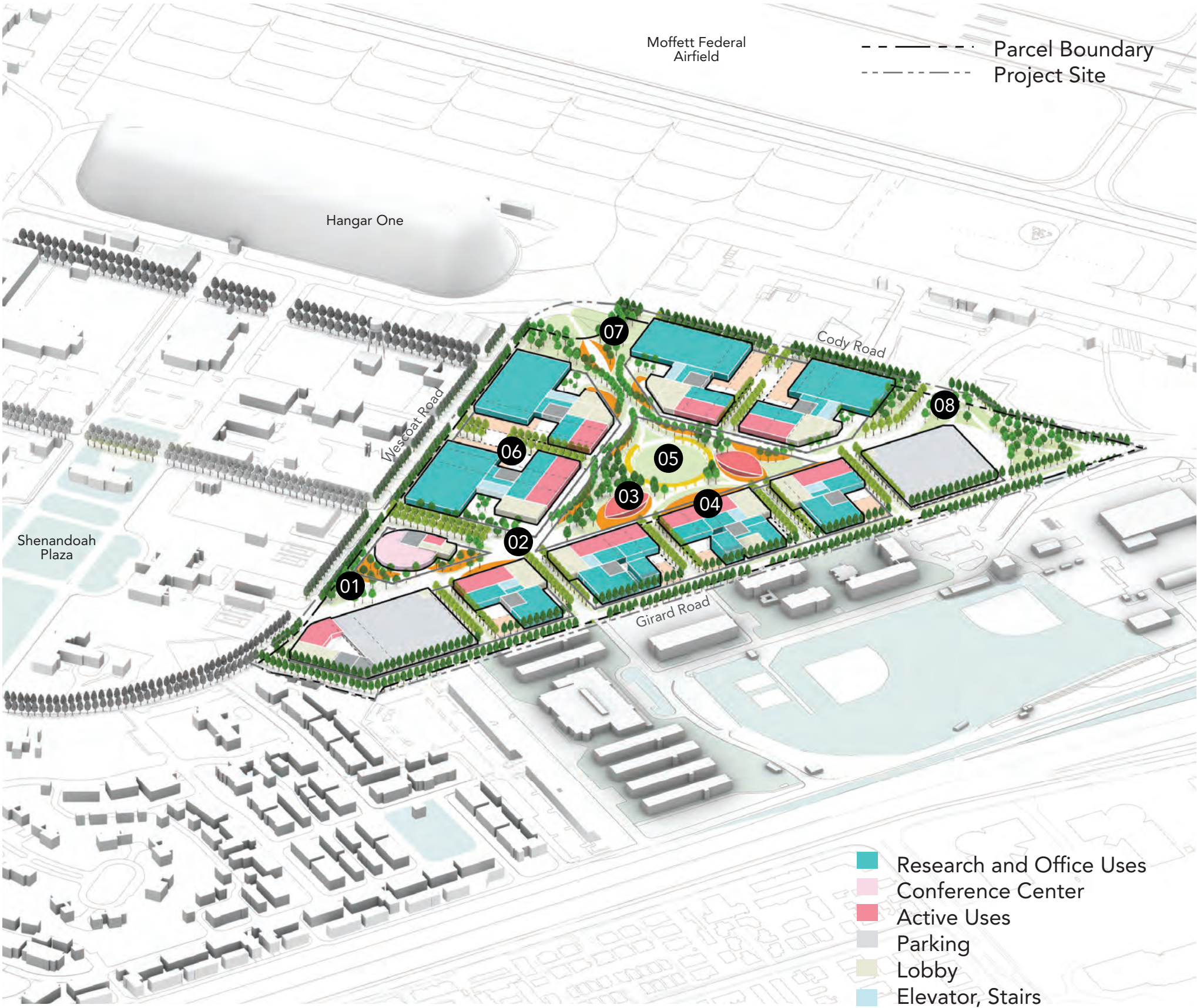
PROGRAMMING & PLACEMAKING

The Berkeley Space Center is envisioned as part of a larger research and innovation ecosystem; therefore, any redevelopment will have a transformative effect on the broader social, intellectual and economic dynamics of NASA ARC and Moffett community. We believe that programming, in particular the ground level programming of interior and exterior spaces, is as much about creating a place as it is about organizing use, circulation and other logistics.

We hold that science and research work best in an environment that forces interaction. The Master Plan for Berkeley Space Center seeks to create such a place, with a critical mass of people that’s needed for productive and innovative research.

LEGEND

- 01. Welcoming Gateway Plaza is activated by conference facility.
- 02. Shaded pedestrian Promenade extends through the site to link buildings and program spaces.
- 03. Amenity pavilions animate the Central Green with retail, food and beverage, and exhibition functions.
- 04. Active ground floor uses extend outdoors into patios around the Central Green.
- 05. The open Central Green area, framed by a solar shade canopy, provides a flexible platform for activity and exhibition.
- 06. Outdoor, multi-purpose service yards adjacent to high bay facilities increase the site's functionality.
- 07. Hangar Commons provides necessary environmental functions and a striking view of Hangar One.
- 08. Strategic vehicular entrance and parking provide efficient access and ensure a pedestrian-oriented district.



Illustrative Ground Floor Uses Diagram

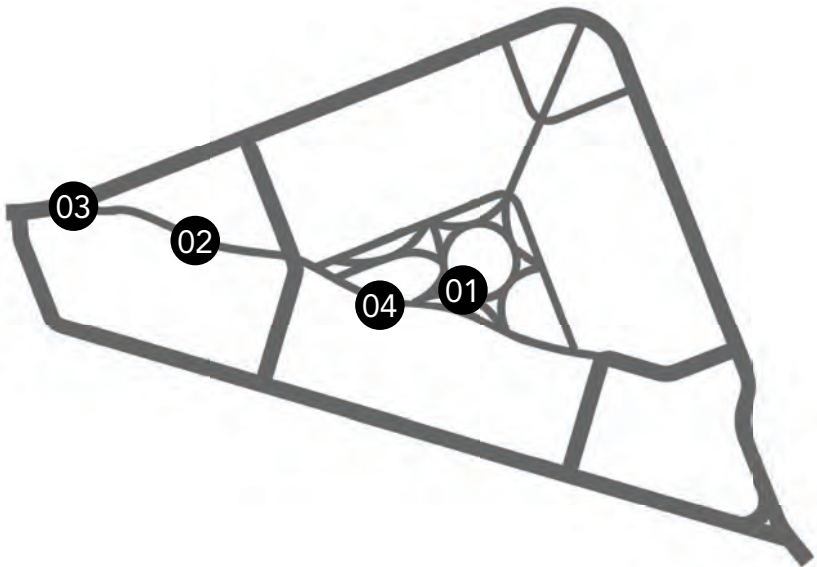
EXECUTIVE SUMMARY

THE PLACES

With the goal of fostering a collaborative "knowledge community" for advanced technological research and development, it is critical to note that state of the art offices and lab facilities alone cannot engender great research and promote the development of a strong collaborative culture. The setting in which cutting edge research and innovation takes place is as critical a component of a successful research community as the facilities themselves.

In this Master Plan, we outline a comprehensive vision, linking building, landscape, movement, environment, sustainability and larger social and intellectual missions into one. The Berkeley Space Center is much more than a research facility; it is a bustling hub of innovation, creativity, and inspiration. The design vision choreographs the environment for communal interaction, enhancing the possibility for new synergies and ideas and building a truly urban community.

As any research scientist can tell you, technological innovations rarely last more than a decade. Great public spaces and their impact though, can last a lifetime.



Public Spaces Key Map Diagram



Illustrative Renderings of Public Spaces

2 SUSTAINABILITY

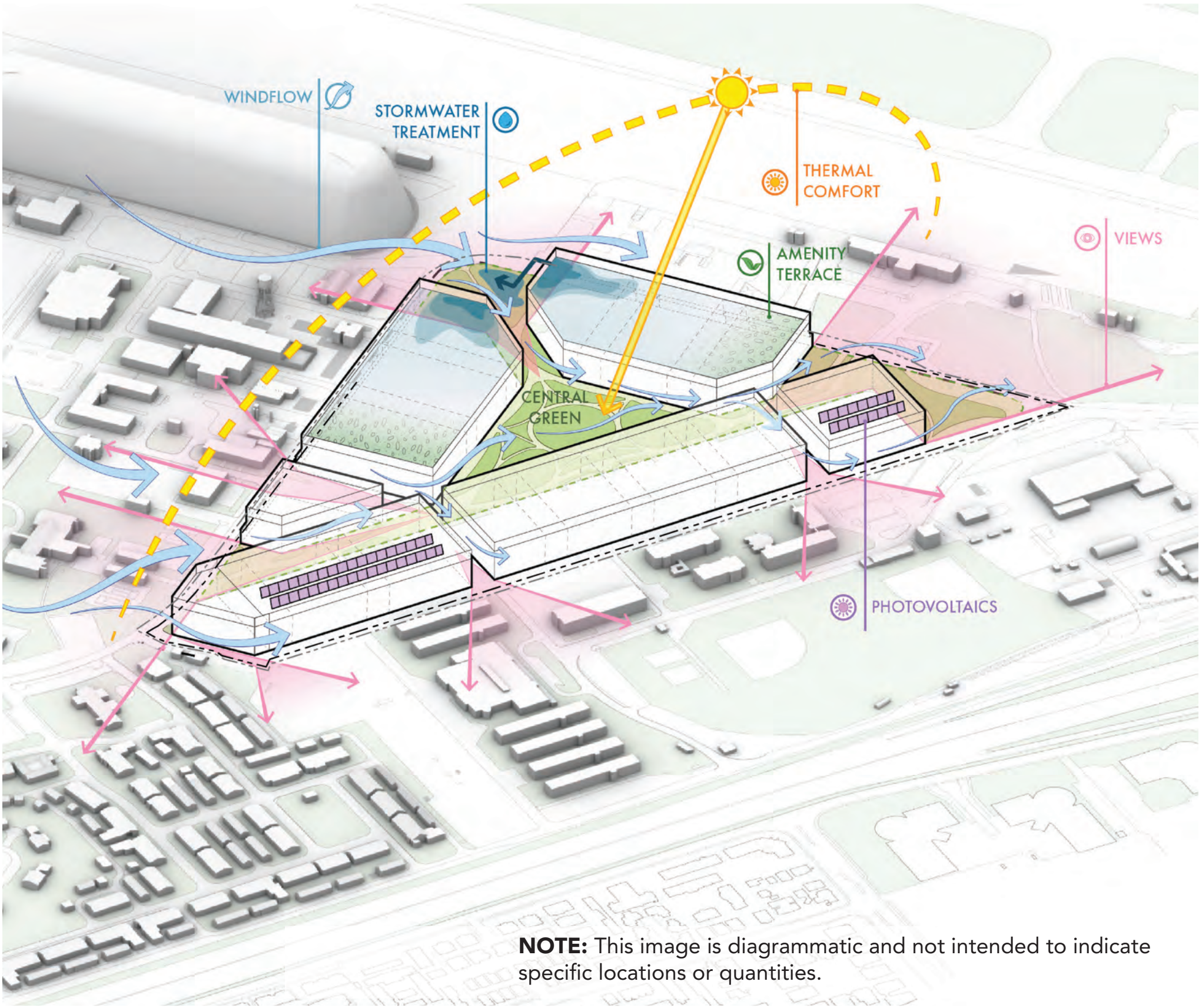
INTRODUCTION	13
CLIMATE AND CONTEXTUAL DESIGN RESPONSES.....	14
SITE DRIVERS.....	16
PUBLIC REALM DAYLIGHT ACCESS STRATEGIES	
PUBLIC REALM DAYLIGHT ACCESS STRATEGIES	
OUTDOOR COMFORT STRATEGIES	
WIND STRATEGIES	

SUSTAINABILITY

INTRODUCTION

The Berkeley Space Center at NASA Research Park intends to create spaces that enrich communities and renew the earth through regenerative design which enhances the site’s ecosystem performance beyond the native habitat. The development may remediate the site using natural systems and use the site to remediate the wider environmental context. Healthier soil enables storm water management and the resulting water quality can support landscape growth to mitigate the winds of the site, clean the air, and increase biodiversity through ecological corridors to support long-term ecosystem growth.

A healthy ecosystem provides social benefits of health and wellbeing for people, and enable a comfortable environment outdoors to support work and play. As buildings develop and the forested areas of the site mature, a balance can be achieving in sequestering the carbon of construction and operations that enable the best management of a delicate climate.



NOTE: This image is diagrammatic and not intended to indicate specific locations or quantities.

Illustrative Sustainability Features

SUSTAINABILITY

CLIMATE AND CONTEXTUAL DESIGN RESPONSES

BAY FLATS AND TERRACES

The Project Site lies between the Bay Flats and Terraces ecoregion of Northern California which includes the near-water flats at the southern end of San Francisco Bay. Elevations are sea level to about 10 feet on Quaternary bay fill of silt and clay. High tides inundate most of the area.

The Bay Terraces/Lower Santa Clara Valley ecoregion is an urbanized area on alluvial plains that wrap around San Francisco Bay. Soil temperature regimes are mostly thermic, with some isomesic. Soil moisture regimes are xeric with some aquic. Common vegetation historically included coast live oak, California oatgrass, and needlegrass grasslands, although land use now is nearly all urban and residential. All but the larger streams are dry through most of the summer.

Several salt evaporation ponds are found in the southern Bay Flats, where saltwater is impounded within levees in the former tidelands.

CLIMATE ANALYSIS

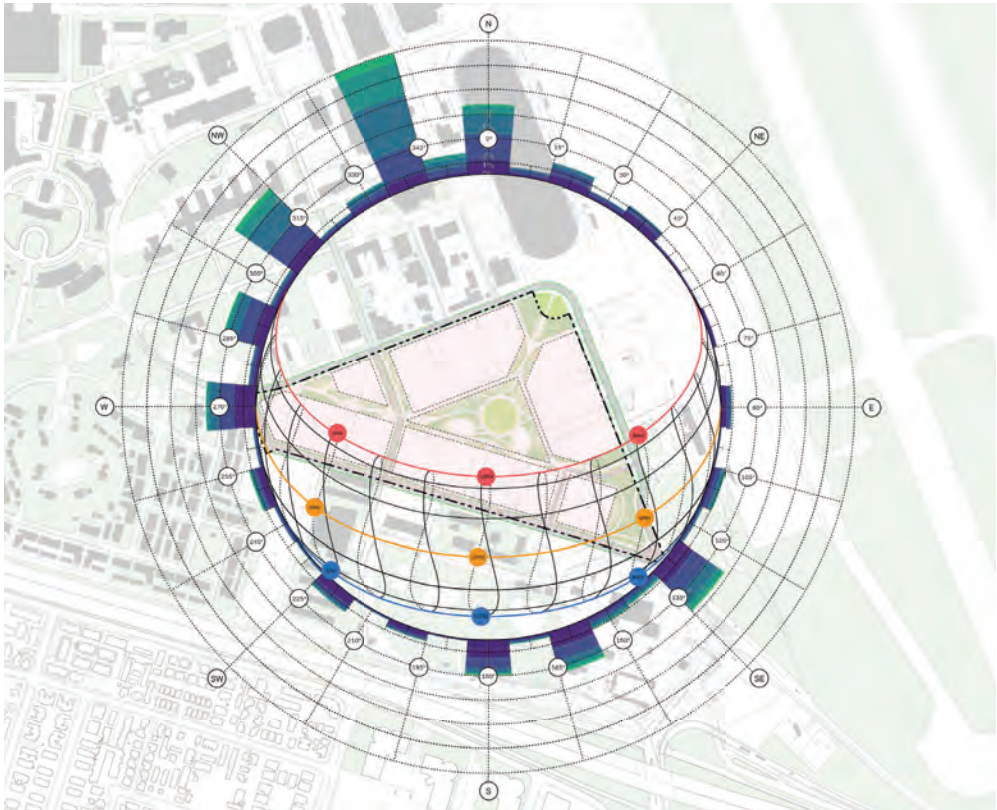
In the vicinity of the Project Site, the summers are long, warm, arid, and mostly clear. The winters are short, cold, wet and partly cloudy. Over the course of the year, the temperature typically varies from 44°F to 77°F and is rarely below 36°F or above 87°F. The hottest month of the year is August, with an average high of 77°F and low of 60°F.

The coldest day of the year is December, with an average low of 45°F and high of 59°F. The perceived humidity level in Moffett Field community does not vary significantly over the course of the year, remaining a virtually constant 0% throughout.

The most comfortable period of the year occurs from May to October, when conditions are most conducive to outdoor activity. With appropriate shading, balanced solar design and landscaping, the range of comfort may extend into mid-March and mid-November.



Bay Flats and Terraces Ecoregion



Climate Analysis

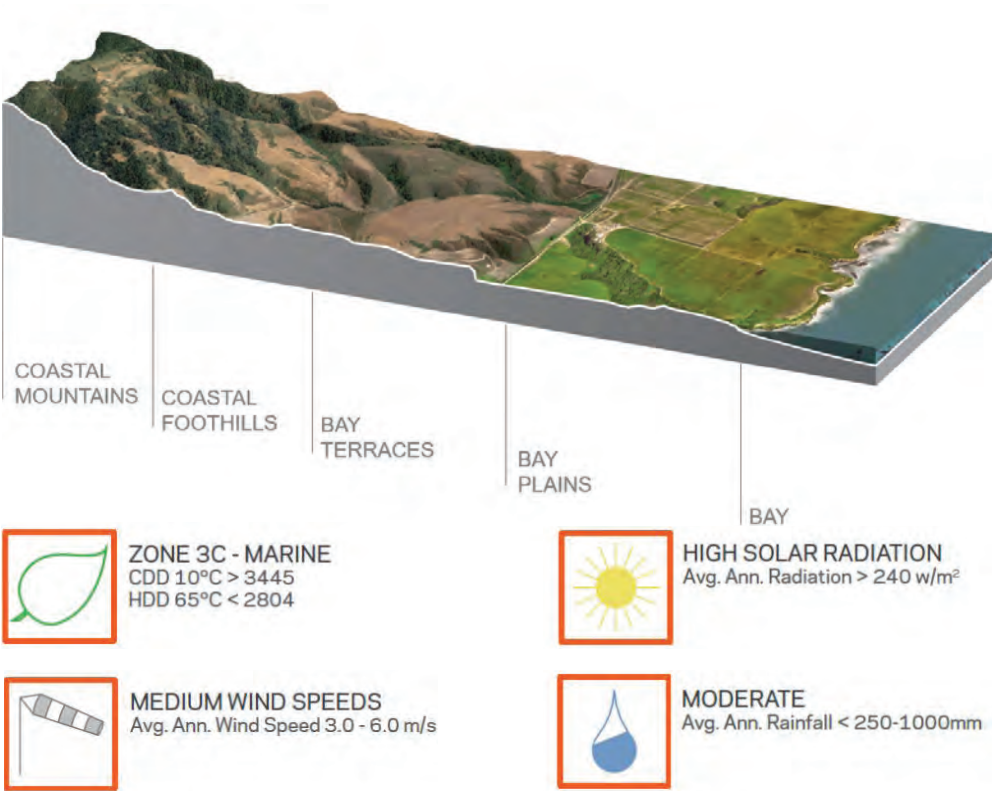
SUSTAINABILITY

CLIMATE AND CONTEXTUAL DESIGN RESPONSES

BIOCLIMATIC FACTORS

This bioclimatic approach for habitat, comfort and performance is founded in long standing environmental principles that have been championed in vernacular approaches and are being applied in California to respond to its climatic conditions.

- Biome: Thermal mass, courtyards and radiant cooling
- Solar: Shading, daylight and solar energy generation
- Wind: Protection from gusts, fresh air and outdoor thermal comfort
- Water: Bioswales, bioretention treatment and ground water revitalization



Bioclimatic Factors

FLORA AND FAUNA

NASA ARC community features one of the most biologically diverse ecosystems in California. The most widespread and characteristic natural communities of this ecoregion are oak woodland and chaparral. Valleys are dominated by foothill pine, blue oak, and chaparral species such as California buckeye, several species of manzanita, chamise, redbud, and scrub oak. NASA ARC's landscape includes tree species such as coast live oak, white alder, and Fremont cottonwood, alongside the famed coast redwood.

The dynamic Mountain View shoreline provides an estuary environment and varied ecosystems for wildlife and many species of birds including the resident Species of Special Concern, the Burrowing Owl. Grey foxes, black-tailed jackrabbits, California slender salamanders, pond sliders, and brown pelicans are also found in the area.



Mountain View Shoreline



Burrowing Owl



Scrub Oak

SUSTAINABILITY

SITE DRIVERS

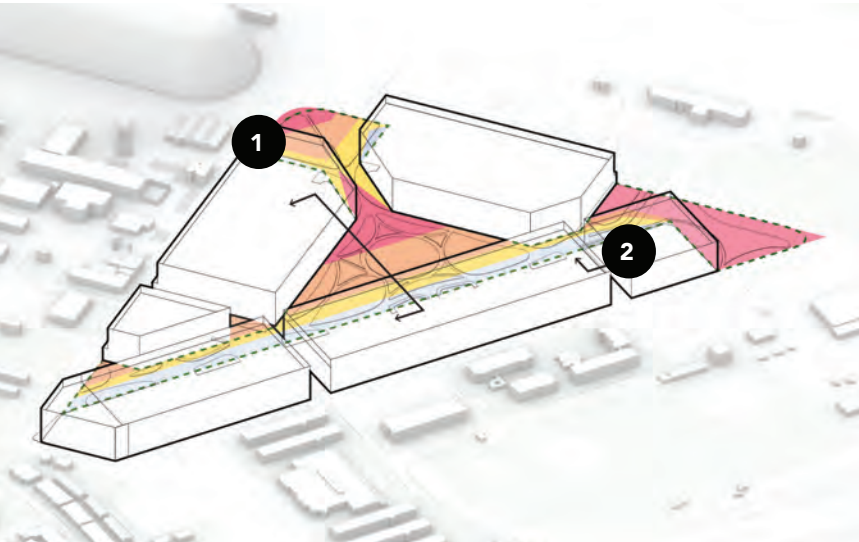
PUBLIC REALM DAYLIGHT ACCESS STRATEGIES

Right to light is an important part of maintaining general solar exposure across the site as well as creating thermally comfortable areas. In an educational setting, daylight access is also proven to be highly beneficial for users of the Berkeley Space Center at NASA Research Park, making it a critical consideration in the development of the plan.

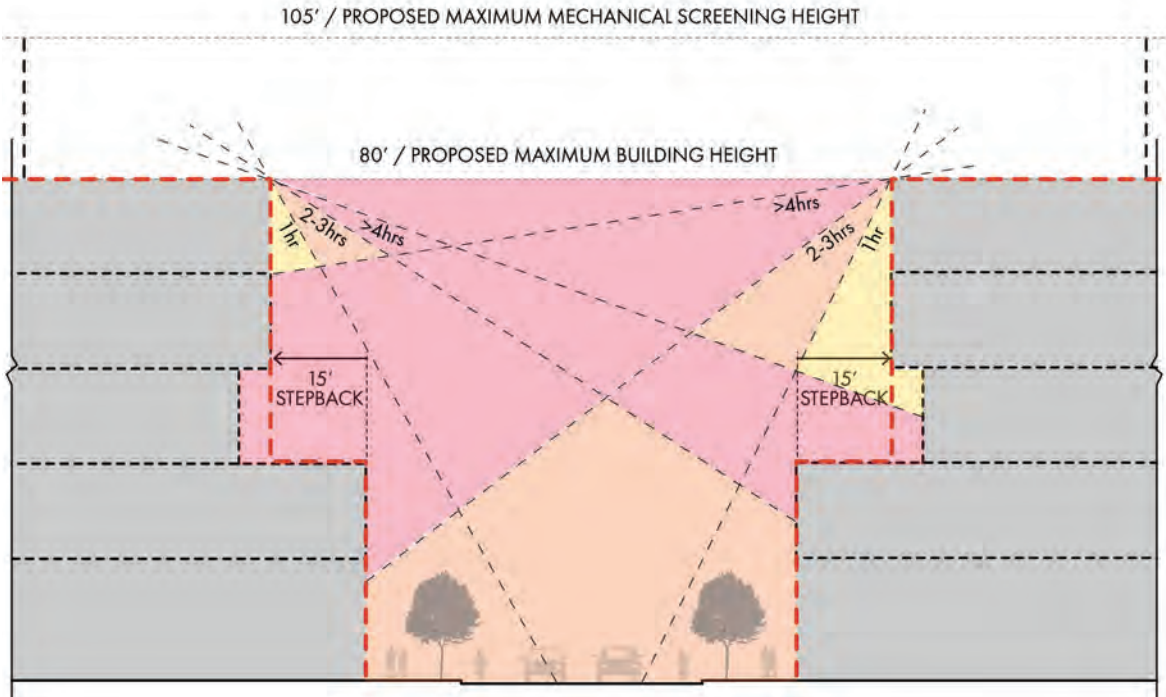
Guidelines:

- All public corridors (open spaces and street right of ways) with pedestrian activity: 2 hrs min on the winter solstice each year
- Public outdoor recreational areas: 4 hrs min on the winter solstice each year

- ⓧ Daylight Access Section (right)
- Right to Light Level

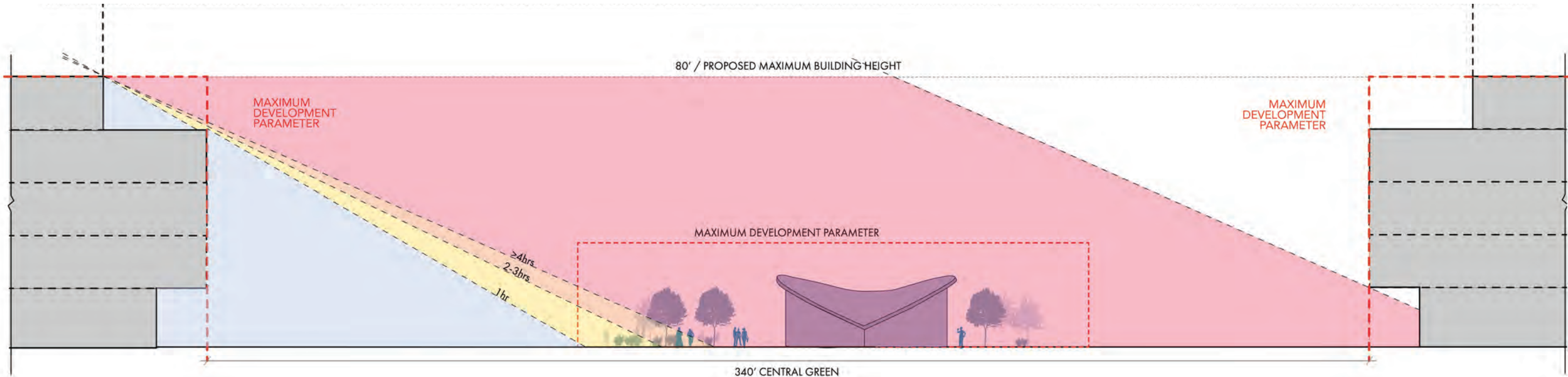


Right to Light Diagram



Internal Street Section (E/W)

Sun Angle Diagram - Winter Solstice 12/21



Internal Section through Central Green (N/S)

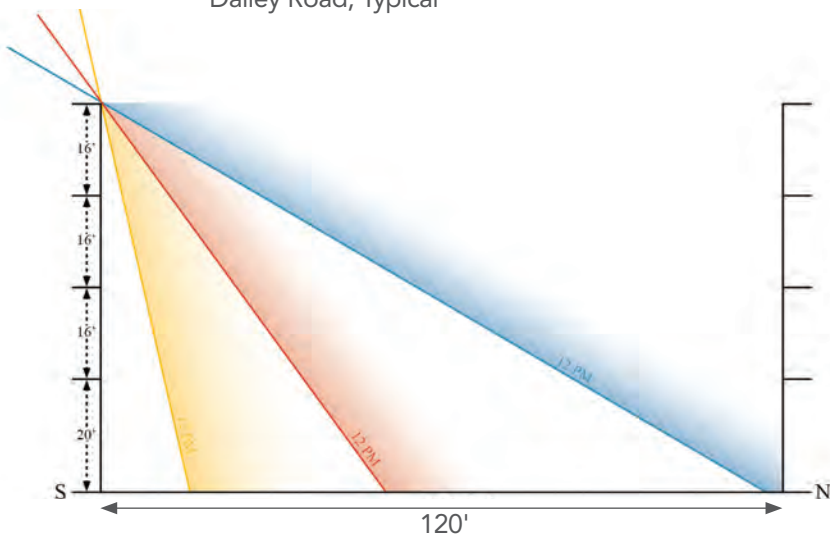
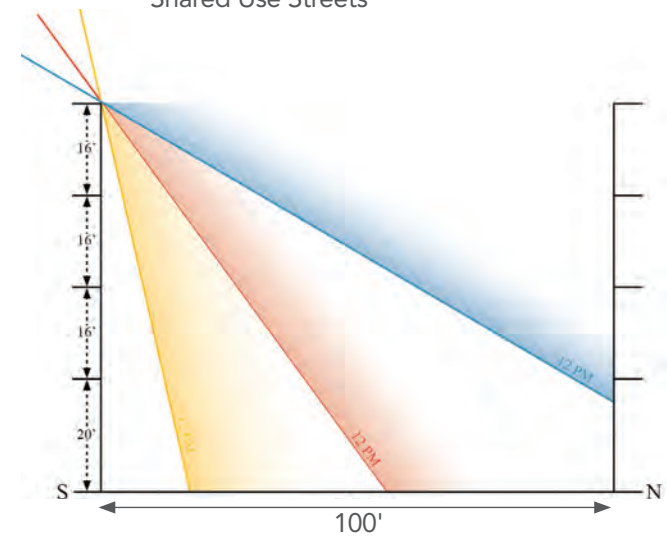
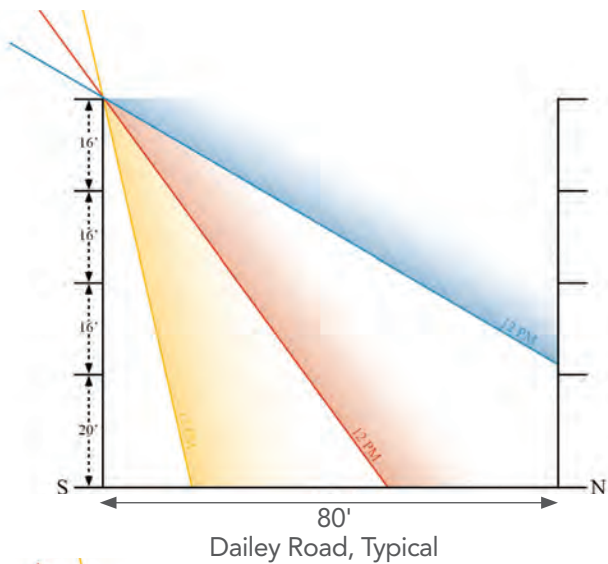
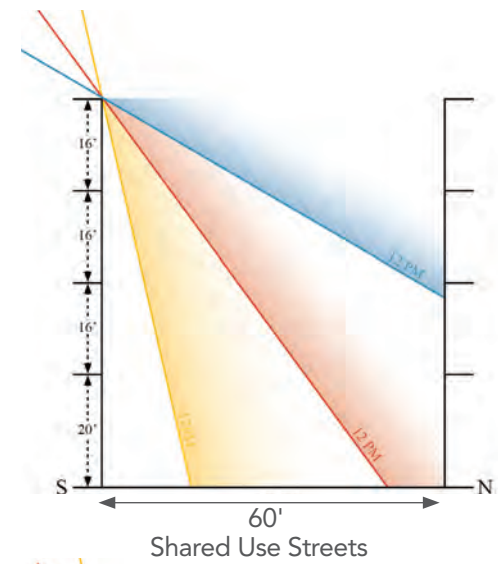
Sun Angle Diagram - Winter Solstice 12/21

PUBLIC REALM DAYLIGHT ACCESS
STRATEGIES

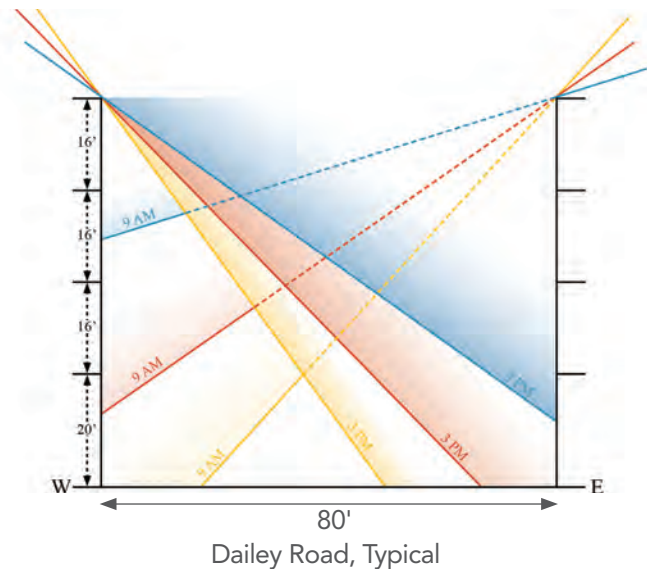
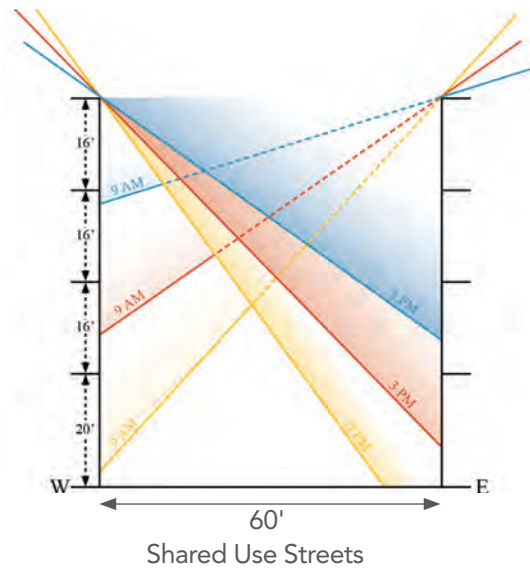
Solar Access and Building Height

Sunlight is essential for human health and well-being. Proper access to it has been linked to improved sleep, reduced stress, increased productivity and strengthening one’s immune system amongst other benefits. With the Project Site's exposure to high wind speeds and cool temperatures, it becomes important to enhance outdoor comfort.

The street sections have been designed with consideration to how deep sunlight may activate the pedestrian realm, illuminating streets, sidewalks and outdoor amenity spaces. The circulation pathways and open spaces allow for natural light to be available at locations throughout the site.



SOLAR ACCESS (S-N)



SOLAR ACCESS (E-W)

- Winter
- Spring / Fall
- Summer

SUSTAINABILITY

SITE DRIVERS

OUTDOOR COMFORT STRATEGIES

Urban Heat Island occurs when an area experiences much warmer temperatures than the surrounding parcels of land. Urban building materials are one of the primary reasons that urban areas trap heat, though impervious surfaces that restrict water flow also contribute. Buildings set in these areas work harder to stay cool, and release hot exhaust air. All of these factors contribute to rising temperatures in the direct vicinity.

Berkeley Space Center at NASA Research Park proposes to alleviate urban heat island effects through a significant increase in natural open space (through removal of surface parking and hardscape), incorporating street tree and canopy standards (see "Planting guidelines" on page 68), considering green roofs and high albedo materials and other sustainable building practices.

Guidelines:
Shade and Shelter: Incorporate trees, awnings, and/or shelters along sidewalks to provide shade and protection from the elements in order to enhance comfort, especially during inclement weather.

Street Tree Species: Street trees should be selected to provide shade during the summer months. Street trees should have non-invasive root systems to reduce impact on sidewalks, curbs, and utilities.

Landscape Materials: to consider permeable surfaces and increased flora to provide an evapotranspiration effect that lowers temperatures in the surrounding area.

Combined with energy efficient buildings, the conceptual master plan intends to showcase how responsible development can reverse urban heat island risk.



Permeable Surfaces



Bioswales



Reduced Parking Footprints & Low Impact Design



Green Roofs



High Albedo Materials



Outdoor Workplace

SUSTAINABILITY

SITE DRIVERS

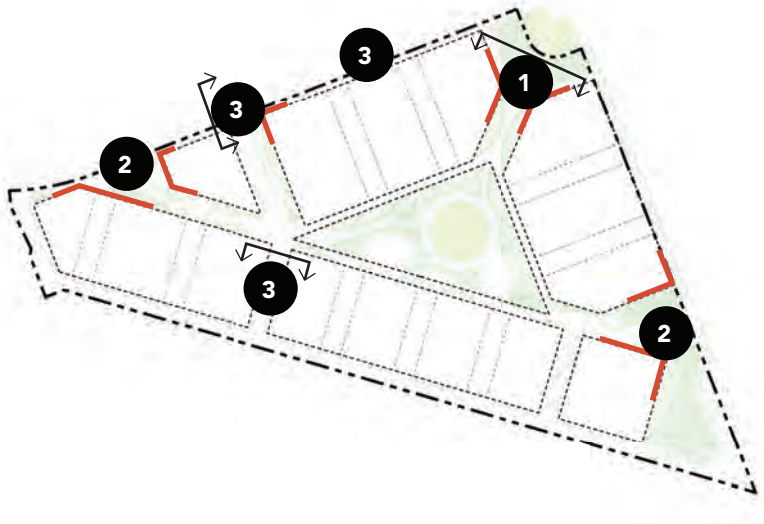
WIND STRATEGIES

Wind strategies in landscape design aim to minimize the impact of wind on outdoor spaces, buildings, and plants, enhancing comfort and functionality while providing protection against potential damage. Typical strategies include windbreaks, strategic tree placement, hedgerows, berms, fencing, wind-resistant plants, and windscreens.

To break up oncoming winds at corner conditions of the Project Site, architectural treatments are recommended. Without addressing the building corners, incoming winds turn the sharp corner and accelerate as they proceed further into the site.

Guideline: Consider macro (A), meso (B), and/or micro (C) treatments to the exposed corners of the buildings to break up the incoming winds and reduce speeds to create a comfortable environment.

