Record of Decision
National Aeronautics and Space Administration

NASA Ames Development Plan
Environmental Impact Statement

A. Background

Under the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 *et seq.*), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR parts 1500-1508), and NASA implementing procedures (14 CFR part 1216 subpart 1216.3), NASA has prepared a Final Programmatic Environmental Impact Statement (FPEIS) for the proposed NASA Ames Development Plan (NADP). The purpose of the NADP is to bring new research and development (R&D) to the NASA Ames Research Center (ARC) in Santa Clara County, California, including the property known as Moffett Field Naval Air Station. The purpose of the NADP FPEIS was to assess the environmental consequences associated with development under the proposed NADP and a range of alternatives, including the No Action alternative.

In 1991, the Federal Base Closure and Realignment Commission decided to decommission Moffett Field Naval Air Station. Subsequently, the U.S. Department of Defense (DOD) transferred stewardship of the property to NASA. NASA took over administration of Moffett Field in 1994. The immediate issues were how to use the newly acquired land cost-effectively and in a manner consistent with NASA's mission. These matters were originally addressed in the Moffett Field Comprehensive Use Plan (CUP) and its associated Environmental Assessment (EA), which resulted in a Finding of No Significant Impact (FONSI) in 1994. In 1996, local

community leaders formed a Community Advisory Committee (CAC), which recommended uses for the newly acquired land. The uses proposed by NASA in the NADP are consistent with those recommended by the CAC.

In the NADP, NASA proposes the development of a world-class, shared-used educational and R&D campus focused on nanotechnology, biotechnology, information technology, astrobiology, life sciences, space sciences, and aeronautics. As part of the NADP, NASA officials plan to create partnerships with Federal, Tribal, State, and local government agencies, universities, private industry, and non-profit organizations in support of NASA's mission to conduct research and develop new technologies.

NASA's mission includes undertaking aeronautical and space activities for the Nation's welfare and security, expanding knowledge of the Earth and phenomena in the atmosphere and space, using the engineering and research resources of the United States effectively, and developing ground propulsion, advanced aviation propulsion and bioengineering research and demonstration projects. ARC pursues this mission as a NASA focal point for information technology with the responsibility to strategically maintain and increase NASA's position in this field. ARC has significant management responsibility for key areas such as intelligent Systems, high performance computing and communications, complex systems engineering, and nanotechnology.

ARC is additionally responsible for building and maintaining human expertise and physical infrastructure in direct support of NASA missions in astrobiology and aerospace operations.

ARC fulfills this mission through the development and operation of unique national facilities. ARC also fulfills its mission through the conduct and management of diverse leading edge research and technology programs from the fundamental biology program to the thermal protection system and the aviation system capacity program.

Development proposed under the NADP has the purpose of furthering NASA's mission by providing the vital scientific, engineering, and academic community necessary to create crucial research focused on the advancement of human knowledge about space, the Earth, and society. The NADP would extend and deepen the research and development capabilities of NASA ARC through R&D partnerships in key research areas. The NADP would create a needed vibrant research and education infrastructure that leverages existing budgets and other resources. The NADP is needed to advance NASA's research leadership, facilitate science and technology education, and create a unique community of researchers, students, and educators.

A secondary purpose of the project is to enhance ARC's research capabilities and enable more efficient use of its lands. The demolition of older buildings, reuse of existing buildings, and construction of new facilities involved in the creation of the new campus would make the best use of land at ARC while minimizing impacts on surrounding areas. New development will incorporate principles of energy efficiency, water conservation, transportation demand management, and seismic safety.

B. Introduction to EIS

Formal scoping for the Draft Programmatic Environmental Impact Statement (DPEIS) began on June 16, 2000, with the publication of NASA's Notice of Intent (NOI) in the *Federal Register*. In parallel, NASA published the NOI in several local newspapers: *San Jose Mercury News* (NOI on June 18, 2000, and Notice of Scoping Meetings on June 18, July 2 and July 7, 2000), *La Oferta Review* (NOI on June 21 and June 28, 2000, and Notice of Scoping Meetings on June 21, July 5 and July 12, 2000), *Sunnyvale Sun* (NOI on June 21, 2000, and Notice of Scoping Meetings on June 21, July 5 and July 12, 2000), *Mountain View Voice* (NOI on July 5, 2000, and Notice of Scoping Meetings on July 2 and July 12, 2000), *Palo Alto Daily News* (NOI on July 6, 2000, and Notice of Scoping Meetings on July 6, 2000), and *Palo Alto Weekly* (NOI on June 21, 2000, and Notice of Scoping Meetings on June 21, 2000), and mailed the NOI and a fact sheet directly to appropriate Federal, State, and local agencies, individuals, and organizations. Public scoping meetings were held during July 2000 at NASA facilities, City of Mountain View Council Chambers, and the City of Sunnyvale Council Chambers. The scoping period closed on July 31, 2000.