- X** Recommended Wind Strategies
- Corner Treatment Recommended



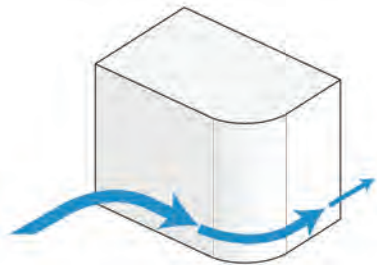
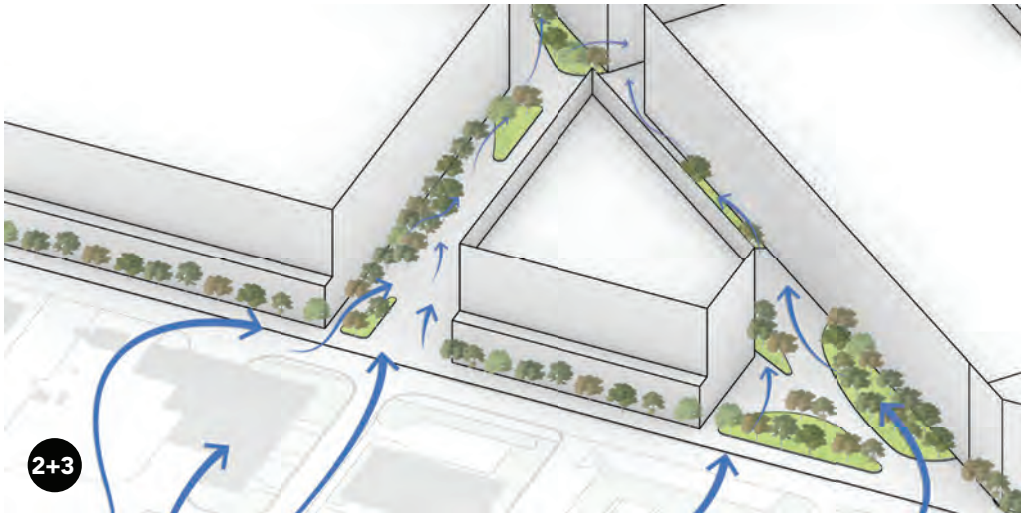
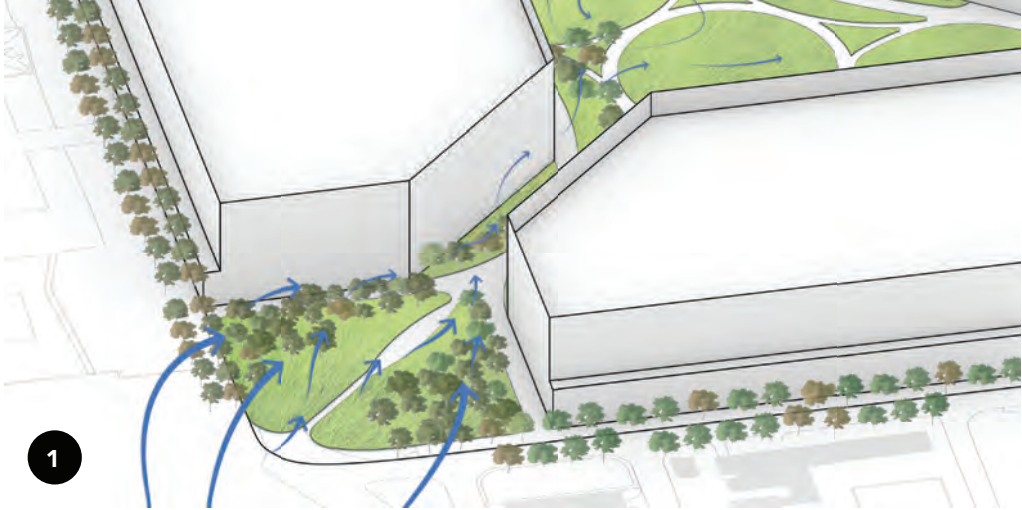
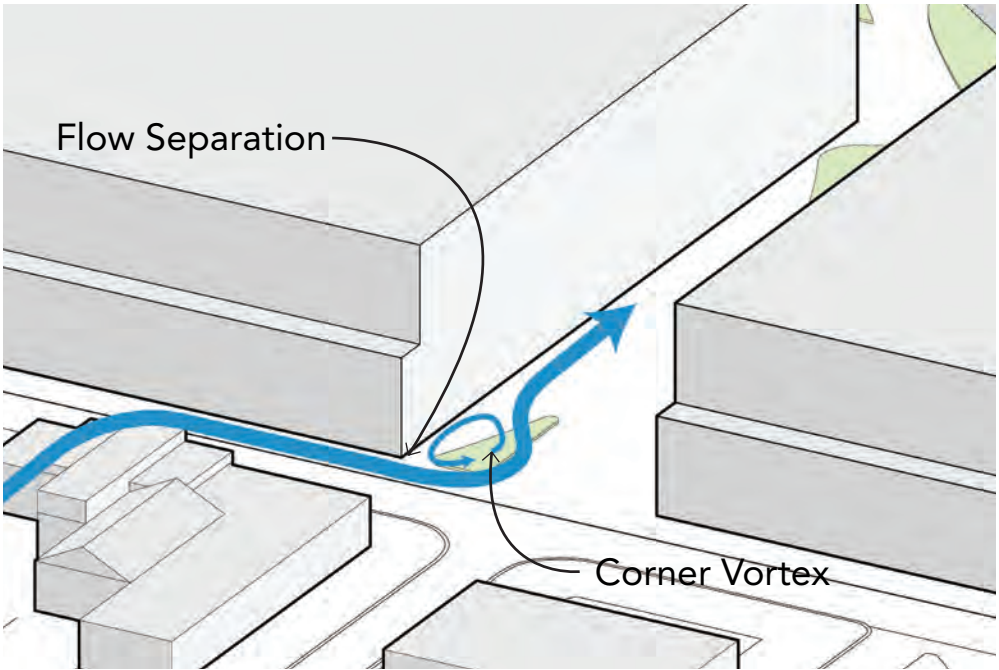
Section through Hangar Commons



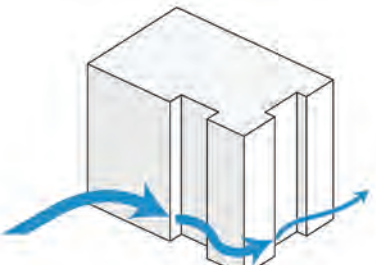
Section through Wescoat Road



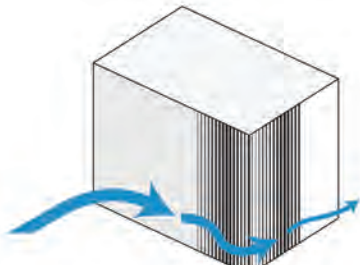
Section through Dailey Road



A. Macro Treatment



B. Messo Treatment



C. Micro-Scale Treatment

3 SITE

PRINCIPLES.....	21
PRIORITIZED INTERIOR VIEWS	22
PRIORITIZED EXTERIOR VIEWS	24
HANGAR ONE	
MAXIMUM DEVELOPMENT PARAMETERS.....	27
SITE	
SUBAREAS	
LAND USE PLAN	29
FLEXIBILITY OF SUBAREAS	30
ILLUSTRATIVE EXAMPLE CONFIGURATIONS	
DISTRIC EDGE HEIGHT, SETBACKS AND STEPBACKS	31
RESEARCH BUILDING HEIGHTS	33
MAXIMUM DEVELOPMENT PARAMETER ELEVATIONS	34

SITE

PRINCIPLES

The Berkeley Space Center at NASA Research Park is envisioned as part of a larger research and innovation ecosystem - a new keystone for the wider NASA ARC community - that integrates site, district, center, region, state and country in a sustainable and innovative natural and built system. As such, determining the right mix and quantum of land uses is key to ensuring positive synergies both within the site and with its greater neighbors is paramount.

The overarching project principles for site and land use at the Berkeley Space Center as follows:



Contextual Response
Respect existing historic artifacts as recognizable icons that identify the focus of the district (including Hangar One and Shenandoah Plaza), while introducing new specialized features as the next generation of identifying landmarks.



Key Views
Ensure that the proposed building layout preserves and enhances view corridors, especially to Hangar One. The new street layout should also respect view corridors to key heritage buildings and character areas, such as Shenandoah Plaza and the airfields.



Maximum Development Parameters
The massing of the proposed development should relate to the surrounding historic fabric and open up new view corridors. Mitigate the visual effect of the new development on the surrounding heritage areas through height limits, landscaping, and overall site design.



Open District aka 'Scientific Switzerland'
Create a place where industry, university and government organizations can commingle, share research and drive advances in knowledge, while also ensuring privacy in certain areas for secure R&D.



Reinforce District Identity
Create an environment that celebrates core competencies, milestone achievements, and reinforces the identity of Berkeley Space Center as well as its place in the wider NASA ARC community.



Foster Collaborations
Create an innovation district that supports the transfer of knowledge. Considerations include strategic positioning of retail and amenity offerings, introducing attractors such as a conference center, and creation of indoor and outdoor demonstration/exhibition spaces.



Ground Floor Activation
Activate the ground plane with publicly accessible and/or visible uses, and design circulation paths from parking/drop-offs to lobby to desk to amenities to intentionally increase opportunities for encounters.



Ideas to Invention
Ensure all types of R&D activity can be supported within the innovation district - from independent research to collaborative idea sharing, and prototyping to testing.



Flexibility
Create a phased development strategy that allows the innovation district to evolve over time, with each phase given flexibility to best target the evolving needs for growth and expansion.



Activate Open Spaces
Utilize outdoor spaces for public-facing uses and functions - such as for exhibitions and events - to create a total environment that celebrates the sharing of ideas.

SITE

PRIORITIZED INTERIOR VIEWS

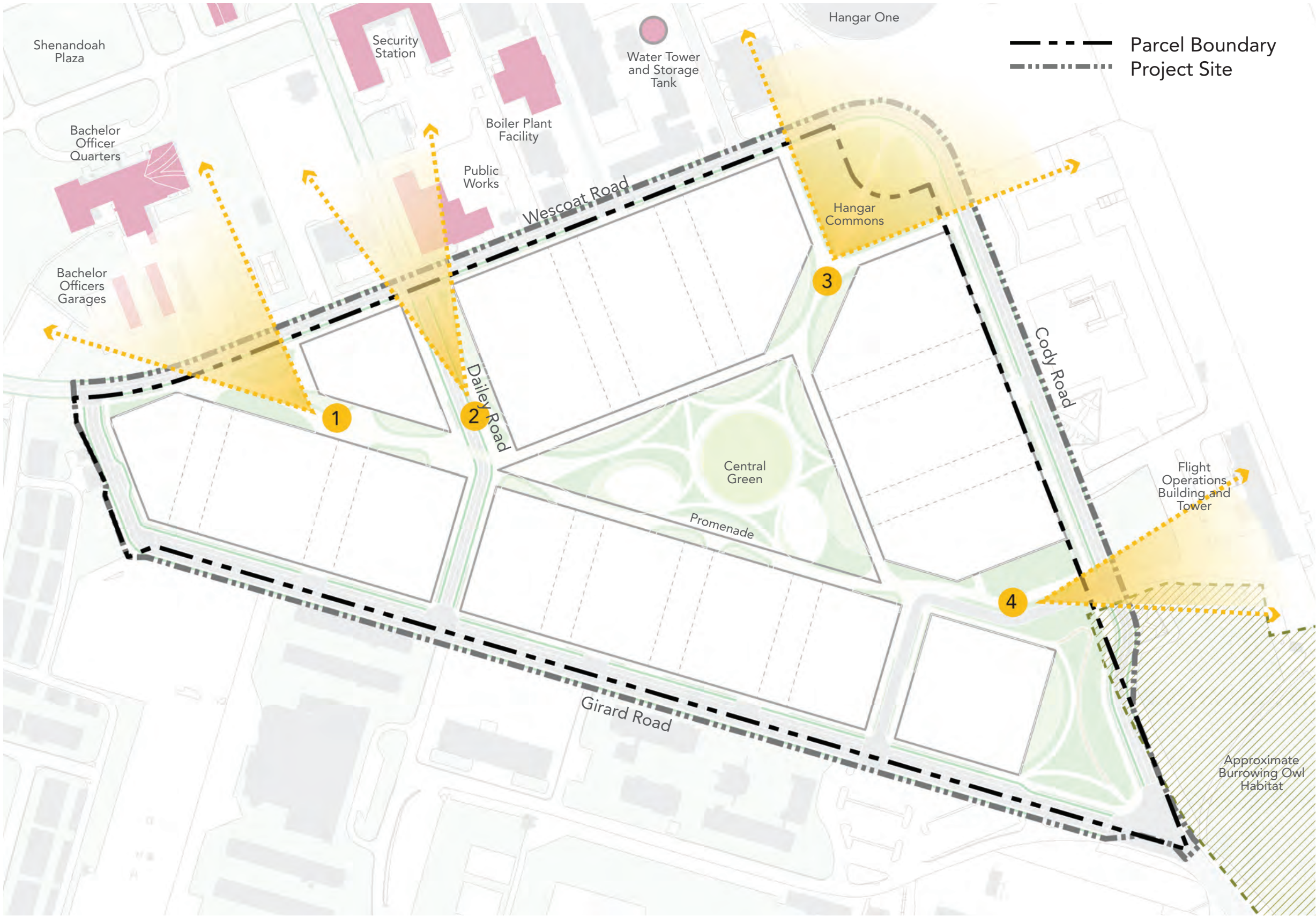
Guidelines: In order to prevent the obstruction of key views of Hangar One, Shenandoah Plaza in the greater NASA ARC, buildings in the project site are to be carefully sited to preserve view corridors through the new development, especially through to Hangar One.

Design of new street layout should preserve view corridors through the new development to the airfield and Diablo Foothills, Shenandoah Plaza, and Hangar One.

Consider how buildings will shape and contribute positively to important view corridors, through building massing, materials, and other elements.

- 1 View towards Western End of Shenandoah Plaza
- 2 View towards Shenandoah Plaza
- 3 View towards Hangar One
- 4 View towards Moffett Federal Airfield / Mt. Hamilton

- NR Listed Buildings
- Water Tower
- Approximate Burrowing Owl Habitat



Illustrative Prioritized Interior Views Map

SITE

PRIORITIZED INTERIOR VIEWS



1 Site Frontage: Wescoat Road towards Western End of Shenandoah Plaza



2 Site Frontage: Wescoat Road towards Shenandoah Plaza [Source: Google Earth]



3 Site Frontage: View towards Hangar One



4 Site Frontage: View towards Moffett Federal Airfield / Burrowing Owl Nesting Habitat Preserve

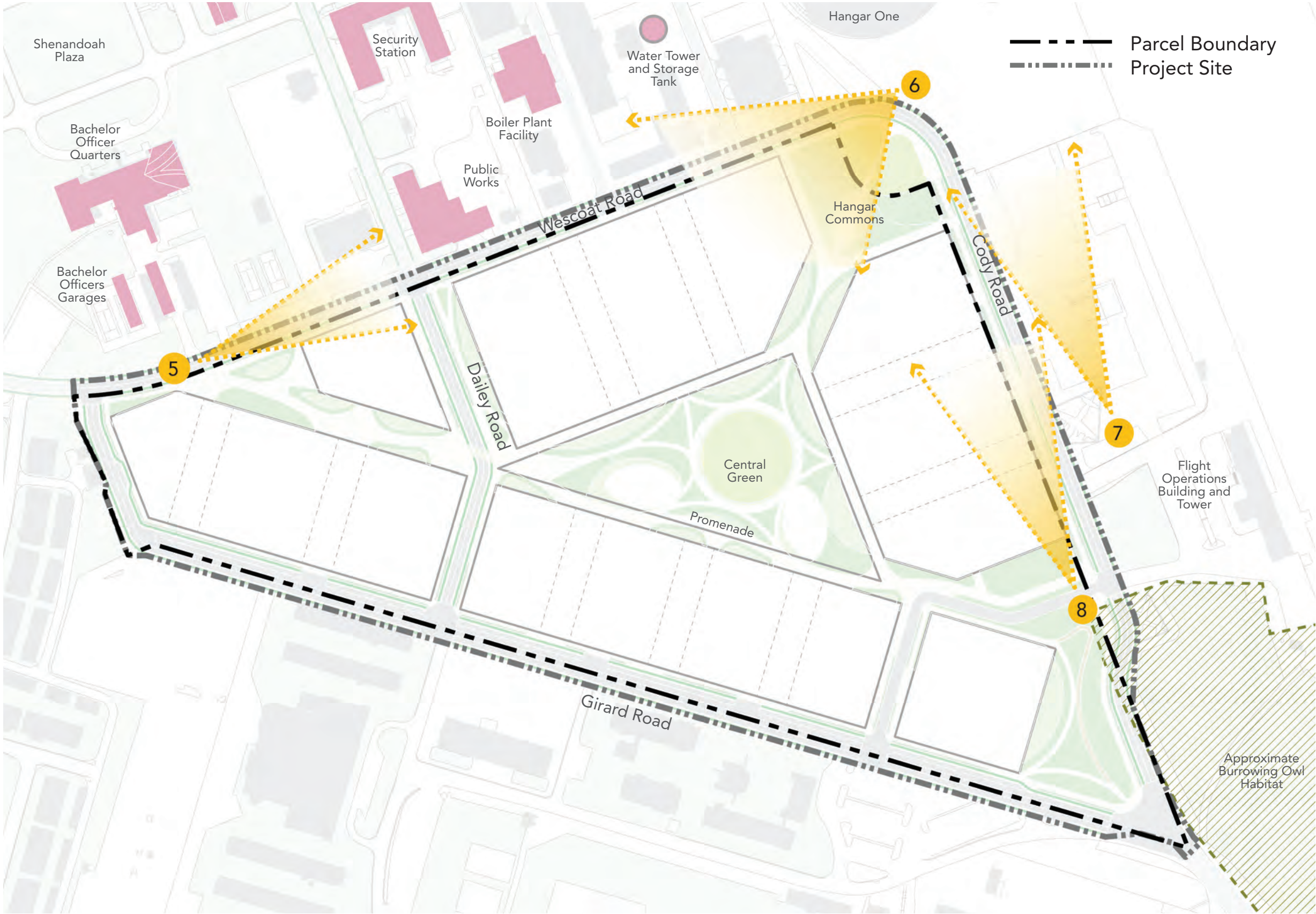
SITE

PRIORITIZED EXTERIOR VIEWS

Guidelines: In order to prevent the obstruction of key views of Hangar One, Shenandoah Plaza and the Burrowing Owl Preserve in the greater NASA ARC buildings in the site area are to be carefully sited to preserve view corridors through the new development, especially through to Hangar One. Design of new street layout should preserve view corridors through the new development to the airfield and burrowing owl preserve, Shenandoah Plaza, and Hangar One. Consider how buildings will shape and contribute positively to important view corridors, through building massing, materials, and other elements.

- 5 View from Wescoat Road towards Hangar One
- 6 View from Hangar One down Wescoat Road
- 7 View from Existing Cody Road towards Hangar One
- 8 View from Proposed Cody Road towards Hangar One

- NR Listed Buildings
- Water Tower
- Approximate Burrowing Owl Habitat



Illustrative Prioritized Exterior Views Map

SITE
PRIORITIZED EXTERIOR VIEWS



5 Site Frontage: Cody Road towards Hangar One



6 Site Frontage: View from Hangar One down Wescoat Road



7 Site Frontage: View from Realigned Cody Road towards Hangar One



8 Site Frontage: View from Existing Cody Road towards Hangar One

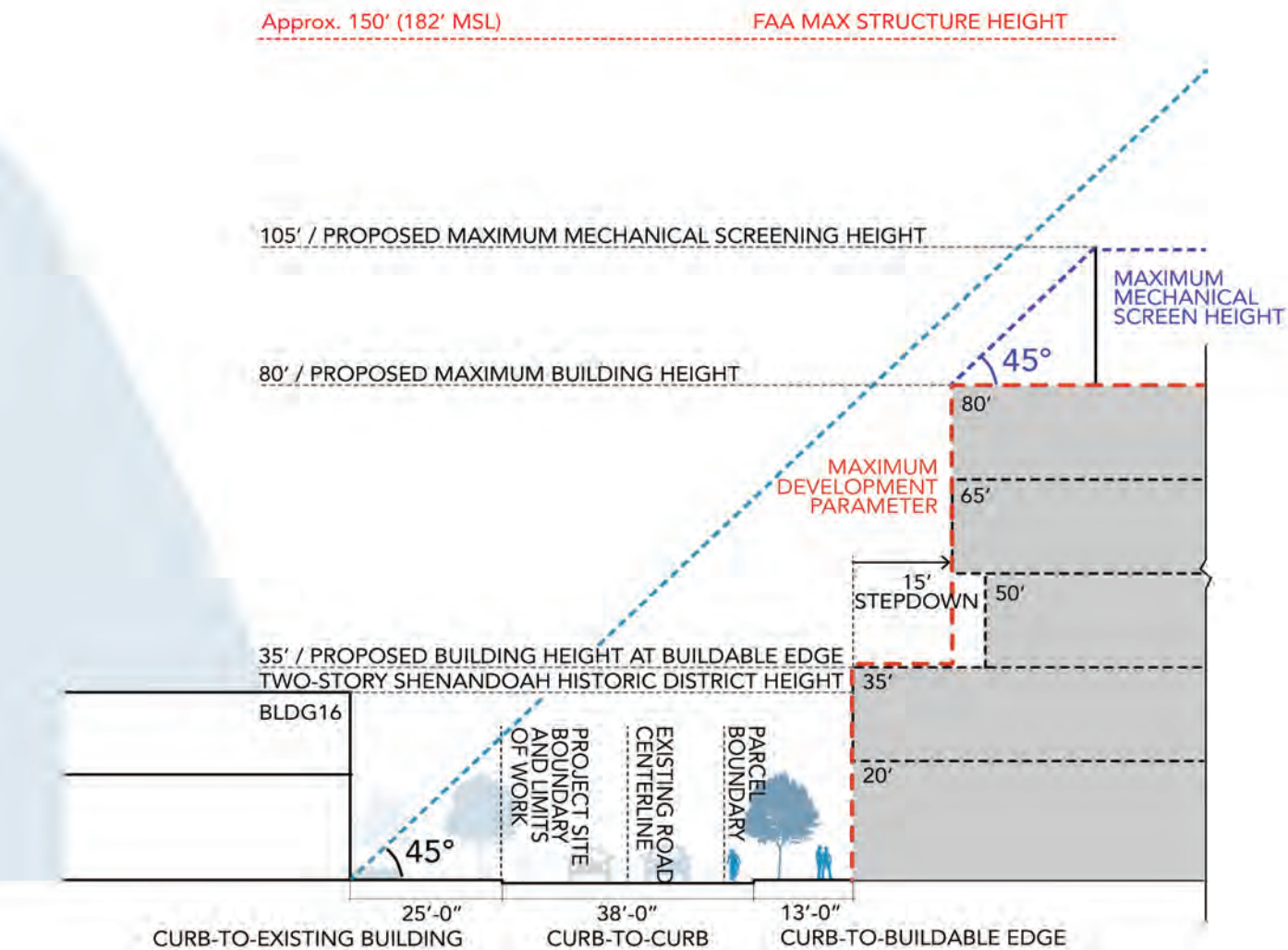
SITE

PRIORITIZED EXTERIOR VIEWS

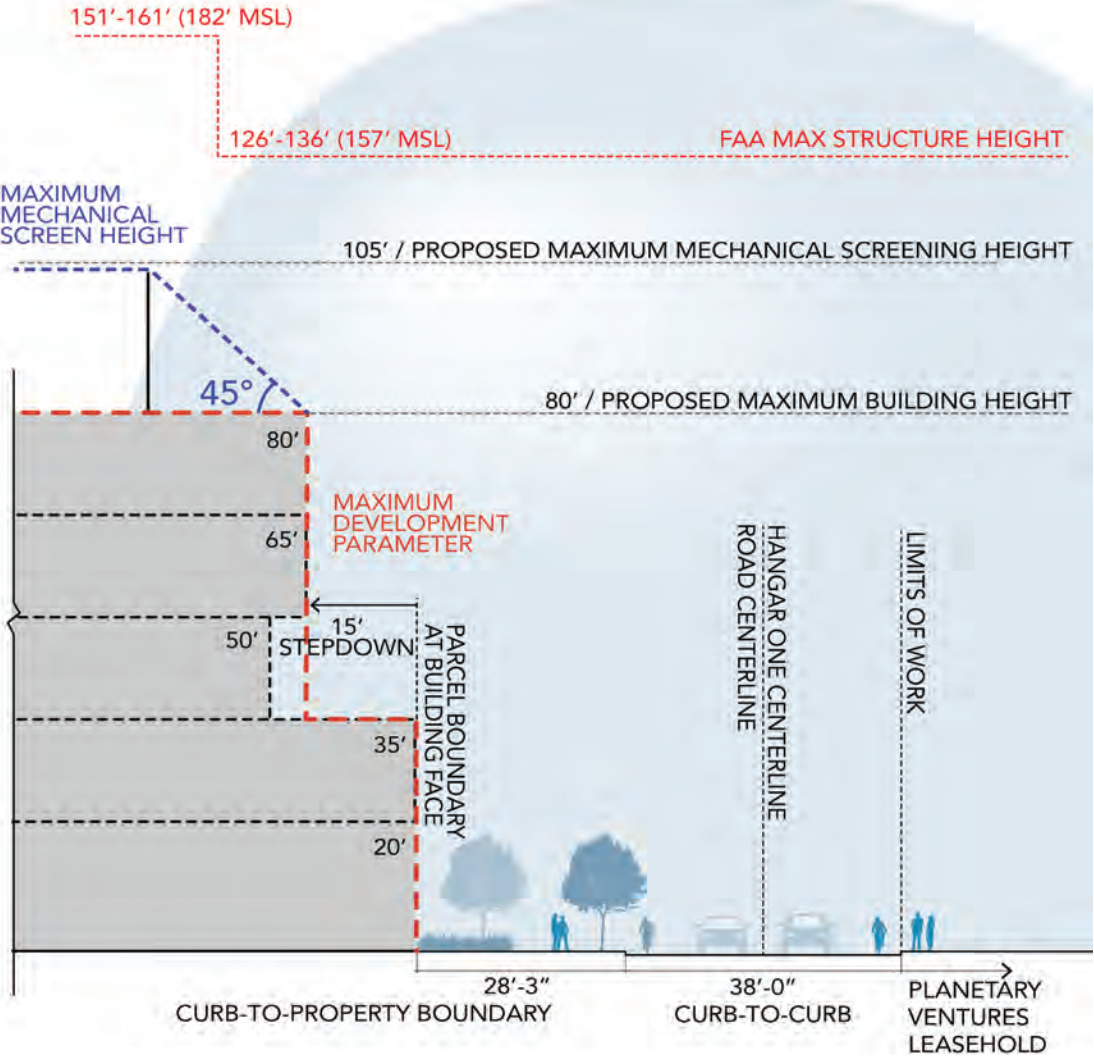
HANGAR ONE

Guidelines: Views from Cody Road and Wescoat Road to Hangar One should be preserved and even emphasized.

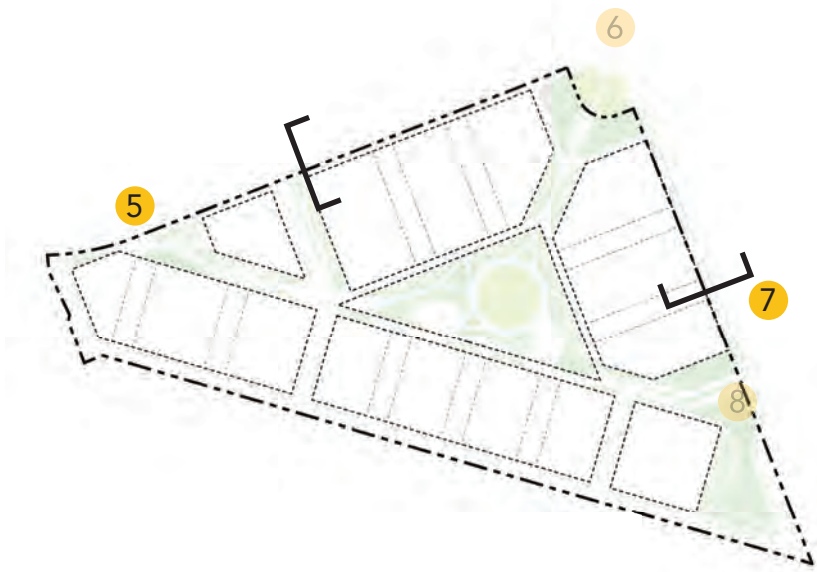
Importantly, Wescoat Road provides the seam between the historic district on the north side of the street and the new development that will occur on the south side of the street. Therefore, future developments within this district must carefully merge the requirements of the two areas.



5 Site Frontage: Wescoat Road towards Hangar One



7 Site Frontage: Cody Road towards Hangar One



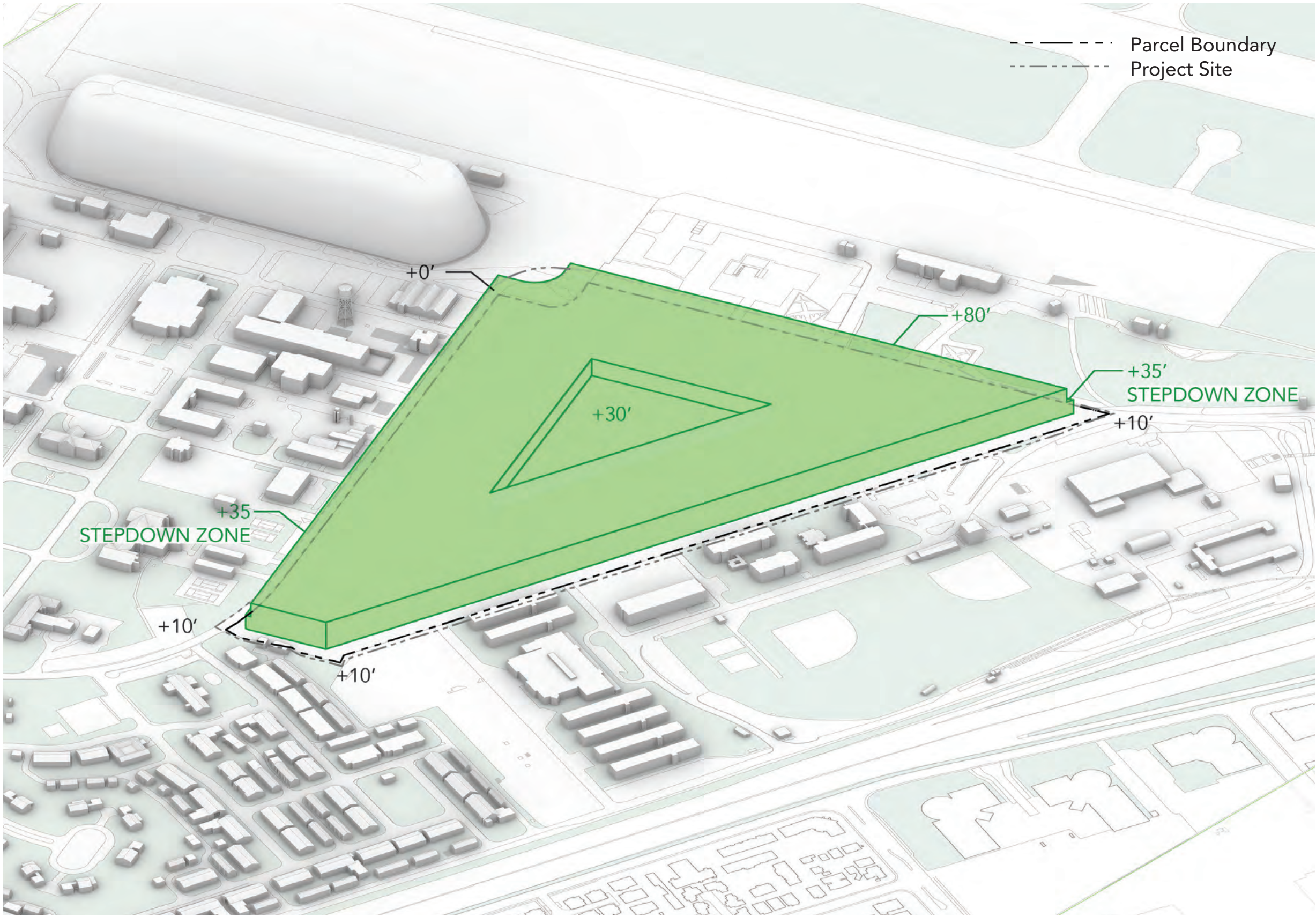
SITE

MAXIMUM DEVELOPMENT PARAMETERS

SITE

The Project Site’s maximum development envelope is set at 80 feet in height. The stepdown zones along Wescoat Road and Cody Road are intended to relate to the historic fabric of Shenandoah Plaza and open up view corridors to Hangar One.

New development’s visual effect against those two assets will be moderated through a combination of height limits, massing, landscape, screening and overall site design within these maximum development parameters.



Illustrative Maximum Development Parameters of Entire Site

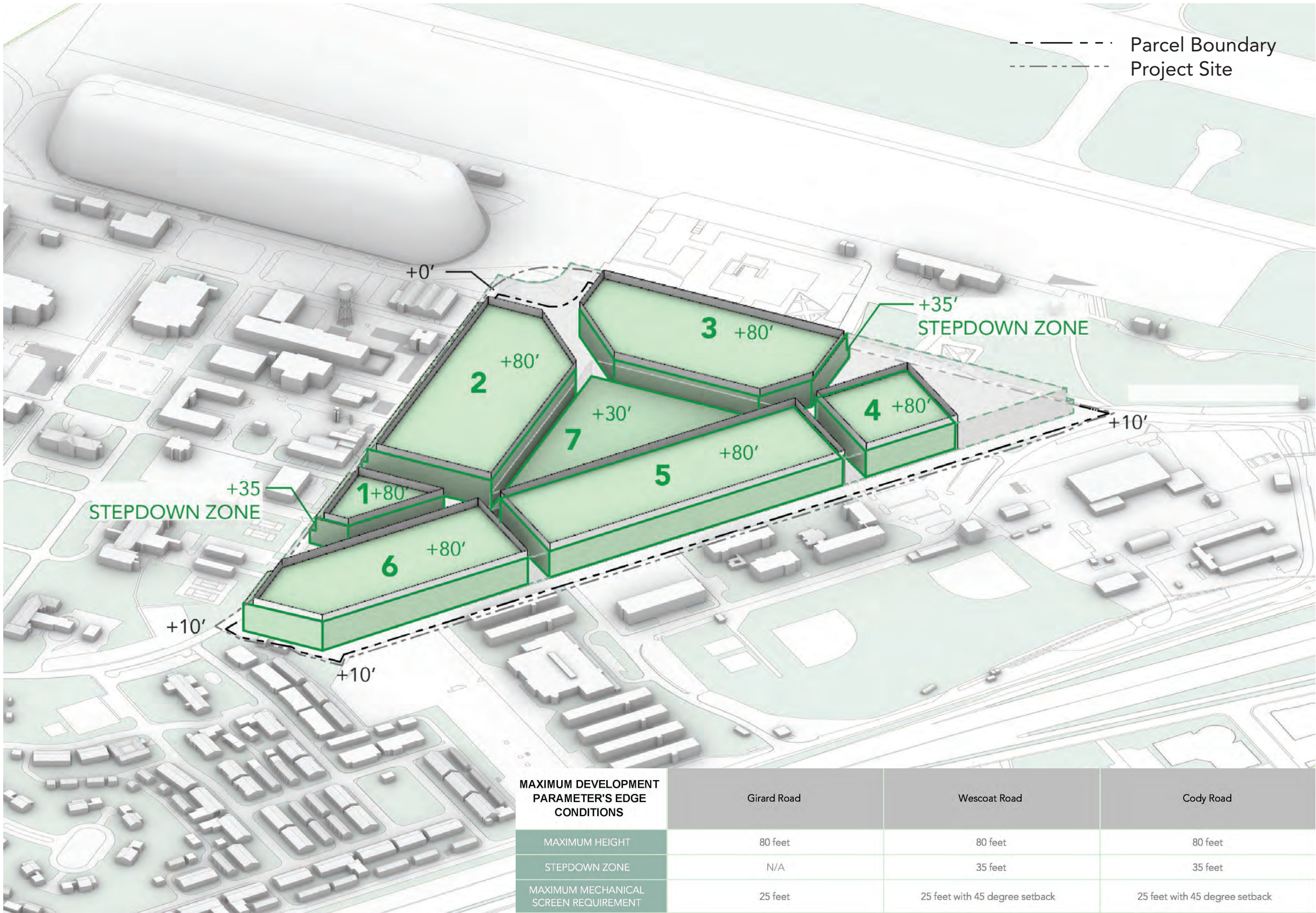
SITE

MAXIMUM DEVELOPMENT PARAMETERS

SUBAREAS

Illustrated here are each Subarea’s maximum development parameters. Each Subarea allows for flexibility within the extruded mass shown, to form their own architectural massing solutions.

Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project’s maximum and minimum development standards 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.



Conceptual Maximum Development Parameters of Each Subarea

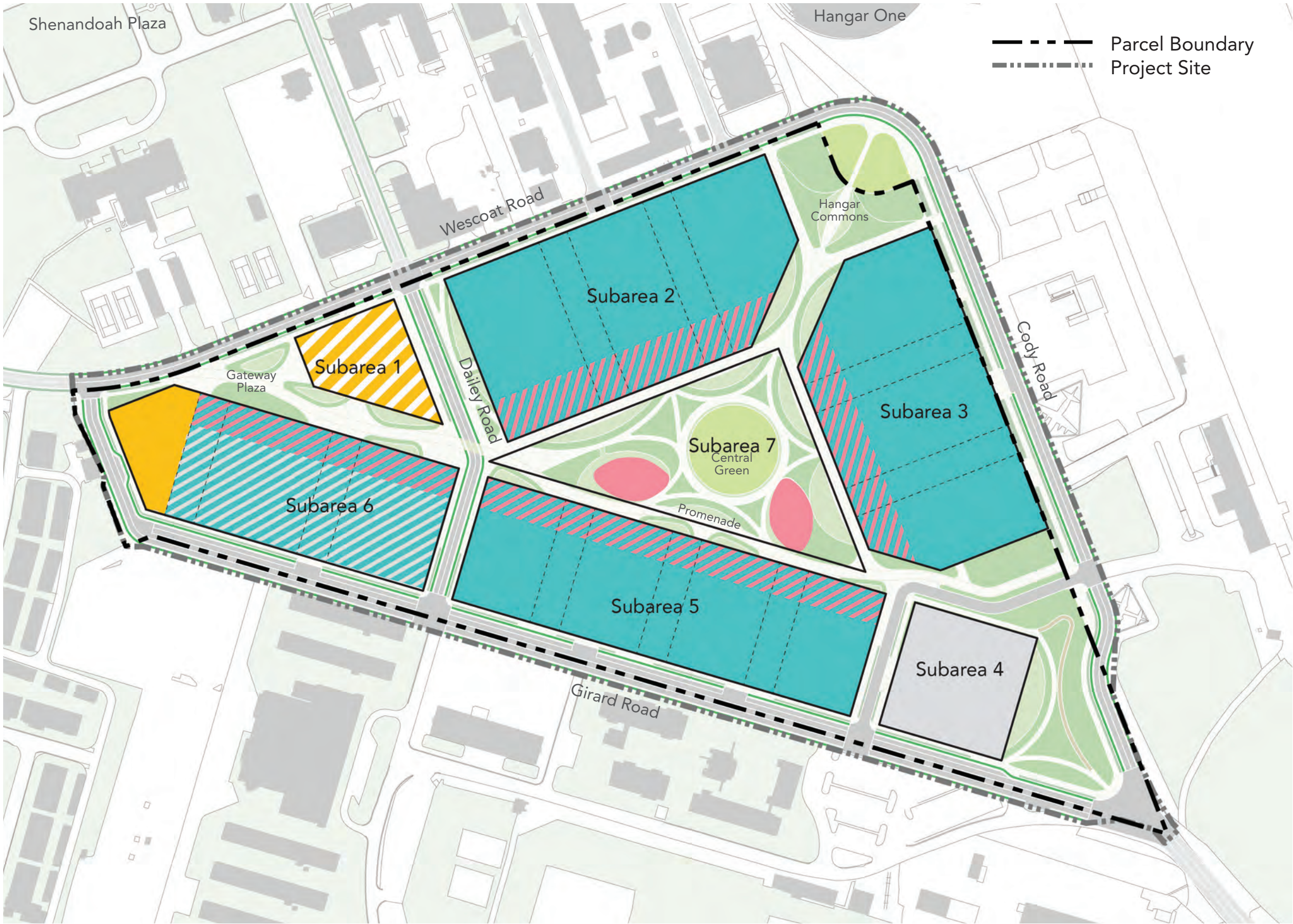
SITE

LAND USE PLAN

Research and Office Uses programs frame the edges of the project site. Active Uses are proposed along the perimeter edges of the Central Green, with additional active uses located within the Central Green itself as pavilions. Student / Faculty Housing, Conference Uses and Short-Term Lodging uses are concentrated at the south-western corner of the site, acting as a welcoming entry from the Wescoat Road approach.

LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking
- Open Space



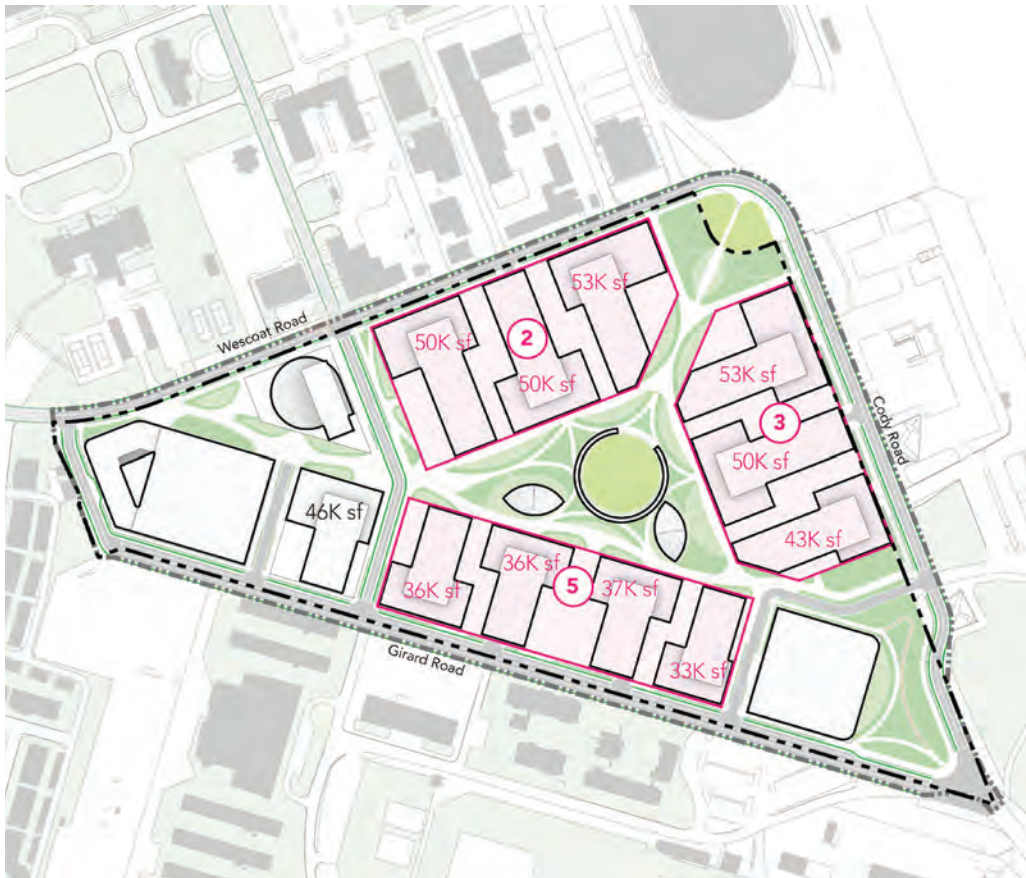
Illustrative Land Use Plan

SITE

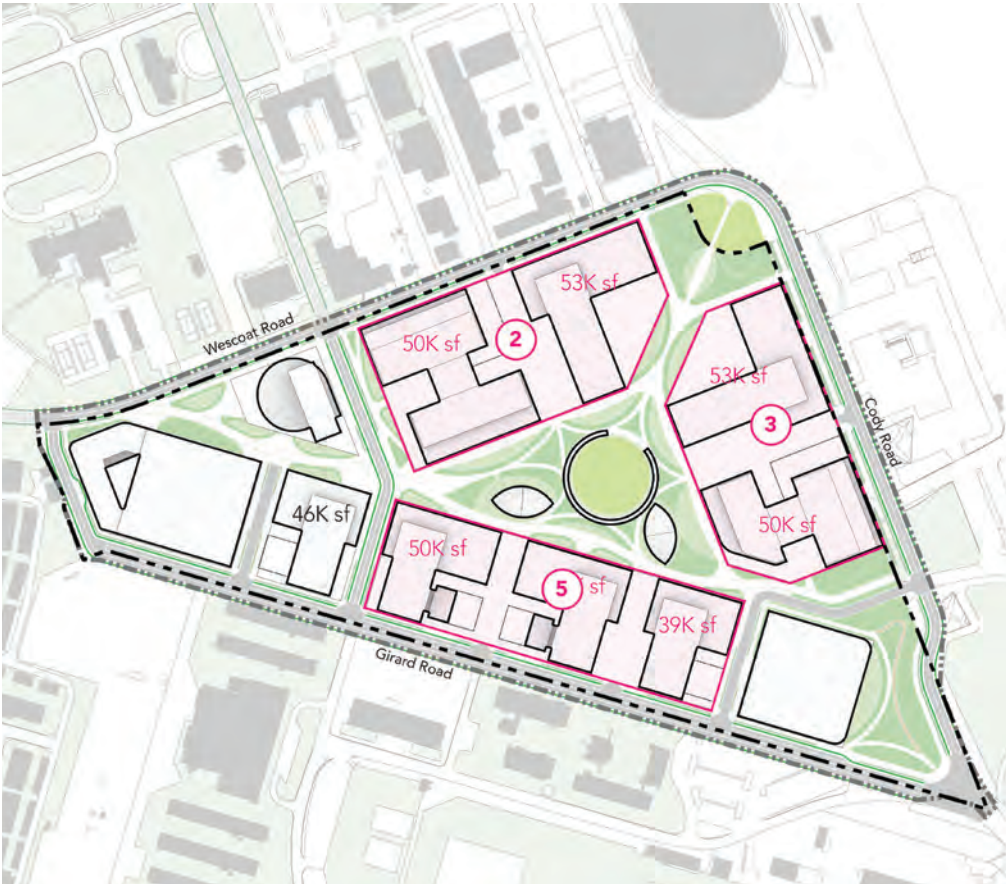
FLEXIBILITY OF SUBAREAS

ILLUSTRATIVE EXAMPLE CONFIGURATIONS

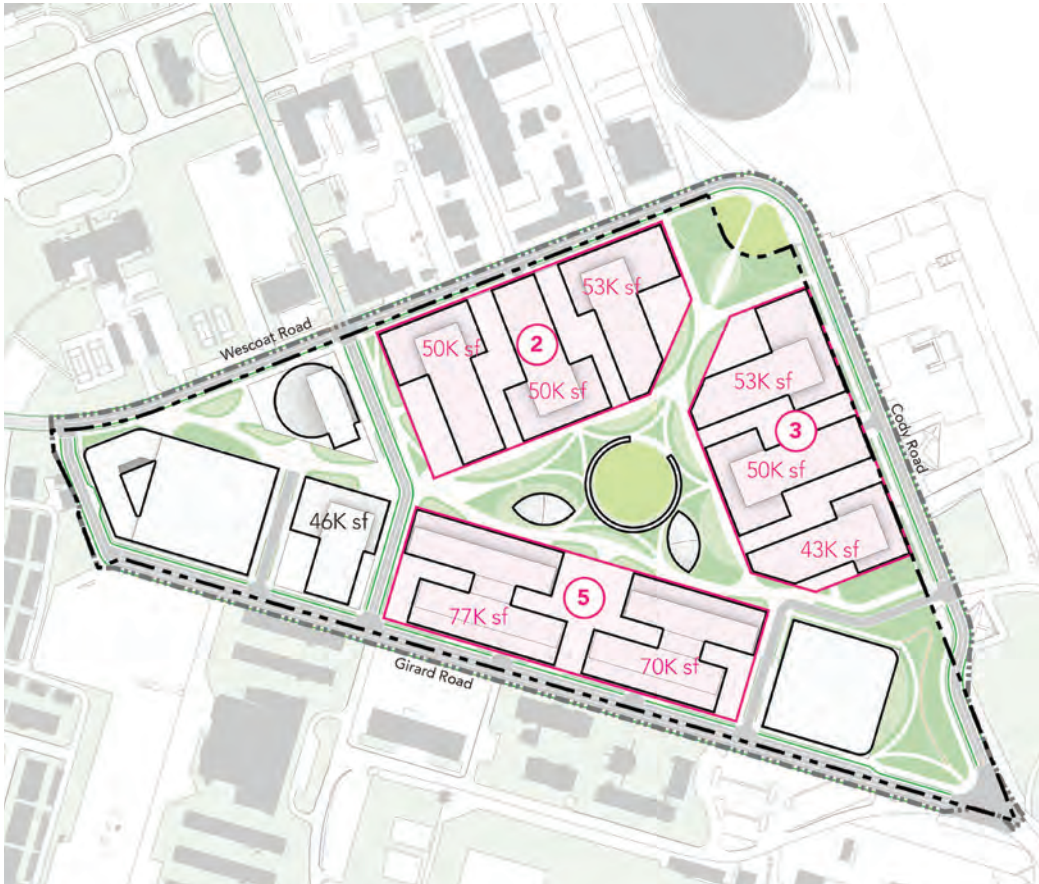
In order to illustrate how the conceptual master plan allows for flexibility of number and size of Subareas, the project studied several alternate configurations. Each reconfigures at least one of the Subareas 2, 3 and 5 and the implications of such massing moves within the Subareas are summarized below.



Three alternating T-shaped building typologies are shown in Subareas 2 and 3 for a finer grain and scale relationship to the Shenandoah Plaza Historic District. Subarea 5 splits into four T-shaped building typologies.



Two Z-shaped building typologies are shown in Subareas 2 and 3 for consolidated research opportunities, aligning with the street fabric of the Shenandoah Plaza Historic District. Subarea 5 splits into three T-shaped building typologies.

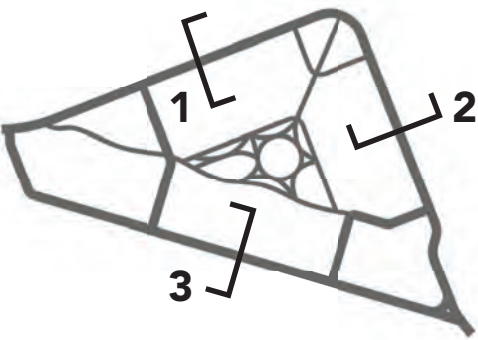


Three alternating T-shaped building typologies are shown in subareas 2 and 3 for a finer grain and scale relationship to the Shenandoah Plaza Historic District. Subarea 5 splits into two Z-shaped building typologies for consolidated research opportunities, leaving a view corridor through the site to Hangar One.

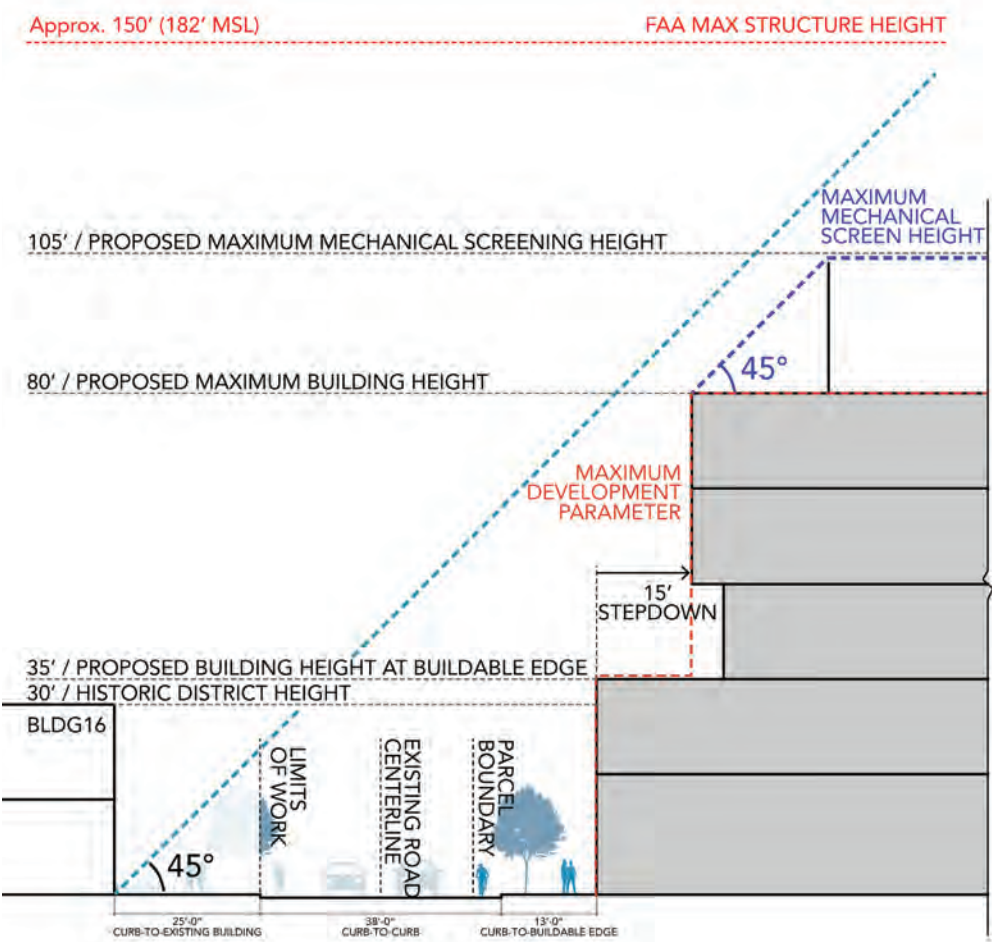
SITE

DISTRICT EDGE HEIGHT, SETBACKS AND STEPBACKS

The Subarea’s maximum development parameters have been studied in terms of height, setbacks, and stepbacks across the site to ensure compliance with FAA requirements while also respecting and complementing the existing historic scale and view corridors. Overall building heights are below FAA restrictions.

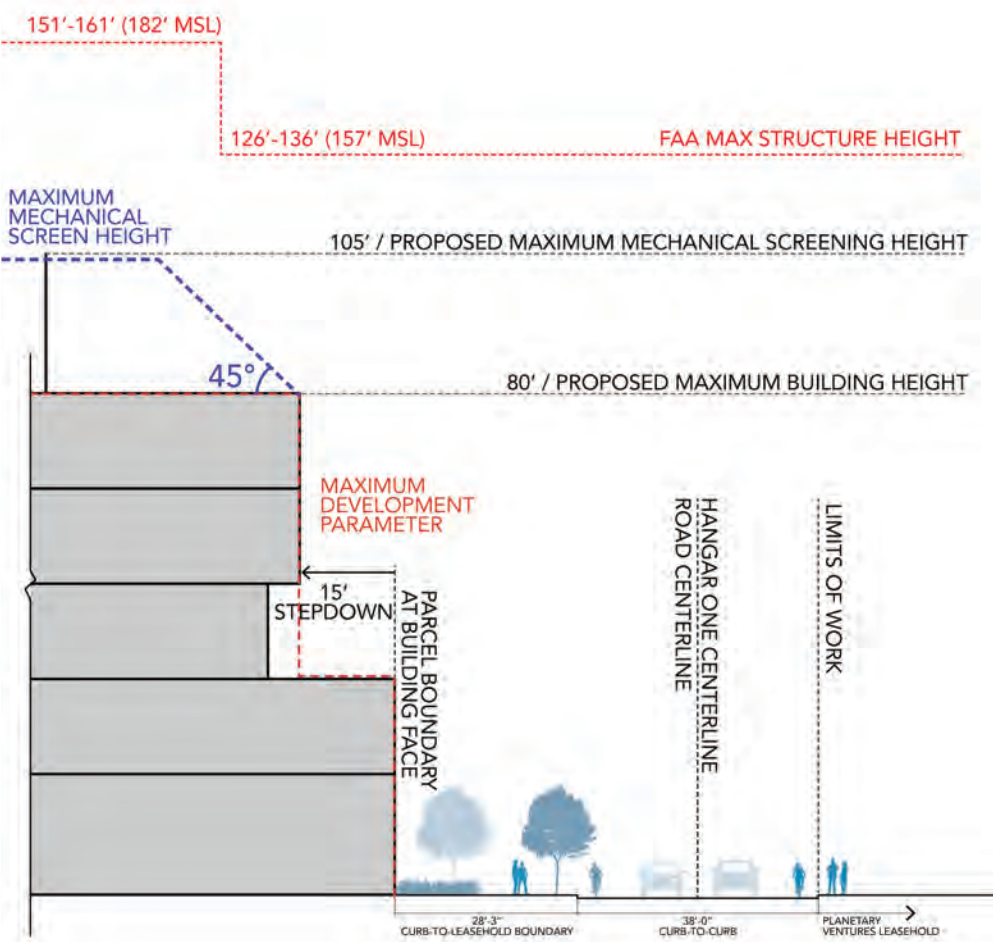


1. WESCOAT ROAD



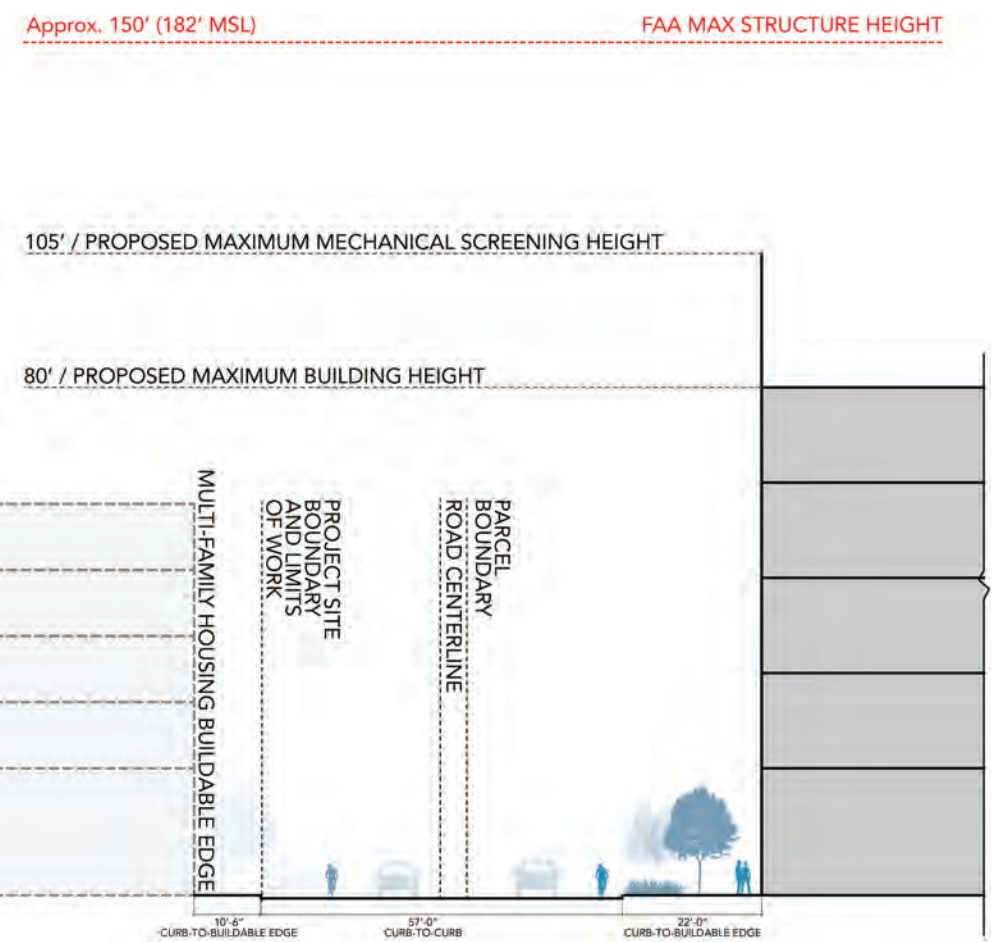
Wescoat Road is the threshold between the project and historic Shenandoah Plaza. The project defines a stepback zone to create a two story scale along the base of the buildings that relates directly to the scale of the buildings across the street.

2. CODY ROAD



Cody Road has been realigned to be on axis with Hangar One. It serves as a primary visual corridor to Hangar One from the south-eastern entrance and separates the project and the airfield. The two story stepback zone continues from Wescoat Road around to Cody Road to maintain a cohesive scale along these two primary roads, while also serving to further open the view corridor to Hangar One.

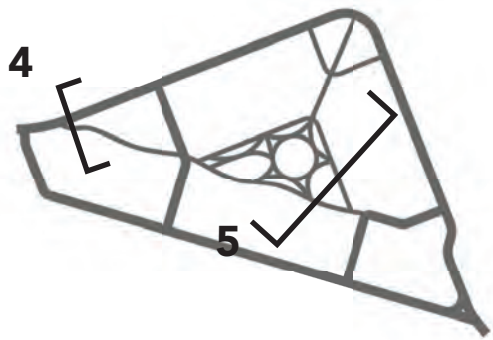
3. GIRARD ROAD



Along Girard Road buildable sites sit back 12'-6" minimum from the roadway, allowing for loading zones and generous planted bulbout zones. The generous ROW between the two proposed developments alleviates any need to prescribe stepbacks.

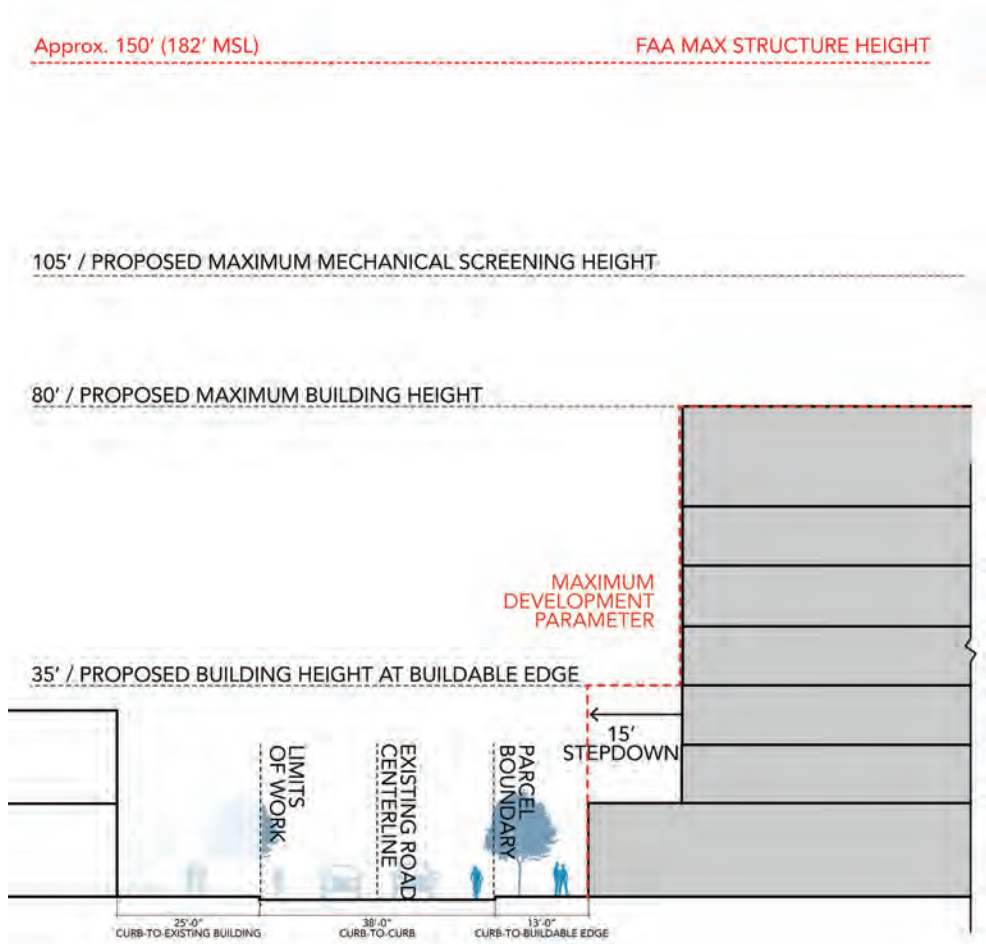
SITE

DISTRICT EDGE HEIGHT, SETBACKS AND STEPBACKS

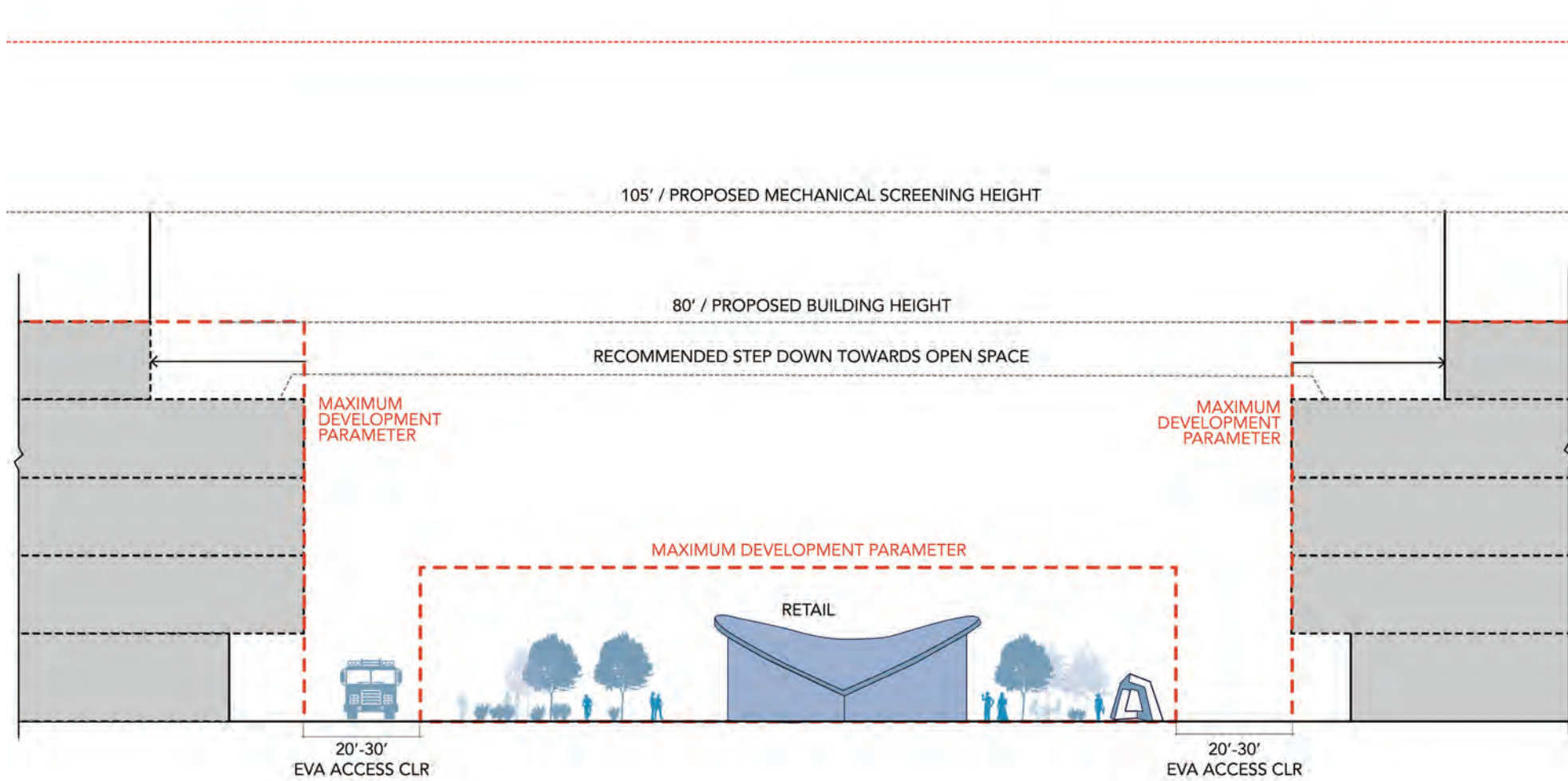


4. SECTION THROUGH RESIDENTIAL AT SUBAREA 6

5. SECTION THROUGH CENTRAL GREEN



At the western corner of the project site where Wescoat Road begins to turn toward Shenandoah Plaza, our subarea boundary is held back in line with the rest of the frontage along Wescoat Road toward Hangar One. This opens up the view corridors at that arrival point, and given the wider view corridor, the residential development is allowed to build up to the subarea line with no stepback condition.



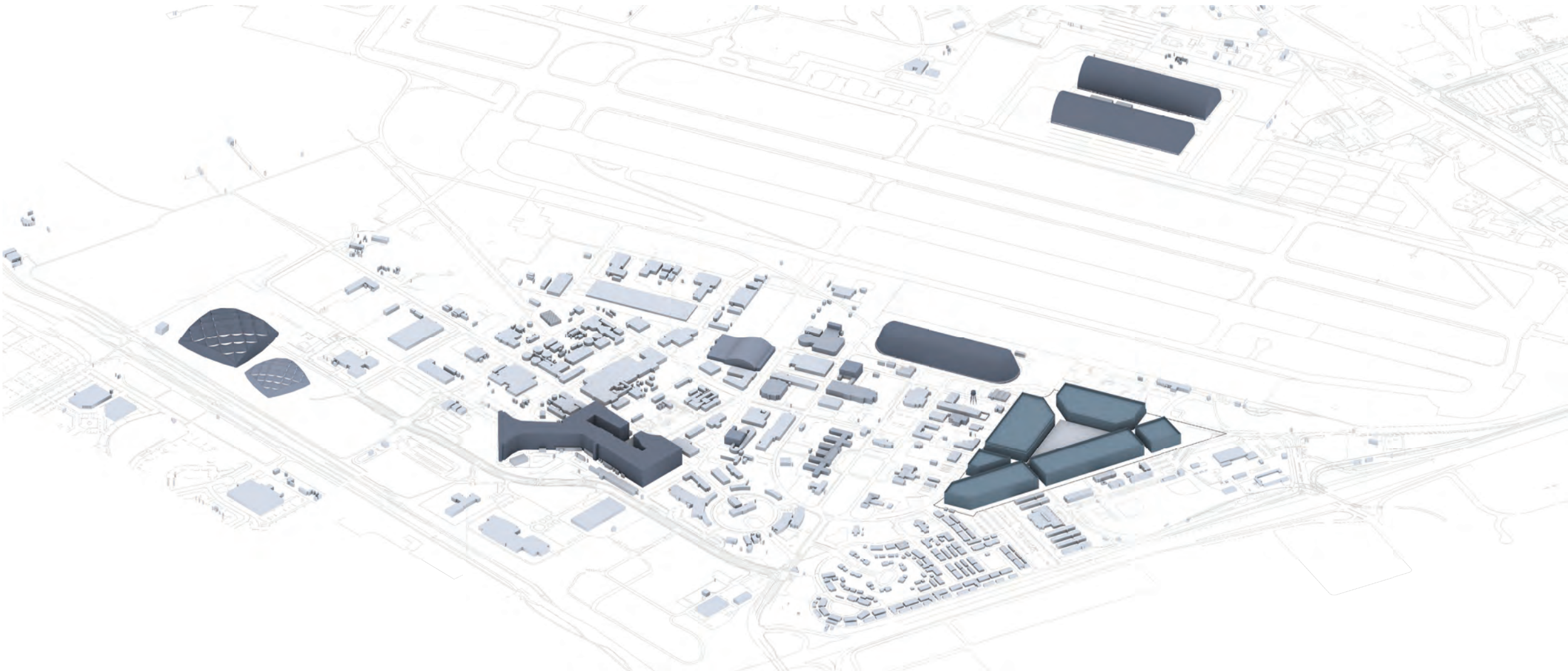
Since buildings front the open space along the Central Green, stepbacks are recommended to provide daylight access and soften the edge, providing a pedestrian scaled environment. The Central Green provides a space for active use pavilions, which are capped at 30 feet in height and in order to maintain open space.

SITE

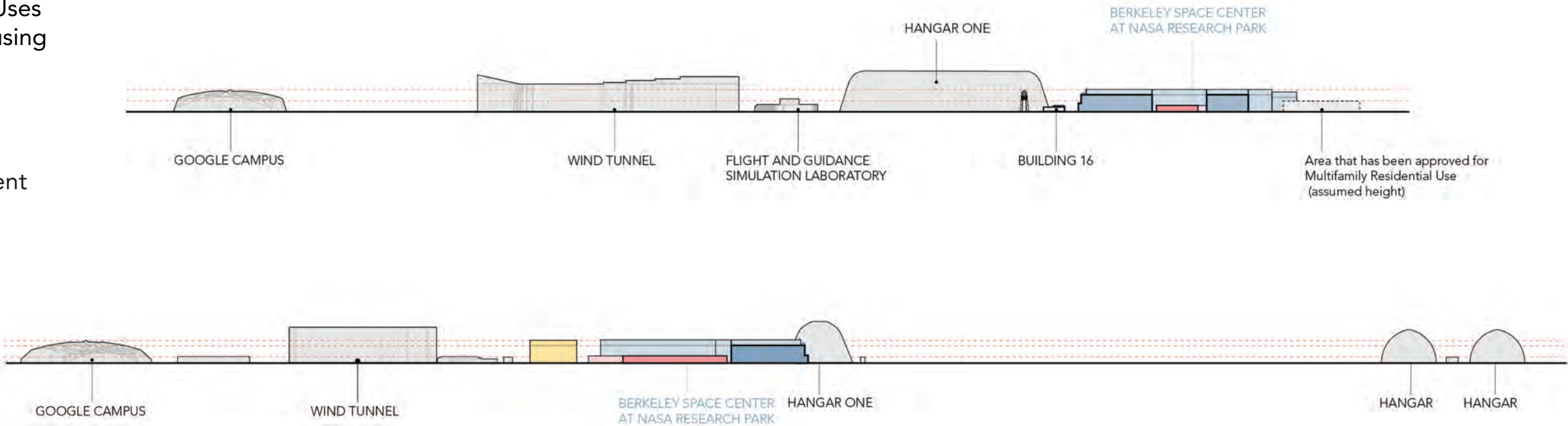
RESEARCH BUILDING HEIGHTS

Berkeley Space Center at NASA Research Park maximum development parameters reflect the heights of many of the existing research buildings, so that the unique skyline of the NASA ARC remains intact.

Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project’s maximum and minimum development standards 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.



- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters

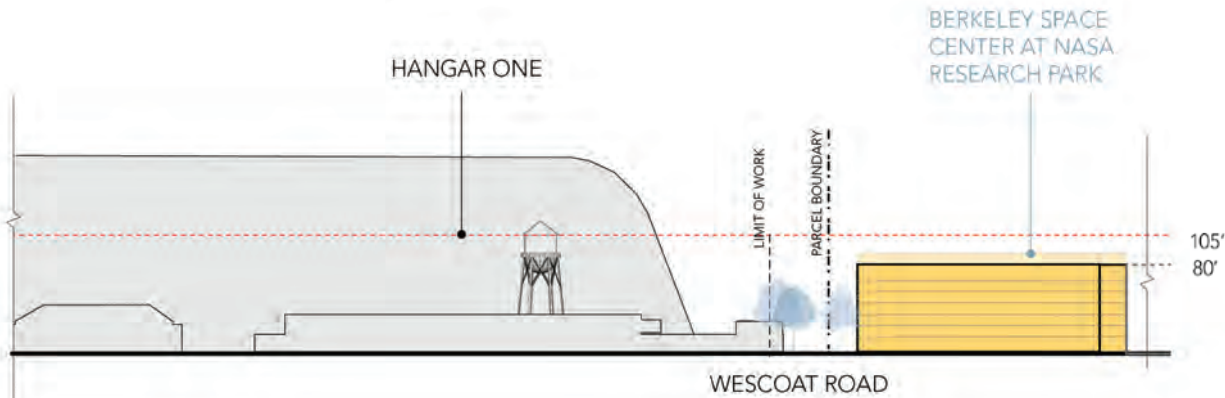
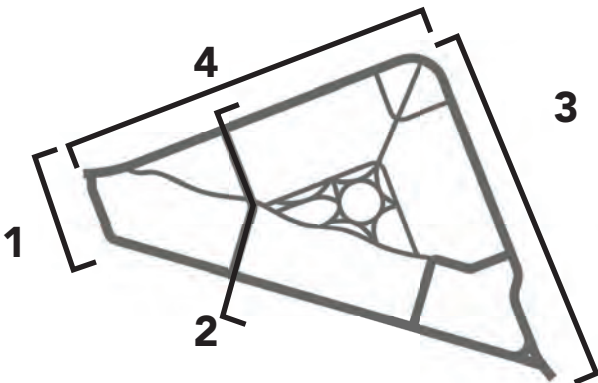


SITE

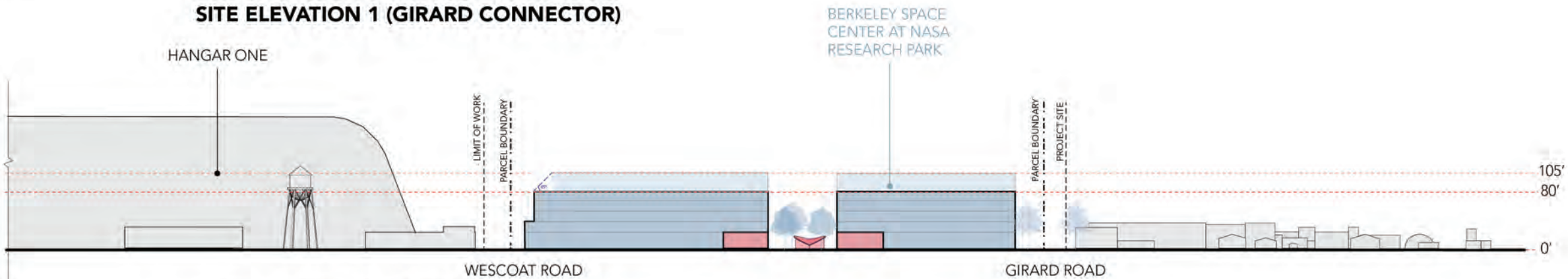
MAXIMUM DEVELOPMENT PARAMETER ELEVATIONS

Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project's maximum and minimum development standards 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.

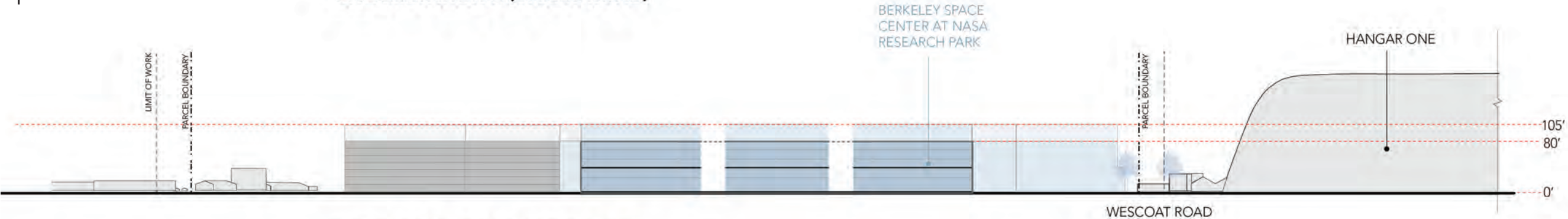
- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters



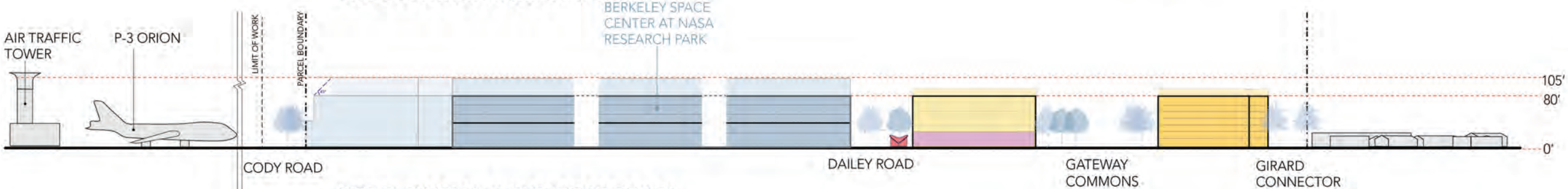
SITE ELEVATION 1 (GIRARD CONNECTOR)



SITE ELEVATION 2 (DAILEY ROAD)



SITE ELEVATION 3 (CODY ROAD)



SITE ELEVATION 4 (WESCOAT ROAD)

4 MOBILITY

PRINCIPLES / GOALS	36
CONNECTIVE NETWORK	37
STREET NETWORK	38
MASTER PLAN STREET SECTIONS	39
SHARED STREET SECTIONS.....	43

MOBILITY

PRINCIPLES / GOALS

In keeping with its overall vision to become a leading research and innovation campus, the Berkeley Space Center at NASA Research Park's mobility strategy aims to encourage active and innovative modes of transport over traditional private vehicles. The Transportation Demand Management (TDM) plan aims to achieve trip reduction by promoting bicycle, scooter, and pedestrian facilities, while reducing single occupant vehicle trips and containing vehicular access to the perimeter of the Project Site.

The overarching project principles for mobility at the Berkeley Space Center as follows:



Wider Connectivity
Opportunity to leverage proximity to U.S. 101, Caltrain, Bay Area Rapid Transit (BART), and Valley Transit Authority (VTA) to connect to San Francisco Airport (SFO), University of California, Berkeley (UC Berkeley), industry leaders throughout Silicon Valley, and the greater Bay Area.



Convenience
Opportunity for mobility to be a joyful, interesting and positive experience, both on site and at the district scale. Opportunity to create a "15-minute neighborhood" via human- or electric-powered devices.



Beacon
Opportunity for mobility to be a part of the Project Site's distinctive identity.



Formative
Opportunity for an improved pedestrian, cyclist, and alternative mobility experience through an innovative transportation demand management program. Opportunity for mobility to be a site-driver rather than solely responsive to other site considerations.

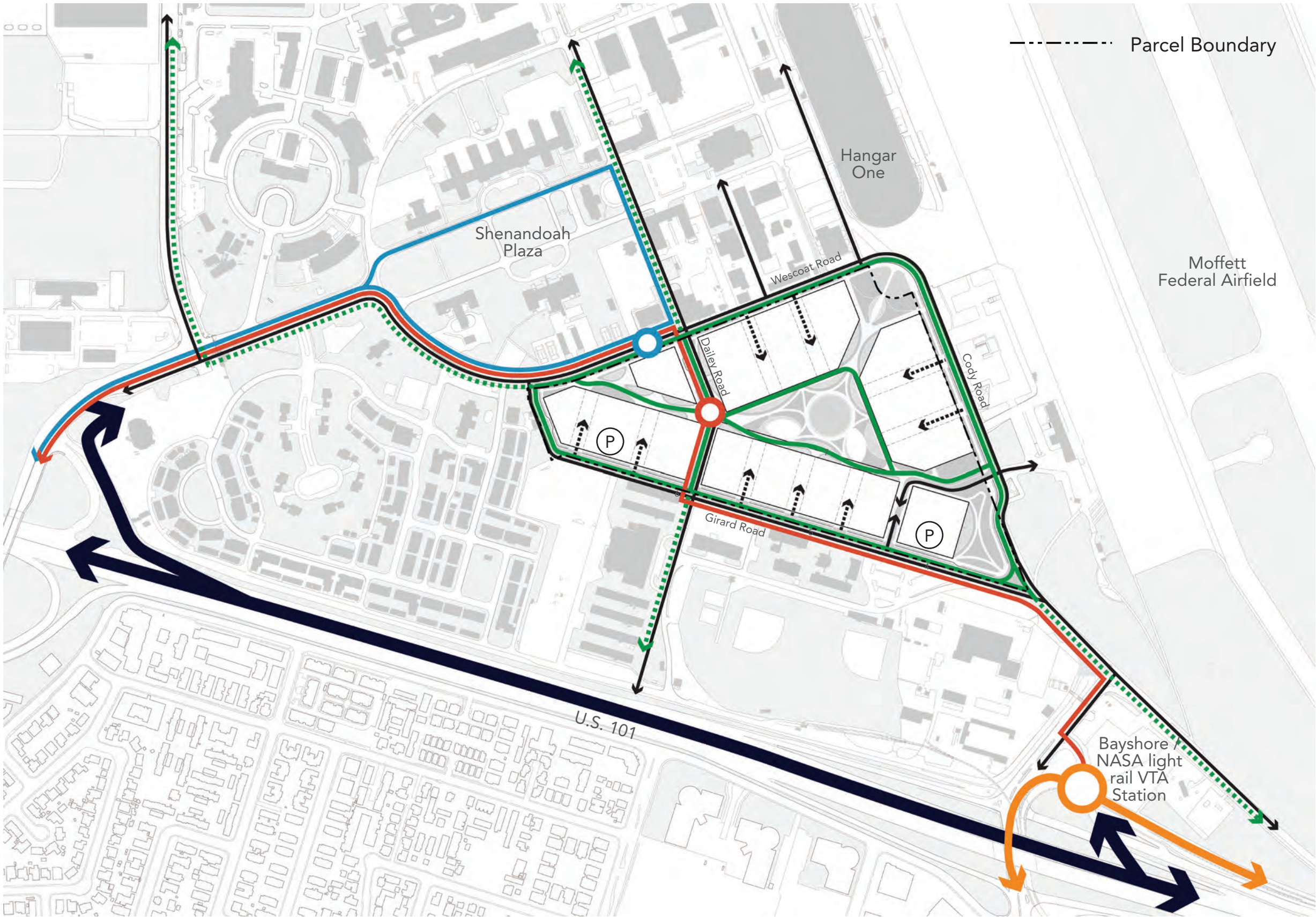
MOBILITY

CONNECTIVE NETWORK

The mobility network for the Project Site is composed of a variety of transportation modes and systems of interchange including VTA, regional highway connections, consolidated vehicular routes, and safe and pleasant conditions for pedestrians and cyclists. This network physically ties the site to the broader NASA ARC district.

There are a number of locations within NASA ARC where revisions to the hierarchy of movement and renovations to the system will transform the interconnectivity of the entire campus.

- Project Proposed Shuttle Stop
- Project Proposed Shuttle Route
- Project Proposed VTA Bus Stop
- Project Proposed VTA Bus Route
- Project Proposed Bicycle Route
- Proposed Bicycle Route, by others
- Existing VTA Stop
- VTA Orange Line
- P Parking
- Vehicular Route
- Potential Shared Use Road



Connective Network Illustrative Diagram

MOBILITY

STREET NETWORK

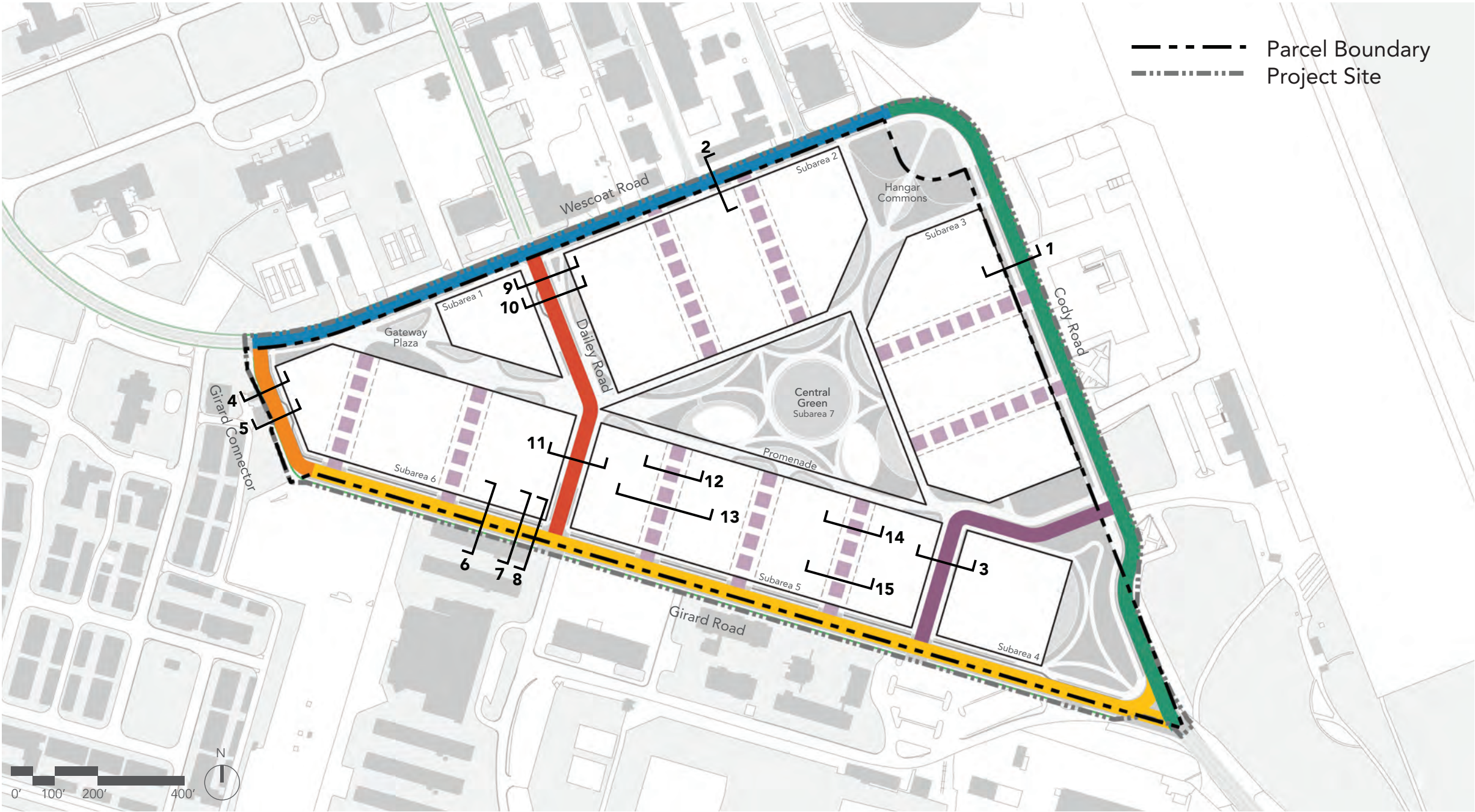
All streets have two travel lanes, including one lane for each direction of traffic. Girard Road additionally includes a center turn lane as shown in Sections 6-8.

Guidelines

To reduce speeds and increase pedestrian and cyclist safety, travel lanes should be the minimum width feasible and include bulb-outs where possible.

Where there is sufficient width for both, amenity bands with street trees should be included between the back of curb and the sidewalk. The character of these amenity zones is flexible, and may have planting or may include hardscape materials to accommodate street furnishings and other elements.

- Cody Road
- Wescoat Road
- Girard Connector
- Girard Road
- Dailey Road
- Shared Use Street
- Subarea 4 Street



Street Network Illustrative Plan

Proposed Street Network Typical Width Guidelines									
Section #	Street Name	Travel Lanes	Bike Infrastructure	Flex Curb/Loading	Pick Up/Drop Off	Back of Curb to Back of Curb	Amenity Zone	Sidewalk	Non-Vehicular Area Width
1	Cody Road	11'-0"	8'-0" Bike Lanes with Buffer			39'-0"	6'-0" (west side, continuous)	9'-0"	28'-3" (west side only, inc. add'l planting to leasehold boundary)
2	Wescoat Road	11'-0"	8'-0" Bike Lanes with Buffer		9'-0" where required	39'-0" to 48'-0"	6'-0" (south side, except at PU/DO)	8'-6" (5'-6" at PU/DO)	5'-6" to 14'-6" (south side only)
3	Subarea 4 Street	11'-0"		9'-0" where required		23'-0" to 32'-0"	6'-0" (as feasible)	9'-6" to 18'-6"	19'-0" to 28'-0" (both sides combined total)
4-5	Girard Connector	11'-0"	8'-0" Bike Lanes with Buffer	9'-0" where required		39'-0" to 48'-0"	5'-0" (east side, except at Flex Curb)	9'-6" (5'-6" at Flex Curb)	5'-6" to 14'-6" (east side only)
6-8	Girard Road	11'-0"	8'-0" Bike Lanes with Buffer	9'-0" where required		50'-0" to 59'-0"	5'-0" to 14'-0" (inc. bulb-out)	7'-6"	12'-6" to 21'-6" (north side only)
9-11	Dailey Road	10'-6"	8'-0" Bike Lanes with Buffer	9'-0" where required	9'-0" where required	38'-0" to 47'-0"	4'-6" to 6'-0" (as feasible)	6'-0" to 14'-0"	12'-0" to 70'-0" (both sides combined total, inc. add'l open space to buildable area)
12-15	Shared-Use Streets	10'-0" to 13'-0"	Shared-Use Markings			20'-0" to 26'-0"	6'-0" to 11'-0" (as feasible)	10'-0"	40'-0" to 44'-0" (both sides combined total)

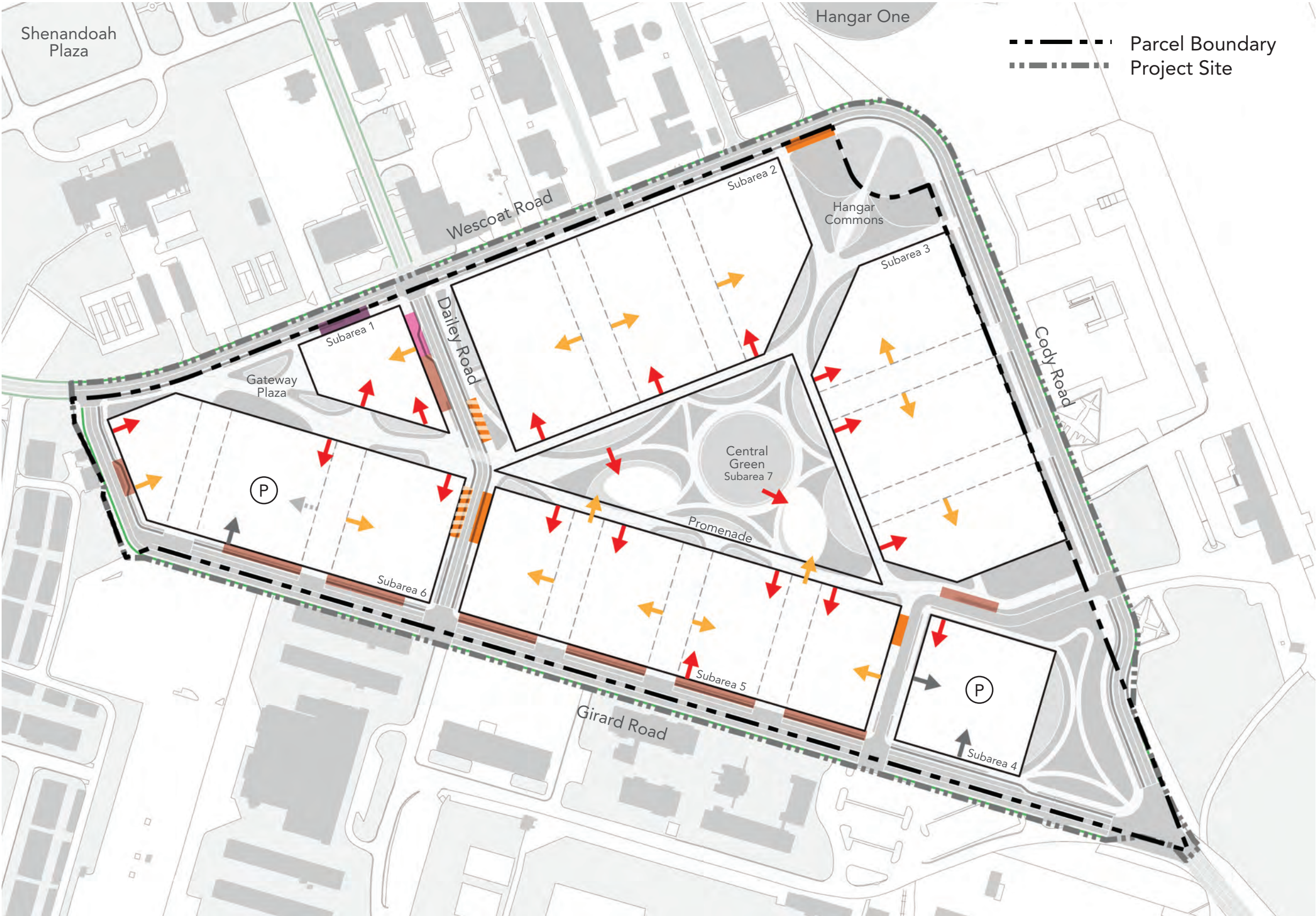
MOBILITY

CURB USE & BUILDING ACCESS

As a project where people are prioritized over cars, the access, logistics, and curb use strategies are optimized for flexible and overlapping uses to reduce competition for curb space and respond to peak demand for different user types.

Primary building entrances and lobbies are located along the frontages facing the Central Green to activate this large open space. Service entrances are located away from the Central Green; instead, loading and delivery hubs are located closer to the outer ring roads (Wescoat Road, Cody Road, and Girard Road) to ensure easy access for service vehicles.

- Project Proposed VTA Bus Stop
 - Passenger Pick Up/Drop Off with Project Proposed Shuttle Stop
 - Passenger Pick Up/Drop Off*
 - Flex Curb: Pick Up/Drop Off* or Loading
 - Loading Dedicated Curb Cuts
 - Potential Building Entrance
 - Potential Service Entrance
 - Potential Parking Entrance
 - Potential Parking or Service Entrance
- *including Ride Sharing



Curb Use and Building Access Illustrative Plan

MOBILITY

MASTER PLAN STREET SECTIONS

1. CODY ROAD

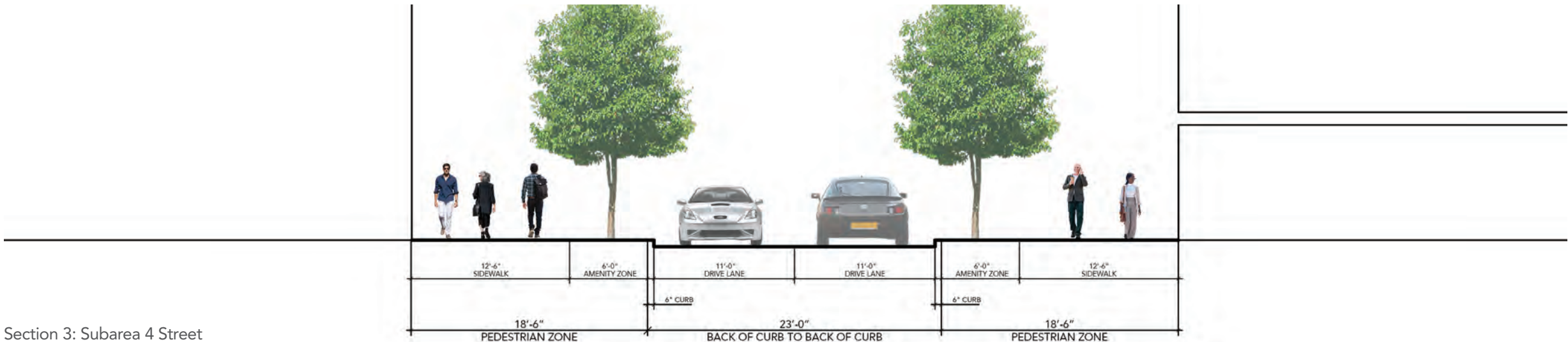
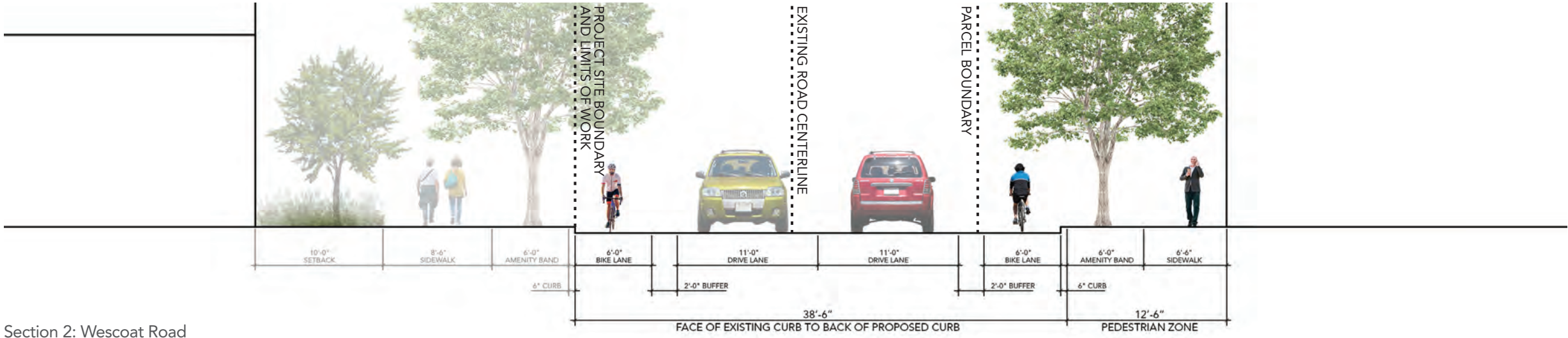
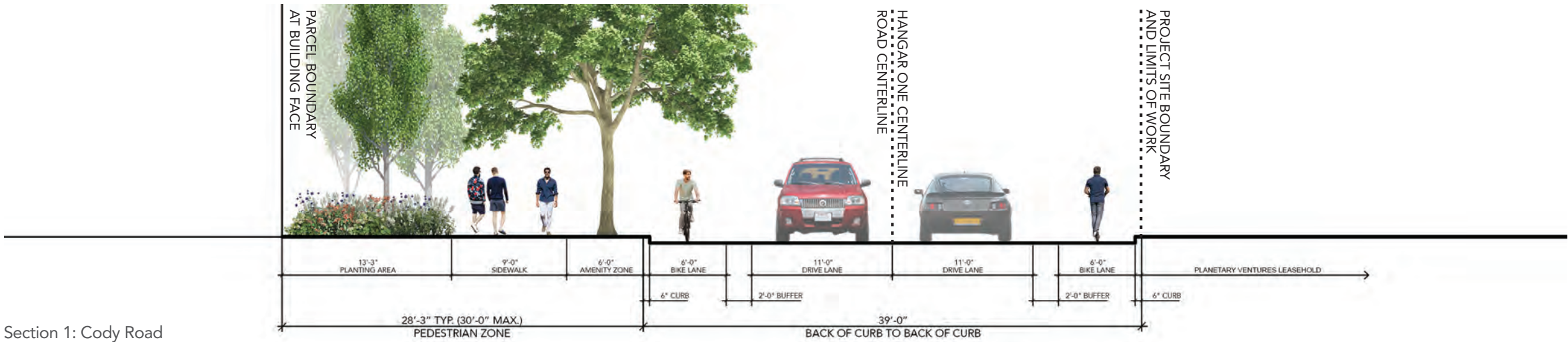
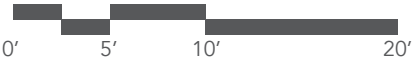
The proposed reconfiguration of Cody Road aligns the road centerline with the axis of Hangar One. The building setback along the parcel boundary is limited by the distance for aerial fire access.

2. WESCOAT ROAD

The proposed design for Wescoat Road shifts the existing road centerline approximately two feet to the south and adds Class II Bicycle Lanes to the roadway. On the south side of the street, an amenity band with street trees is included except at the pick-up/drop-off area. No improvements beyond the face of curb are proposed on the north side of the street by this project, but may be pursued by others in the future.

3. SUBAREA 4 STREET

To accommodate multiple entrances or exits from Berkeley Space Center's parking garage, a 60-foot wide street is proposed.



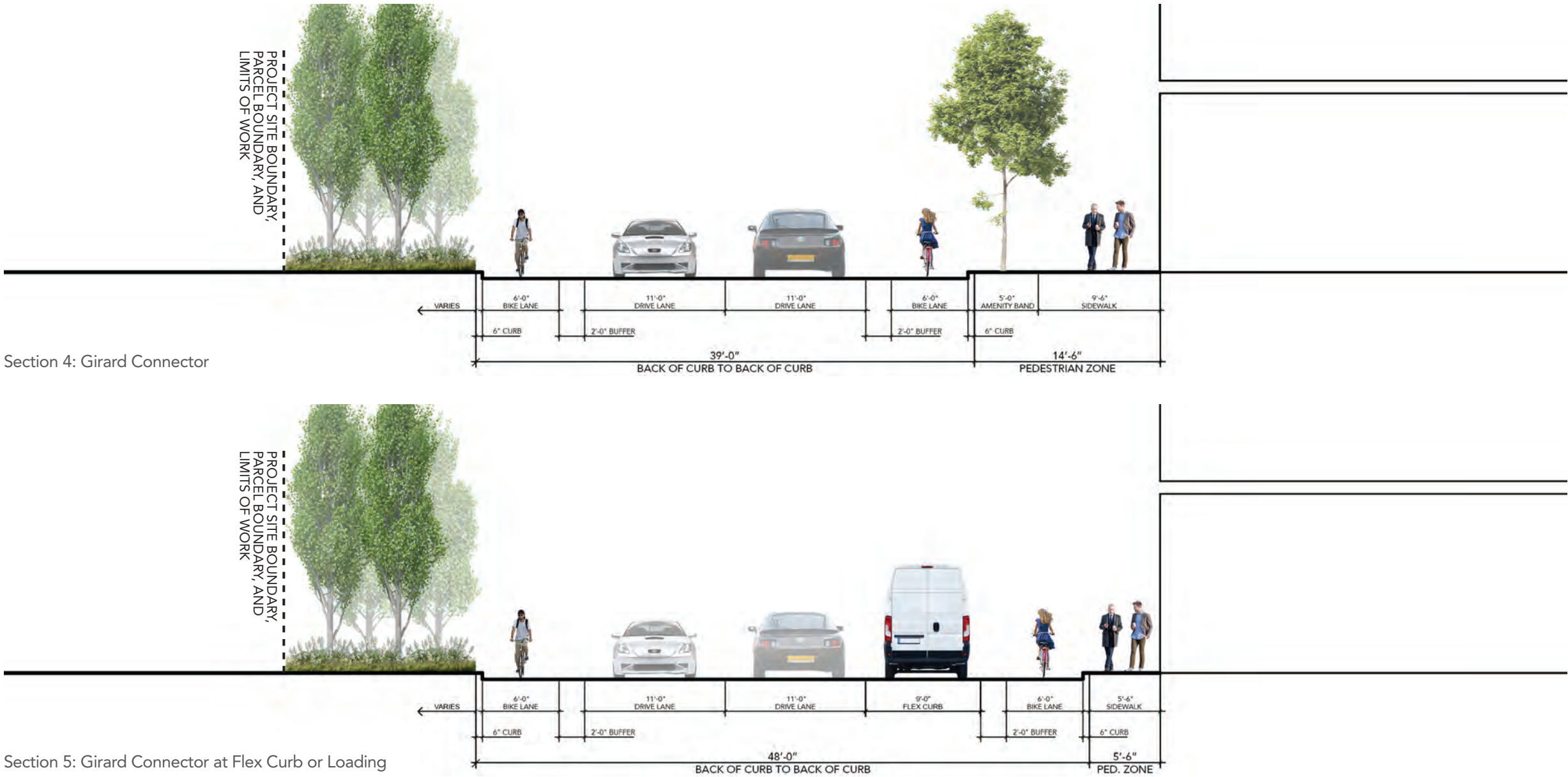
MOBILITY

MASTER PLAN STREET SECTIONS

4/5. GIRARD CONNECTOR

A new connector street should link Girard Road and Wescoat Road on the western edge of the Project Site.

Guidelines: Flex curbs and loading zones should be provided only where required.



MOBILITY

MASTER PLAN STREET SECTIONS

6. GIRARD ROAD AT FLEX CURB

Girard Road is proposed to be shared with the adjacent development area to the south of the Project Site. **Guidelines:** Flex curbs and/or loading should be provided only where required.

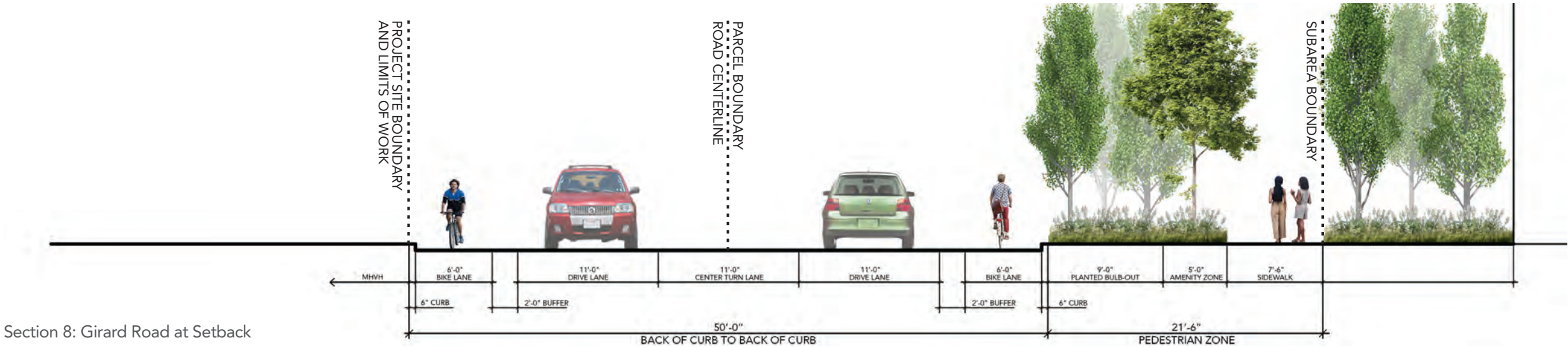
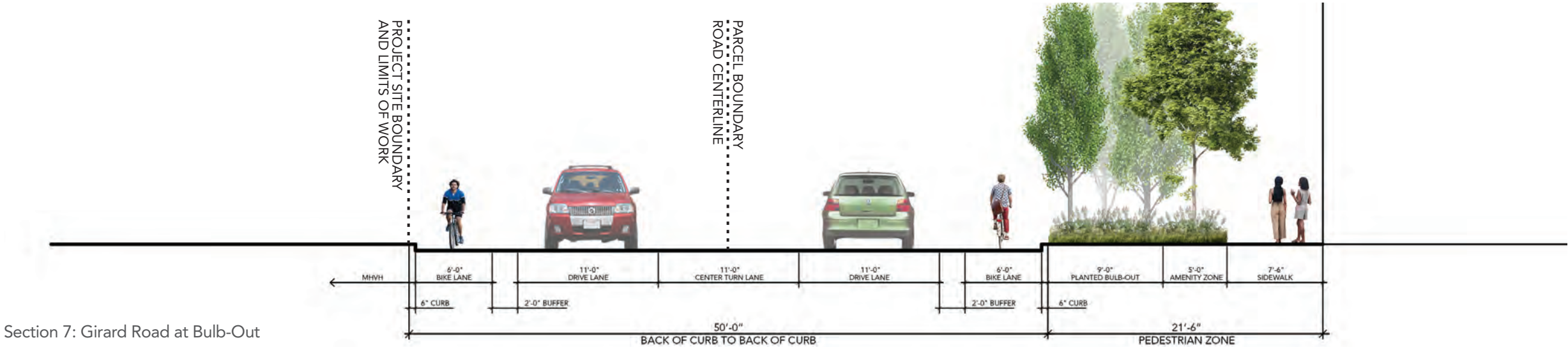
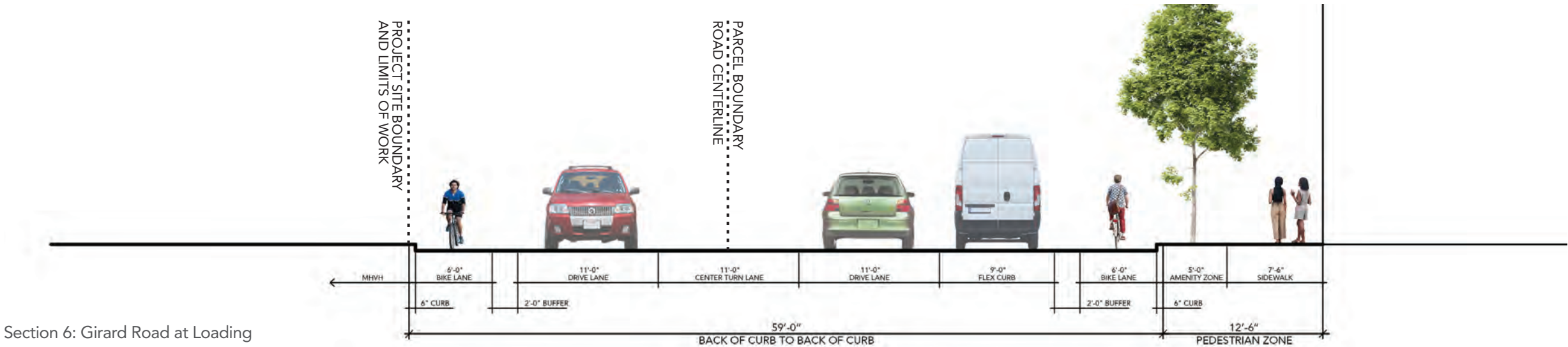
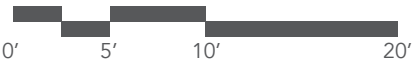
7. GIRARD ROAD AT BULB-OUT

Guidelines: Where flex curbs and curb-side loading are not required, bulb-outs should be added. Where possible, these bulb-outs should be planted.

8. GIRARD ROAD AT SETBACK

Guidelines: Where the buildings are setback from Girard Road, additional planting should be considered to provide further phytoremediation curtaining to capture groundwater as it flows onto the site.

Note: the phytoremediation strategy will be reviewed and approved by the EPA; see more information about permitting and review processes under "Purpose of This Document" on page 8.



MOBILITY

MASTER PLAN STREET SECTIONS

9. DAILEY ROAD NORTH

The northern leg of Dailey Road continues the existing centerline of McCord Avenue to connect the adjacent development area south of the Project Site to Shenandoah Plaza. To maintain setbacks from existing critical infrastructure, Subarea 2 is setback from Dailey Road with an area for additional planting and occupiable spill-out terraces.

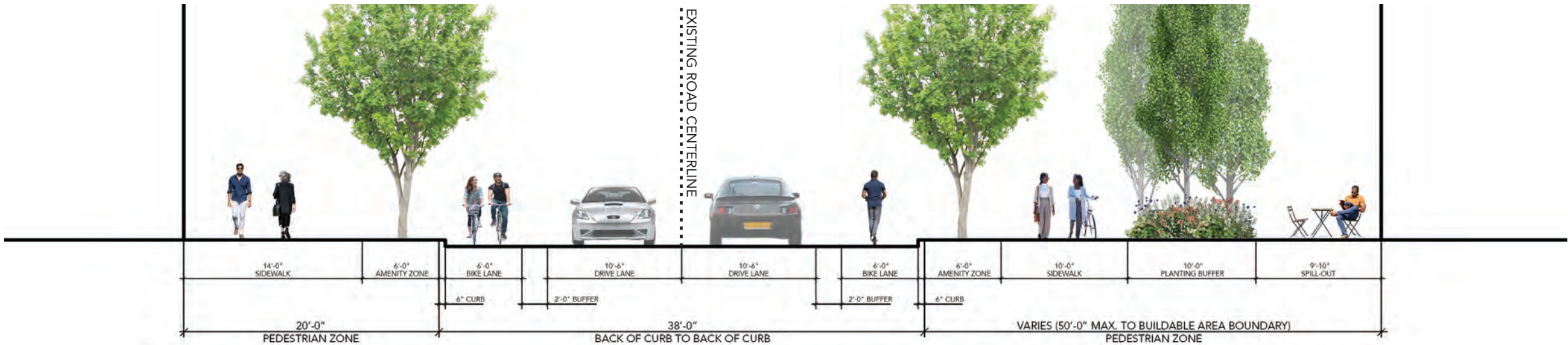
Guidelines: Travel lane widths along Dailey Road should be narrowed to slow traffic across the promenade.

10. DAILEY ROAD AT LOADING/FLEX CURB

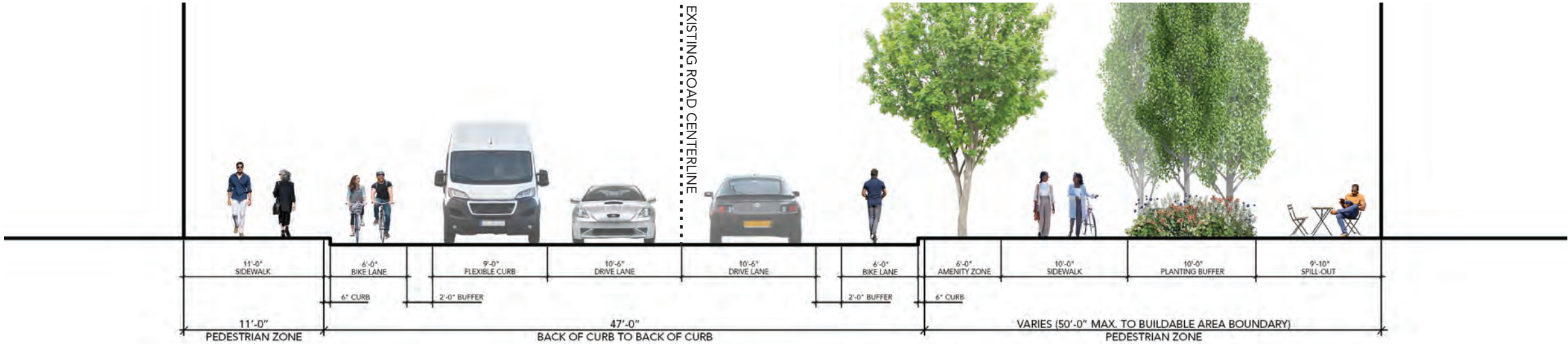
Guidelines: Dailey Road should include flex curbs and loading zones only where required.

11. DAILEY ROAD SOUTH

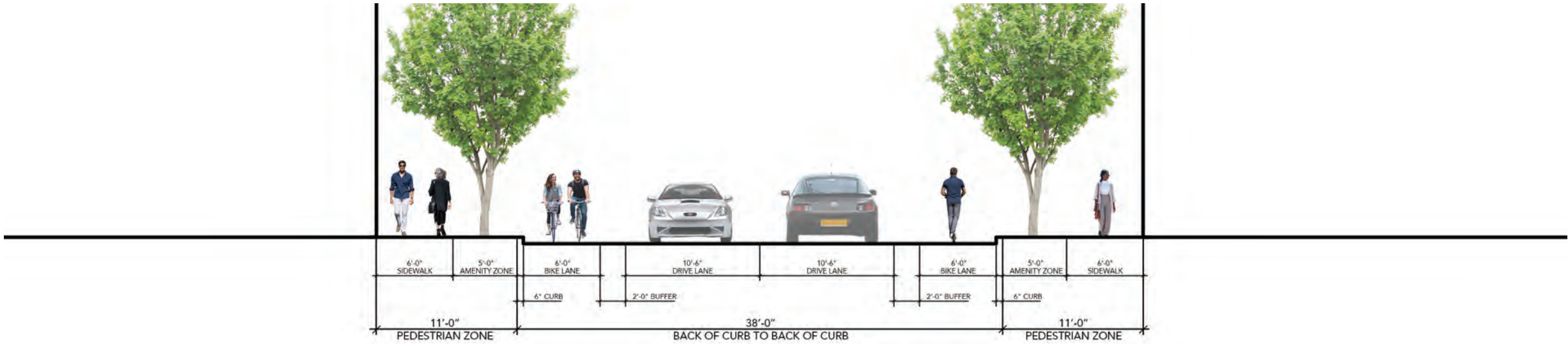
Guidelines: Travel lane widths along Dailey Road should be narrowed to slow traffic across the promenade.



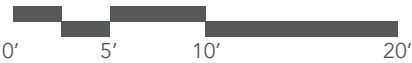
Section 9: Dailey Road North



Section 10: Dailey Road North at Loading



Section 11: Dailey Road South



MOBILITY

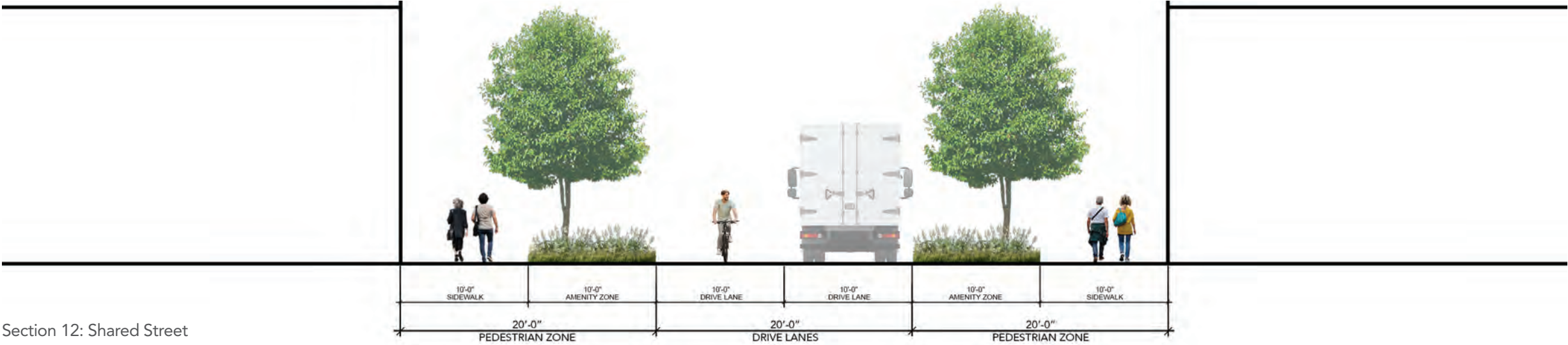
SHARED STREET SECTIONS

12. SHARED STREET

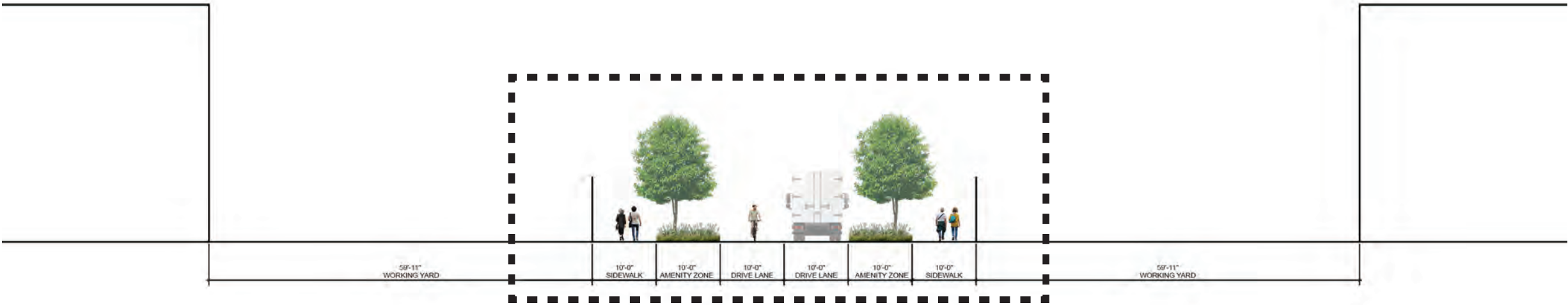
Guidelines: Shared streets should include shared-use roadway markings for cyclists.

13A/B. SHARED STREETS AT WORKING YARDS

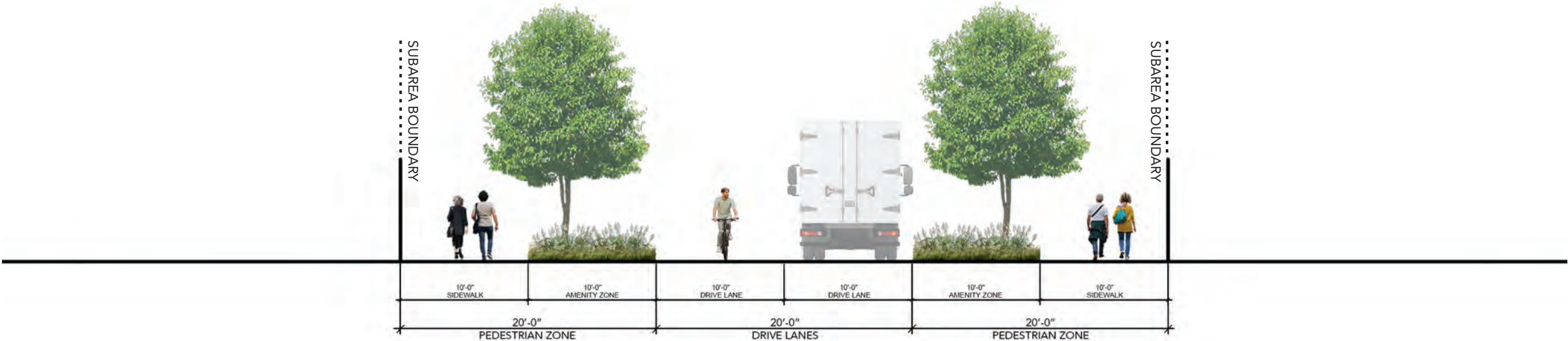
Working yards typically face the shared streets, with generous setbacks to accommodate a variety of different outdoor testing labs or research spaces.



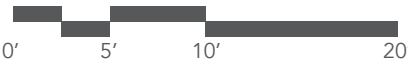
Section 12: Shared Street



Section 13a: Shared Street at Working Yards



Section 13b: Shared Street at Working Yards Enlargement

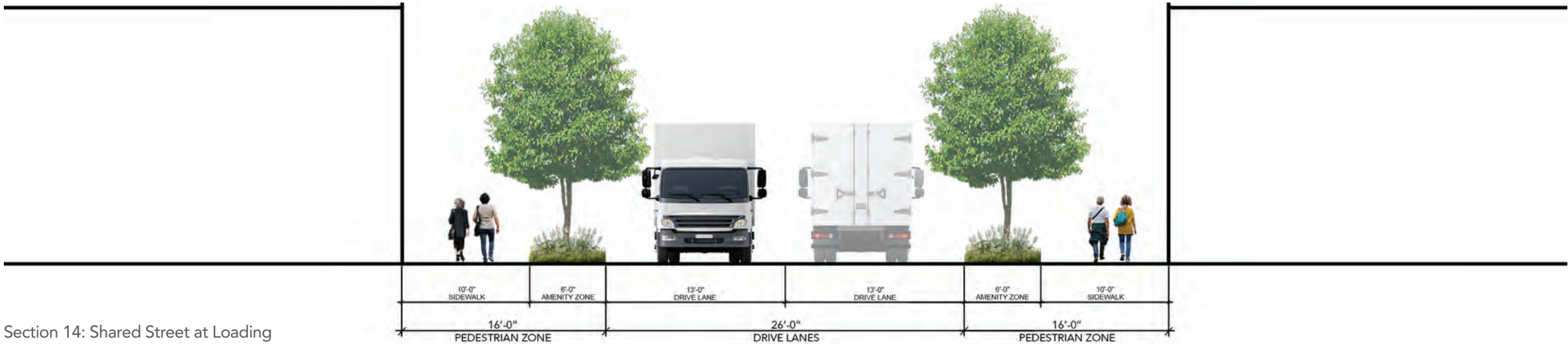


MOBILITY

SHARED STREET SECTIONS

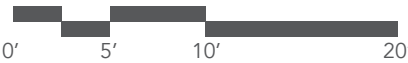
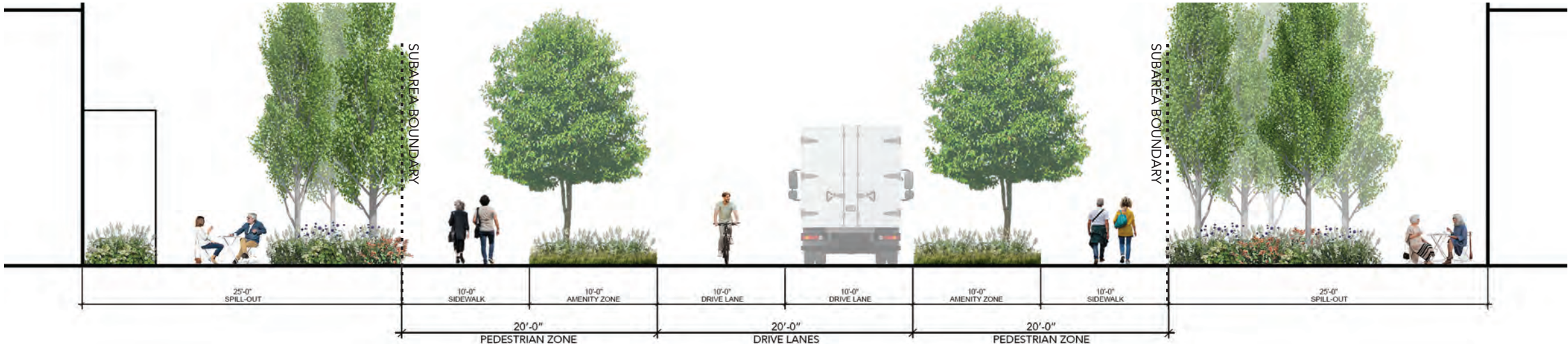
14. SHARED STREET AT LOADING

Where required, the shared street lane width should be increased to provide turning radii and clearances to the building loading docks. **Guidelines:** These wider lanes should be limited in length to provide maximum planting and to reduce overall travel speeds on these dead-end streets.



15. SHARED STREET AT SETBACKS

Guidelines: Where the buildings are set back from the Subarea boundary, open terraces and additional planting should be provided for additional shade and privacy screening.



5 OPEN SPACE

- PRINCIPLES / GOALS 47
- ORGANIZING FRAMEWORK 48
- OPEN SPACE NETWORK 49
- PROGRAMMING & ACTIVATION 50
- SOCIAL ROOMS: TERRACES, PATIOS, & SPILL OUT AREAS 51
- HARDSCAPE MATERIALS & CHARACTER..... 52
- SITE LIGHTING, FURNISHINGS, & FEATURES 55
- OPEN SPACE STRATEGIES..... 57
- STORMWATER STRATEGIES 58
- PHYTOREMEDIATION STRATEGIES 59
- SENSITIVE HABITAT GUIDELINES 60
- PROTECTED TREES 61
- PLANTING CHARACTER..... 62
- PLANT PALETTE GUIDELINES 64
- PLANTING GUIDELINES 68

OPEN SPACE

PRINCIPLES / GOALS

The social heart of the Berkeley Space Center at NASA Research Park is the "Center-Point"— a shared open space at the center of the development site, with green fingers connecting out to the north, west, east and south to the context. The underlying principle for this approach is that great open spaces make great innovation districts: the scheme envisions a development that fully integrates buildings with landscape and connects the project interior to the greater area, with open spaces used to host shared amenity features that act as the focal points for activity and innovation.

The overarching project principles for open space at the Berkeley Space Center at NASA Research Park are as follows:



Center-Point
Create an active center-point that pulls activity from within buildings to the outside — blurring the boundaries between interior and exterior environments to facilitate collisions of knowledge throughout the campus.



Maximize Connectivity
Ensure that the public realm creates safe and convenient connections throughout the site. Creating car-free zones can foster spontaneous interactions of people and ideas, create amenity spaces, and improve connections to nature.



Regenerating Nature
Opportunity to remediate the site using natural systems while using the site to remediate the larger environmental context.



Diversify Programming
Activate open spaces using programming, amenities, and dedicated flexible spill out zones that can be used for personalized programming opportunities.



Green Infrastructure
Opportunity to utilize nature as a model for intelligent systems planning and as a performative system that works for the Project Site. Stormwater management should be integrated into the landscape.



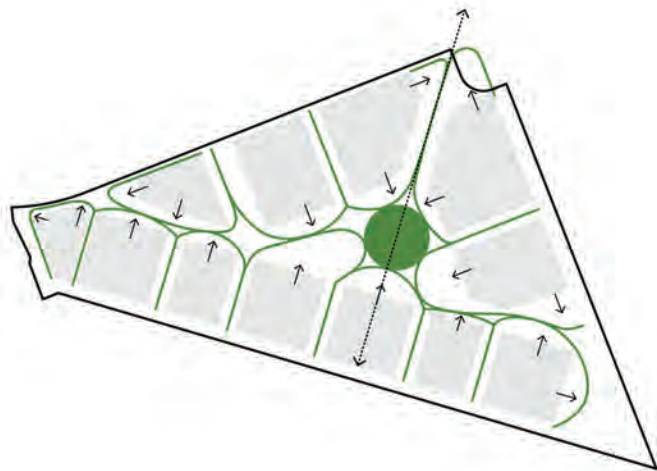
Nature as Innovation
Design elements within the public realm should reflect the innovative spirit of space exploration and space-inspired technology.

OPEN SPACE

ORGANIZING FRAMEWORK

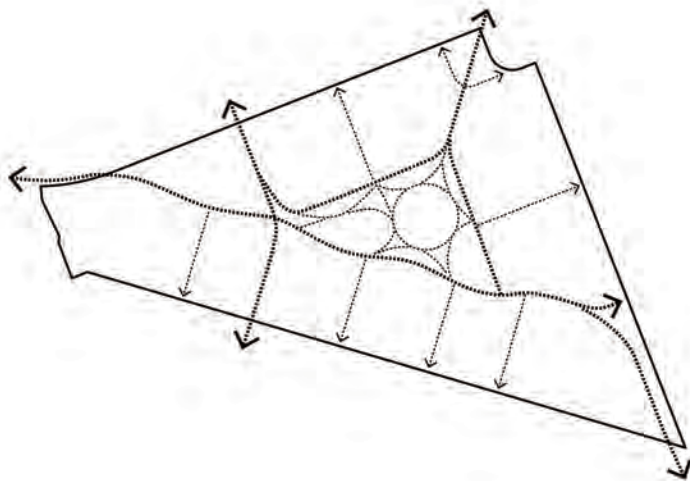
The social heart of the new district — the “Center-Point” — is achieved through the strategic choreography of urban fabric, site circulation, indoor-outdoor programming, and diverse planting environments that frame, shape, and animate a central hub of activity.

1. CREATE THE CENTER-POINT



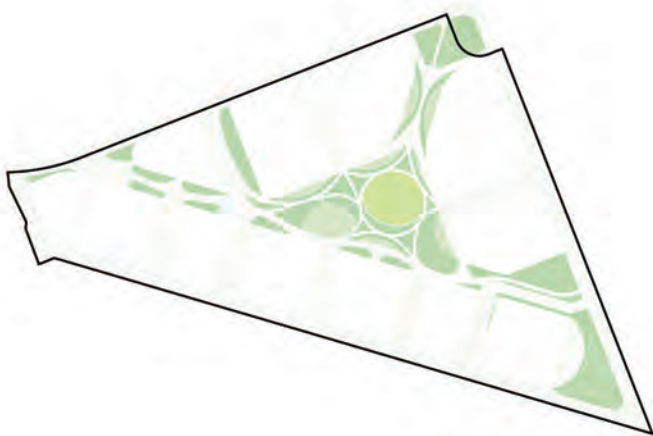
Building program and activity is intended to be pulled from the inside out to create a unique social environment in the landscape. An active center-point is created as a means to facilitate collisions of research, knowledge and innovation. The intent is for the central node of the Project Site to be the active, shared heart.

2. MAXIMIZE CONNECTIVITY



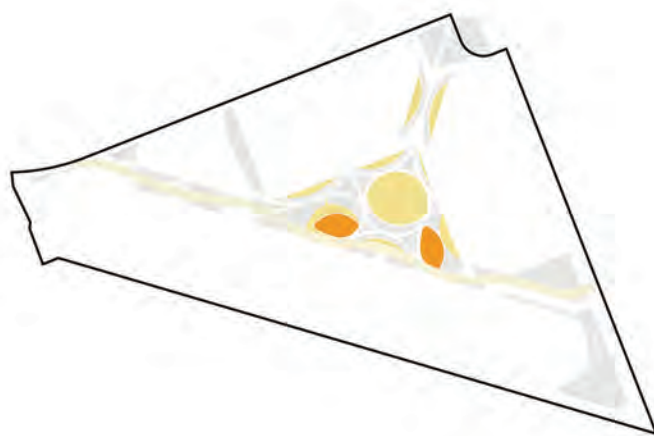
Connections are created around the site, and a direct relationship between the district’s street network and Shenandoah Plaza/Berkeley Space Center at NASA Research Park is maintained. View corridors to Hangar One and the Diablo Foothills are maintained and celebrated.

3. REGENERATE NATURE



Open space is clustered at the center and the north corner of the Project Site, with green fingers connecting out to the context. A meandering green promenade links the Project Site to its context at the east and west, and welcomes people in on both ends.

4. DIVERSIFY PROGRAMMING



The car-free core is the social magnet and meeting point for the district and beyond. Active social nodes and spines are connected by a network of multimodal paths that prioritize pedestrians and cyclists. The Central Green and Promenade may be activated by garden amenity pavilions and the building frontages. All Subareas have dedicated spill out zones into the Central Green or Promenade for more personalized programming opportunities.

OPEN SPACE

OPEN SPACE NETWORK

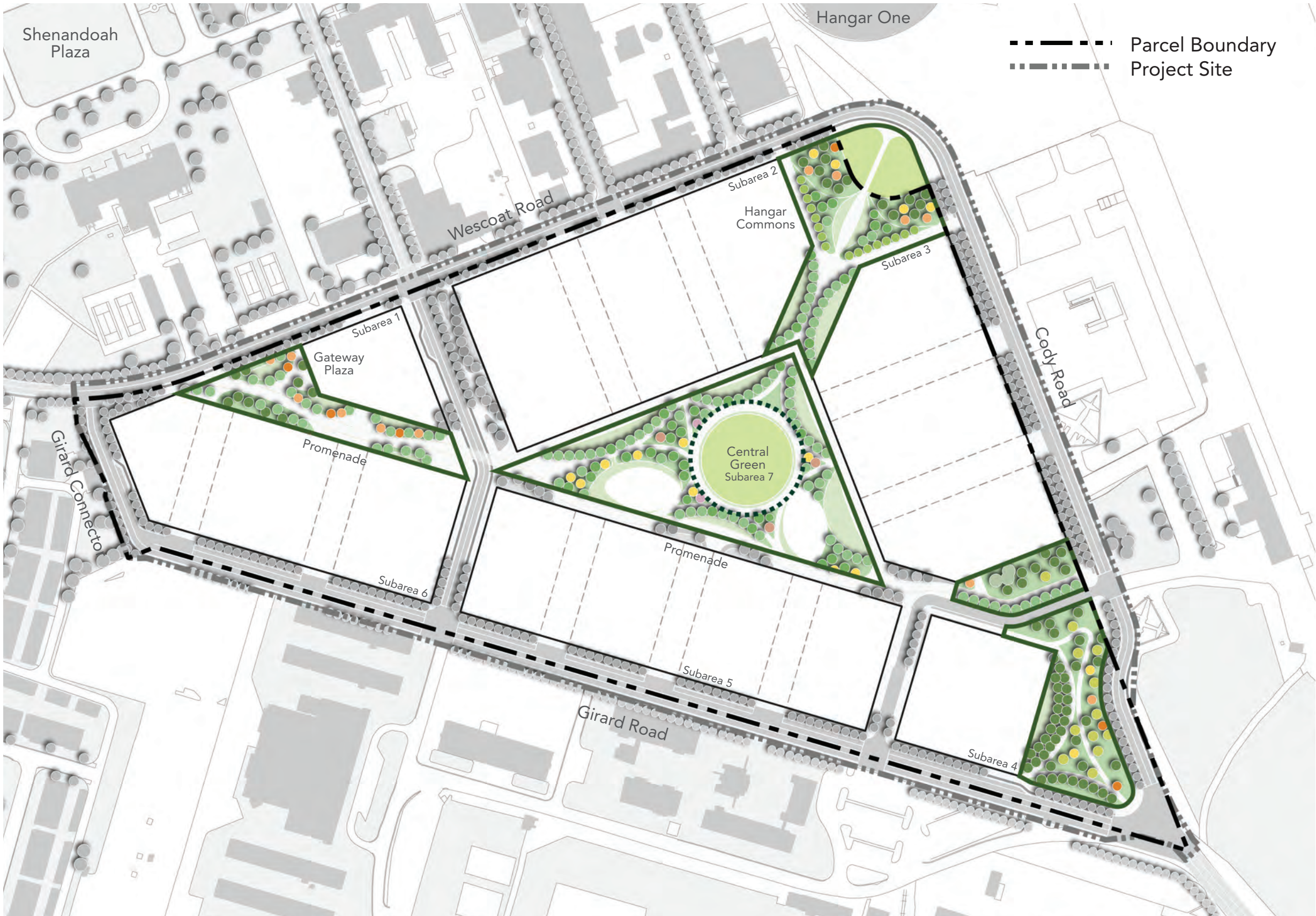
Berkeley Space Center's open space network includes a mix that range from highly programmed to passive recreation gardens.

Standards: Hangar Commons shall be a minimum of 10 acres, and its planting layout and palette shall maintain a clear view corridor from the Central Green to Hangar One.

Planting outside of Berkeley Space Center's Parcel Boundary shall comply with NASA height requirements to accommodate Hangar One door opening and aircraft movement.

Guidelines: The Central Green, Promenade, and Gateway Plaza should be the most activated.

Planting at the southeast corner of the Project Site provides a secondary gateway experience, as well as an important green buffer between Berkeley Space Center and sensitive habitat areas to the east of Cody Road.



Illustrative Open Space Network

OPEN SPACE

PROGRAMMING & ACTIVATION

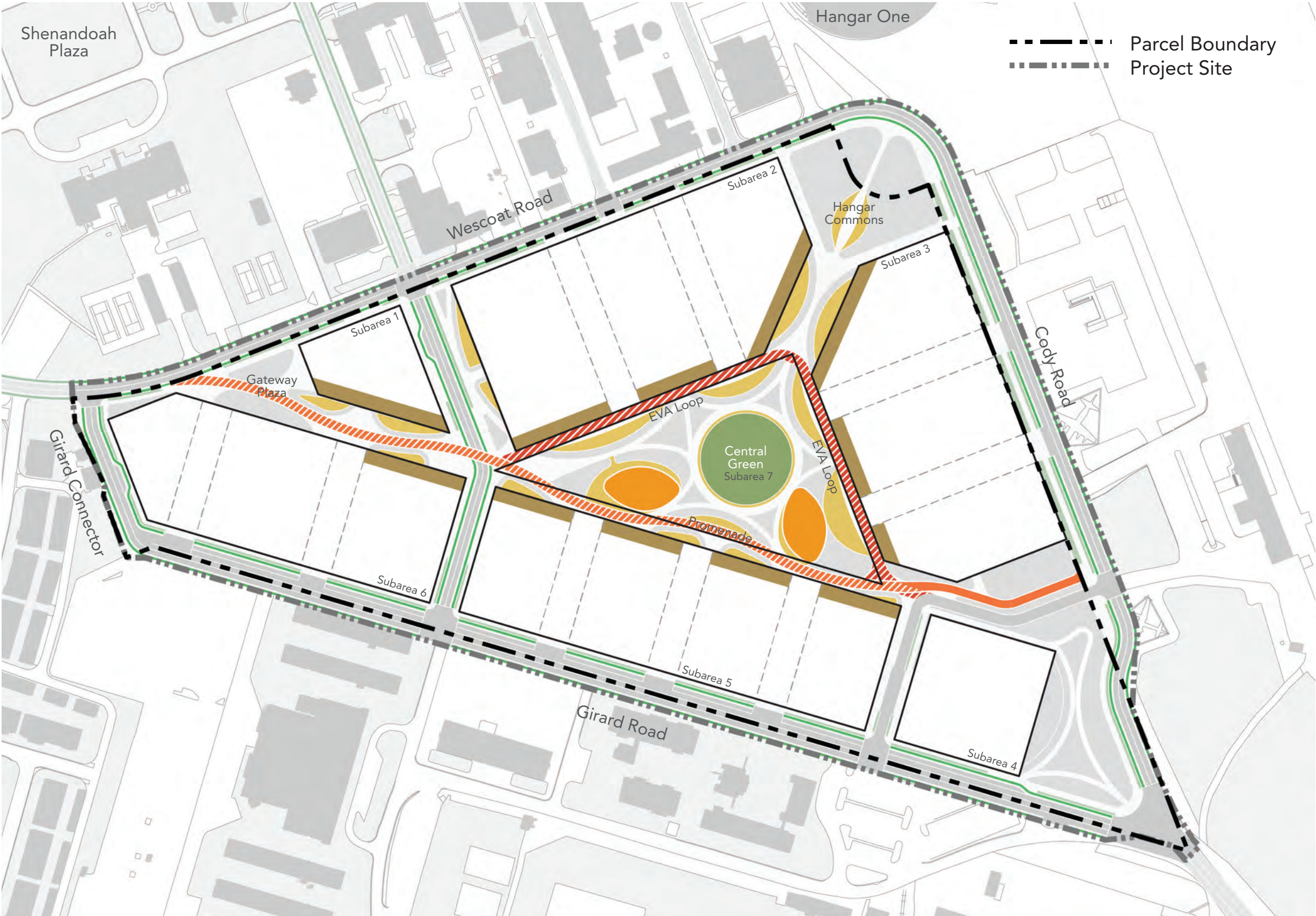
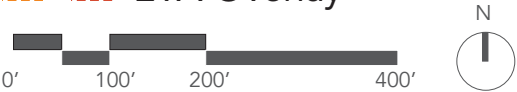
Standards: The Promenade shall be designed as a multi-modal, car-free pathway, linking the historic Shenandoah Plaza to Moffett Federal Airfield through the center of the Project Site.

Publicly accessible seating terraces and patios shall be located adjacent to the Promenade and along the interior Emergency Vehicular Access (EVA) loop. The character of these areas shall relate to the building spill out zones, which are designated along frontages as shown.

Guidelines: Up to 50 percent of frontages should include spill out zones, which may be located underneath a building overhang, and may be tenant spaces or publicly accessible.

Amenity pavilions may be located within Subarea 7 (Central Green). Potential programs should encourage ground-floor activity, and may include cafes or food and beverage, retail, community and exhibit space, etc.

- Amenity Pavilion
- Promenade
- Seating Terrace / Patio
- Spill-Out Zone
- EVA Overlay

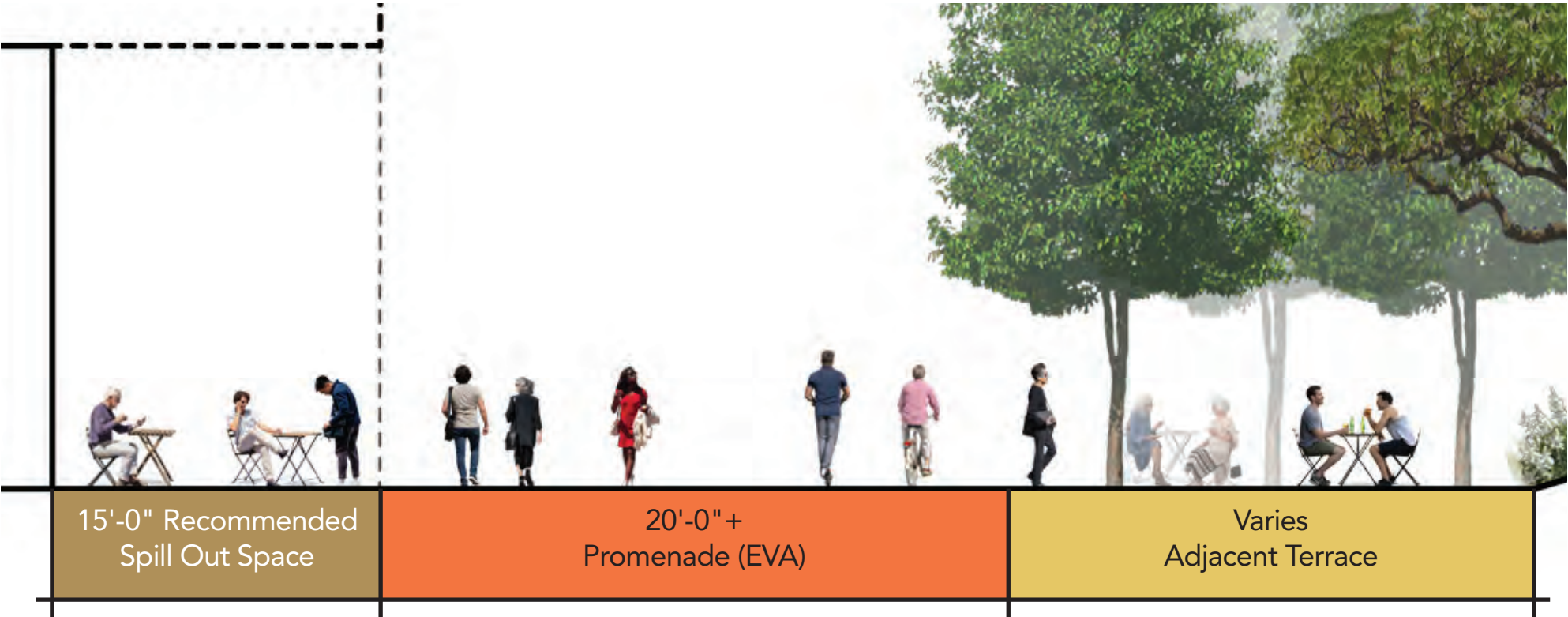


Illustrative Programming and Activation

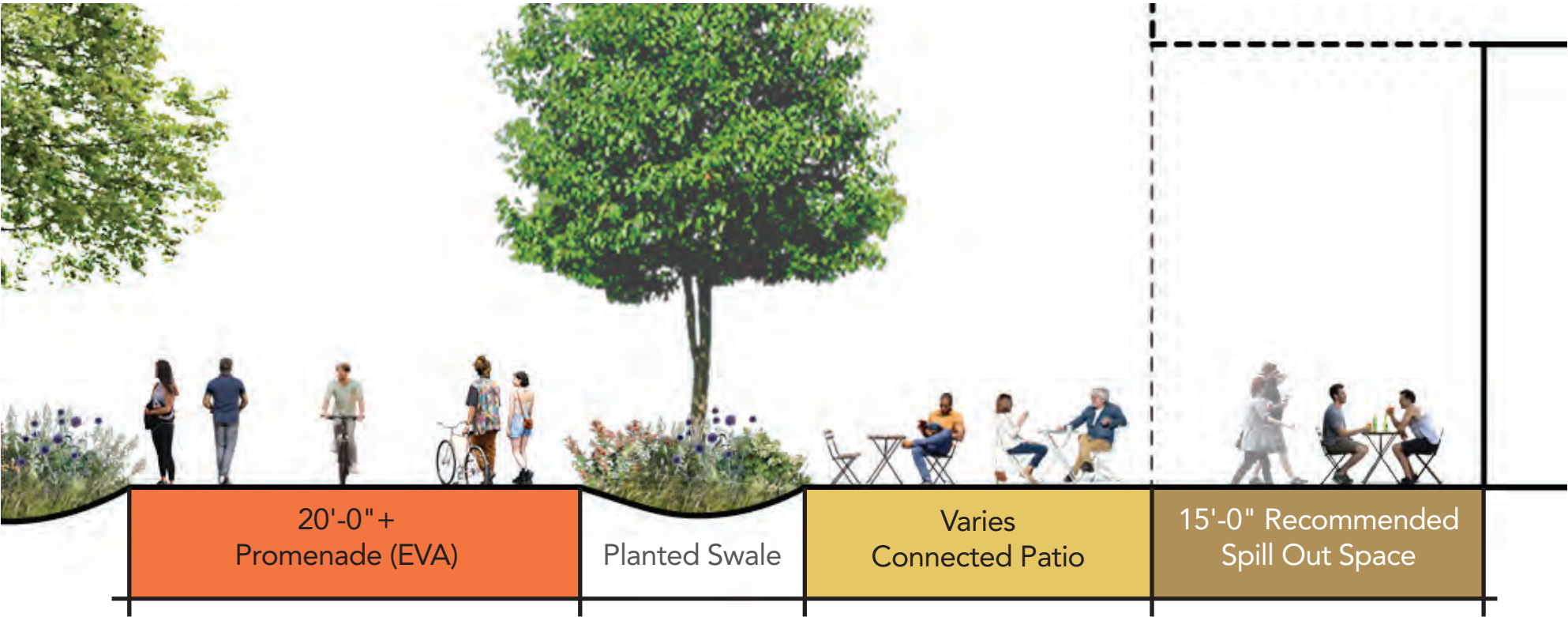
SOCIAL ROOMS: TERRACES, PATIOS, & SPILL OUT AREAS

These social rooms may be diverse in character and should cater to different uses, from quiet individual work to larger gatherings, and from collaboration sessions to more casual catch-ups. These areas may be fully or partially covered by building articulation/overhang, trellises, and tree canopy.

Guidelines: Terraces, patios, and spill out areas have a recommended 15-foot width to accommodate seating for small to medium groups. This minimum distance may be combined where different gathering space types are physically connected.



Spill Out + Terrace (With EVA Access) Conceptual Section



Spill Out + Connected Patio Conceptual Section

OPEN SPACE

HARDSCAPE MATERIALS & CHARACTER

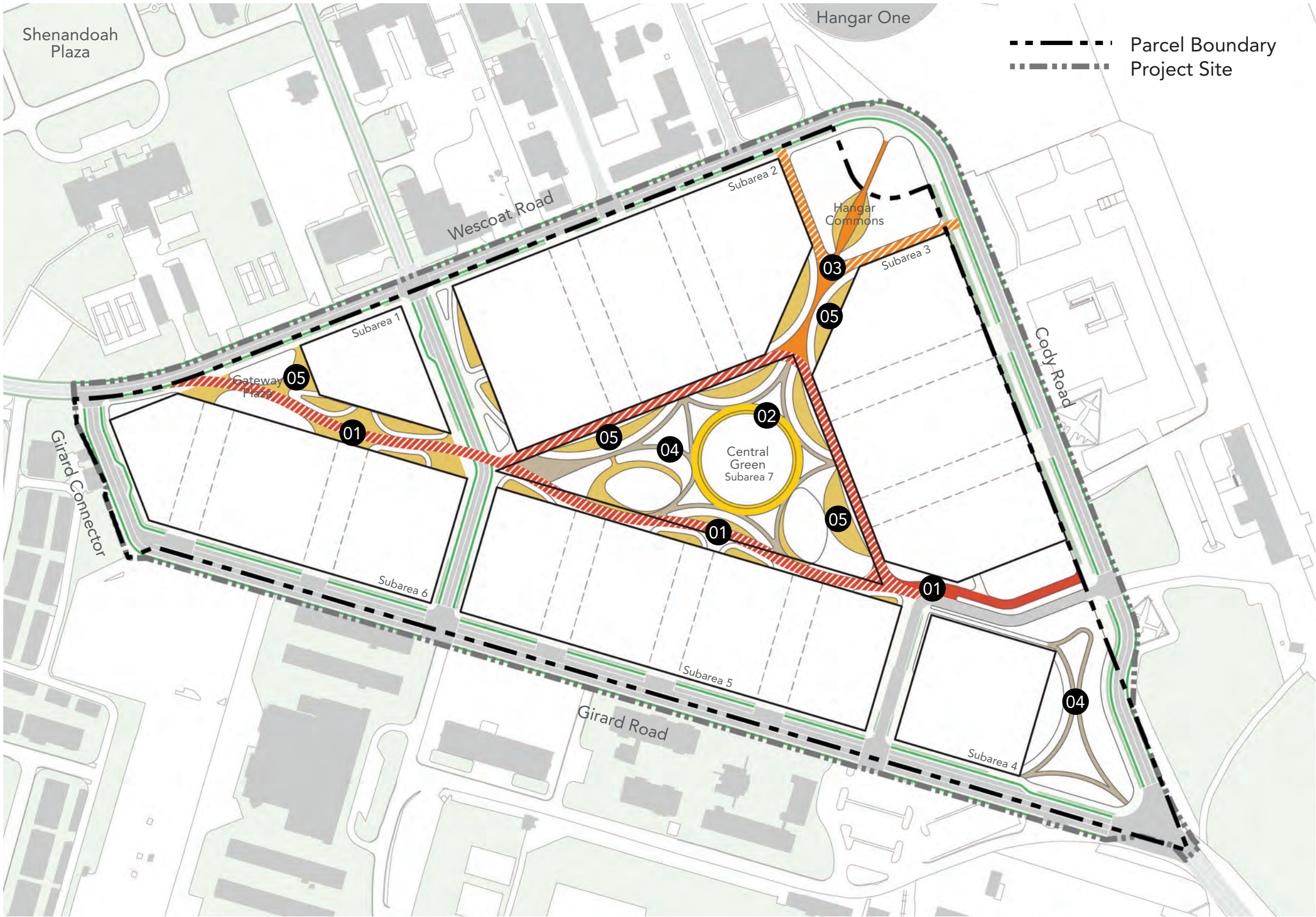
Standards: The character of the hardscape materials, including grain, color and texture, shall reflect the industrial history and qualities of the site, while maintaining a cohesive relationship with the architectural material palette and avoiding false historicism.

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.

Guidelines: All paving should be slip-resistant, heel-proof, and have sufficient strength to meet applicable loading requirements.

Note: Specific materials to be studied in future project phases; see more information about permitting and review processes under "Purpose of This Document" on page 8.

- 01. Promenade
- 02. Loop Walk
- 03. Primary Pathways
- 04. Secondary Pathways
- 05. Plazas and Terraces
- EVA Overlay



Hardscape Materials and Character

OPEN SPACE

HARDSCAPE MATERIALS & CHARACTER

THE PROMENADE, PRIMARY PATHWAYS, AND LOOP WALK

Guidelines:

- Primary material: warm or gray tone cast-in-place concrete or oversize pavers
- Secondary material: a band of contrasting edging material, such as stone or precast pavers, for clear identification
- At the Promenade, provide large joint spacing where possible to accommodate cyclist comfort
- Consider daily pedestrian use, as well as loading requirements for emergency vehicles
- Character images represent a range of recommended options, but are not exclusive or comprehensive



Exposed Aggregate Cast-in-Place Concrete



Honed Cast-in-Place Concrete



Acid Wash Cast-in-Place Concrete



Stone Paver



Smooth Precast Concrete Paver

PLAZAS AND TERRACES

Guidelines:

- Paving material should emphasize tactile qualities to enrich the pedestrian experience
- Unit pavers, such as cobble, brick, and precast concrete are recommended
- Cast-in-place concrete that is distinct from the Promenade may also be used
- Material should compliment but be visually distinct from the Promenade and other project areas
- Permitted color palette may be warm or cool tones, ranging from grays to sandy tans
- Character images represent a range of recommended options, but are not exclusive or comprehensive



Smooth Precast Concrete Paver



Tumbled or Exposed Aggregate Concrete Paver



Combination of Paver Sizes



Exposed Aggregate Cast-in-Place Concrete



Smooth Cast-in-Place Concrete

HARDSCAPE MATERIALS & CHARACTER

SECONDARY PATHWAYS

Guidelines:

- Paving material should emphasize natural materials and aggregates
- Opportunity for a special moment in landscape materials that do not occur elsewhere on the project, including stabilized aggregate paving or wood decking
- Material should compliment but be visually distinct from the Promenade and other project areas
- Permitted color palette is warm or cool tones, ranging from grays to warm browns to sandy tans
- Character images represent a range of recommended options, but are not exclusive or comprehensive



Stabilized Aggregate Paving



Exposed Aggregate Cast-in-Place Concrete



Stone Paver



Seeded Aggregate Cast-in-Place Concrete



Wood Boardwalk



Smooth Cast-in-Place Concrete

OPEN SPACE

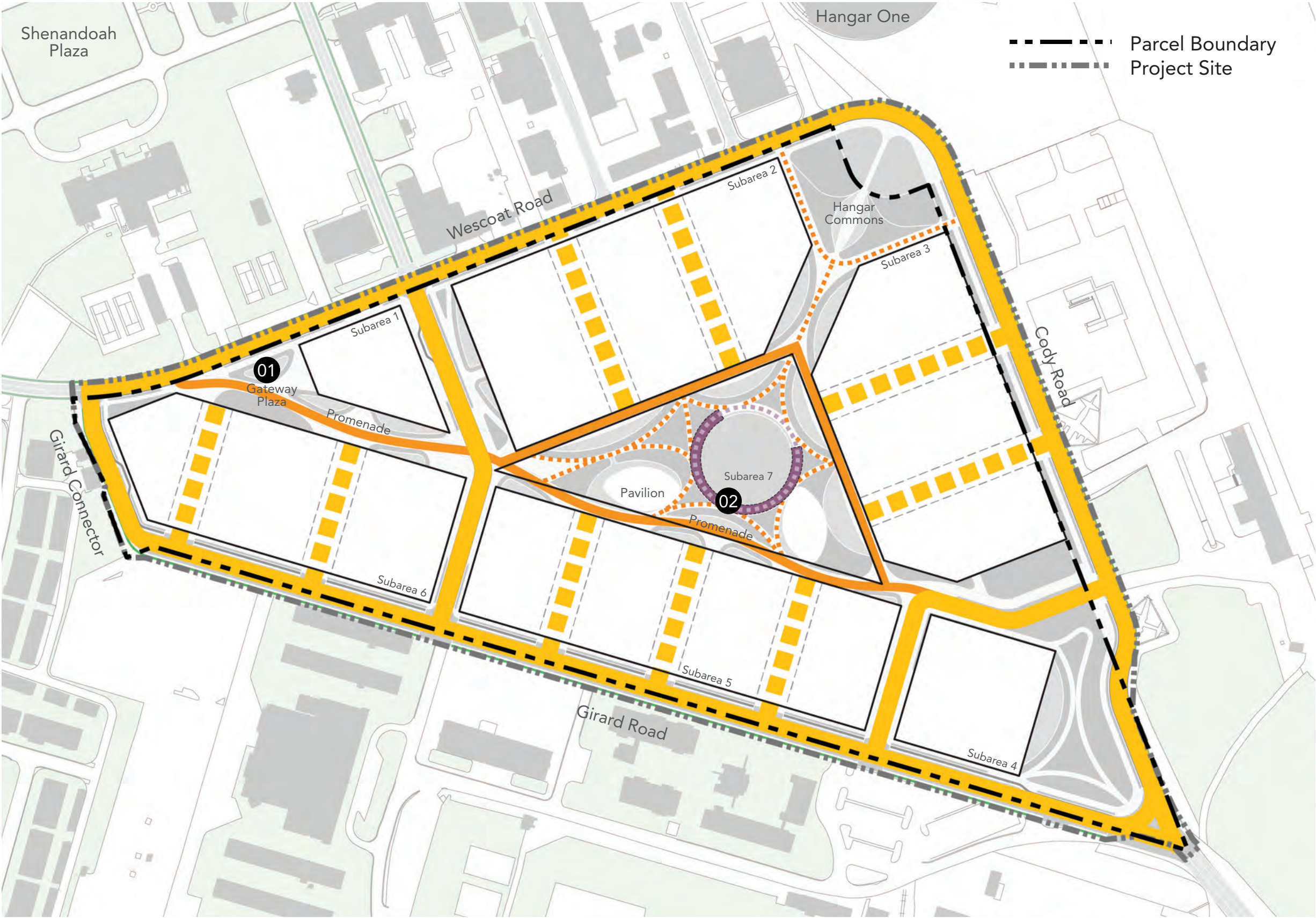
SITE LIGHTING, FURNISHINGS, & FEATURES

Standards: Site elements, including streetlights, pedestrian lightpoles, bollards, litter bins, bicycle racks, benches, special features, etc., shall maintain a cohesive identity that compliments the overall landscape and architectural material palettes and avoids false historicism.

Guidelines: Simple elements that do not compete with their surroundings or call attention to themselves are preferred over elements with overly ornamental forms and detailing.

Note: Site furnishing locations not shown in plan; to be studied in future project phases; see more information about permitting and review processes under "Purpose of This Document" on page 8.

- 01. Gateway Sculpture
- 02. Canopy
- Street and Sidewalk Lighting
- Potential Street and Sidewalk Lighting
- Primary Path Lighting
- Secondary Path Lighting
- Special Lighting Opportunity



Site Lighting, Furnishings, and Features Overview

SITE LIGHTING, FURNISHINGS, & FEATURES

GENERAL SITE LIGHTING, FURNISHINGS, AND FEATURES GUIDELINES

- Products should be made from durable materials that can withstand the exterior site conditions and undergo periodic maintenance
- All elements should be anchored to a foundation or a hardscape paving surface
- Elements should not block sightlines or impede the flow of movement
- Litter and recycling containers should feature covered lids that resist animal scavenging

SITE LIGHTING AND DARK SKY OBJECTIVES

Standards:

- Lighting shall illuminate roadways, sidewalks, and primary pathways, while minimizing impacts to nearby wildlife habitat and avoiding unnecessary light pollution
- Consistent with the 2001 Design Guidelines, lighting shall be provided at the minimum levels required by the Illumination Engineering Society of North America (IESNA) lighting guidelines and relevant local 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 should 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 should follow a clear hierarchy and be in scale with the context and surroundings

Guidelines:

- Site lighting elements should provide a sense of safety and security, assist in wayfinding and navigation, and contribute to the comfort, mood, and character of the site
- Accent lighting intended for artistic expression to accentuate architectural features or illuminate artwork may be exempt from these dark sky principles
- See "Bird Friendly Design" on page 80 for additional lighting requirements

SPECIAL FEATURES

The Master Plan has identified two opportunities for special site features that should contribute to the project identity, heighten the arrival experience, and make the Central Green an iconic destination.

Gateway Sculpture at Gateway Plaza Guidelines:

- Distinctive identifying element
- Opportunity to tie into UC Berkeley identity/branding
- Visible from the approach on Wescoat Road
- Element shall be constructed from a durable material that can withstand wear and tear of public environment

Canopy at the Central Green Guidelines:

- Surrounding the Central Green along the Loop Walk, the Canopy should frame the view to Hangar One
- Supporting informal activities and specific programming
- Potential structure for site furnishings such as swings
- Opportunity for multi-media installation on the underside of the canopy
- Opportunity to integrate solar generation or stormwater catchment



Gateway Plaza with Gateway Sculpture



Canopy at Central Green could provide stormwater capture, and/or solar generation



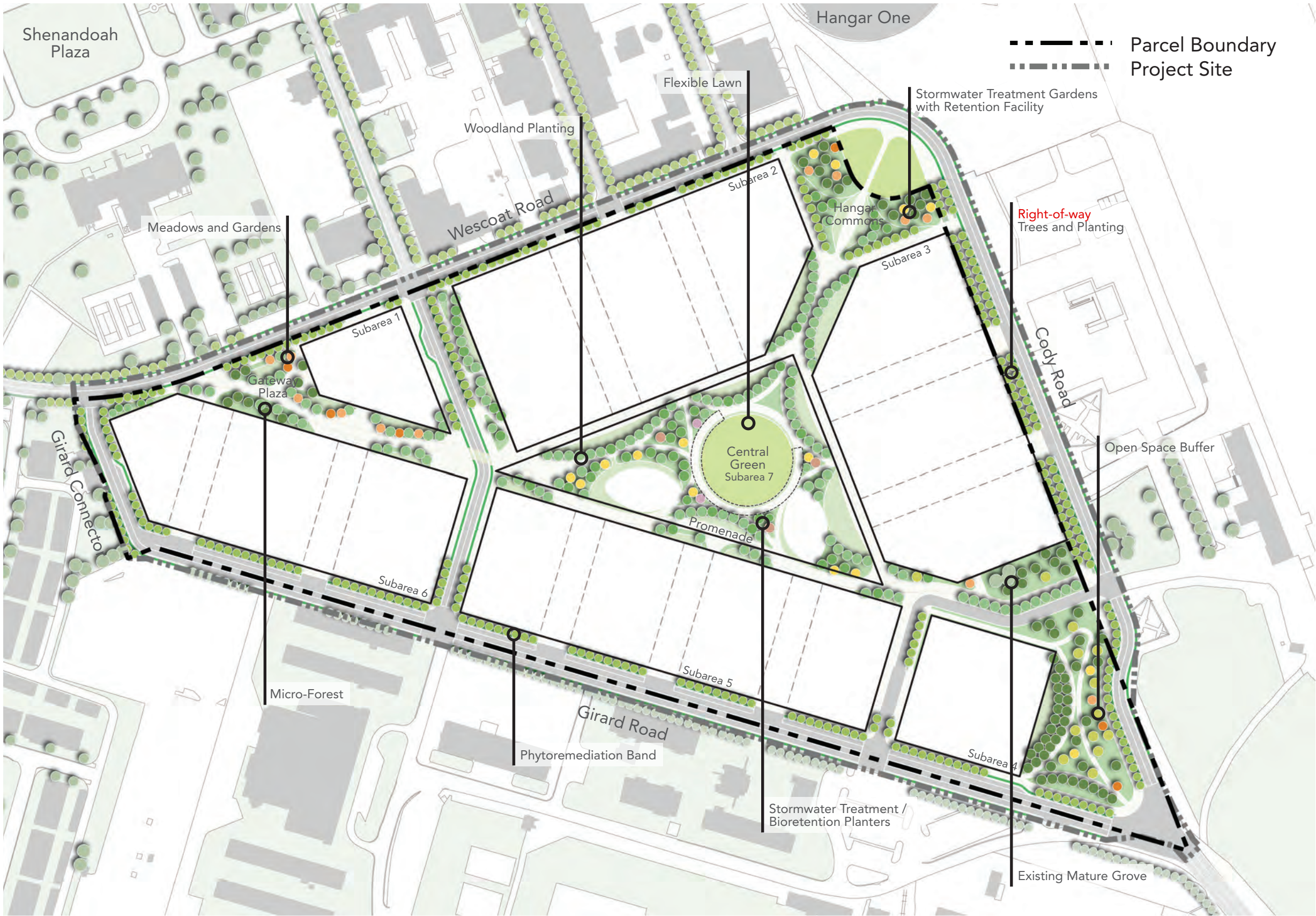
Canopy at Central Green could incorporate multi-media installations and seating

OPEN SPACE

OPEN SPACE STRATEGIES

The open space design incorporates multiple functions. Beyond the social and recreational, the landscape serves a number of functional roles. The following pages of this chapter identify the strategies, standards, and guidelines for:

- Stormwater management
- Phytoremediation
- Sensitive habitat (burrowing owl)
- Protected trees
- Vegetation/planting



Illustrative Open Space Strategies

OPEN SPACE

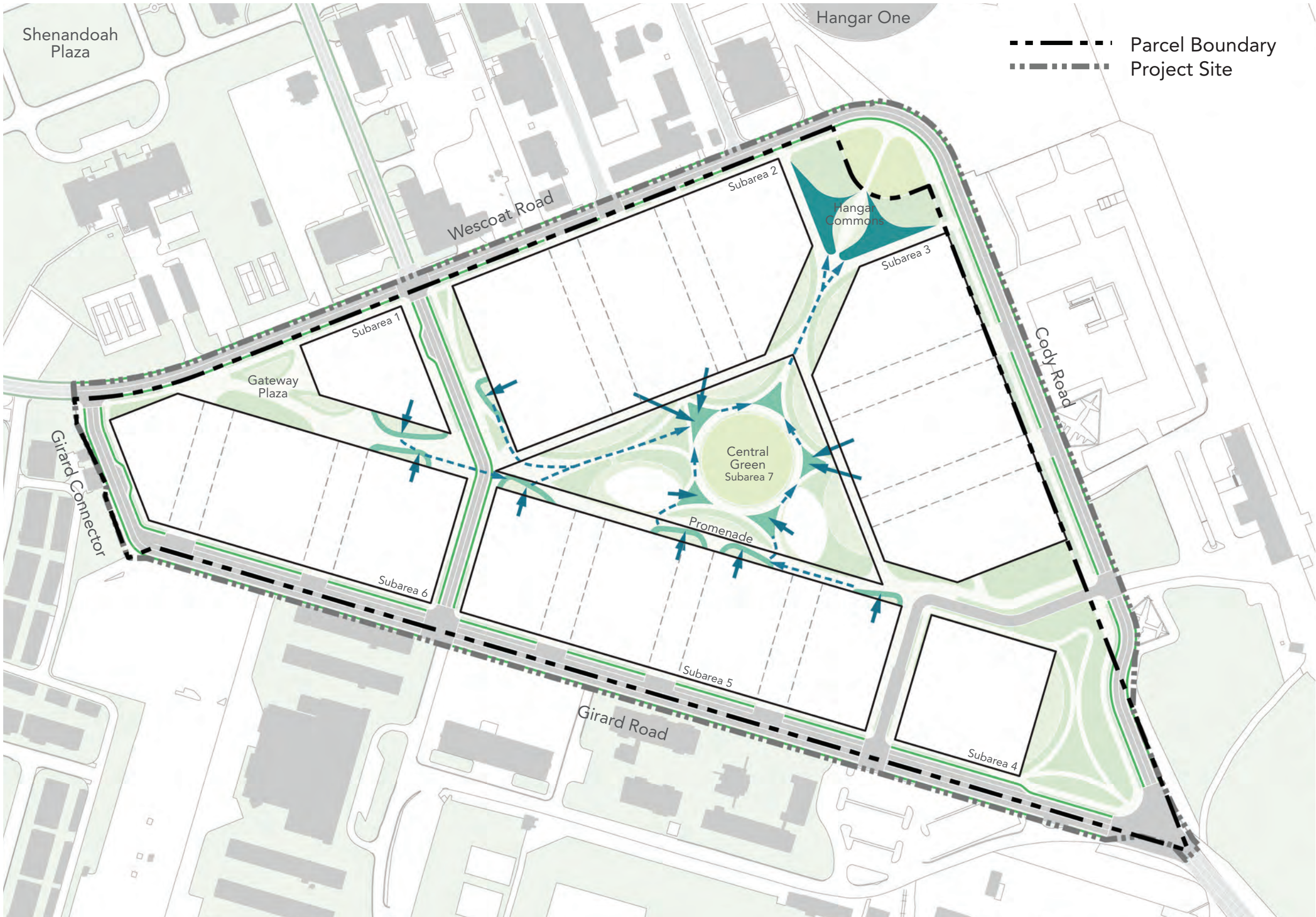
STORMWATER STRATEGIES

Guidelines: Stormwater infrastructure is integrated into the landscape framework in a distributed, decentralized network. Each Subarea has an adjacent treatment area. A percentage of treatment will also be required within the Subareas as well. Treatment areas should maximize overland conveyance, and can be connected through an underground conveyance where required. Following the natural grading, stormwater will be directed to the northern retention facility at the Project Site's low point.

Approximately 25,000 square feet of retention is required at 3 ft ponding depth. A deeper facility with a smaller footprint would also be acceptable. Approximately 30,000 square feet of on-site and district treatment area provided within the area that drains to the retention facility.

Note that treatment areas are diagrammatic and may not show actual sizing requirements.

- Retention Facility
- Treatment Area
- Runoff
- Conveyance



Illustrative Stormwater Strategies

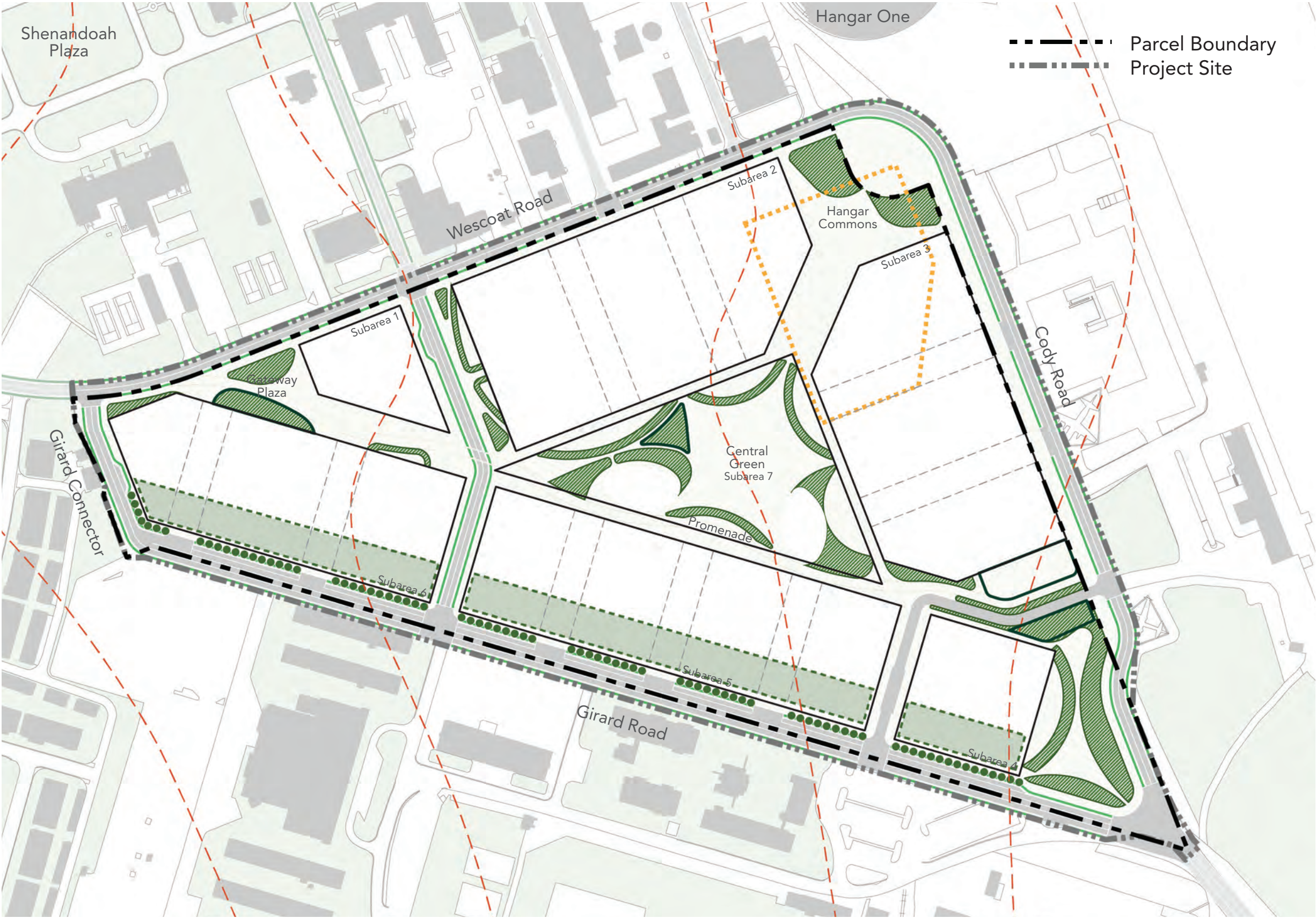
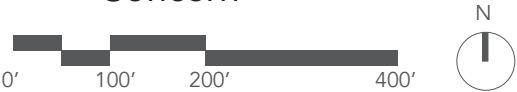
OPEN SPACE

PHYTOREMEDIATION STRATEGIES

Guidelines: Industrial uses adjacent to and within the project boundaries have left behind a legacy of residual chemicals in the soil and groundwater. The landscape framework is flexible to allow for the inclusion of phytoremediation strategies, including: the planting of phytoremediation band(s) along Girard Road to intersect the flow of the plume; mixing phytoremediation species such as poplar, willow, and cottonwood, into the overall palette; and planting temporary dense groves of phytoremediation trees on future Subareas to improve soil and water in the near-term.

Note: the phytoremediation strategy will be reviewed and approved by the EPA; see more information about permitting and review processes under "Purpose of This Document" on page 8.

- Mixed Phyto Groves
- Potential Micro-Forests
- Phytoremediation Band
- Temporary Phyto Groves
- Isoconcentration Contour for Trichloroethylene (TCE) in Shallow Groundwater
- Area of Environmental Concern



Illustrative Phytoremediation Strategies: Minimum phytoremediation tree quantity to be determined by agreements with the EPA.

OPEN SPACE

SENSITIVE HABITAT GUIDELINES

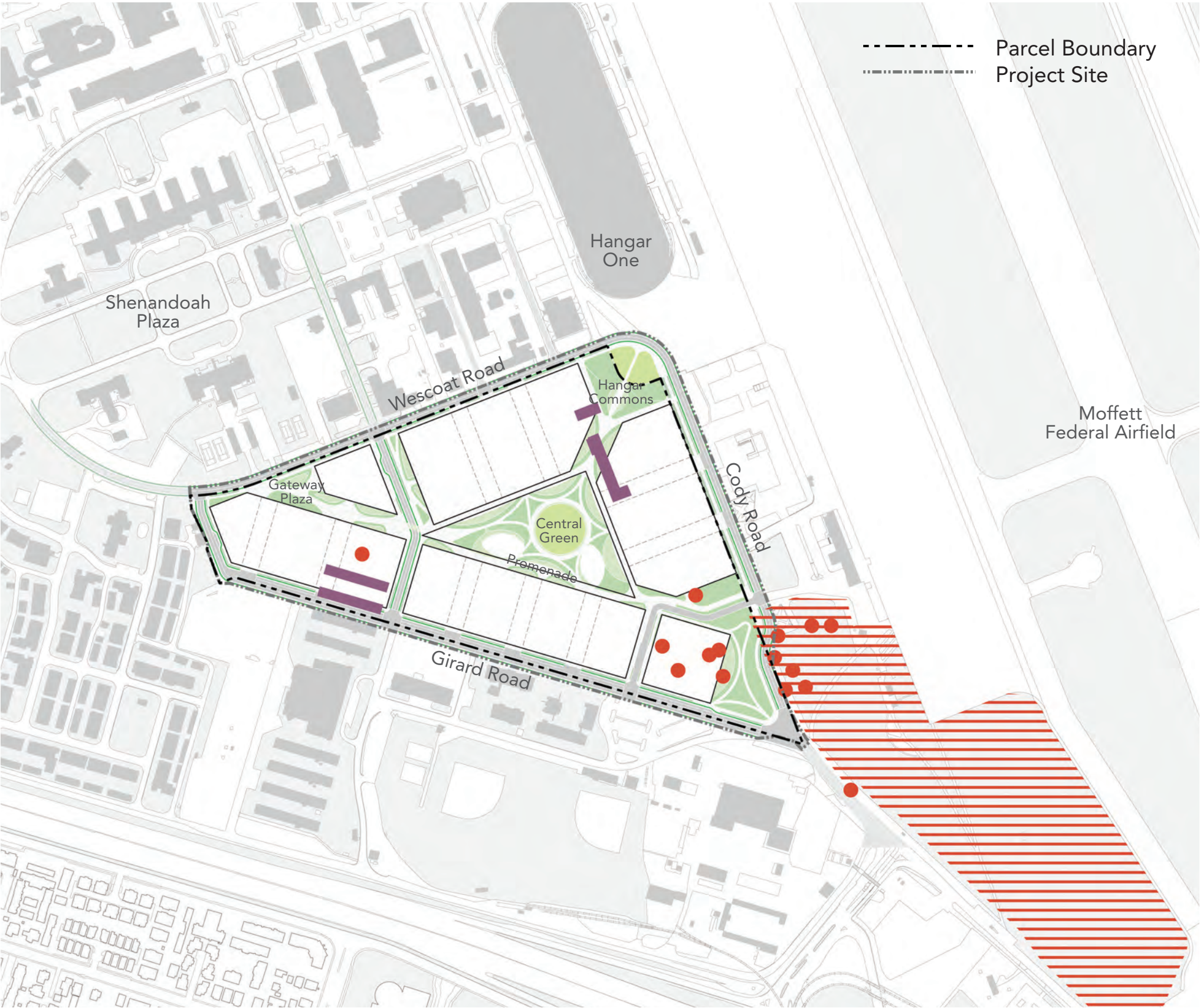
Per NASA surveys, Burrowing Owl Habitat is located between the Moffett Federal Airfield and lands east of Cody Road and the Ellis Street extension. The Project Proponent will follow the mitigation measure defined in the joint EIS/EIR to preserve Burrowing Owl Habitat. Berkeley Space Center at NASA Research Park proposes to carefully re-route Cody Road to both align with the centerline of Hangar One, connect to existing adjacent drive aisles and roads, and avoid encroaching on existing burrowing owl preserves as feasible.

Guidelines: Landscaping at the intersection of Cody Road and Girard Road provides a green buffer between the owl habitat and new development. Street trees and a sidewalk are not proposed on the side of Cody Road adjacent to the burrowing owl habitat to limit potential impacts from people and natural predators.

Illumination levels of areas adjacent to the Burrowing Owl Preserve and airfield should be minimized to avoid excessive glare. Refer to previous section on "Site Lighting, Furnishings, and Features" early in this chapter for additional lighting parameters.

Informational signs are useful for providing descriptive information about the site, such as the burrowing owl habitat and/or research center maps and directories. NASA should provide any additional required signage. Informational signs should be implemented on primary pedestrian routes of travel as appropriate.

-  Suitable Burrow Location for Burrowing Owls
-  Approximate Burrowing Owl Preserve (NRP-19)
-  Existing Building with Nesting Swallow(s)



Illustrative Sensitive Habitat Site Plan. Source: Adapted from ICF survey 2025, and NASA surveys.

OPEN SPACE

PROTECTED TREES

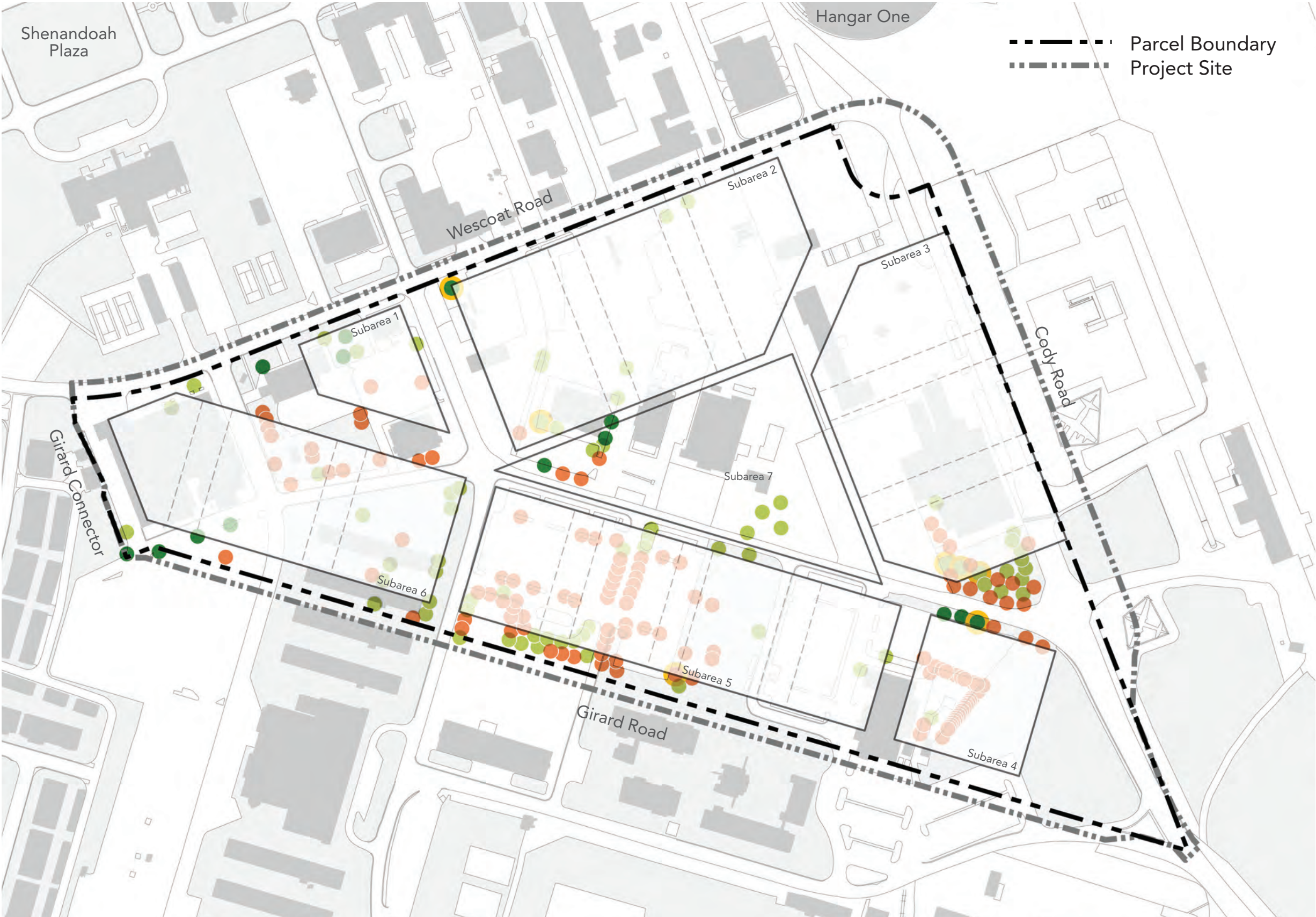
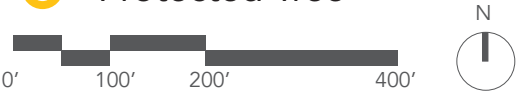
An existing grove along Cody Road presents an opportunity, if feasible with the schedule and design, for the Berkeley Space Center to retain existing mature tree canopy and benefit from the inclusion of large trees as part of the initial development phases.

Guidelines: Where possible, NASA and its partners should carefully site new development so as to preserve protected trees.* Where it is not possible, a revegetation plan consistent with the requirements of the Santa Clara County Tree Preservation and Removal Ordinance should be developed.

*Defined by Santa Clara County as "Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks."

Existing Tree Preservation Suitability:

- Low
- Moderate
- High
- Protected Tree*



Protected Trees. Source: Adapted from Bartlett Hort Science Tree Assessment Survey (August 22, 2024)

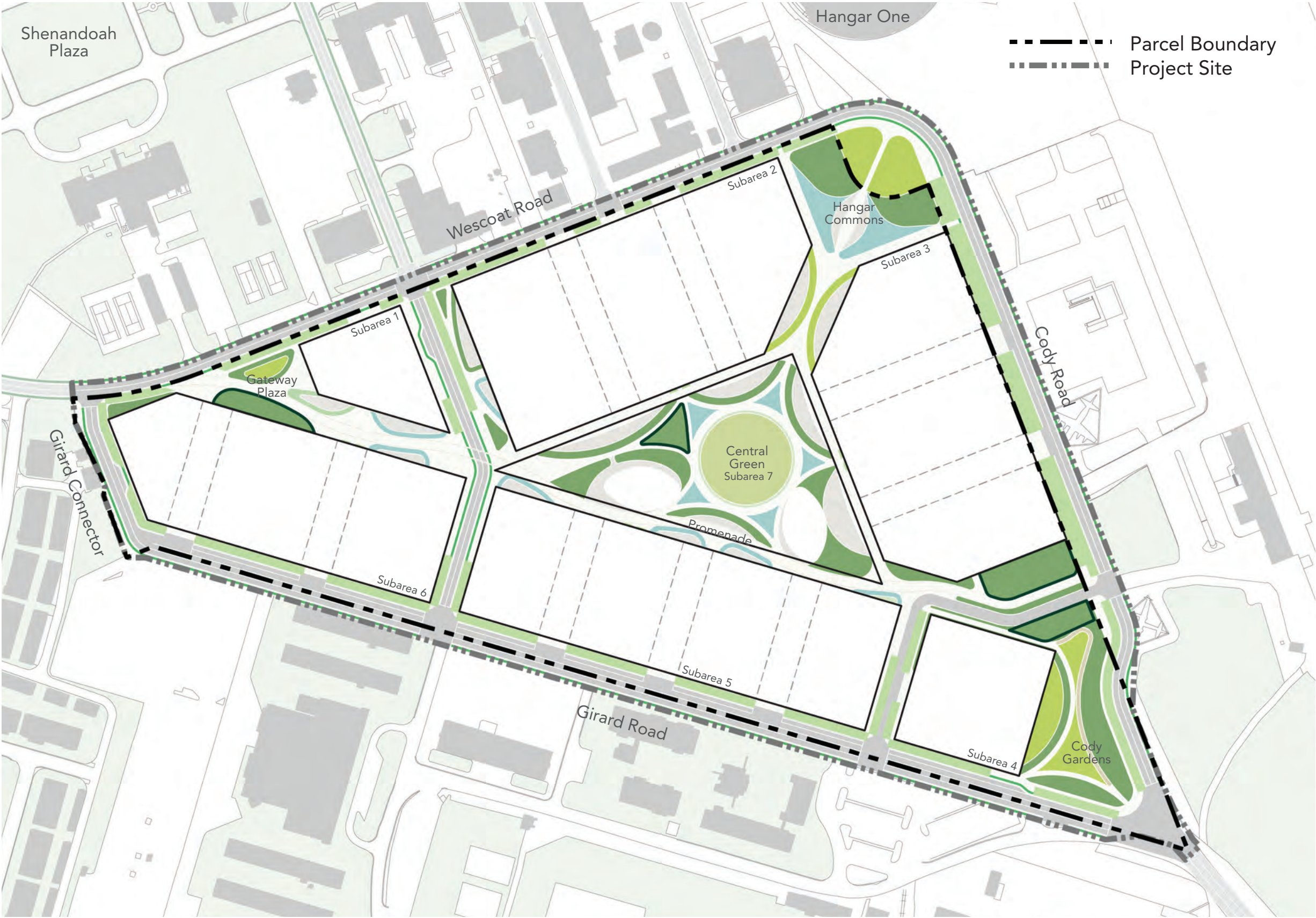
OPEN SPACE

PLANTING CHARACTER

A dynamic and varied planting palette enriches both the ecological and social functions of the landscape program. Iconic planting palettes strengthen the individual identities of landscape features within the site. A mix of native, climate adaptive, drought-tolerant and memorable species provide flexibility for the palette to enrich one's experience across the site. All planting zones include phytoremediation species as part of the suggested palette. See "Phytoremediation Strategies" on page 59 for additional information.

Standard: The palette and irrigation shall comply with all local relevant regulatory requirements.

Guideline: The planting strategy should support the project's LEED and sustainability goals, where feasible, reducing the urban heat island effect, providing shade and shelter from the prevailing winds.



Planting Character Zones

OPEN SPACE

PLANTING CHARACTER

This palette not only provides an opportunity to connect Berkeley Space Center with the wider NASA ARC campus, but also with the University of California, Berkeley Campus. It reflects the Bay Terraces ecoregion and regional ecology to ensure water conservation, with the goal to connect people to nature, provide future resiliency, and maximize social and environmental benefits.

Guidelines: The planting palette should relate to the broader site's dual characters and celebrate both its industrial history and its sense of campus idyll. It is encouraged, where appropriate, to incorporate plant species that are found on both the greater NASA ARC campus and the UC Berkeley Campus.

The project's vegetation should be comprised of an "enhanced native" palette, combining Bay Area natives along with adapted, non-native, non-invasive and drought-tolerant species that are appropriate for the Project Site both today and in future climate scenarios.

Note: specific planting species are shown as suggestions; final planting palettes to be determined in future project phases.

 PHYTOREMEDIATION SPECIES

WOODLANDS



STORMWATER



GARDENS & MEADOWS



STREET TREES



OPEN SPACE

PLANT PALETTE GUIDELINES

Stage 3	NRP	Scientific Name/ Common Name	Type	Cal Native	Growth Rate	Height x Spread	Sun	Water	Dormancy	Color	Flowering	Soil Drainage
	x	<i>Abies concolor</i> White Fir	Tree	Yes	Slow	80-200 ft tall	Full Sun, Partial Shade, Deep Shade	Moderate	E	N/A	N/A	Fast, Medium
	x	<i>Acer circinatum</i> Vine Maple	Tree	Yes	Moderate, Slow	15-30 ft tall x 3-6 ft wide	Partial Shade, Deep Shade	Moderate, High	D	Green, Red, Yellow	Spring	Fast, Medium, Slow
	x	<i>Acer macrophyllum</i> Bigleaf Maple	Tree	Yes	Fast	30-100+ ft tall x 60 ft wide	Full Sun, Partial Shade	Moderate, High	D	Yellow, Pink	Winter, Spring	Fast, Medium, Slow
x		<i>Agonis flexuosa</i> Peppermint Willow	Tree	No	Fast	25-40 ft tall x 15-25 ft wide	Full Sun	Low	E	White	Spring, Summer	Fast, Medium
x	(s)	<i>Arbutus</i> ‘Marina’ Strawberry Tree	Tree	No	Fast	25-50 ft tall x 25-40 ft wide	Full Sun	Low	E	Pink	Year-round	Fast
x	x	<i>Arbutus menziesii</i> Pacific Madrone	Tree	Yes	Slow	15-100 ft tall x 5-25 ft wide	Partial Shade	Low	E	White, Red	Spring	Fast, Medium
x	(s)	<i>Arctostaphylos</i> ‘Austin Griffiths’ Austin Griffiths Manzanita	Tree	Yes (cultivar)	Moderate	8-15 ft tall x 6-10 ft wide	Full Sun, Partial Shade	Low	E	White, Pink	Winter	Medium
x	x	<i>Calocedrus decurrens</i> Incense Cedar	Tree	Yes	Moderate, Slow	12-100+ ft tall x 50 ft wide	Full Sun, Partial Shade	Moderate	E	Yellow	Spring	Medium
x		<i>Ginkgo biloba</i> Ginkgo	Tree	No	Slow	50-80 ft tall x 30-40 ft wide	Full Sun	Moderate	D	Green	Spring	Fast, Medium
	(s)	<i>Lyonothamnus floribundus subsp. aspleniifolius</i> Santa Cruz Island Ironwood	Tree	Yes	Fast	40 ft tall x 15-20 ft wide	Full Sun	Low	E	White, Cream	Spring, Summer	Fast, Medium
	x	<i>Picea sitchensis</i> Sitka Spruce	Tree	Yes	Moderate	40-200+ ft tall	Full Sun, Partial Shade	Moderate, High	E	Yellow	Spring	Medium
x		<i>Pinus brutia</i> var. <i>eldarica</i> Afghan Pine	Tree	No	Fast	30-60 ft tall x 20-30 ft wide	Full Sun	Low	E			Fast, Medium
x		<i>Pinus canariensis</i> Canary Island Pine	Tree	No	Fast	50-80 ft tall x 20-35 ft wide	Full Sun	Low, Moderate	E			Fast
		<i>Pinus sabiniana</i> Gray Pine/Foothill Pine	Tree	Yes	Slow	20-80 ft tall x 40-40 ft wide	Full Sun, Partial Shade	Very Low, Low	E	Yellow	Winter, Spring	Fast, Medium
	x	<i>Pinus torreyana</i> Torrey Pine	Tree	Yes	Fast, Moderate, Slow	25-100+ ft tall x 25-50 ft wide	Full Sun	Low, Moderate	E	Red, Yellow	Winter, Spring	Fast, Medium
x	x	<i>Platanus</i> × <i>acerifolia</i> London Plane	Tree	No	Fast, Moderate	70-90 ft tall x 60-70 ft wide	Full Sun, Partial Shade	Moderate	D			Fast, Medium
x	x	* <i>Populus</i> hybrids Cottonwoods/Poplars	Tree	No	Fast	40-80 ft tall x 30-50 ft wide	Full Sun	Low, Moderate	D			Fast, Medium
x	x	<i>Quercus agrifolia</i> Coast Live Oak	Tree	Yes	Moderate, Slow	25-80 ft tall x 15-35 ft wide	Full Sun, Partial Shade	Very Low, Low, Moderate	E	Yellow, Cream, Green	Winter, Spring	Medium
x	x	<i>Quercus douglasii</i> Blue Oak	Tree	Yes	Slow	16-80 ft tall x 30 ft wide	Full Sun, Partial Shade	Very Low, Low	S-D	Yellow, Cream, Green	Winter, Spring	Fast
x		<i>Quercus suber</i> Cork Oak	Tree	No	Fast	60-90 ft tall x 60 ft wide	Full Sun	Low	E	Yellow-Green, Brown	Spring	Fast, Medium
x		<i>Tilia tomentosa</i> Silver Linden	Tree	No	Moderate	50-70 ft tall x 30-50 ft wide	Full Sun, Partial Shade	Moderate	D	Yellow	Summer	Fast, Medium
x		<i>Ulmus americana</i> ‘Valley Forge’ American Elm	Tree	No	Fast, Moderate	60-80 ft tall x 40-70 ft wide	Full Sun	Moderate	D			Fast, Medium
x	x	<i>Umbellularia californica</i> California Bay Laurel	Tree	Yes	Moderate	8-80 ft tall x 3-30 ft wide	Full Sun, Partial Shade	Low, Moderate	E	Yellow, Cream, White, Green	Spring	Medium, Slow
x	x	<i>Aesculus californica</i> California Buckeye	Shrub, Tree	Yes	Moderate	13-39 ft tall x 40 ft wide	Full Sun, Partial Shade	Very Low, Low	D	White, Cream	Spring, Summer	Medium, Slow

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE

PLANT PALETTE GUIDELINES

Stage 3	NRP	Scientific Name/ Common Name	Type	Cal Native	Growth Rate	Height x Spread	Sun	Water	Dormancy	Color	Flowering	Soil Drainage
x	(s)	<i>Cornus sericea</i> Red Osier Dogwood	Shrub, Tree	Yes	Fast	4-13 ft tall, 9-15 ft wide	Full Sun, Partial Shade, Deep Shade	High	D	White, Purple, Red	Summer	Medium,Slow, Standing
	x	<i>Fraxinus dipetala</i> California Ash	Shrub, Tree	Yes	Moderate	20 ft tall x 15 ft wide	Full Sun, Partial Shade	Low	D	Yellow, White	Spring	Fast, Medium, Slow
x		<i>Morus alba</i> White Mulberry	Shrub, Tree	No	Fast	30-50 ft tall	Full Sun	Medium	D			Fast, Medium
x		* <i>Salix scouleriana</i> Scouler’s Willow	Shrub, Tree	Yes	Fast	7 - 50 ft tall	Full Sun, Partial Shade	High	D	Yellow, Cream, White	Winter, Spring	High
x	(s)	<i>Sambucus mexicana</i> Blue Elderberry	Shrub, Tree	Yes	Fast	20-30 ft tall x 20-30 ft wide	Full Sun, Partial Shade, Deep Shade	Low, Moderate	D	Cream, Yellow, Purple	Spring, Summer	Fast, Medium
x		<i>Arctostaphylos patula</i> Greenleaf Manzanita	Shrub	Yes	Slow	3-7 ft tall x 9 ft wide	Full Sun, Partial Shade	Low	E	White, Pink	Winter, Spring	Fast
		<i>Arctostaphylos uva-ursi</i> ‘Wood’s Compact’ Dwarf Manzanita	Shrub	Yes (cultivar)	Fast	6-8 in tall x 6-8 ft wide	Full Sun, Partial Shade	Moderate	E	Pink	Winter, Spring	
		<i>Artemisia californica</i> California Sagebrush	Shrub	Yes	Fast	1-8 ft tall x 4 ft wide	Full Sun	Very Low, Low	D	Cream, White, Yellow	Spring, Summer, Fall	Fast, Medium, Slow
x	x	<i>Baccharis pilularis</i> Coyote Brush	Shrub	Yes	Fast, Moderate	2-10 ft tall x 12 ft wide	Full Sun, Partial Shade	Very Low, Low	E	Yellow, Cream, White	Year round	Fast, Medium, Slow
x	(s)	<i>Ceanothus crassifolius</i> Hoaryleaf Ceanothus	Shrub	Yes	Slow	5-14 ft tall x 5-10 ft wide	Full Sun, Partial Shade	Very Low	E	White	Winter, Spring	Fast
x	(s)	<i>Ceanothus leucodermis</i> Chaparral Whitethorn	Shrub	Yes	Fast	6-13 ft tall x 3-7 ft wide	Full Sun, Partial Shade	Very Low, Low	E	Blue, Lavender, White	Winter, Spring	Fast
x	x	<i>Ceanothus thyrsiflorus</i> Blueblossom Ceanothus	Shrub	Yes	Fast, Moderate	2-30 ft tall x 2-40 ft wide	Partial Shade	Low	E	Blue, White	Winter, Spring	Fast, Medium, Slow
x	(s)	<i>Ceanothus tomentosus</i> Woollyleaf Ceanothus	Shrub	Yes	Fast	6-13 ft tall x 6-20 ft wide	Full Sun, Partial Shade	Very Low	E	Blue, Lavender, White	Winter, Spring	Fast, Medium
x	x	<i>Frangula californica</i> Coffeeberry	Shrub	Yes	Moderate	6-15 ft tall x 5-15 ft wide	Full Sun, Partial Shade	Very Low, Low	E	Cream, Green, White	Spring, Summer	Fast, Medium
x	x	<i>Heteromeles arbutifolia</i> Toyon	Shrub	Yes	Fast, Moderate	6-30 ft tall x 10-15 ft wide	Full Sun, Partial Shade	Very Low, Low	E	White	Summer	Fast, Medium, Slow
x	x	<i>Myrica californica</i> Pacific Wax Myrtle	Shrub	Yes	Fast, Moderate	6-33 ft tall x 20 ft wide	Full Sun, Partial Shade	Low, Moderate	E	Yellow	Summer	Medium
x	x	<i>Ribes speciosum</i> Fuchsia-Flowered Gooseberry	Shrub	Yes	Fast	6-10 ft tall x 3-8 ft wide	Partial Shade, Deep Shade	Very Low, Low, Moderate	D	Red, Pink	Winter, Spring	Medium, Slow
		<i>Salvia apiana</i> Californian White Sage	Shrub	Yes	Fast, Moderate	3-5 ft tall x 3-8 ft wide	Full Sun	Very Low, Low	S-D	White	Winter, Spring, Summer	Fast, Medium
x	x	<i>Salvia clevelandii</i> Cleveland Sage	Shrub	Yes	Fast, Moderate	3-4 ft tall x 8 ft wide	Full Sun, Partial Shade	Very Low	E	Blue, Purple, Lavender	Spring, Summer	Medium
		<i>Abronia latifolia</i> Sand Verbena	Perennial	Yes	Fast	6 in tall x 6 in wide	Full Sun	Very low	S-D	Yellow	Spring, Summer, Fall	Fast
		<i>Achillea millefolium</i> Yarrow	Perennial	Yes	Fast, Moderate	1-3 ft tall x 1-2 ft wide	Full Sun	Low	E, S-D	White	Spring, Summer	Fast, Medium, Slow
		<i>Agastache urticifolia</i> Nettle Leaf Giant Hyssop	Perennial	Yes	Fast	1-5 ft tall x 1-3 ft wide	Partial Shade, Deep Shade	Moderate	E	Red	Spring	Fast
x		<i>Anigozanthos</i> spp. Kangaroo Paw	Perennial	No	Fast, Moderate	1-6 ft tall x 1-3 ft wide	Full Sun	Low, Moderate	E	Red, Yellow, Orange, Pink, Purple	Spring, Summer, Fall	Fast
	x	<i>Armeria maritima</i> Thrift Seapink	Perennial	Yes	Moderate	6-12 in tall x 4-12 in wide	Full Sun, Partial Shade	Moderate	E	Purple, Pink	Spring	Fast

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE

PLANT PALETTE GUIDELINES

Stage 3	NRP	Scientific Name/ Common Name	Type	Cal Native	Growth Rate	Height x Spread	Sun	Water	Dormancy	Color	Flowering	Soil Drainage
		<i>Asclepias</i> spp. Milkweed	Perennial	Yes	Slow, Moderate	2-3 ft tall x 1-3 ft wide	Full Sun	Very Low, Low	S-D	Lavender, Pink, White	Summer, Fall	Fast, Medium, Slow
		<i>Dichelostemma capitatum</i> Blue Dicks	Perennial, Bulb	Yes	Moderate	2 ft tall x 2 in wide	Full Sun, Partial Shade	Low	S-D	Blue, Lavender	Winter, Spring	Fast, Medium, Slow
	x	<i>Epilobium californica</i> California Fuchsia	Perennial	Yes	Fast	3-18 in tall x 2-3 ft wide	Full Sun, Partial Shade	Very Low, Low	S-D	Red	Summer, Fall	Fast, Medium, Slow
		<i>Erigeron glaucus</i> Seaside Daisy	Perennial	Yes	Fast	1-2 in tall x 1-2 ft wide	Full Sun, Partial Shade	Low, Moderate	E	Lavender, Yellow	Winter, Spring, Summer	Fast, Medium, Slow
x	x	<i>Eriogonum fasciculatum</i> California Buckwheat	Perennial	Yes	Fast, Slow	1-7 ft tall x 3 ft wide	Full Sun	Very Low, Low	E	Yellow, Cream, Pink, White	Spring, Summer, Fall	Fast, Medium, Slow
x	(s)	<i>Eriogonum latifolium</i> Wild Buckwheat	Perennial	Yes	Moderate	2 ft tall x 2-3 ft wide	Full Sun, Partial Shade	Low	S-D	Cream, Pink, White	Summer, Fall	Fast, Medium
		<i>Eurybia radulina</i> Rough Leaved Aster	Perennial	Yes	Moderate	2 ft tall x 1-2 ft wide	Partial Shade	Low	S-D	Purple	Summer, Fall	Medium, Slow
x		<i>Erythranthe guttata</i> Seep Monkeyflower	Perennial	Yes	Fast	2-5 ft tall x 7 in wide	Full Sun, Partial Shade	Moderate, High	D	Yellow	Winter, Spring	Slow, Standing
x	x	<i>Eschscholzia californica</i> California Poppy	Perennial	Yes	Fast, Moderate	2-24 in tall x 1-2 ft wide	Full Sun	Very Low	D	Orange, Yellow	Spring, Summer, Fall	Fast, Medium, Slow
		<i>Grindelia camporum</i> Great Valley Gumweed	Perennial	Yes	Moderate	2-7 ft tall x 3 ft wide	Full Sun	Very Low, Low	S-D	Yellow	Spring, Summer, Fall	Fast, Medium, Slow
	x	<i>Heuchera maxima</i> Island Alum Root	Perennial	Yes	Moderate	1-2’ tall x 2 ft wide	Partial Shade, Deep Shade	Low, Moderate	E	Pink, White	Winter, Spring	Fast, Medium
x	(s)	<i>Heuchera</i> ‘Santa Ana Cardinal’ Santa Ana Coral Bells	Perennial	Yes (cultivar)	Fast	6-12 in tall x 1-2 ft wide	Partial Shade, Deep Shade	Low, Moderate	E	Pink, Red	Spring, Summer	Fast, Medium, Slow
x		<i>Kniphofia uvaria</i> Red Hot Poker	Perennial	No	Fast	3-4 ft tall x 2-3 ft wide	Full Sun, Partial Shade	Moderate	E	Yellow, Orange, Red	Summer, Fall	Fast, Medium
		<i>Lupinus albifrons</i> Silver Lupine	Perennial, Annual	Yes	Fast	2-5 ft tall x 2-3 ft wide	Full Sun	Very Low, Low	E	Blue, Lavender, Purple	Winter, Spring, Summer	Fast
	x	<i>Mimulus</i> hybrids Monkey Flower	Perennial	Yes	Fast	2-3 ft tall x 2-3 ft wide	Full Sun, Partial Shade	High	D	Orange, Yellow, Red, Pink, White, Cream	Spring	Fast
		<i>Monardella villosa</i> Coyote Mint	Perennial	Yes	Moderate	2 ft tall x 3 ft wide	Full Sun, Partial Shade	Very Low, Low	E	Pink, Lavender	Summer	Medium
x	x	<i>Penstemon centranthifolius</i> Scarlet Bugler	Perennial	Yes	Fast	2-4 ft tall x 1 ft wide	Full Sun, Partial Shade	Low	D	Red	Spring, Summer	Fast, Medium, Slow
	x	<i>Sidalcea malviflora</i> Checkerbloom	Perennial	Yes	Fast	4-18 in tall x 3-6 in wide	Full Sun, Partial Shade	Low, Moderate	S-D	Pink, Green	Spring, Summer	Fast, Medium, Slow
	x	<i>Sisyrinchium bellum</i> Blue-eyed Grass	Perennial	Yes	Moderate	1-2 ft tall x 3 in wide	Full Sun, Partial Shade	Low	S-D	Blue, Lavender, Purple	Winter, Spring	Fast, Medium, Slow
		<i>Solidago velutina</i> ssp. <i>californica</i> California Goldenrod	Perennial	Yes	Fast	2-5 ft tall x spreading	Full Sun, Partial Shade	Very Low, Low	E	Yellow	Summer, Fall	Medium
		<i>Symphyotrichum chilense</i> California Aster	Perennial	Yes	Fast	1-3 ft tall x 3 ft wide	Full Sun, Partial Shade	Very Low, Low	S-D	Yellow, Blue, Lavender	Summer	Medium, Slow, Standing
		<i>Bouteloua gracilis</i> ‘Blonde Ambition’ Blonde Ambition Blue Grama	Grass	Yes (cultivar)	Fast, Moderate	6-24 in tall x 2 ft wide	Full Sun, Partial Shade	Very Low	S-D	Yellow	Summer	Fast, Medium
		<i>Carex pansa</i> Dune Sedge	Grass	Yes	Fast	8-16 in tall	Full Sun	Moderate	E	Cream, Brown		Fast, Medium
x	(s)	* <i>Elymus triticoides</i> Creeping Wild Rye	Grass	Yes	Fast	2-4 ft tall	Partial Shade	Low	D	Green	Summer	Medium, Slow

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE

PLANT PALETTE GUIDELINES

Stage 3	NRP	Scientific Name/ Common Name	Type	Cal Native	Growth Rate	Height x Spread	Sun	Water	Dormancy	Color	Flowering	Soil Drainage
x		* <i>Festuca rubra</i> Red Fescue	Grass	Yes	Fast, Moderate	1-3 ft tall	Full Sun, Partial Shade	Low, Moderate, High	S-D	Yellow	Spring	Medium
x		<i>Juncus patens</i> California Gray Rush	Grass	Yes	Moderate	1-3 ft tall x 3 ft wide	Full Sun	Moderate, High	E	Red, Brown	Spring, Summer, Fall	Slow, Standing
	x	<i>Muhlenbergia rigens</i> Deer Grass	Grass	Yes	Fast, Moderate	4-5 ft tall x 4 ft wide	Full Sun	Low, Moderate	E	Yellow, Cream	Spring	Fast, Medium, Slow
x		<i>Pennisetum</i> ‘Fairy Tails’ Evergreen Fountain Grass	Grass	No	Moderate	2-4 ft tall x 2-4 ft wide	Full Sun	Low, Moderate	E	Pink, Cream	Summer, Fall	Fast, Medium
x		<i>Poa cita</i> Silver Tussock	Grass	No	Fast	2-3 ft tall x 1-2 ft wide	Full Sun	Low	E	Brown	Summer	Fast, Medium
x		<i>Polypodium californicum</i> California Polypody	Fern	Yes	Slow	2 ft tall x 3 ft wide	Partial Shade, Deep Shade	Very Low	E	N/A	N/A	Slow
x		<i>Polystichum munitum</i> Western Sword Fern	Fern	Yes	Moderate	2-6 ft tall x 2-3 ft wide	Partial Shade, Deep Shade	Moderate, High	E	N/A	N/A	Medium, Slow
		<i>Helianthus annuus</i> Sunflower	Annual	Yes	Fast	5-10 ft tall x 2 ft wide	Full Sun	Low	N/A	Orange, Yellow, Brown	Summer	Fast, Medium, Slow
x		<i>Lasthenia californica</i> California Goldfields	Annual	Yes	Fast	6-16 in tall x 6 in wide	Full Sun, Partial Shade	Very Low, Low	N/A	Yellow	Winter, Spring	Medium

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE

PLANTING GUIDELINES

GROUNDCOVER AND GENERAL PLANTING

Standards

- In accordance with California requirements, all groundcover and tree planting areas shall receive three inches of mulch to retain soil moisture

Guidelines

- Plants should be specified, grouped, and sited according to wind speed/direction, solar orientation, and designation of hydrozone areas
- Where possible, planting installation and maintenance plans should minimize the use of chemicals including herbicides, pesticides, and fertilizers

STORMWATER

Standards

- Stormwater design shall be in compliance with all relevant local regulations and guidelines
- The project shall achieve required rate and volume of stormwater runoff during the design-level event through best management practices, including green infrastructure, storage, and local treatment

Guidelines

- Soil cells, a modular suspended pavement system, may also be used to support tree growth and provide on-site stormwater management; trees planted in hardscape would additionally benefit from this system
- Green roof systems may also be explored to meet stormwater needs

LAWN

Guidelines

- The use of traditional lawn should be minimized except in high-use, formal areas, such as at the Central Green
- Lawn planting grass species should be:
 - Low maintenance
 - Low or medium water needs
 - Allow for a variety of programming and daily pedestrian use

TREES

Guidelines

- Tree massing should incorporate regular spacing along the public rights-of-way where feasible
- Tree species should be used to define key roadways, with different species used along different streets within the district to provide interest, diversity, and identity
- Street trees should be selected for spreading canopies with a 36-inch box size at installation preferred (minimum 24-inch box size at installation)
- Street trees should be located in the amenity band between the sidewalk, providing tree canopy cover and shade over both the roadway and the sidewalk
- Trees within all plazas, terraces/patios, and the lawn of the Central Green should be limbed up to preserve sightlines to buildings and Hangar One
- Trees planted in pavement should be planted within a minimum cubic soil volume that corresponds with the mature size of the species
- Where possible, use tree canopies, trellises, or other shade devices in front of building entrances to facilitate pedestrian movement

PHYTOREMEDIATION TREES

Guidelines

- Phytoremediation species should be selected based on best practices, including water uptake capacity and fast growth rate
- Phytoremediation trees may be planted as bare root stock
- Plant density for temporary phytoremediation groves and micro-forests should be maximized, see micro-forest strategy
- Where feasible, trees from temporary phytoremediation groves should be planted elsewhere on site to provide larger trees upon installation

MICRO-FOREST STRATEGY

Guidelines

- Micro-forest (Miyawaki Method) may be combined with phytoremediation strategies
- Plant multiple layers of species, from shrub to canopy, densely, at approximately three to five plants per meter (or 18- to 24-inch on-center spacing in a triangular configuration)
- For tree count applications, assume approximately 1350 trees per acre, or approximately 6 foot on-center spacing in a triangular configuration



6 BUILDINGS

- PRINCIPLES..... 70
- LAND USE AND PARKING STANDARDS SUMMARY 71
- ARCHITECTURAL CHARACTER 72
 - UNDERSTANDING THE NASA AMES CONTEXT
 - HISTORIC ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD
 - PROJECT ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD
 - OVERALL PROJECT BUILDING MATERIALS
 - OVERALL PROJECT FACADE ARTICULATION
 - OVERALL PROJECT FENESTRATION
- BIRD FRIENDLY DESIGN 78
- MECHANICAL SCREENING 79
- SERVICE ENTRIES AND LOADING 80
- WORKING YARDS 81
- VEHICULAR PARKING 82
- BIKE AND SCOOTER PARKING 83
- SHUTTLE STOP AND BIKE LANE CONFIGURATION 84
- LARGE DIESEL EMERGENCY STANDBY ENGINES 85
- PHOTOVOLTAIC AND BATTERY SYSTEMS..... 86

BUILDINGS

PRINCIPLES

The building typologies at Berkeley Space Center at NASA Research Park are a key driver of its success as a center for research and innovation. The development Subareas are broken down into efficient building typologies that can accommodate the split between Academic, Innovation and Industry. The principal aim is to meet and exceed best practice principles for innovative district design, while also respecting the historical character of the surrounding site.

The overarching project principles for buildings at the Berkeley Space Center as follows:



Performance and Function
Organize functions within the building around the R&D process - creating seamless and efficient workflows. Key support functions should be located close to where they are needed.



Incubate Collisions
Support the transfer of knowledge, operational synergies and consolidations by strategically locating collaboration spaces where they are most useful.



Safety & Security
Carefully consider the number and location of access points to ensure privacy for certain R&D functions.



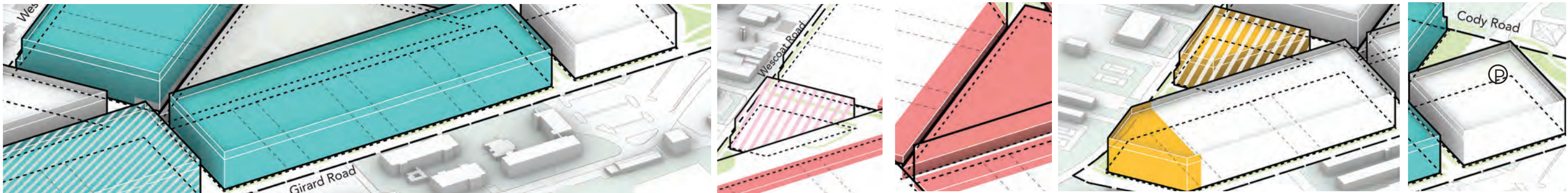
Future-Proof Design
Design for convertibility of buildings to transition between uses according to market demand and equipment and product development.



Cohesive Character
Create an iconic and cohesive built character that looks to the future, while also respecting its past and historic neighbors.

BUILDINGS

LAND USE AND PARKING STANDARDS SUMMARY



PROJECT ASSUMPTIONS	Research and Office Uses			Conference Center	Active Uses	Housing and Lodging		Garage
	Office	Lab and R&D	Academic			Short-Term Lodging	Student/Faculty Housing	
PARCELS CAPACITY ASSUMPTIONS	Ground Plane: 10% Working Yards, 90% Building Footprint Vertical: 75% Massing, 25% Sculpting Reduction			N/A	N/A	N/A	N/A	N/A
TYPICAL FLOOR HEIGHTS	Typical Ground Floor Height: 20ft-26ft Typical Floor Height: 15ft-18ft Maximum Development Parameter: 80ft+25ft mechanical screening=105ft			Typical Floor: 20ft	Typical Floor: 20ft	Typical Floor: 10ft		Typical Floor: 10ft 75ft (7 stories / 8 Levels)+5ft parapet=80ft 65ft (6 stories / 7 Levels)+5ft Parapet=70ft

PARKING RATIOS		Research and Office Uses			Conference Center	Active Uses	Housing and Lodging		Garage
		Office	Lab and R&D	Academic			Short-Term Lodging	Student/Faculty Housing	
MINIMUM BICYCLE PARKING	Long-Term Bicycle Parking (Class I)	0.75 Spaces / 1,000 sf	0.345 Spaces / 1,000 sf	2.25 Spaces for each 10 employees plus 1.5 space for each 10 students	N/A	0.15 Spaces / 1,000 sf	1.5 Space / 1,000 sf	1.5 Space / 1,000 sf	N/A
	Short-Term Bicycle Parking (Class II)	0.1875 Spaces / 1,000 sf	0.1875 Spaces / 1,000 sf	1.5 Space / 10 students	N/A	0.75 Spaces / 1,000 sf	1.5 Space / 10 Unit	1.5 Space / 10 Unit	N/A
MAXIMUM VEHICULAR PARKING		1.5 Spaces / 1,000 sf	1.5 Spaces / 1,000 sf	1.3 Spaces / 1,000 sf	1.7 Spaces / 1,000 sf	1.7 Spaces / 1,000 sf	1.3 Spaces / Unit	1 Spaces / Unit	N/A

BUILDINGS

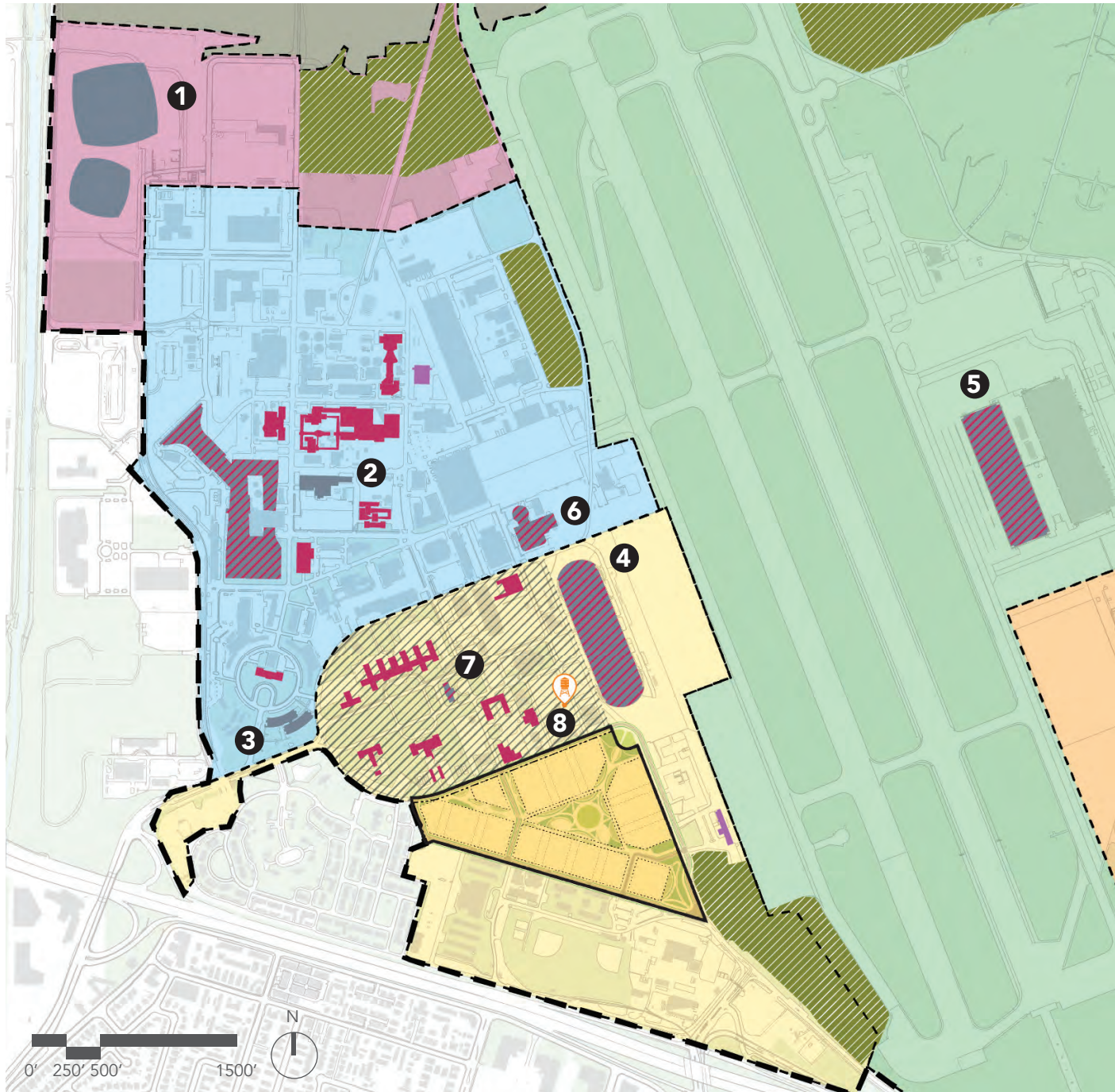
ARCHITECTURAL CHARACTER

UNDERSTANDING THE NASA AMES CONTEXT

NASA ARC has, as a result of incremental planning and development since the 1930's, developed a significant diversity of architectural forms, styles and materials.

Each building built in its own time, for its own time and uniquely built for its own purpose has established a place defined by a spirit of continual evolution and reinvention.

Standards: The architectural character of Berkeley Space Center at NASA Research Park 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.



- Berkeley Space Center at NASA Research Park

Wetlands

Eastside / Airfield

Bay View

Ames Campus

Shenandoah Plaza

Air National Guard
- NASA Research Park
- NR Listed Buildings
- NR Eligible Buildings
- Historic Water Tower
- Key Neighboring Buildings
- Approximate Burrowing Owl Habitat
- NASA Ames Research Center

1

 Google Bay View

2

 NASA Ames Biosciences Research Facility

3

 NASA Sustainability Base

4

 Hangar One

5

 Hangar Two

6

 NASA Flight and Guidance Simulation Laboratory

7

 Shenandoah Plaza

8

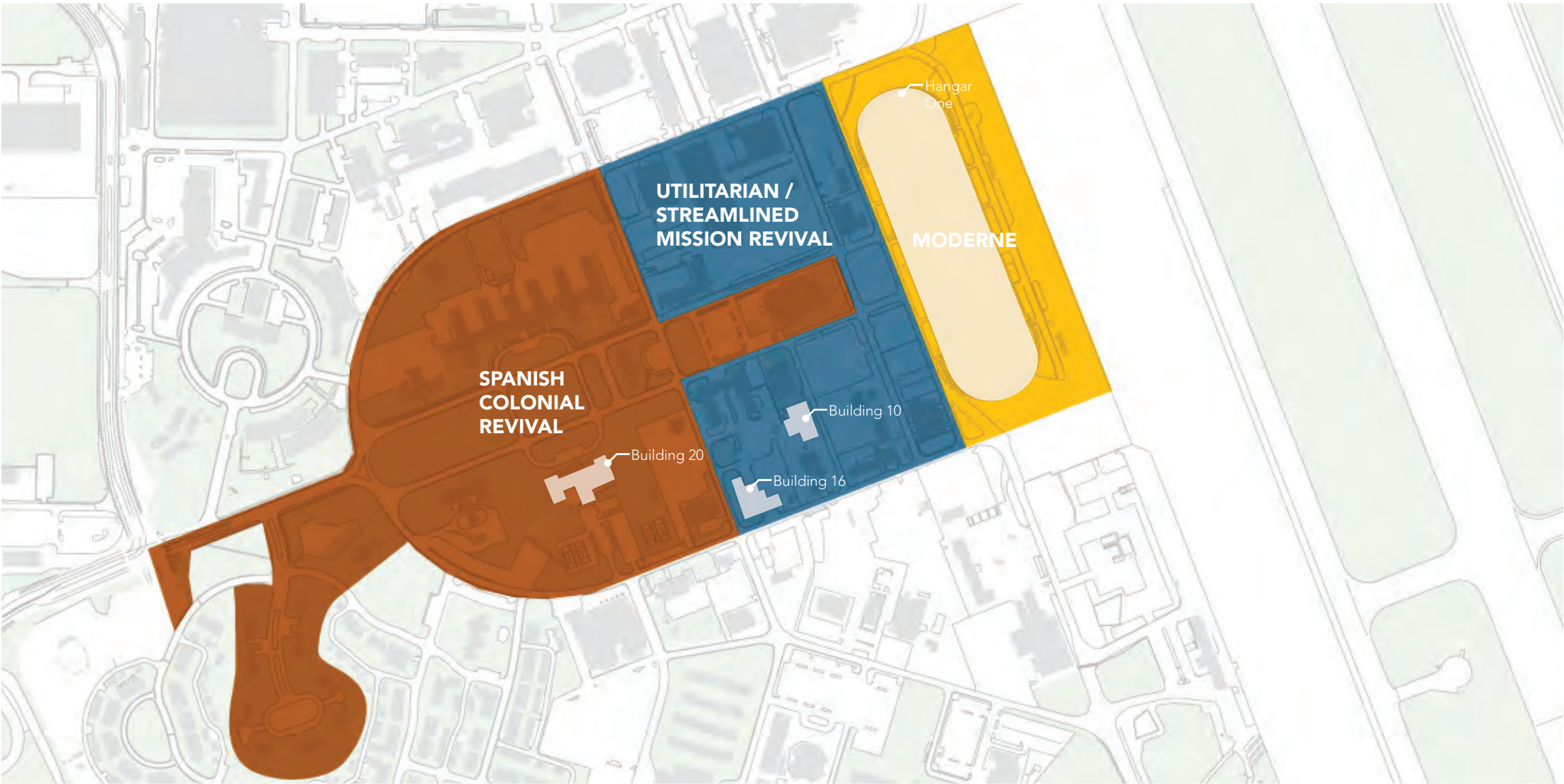
 US Geological Survey Lab

BUILDINGS

ARCHITECTURAL CHARACTER

HISTORIC ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD

Shenandoah Plaza Historic District has three architectural character zones within the NAS Sunnyvale Historic District (Shenandoah Plaza): spanish colonial revival, utilitarian / streamlined mission revival, and moderne.



Architectural Style Zones within the NAS Sunnyvale Historic District



New Development within Utilitarian/Streamlined Mission Revival Area



Building 10



Building 16



Building 20



Hangar One

BUILDINGS

ARCHITECTURAL CHARACTER

PROJECT ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD

Respecting the massing and historic character of the architecture along the northern edge of Wescoat road while also following the spirit of continual evolution and reinvention of NASA ARC creates opportunities for inspired, well crafted and scaled architecture that will enrich Berkeley Space Center and NASA ARC as a whole.

Standard: Architectural character shall both complement the historic character of Shenandoah Plaza Historic District and provide a contemporary response to the new development as an urban research district.

Facades shall be articulated to convey a sense of human scale, denote building entries and reinforce the streetwall.

Guidelines: New development should consider architectural character that considers future focused design that speaks to the space science focuses of the program.

New development should consider massing and facade strategies that break buildings into a traditional triad of base, middle and top:

- Base corresponds to the two story height limit of the Shenandoah Plaza Historic District.
- Step back creates middle zone.
- Top zone of the building (top floor and/or mechanical penthouse) articulated to address the relationship to the sky.



Building Massing Response - Base/Middle/Top



Step Back Creates Roof Terraces



Materials Respond to Historic Character



BUILDINGS

ARCHITECTURAL CHARACTER

OVERALL PROJECT BUILDING MATERIALS

According to the spirit of continual evolution and reinvention at NASA ARC, the significant diversity of existing material and color palettes enable the Berkeley Space Center to create its own material and color identity, while still being complementary to the existing district.

Standards: Utilize durable building materials and systems that minimize long-term maintenance operations and costs, while 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.

Guidelines: Within Berkeley Space Center at NASA Research Park, materials should relate to its purpose and research uses, providing an inspirational and energizing backdrop for the hub of activity.

Materials such as metal panel, exposed and painted structural steel, cast concrete, glass curtain wall, glazing with frit inlay or colors, terracotta, aluminum frames, plaster soffit and natural wood soffits are likely to inform material selection.



Natural Wood Soffit



Metal Panel, Glass Curtain Wall with Aluminium Extrusions



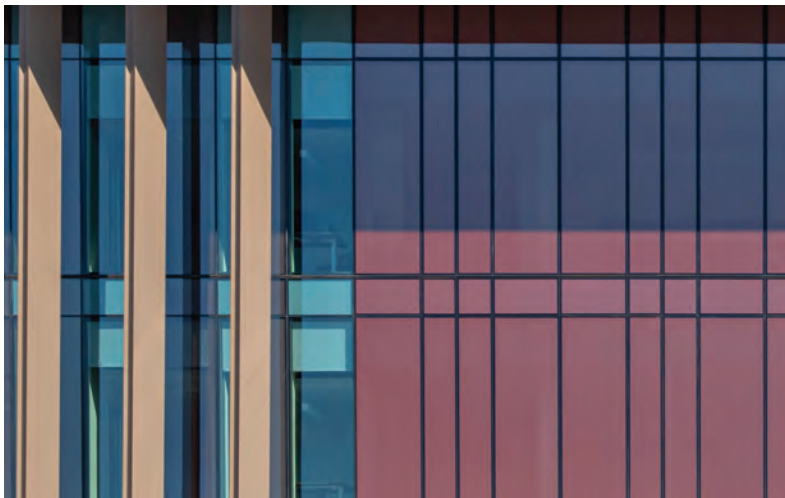
Glass Curtain Wall



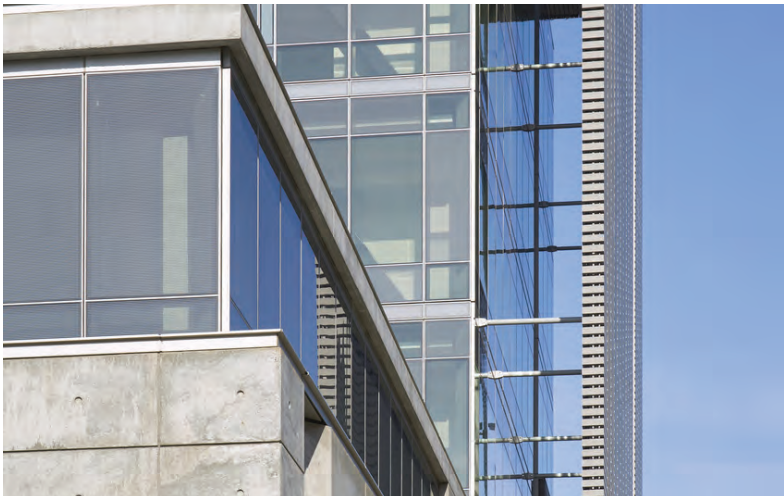
Cast-in-Place Concrete, Glass Curtain Wall, Painted Structural Steel



Metal Panel



Terracotta Colored Glazing



Cast Concrete, Glass Curtain Wall



Painted Aluminium Extrusions



Plaster Soffit, Metal Fascia

BUILDINGS

ARCHITECTURAL CHARACTER

OVERALL PROJECT FACADE ARTICULATION

The form and articulation of facades seeks to support the project principles for building design through thoughtful, and innovative design that shapes a vibrant public realm, while supporting and expressing the functions within each building.

Standards: Facades 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 facade treatments.

Guidelines: Consider utilizing facade depth to shade glazing, improve interior thermal comfort and reduce glare.

- Wall and solid mass wall should be carefully studied to create the most energy-efficient envelope. Curtain walls of all glass are not recommended.
- Natural light is encouraged in all spaces and natural light harvesting strategies should be implemented whenever possible. For example, areas facing north or shaded by surrounding buildings, trees,

and topography can introduce more glazing. Increasing ceiling height at the perimeter or using light interior materials can harvest more natural light.

- When possible, windows should be strategically placed to introduce desirable exterior views from interior spaces. Both panoramic and carefully framed views of nature are desired.
- Views into the interior of the buildings are encouraged at the ground floor, especially when there are active program uses such as lobbies or circulation. Large areas of highly reflective glass are not recommended, as this prevents views directly into spaces.
- All windows should have glare protection strategies. When necessary, privacy strategies and blackouts should also be added. If mini-blinds, shades, or curtains are used, they should look purposeful and cohesive when viewed from outside.
- Operable windows or other methods of natural ventilation are encouraged.



Utilizing Facade Depth to Shade Glazing



Utilizing Facade Depth to Shade Glazing



Material, Color and Texture Use Changes



Reinforce Streetwall



Denote Building Entry through Articulation



Denote Building Entry through Material Shifting

BUILDINGS

ARCHITECTURAL CHARACTER

OVERALL PROJECT FENESTRATION

Introducing transparency to interior spaces can change how they are experienced. Strategically placed windows enhance a healthy environment with connections to nature. Proper sun control with shading devices enhances human comfort.

Fenestration can be vertical, horizontal, universal (curtain wall) or punched. For all fenestration designs, it is important for design teams to consider the aesthetic of the exterior as well as the quality of interior spaces.

Guidelines:

- Wall and solid mass wall should be carefully studied to create the most energy-efficient envelope. Curtain walls of all glass are not recommended.
- Natural light is encouraged in all spaces and natural light harvesting strategies should be implemented whenever possible. For example, areas facing north or shaded by surrounding buildings, trees, and topography can introduce more glazing. Increasing ceiling height at the perimeter or using light interior materials can harvest more natural light.
- When possible, windows should be strategically placed to introduce desirable exterior views from interior spaces. Both panoramic and carefully framed views of nature are desired.

- Views into the interior of the buildings are encouraged at the ground floor, especially when there are active program uses such as lobbies or circulation. Large areas of highly reflective glass are not recommended, as this prevents views directly into spaces.
- All windows should have glare protection strategies. When necessary, privacy strategies and blackouts should also be added. If mini-blinds, shades, or curtains are used, they should look purposeful and cohesive when viewed from outside.
- Operable windows or other methods of natural ventilation are encouraged.



Vertical



Universal Grid



Horizontal



Punched Window

BIRD FRIENDLY DESIGN

Tidal marshes are highly productive ecosystems that support migratory birds as roosting and over-wintering habitats on the Pacific Flyway. NASA ARC's proximate location to the Stevens Creek Shoreline Nature Study Area Preserve and other shoreline open spaces create challenges related to bird safety. New developments should consider best practices for bird-friendly building design.

Standard: As required, all building facades 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.

Guidelines: Going beyond CALGreen, incorporate the following bird-friendly strategies to a height of 60 feet above grade:

Lighting

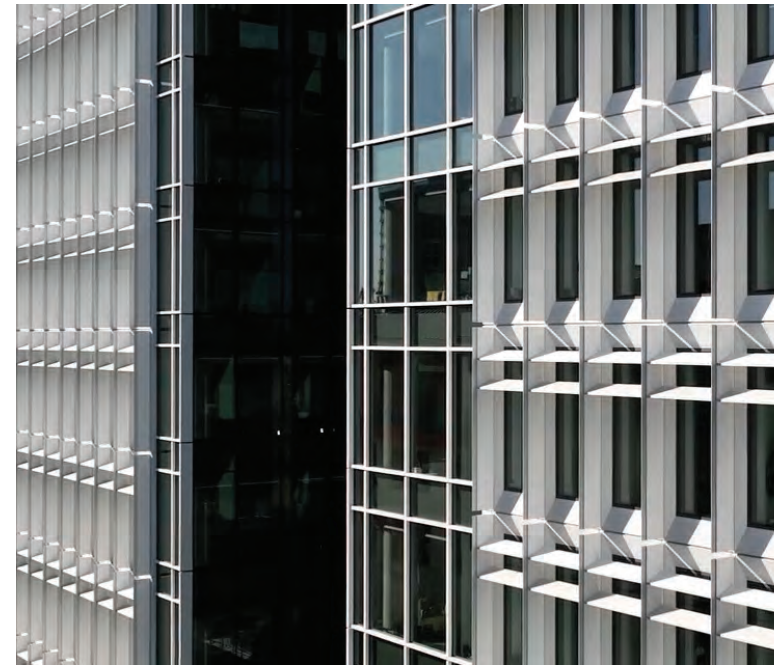
- For office and commercial buildings, interior light "pollution" should be reduced during evening hours through the use of a lighting control system programmed to shut off during non-work hours and between 10 p.m. and sunrise; where interior lighting is used at night, window coverings should be closed to block light transmission adequately.
- Exterior lighting should be directed downward and screened to minimize illuminating the exterior of the building at night, except as needed for safety and security.



Fritted glazing

Glazing

- Glazing shall not appear clear to birds. Untreated glass skyways or walkways, freestanding glass walls, and transparent building corners should be avoided; if any such features are included in the project design, all glazing used in any such features shall be 100% treated with a bird-friendly glazing treatments.
- Avoid the use of highly reflective glass as an exterior treatment, which appears to reproduce natural habitat and can be attractive to some birds.
- Limit reflectivity and prevent exterior glass from attracting birds in building plans by utilizing low-reflectivity glass (15% or lower).
- Use low-reflectivity glass or other bird safe glazing treatments for the majority of the building's glass surface, not just the lower levels.



Building Shading

Building Envelope

- Building envelope design should aim to prevent birds from flying into glass. Strategies can include architectural elements such as screens, overhangs, louvers, and sun shades. A limited window-to-wall ratio or limits to large sections of clear glass can also reduce bird collisions.



Limited Window-to-wall Ratio

BUILDINGS

MECHANICAL SCREENING

Standards:
Mechanical screening shall extend up to 25 feet with 45 degree setback above the maximum building height limit for the development along Cody Road and Wescoat Road.

Mechanical equipment and rooftop appurtenances must be screened. Mechanical equipment must not be visible from the street level and views from adjacent, taller buildings shall be minimized.

Guidelines:
Mechanical equipment placed on the roof should be fully screened from view of the public streets, with a limited amount of minor protrusions allowed for exhaust fans and other small appurtenances. The shape and massing of the mechanical penthouse enclosure should be designed as part of the whole building and should create a balanced composition with the whole building massing.

Use appropriate acoustical design strategies to prevent noise from mechanical equipment placed on the roof from migrating to occupiable spaces below. Examples are spring dampers or floating slabs.



Vertical Extension of Building Facade, Integral to Building Form



Integrated into the Facade Design



Set Back but Integrated into the Design of the Overall Building Form



Follows the Geometric Form of the Building

BUILDINGS

SERVICE ENTRIES AND LOADING

It is important to screen back of house areas, such as loading docks and service areas, from main public spaces and public view.

Standards: Service, security, or garage doors shall not be placed along facades adjacent to public streetscapes, plazas, and parks. If this cannot be avoided, the doors may be placed in a manner that reduces their visibility by recess or other methods that incorporate them into the greater architecture of the building.

Guidelines:
Interior loading docks with overhead coiling doors are aesthetically preferred if possible within programmatic, technical, and spatial constraints.

As part of the walkable environment, back of house area exterior walls should be designed with attention to human scale, details, and materials. Since activation through transparency is not possible in these areas, use of texture change, screening landscape, green walls, and warm facade lighting to create a more welcoming environment is encouraged.



Screened Loading Dock



Recessed Service / Parking Entry



Recessed Service Entry Designed as Part of the Building Facade



Loading Dock Recessed into Building Facade

BUILDINGS

WORKING YARDS

Working yards are expected, though not required, within the development as tenants are engaged in the pursuit of knowledge (advanced research and process design) and/or creation of products (prototyping, testing and development) and may need larger, exterior laydown and maneuvering space. Research is expected in science, engineering and technology intensive fields, including but not limited to, electric vehicles (manned and unmanned), telecommunications, remote sensing, space missions, defense and military, biology and physics, bioengineering and aerosciences, and will most likely be aligned with on-going tenant research programs in support of scientific missions.

Guidelines:
Building Interface: Working yards are partially enclosed by the building envelope, just outside a high-bay extended building space and partially enclosed by privacy screening. Functionally located

adjacent to the building’s service entrance and loading docks allows for ease of access.

Security: Tenant’s private research and development activities will be conducted within high security zones due to for any number of reasons, up to and including air quality and /or other emission containment, intellectual property protection, and property security and safety, and will not be accessible to the general public. Intentionally limited access points to the working yards will be provided.

Standards: 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 shall create a visually engaging environment.

- Working Yard
- Loading Zone
- Security Fence

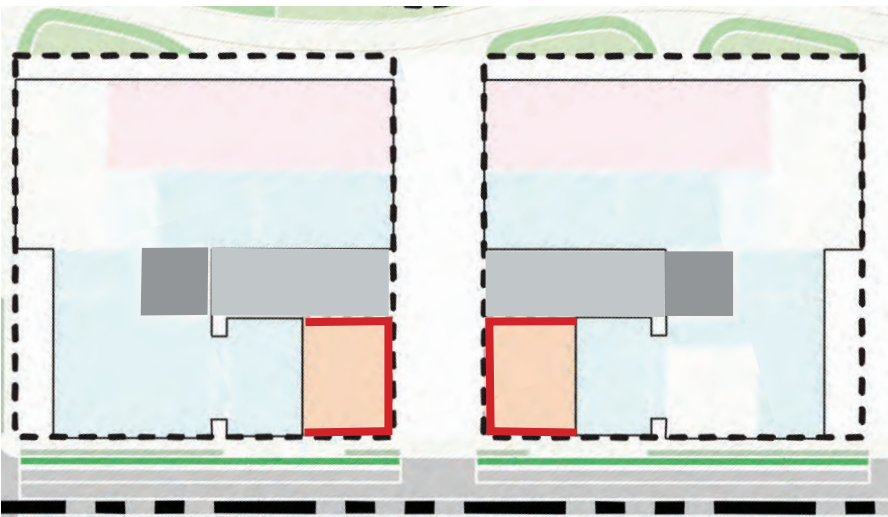
- Loading Dock
- Buildable Area Boundary
- Parcel Boundary



Zoox Robotaxi Testing, California



UMich Drone Testing Facility



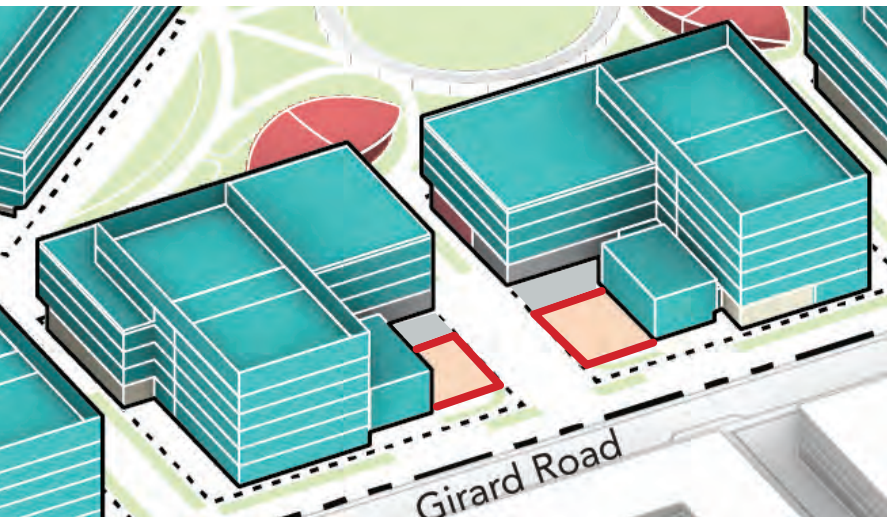
Illustrative Working Yards in Project Site Plan



Tank Storage, Generators, Service Yard



JPL Mars Rover Yard



Illustrative Working Yards in Project Site Axonometric

BUILDINGS

VEHICULAR PARKING

Standards:

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 street-side 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.

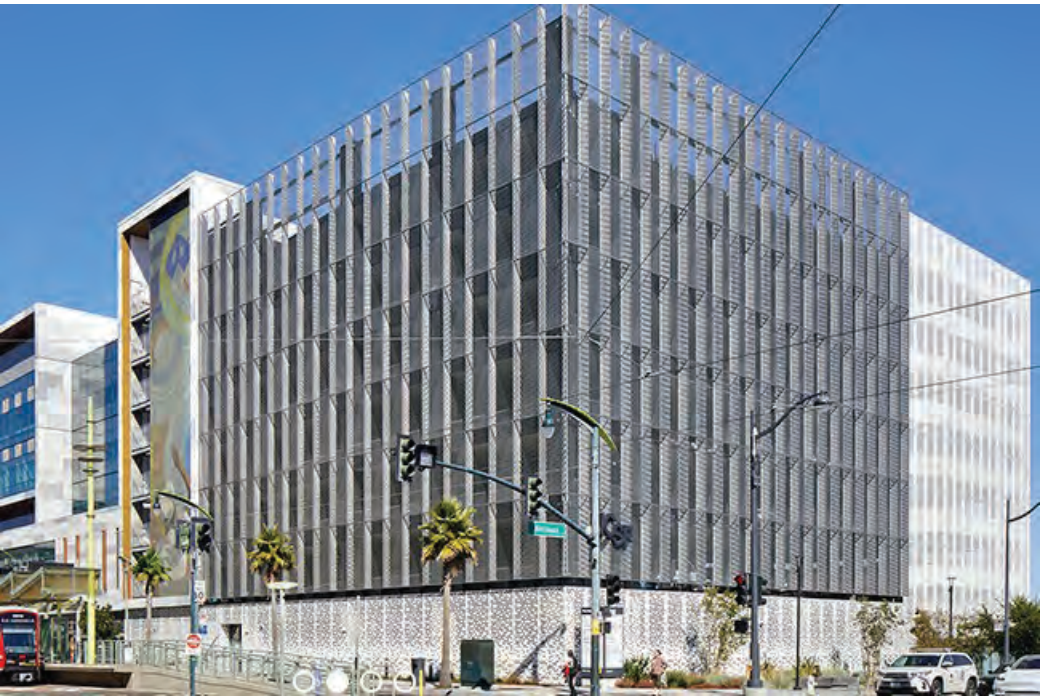
Guidelines:

Stand-alone parking structures should encourage the following:
Level floors
Ramps are at the center of the garage or external to the garage.

Design of the parking structures should use building massing, articulation, and other facade treatments that are consistent with neighboring buildings.

Where pedestrians and cyclists need access to parking areas, provide clear and convenient routes from the sidewalk.

Encourage the construction of parking structures that can be redeveloped or repurposed in the future.



Parking Structure with facade treatments

BUILDINGS

BIKE AND SCOOTER PARKING

Class I Bike Parking:

Class I bike parking offers higher-security, longer-term bicycle parking. This class usually includes bike lockers, secure rooms, or staff bike stations. Given their higher-security nature, access can be controlled by keys, card access, or other secure methods.



Class II Bike Parking:

Class II bike parking is meant for short-term bicycle parking. These racks provide a point of contact to lock the bicycle frame but are less secure compared to Class I facilities.



Standards:

Convenient access to bicycle parking facilities shall be provided. Where access is via a sidewalk or pathway, curb ramps shall be installed where appropriate.

Lighting shall be provided in all bicycle parking areas. In both exterior and interior locations, lighting of not less than one foot-candle of illumination at ground level shall be provided.

Guidelines:

Some Class I and Class II parking should be designed to accommodate larger or non-standard bikes, such as cargo bikes, bikes with trailers, and e-bikes.

Approximately 75% of the designated bicycle parking spaces can be allocated to Class I (long-term) facilities, while the remaining 25% can be designated for Class II (short-term) usage. The desirable breakdown between Class I and II parking can vary depending on type of land use. Bicycle parking facilities and access aisles should be designed such that columns, walls, or other obstructions do not interfere with normal bicycle parking maneuvers and with parked bicycles.

Parking facilities should support bicycles in a stable position without damage to wheels, frame, paint, or components.

Bicycle and vehicle parking areas should be separated by a physical barrier or sufficient distance to protect parked bicycles from damage by vehicles.

Where bicycle parking areas are not clearly visible to approaching bicyclists, signs should be posted to direct cyclists to the facilities.



Scooter Parking:

Because many shared scooters do not operate with docks, scooter parking is often designated as a painted “corral” near to existing or planned Class II bike parking. Dimensions for scooter corrals are typically about 4’ by 10’, which can accommodate about 10 scooters (about 4 square feet/scooter, excluding circulation). In case where there are locking requirements or charging needs, scooter racks can be placed adjacent to Class II bike racks. Scooter can also be collocated with Class II e-bike racks and/or Class II bike parking that accommodates e-bike charging.



BUILDINGS

SHUTTLE STOP AND BIKE LANE CONFIGURATION

Guidelines:

Key features of shuttle stops include:

Multi-modal Integration: Shuttle stops integrate multiple forms of transportation, such as buses and shuttles. Access to other modes like bicycles and shared vehicles, with convenient connecting pedestrian pathways, allows users to easily transfer between them.

Amenities: To enhance user experience, these stops can provide amenities such as waiting areas, real-time transportation information displays, Wi-Fi, and close access to nearby retail services like coffee shops.

Shared Mobility Services: Beyond traditional public connections, shuttle stops often connect to shared mobility services like car-sharing, bike-sharing, ridesharing, and e-scooters.

Bus and shuttle stops will likely be on streets with on street bikeways. This includes bus/shuttle stops on Bailey Road at the pedestrian promenade, as well as a potential VTA bus stop on Westcoat Road at Bailey Road.

Typical design practice is to allow bike facilities to “wrap around” behind the bus stop to reduce conflicts.

Depending on the street cross section, design options include:

On-street Parking/Loading at Curb: Under this configuration, buses would stop in the travel lane (if appropriate given traffic volumes and speeds) and bicyclists would weave behind the bus stop and then return biking to the left of parked cars and the vehicle travel lane. This configuration is generally suitable for Class II bike facilities.

On-street Parking/Loading Adjacent to Travel Lanes: Under this configuration, buses would stop in the travel lane (if appropriate given traffic volumes and speeds), and the bikeway would remain in between parked cars and the curb. This configuration is generally suitable for Class IV separated bike facilities.

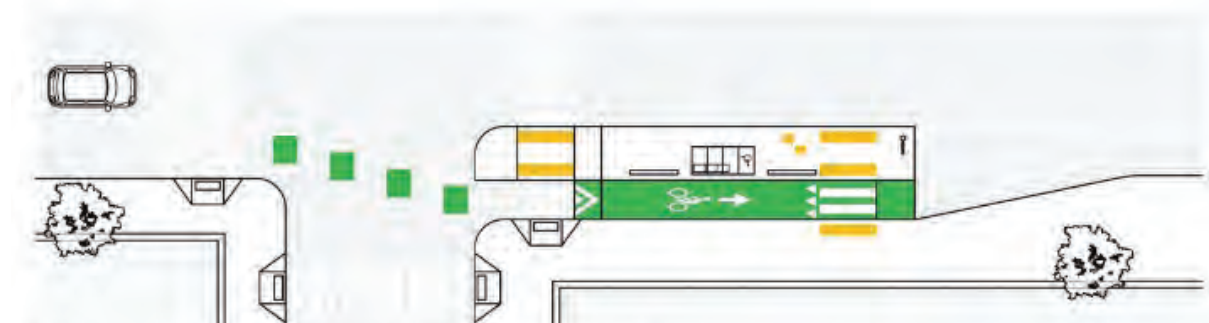
No On-street Parking or Loading: When no on-street parking or loading exists, bicyclists would weave behind the bus stop. This configuration would require a slightly wider curb to curb cross section at the stop compared to the rest of the street. This configuration is generally suitable for buffered Class II bike facilities



Bike lane and Shuttle Stop with Curbside On-Street Parking



Bike lane and Shuttle Stop with On-Street Parking Adjacent to Travel Lanes



Bike lane and Shuttle Stop with No On-Street Parking

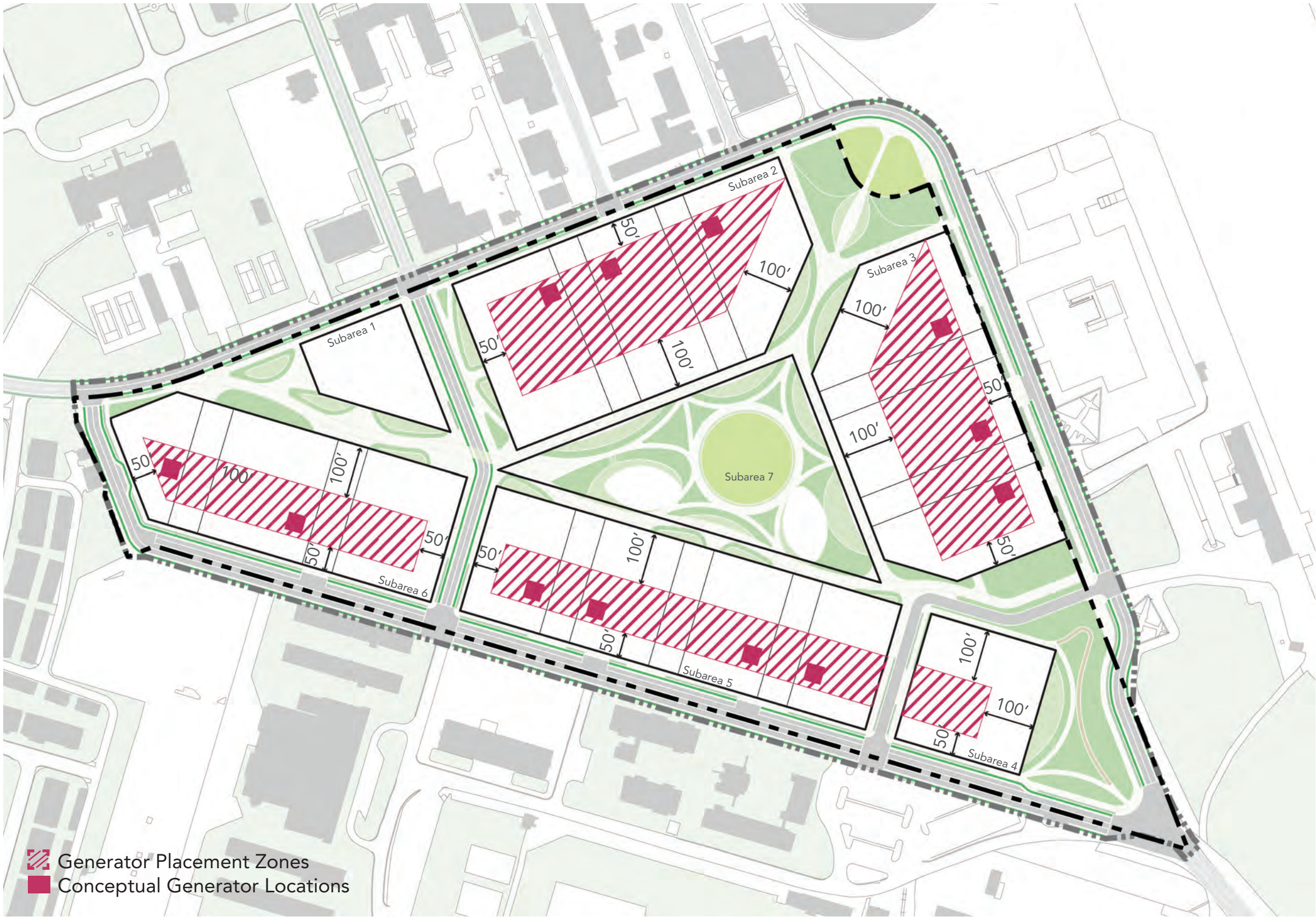
BUILDINGS

LARGE DIESEL EMERGENCY STANDBY ENGINES

Standards: Any large diesel emergency standby engines (> 1,000 BHP) “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 three years after district-approved source testing conducted before installation).

The project will comply with the regulatory requirement to use the Air District’s Best Available Control Technology and Best Available Control Technology for Toxics Workbook (BACT/ TBACT) revised June 9, 2015 for commonly permitted sources subject to New Source Review in the Bay Area as a guide for permit applicants.

Any large diesel emergency standby engines should be screened prior to Certificate of Occupancy for each building. Screening shall be to the height of the generator and enclose all four of it sides. Buildings may be used for all or part of the enclosure.



Illustrative Large Diesel Emergency Standby Engine Placement Zones

BUILDINGS

PHOTOVOLTAIC AND BATTERY SYSTEMS

Photovoltaic Systems:

Minimum Prescriptive Approach:

Per 2022 California Code of Regulations, Title 24, Section 140.10, the development will install photovoltaic (PV) systems meeting or exceeding the minimum qualification requirements of Reference Joint Appendix JA11. The PV capacity in kW shall meet or exceed the PV system size determined by Equation 140.10-A.

Or the total of all available Solar Access Roof Areas (SARA) multiplied by 14 W/ft2, to be determined in later design stages.

Performance Approach:

Energy code compliance may be demonstrated through on whole building energy performance, which may supersede the prescriptive requirement for PV Array, to be determined in later design stages. PV system will be connected to the BESS system.

Battery Storage Systems:

Minimum Prescriptive Approach:

Per 2022 California Code of Regulations, Title 24, Section 140.10, the development will also have a battery storage system meeting the minimum qualification requirements of Reference Joint Appendix JA12. The rated energy capacity and the rated power capacity shall be not less than the values determined by Equation 140.10-B and Equation 140.10-C;

Performance Approach:

Energy code compliance may be demonstrated through on whole building energy performance, which may supersede the prescriptive requirement for BESS, to be determined in later design stages.



Subarea	PV Capacity (kW)	BESS Energy (kWh)	BESS Power (kW)
1	41.80	40.98	9.61
2	516.82	936.67	221.06
3	459.26	833.54	196.72
4	0.00	0.00	0.00
5	431.04	776.39	183.22
6	412.18	513.83	120.89
7	6.60	6.47	1.52
Total	1,868	3,108	733

Minimum Prescriptive Approach Values

APPENDIX

STANDARDS SUMMARY	88
-------------------------	----

APPENDIX

STANDARDS SUMMARY

Table 2-4. Summary of Proposed Maximum and Minimum Development Parameters and Standards in Proposed Development Guidelines for the CEQA Proposed Project and the CEQA Reduced Density Alternative

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

APPENDIX

STANDARDS SUMMARY

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 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.	n/a	n/a

APPENDIX

STANDARDS SUMMARY

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	- 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	n/a	n/a
		X	n/a
	Vehicular parking ratio		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. - 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.	n/a	n/a

APPENDIX

STANDARDS SUMMARY

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	- Architectural character shall both complement the historic character of Shenandoah Plaza Historic District 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.	n/a	25 feet
	Mechanical equipment and rooftop appurtenances must be screened. Mechanical equipment must not be visible from the street level and views from adjacent, taller buildings shall be minimized.	n/a	n/a
	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,	n/a	n/a

APPENDIX

STANDARDS SUMMARY

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
	vegetated screen walls and/or building material textural variation are recommended to create a visually engaging environment.		
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, 2015, for commonly permitted sources subject to New Source Review in the Bay Area as a guide for permit applicants.	n/a	n/a
Buildings: solar and battery storage	Minimum prescriptive approach code requirements.	Minimum Prescriptive Code Requirements	n/a
Vehicular Parking	Driveways shall be minimized to the extent feasible on the primary bike network to minimize conflicts between bikers and vehicles.	n/a	n/a
	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.	n/a	n/a
	Ramps and ramped floors shall not face a street or publicly accessible open space.		

Topic/Page	Standard	Minimum Development Parameter (if applicable)	Maximum Development Standard (if applicable)
Bike and Scooter Parking	No off-street parking shall be located in required front or street-side 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.		
	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 foot-candle of illumination at ground level shall be provided.		

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

Notes:

n/a = not applicable



BERKELEY SPACE CENTER
AT NASA RESEARCH PARK

Berkeley **SKS**
UNIVERSITY OF CALIFORNIA