All responses received during the scoping period were reviewed. The largest number of comments (43) pertained to the impact on housing supply in the surrounding communities. Next most commonly voiced concern was about traffic congestion (35 comments). Between 20 and 30 comments were about the range of alternatives, the development in the Bay View area, and use of the airfield. The comments were divided in favor of expanding the airfield, and opposed to the airfield. Between 10 and 20 comments concerned the need to improve bicycle and pedestrian access, the Bay Trail, noise, site contamination, economic impacts, and impacts to schools, services, utilities, and childcare. Between 6 and 9 comments concerned impacts on air quality, recreation, water supply, the golf course, safety,

security, and the wetlands; and included concerns about space for non-profit organizations, compatibility of land use, aesthetics, and the desire to promote mixed use development. Fewer than 6 comments were about the commissary and exchange, cultural resources, and animal research.

Cooperating agencies were identified prior to the scoping meetings; these included the City of Mountain View, the City of Sunnyvale, the Santa Clara Valley Transportation Authority, California Department of Transportation (Caltrans), the Federal Highway Administration, the Bay Area Air Quality Management District (BAAQMD), and the California State Office of Historic Preservation (SHPO).

On November 21, 2001, NASA published the Notice of Availability (NOA) for the DPEIS in the *Federal Register*. On December 7, 2001, the U.S. Environmental Protection Agency (EPA) published its NOA in the *Federal Register*, stating that the comment period would end January 28, 2002. In addition, notices were published in the *San Jose Mercury News* (November 30 and December 2, 7, and 9, 2001), the *La Oferta Review* (November 30 and December 7, 2001), *The Sunnyvale Sun* (December 5, 2001) and the *Mountain View Voice* and the *Palo Alto Daily News* (November 28 and 30, 2001). NASA also mailed the NOA and Fact Sheet for the DPEIS directly to Federal, and state agencies, individuals, and organizations. NASA conducted public meetings during December 2001 to receive comments on the DPEIS. Meetings were held at NASA facilities, City of Mountain View Council Chambers, and the City of Sunnyvale Council Chambers. The public review period for the DPEIS was from December 10, 2001, through January 28, 2002, which allowed 50 days, or 5 days longer than required under CEQ regulations. During the comment period, various agencies, organizations, and individuals submitted comments on the DPEIS. Comments were received from 4 Federal agencies, 8 State agencies,

11 local agencies, 10 organizations, and 97 individuals. In addition, 39 commenters spoke at the public meetings. Comments received on the DPEIS included issues associated with housing, traffic, Bay View development near the wetlands, the desire for wetlands restoration, security, contamination and remediation, natural resources, the airfield, historic resources, and infrastructure.

As required under CEQ regulations, NASA responded in the FPEIS to substantive comments made during the DPEIS review period. The major changes resulting from comments received during public review of the DPEIS include the following:

1. Additional Housing as a Mitigation Measure

The most significant change in the FPEIS is the addition of a new mitigation measure to the socio-economic portion of the DPEIS. Several commenters requested consideration of additional housing in the NADP to decrease the impact of the development on the Bay Area's existing jobs/ housing imbalance. NASA responded by developing a mitigation measure that would add 890 housing units to the proposed development, bringing the total on-site housing to 1,930 units. NASA also would continue efforts to obtain military housing in the vicinity, would continue to evaluate additional housing in the NRP area as contamination is remediated, and would ensure that at least 10 percent of the housing would be affordable to low-income residents.

2. Recalculation of Fill Needed in Bay View

As described in the DPEIS, fill would be required in the Bay View area in order to prevent flooding. Fill would be used to bring the finished grade up to 2 meters (7 feet) along the northern edge of the Bay View area, and slope upward to the south to conform to the existing ground elevations. A recalculation of fill requirements concluded that fill would be placed over a 102,000 square meter (1,100,000 square feet) area with fill ranging in depth from 0.15 meter (0.5 feet) to 1.4 meters (4.5 feet), with an average depth of 1.2 meters (4.0 feet). This is less than the 170,000 cubic meters (220,000 cubic yards) that was calculated in the DPEIS.

3. Increase to Wetlands Buffer

In response to received comments, the open space buffer between residential development in the Bay View area and the wetlands has been increased from 30.5 meters (100 feet) to 61 meters (200 feet).

4. Stormwater Drainage Changes

NASA has revised the conceptual plan for the storm drain system to reduce off-site flows and pollutant loading. In Bay View, storm water would be retained on-site in recreational areas, then flow through swales to a settling basin. From there, it would flow to the Eastern Diked Marsh and then to the stormwater retention pond, thereby eliminating the need to route water directly to

Stevens Creek. In addition, there have been changes to the design of the NASA Research Park storm system to slow drainage flows to the stormwater retention pond.

5. **Construction Buildout**

Construction of the increased housing under Mitigated Alternative 5, the preferred alternative, would cause the project to be built out over 11 years, instead of 10 years, to keep NOx emissions below *de minimus* levels of 91 tonnes (100 tons) per year as required under the Federal Clean Air Act (CAA).

6. **Air Quality Impacts**

The construction and trips associated with the additional housing would cause emissions of reactive organic gasses (ROG) to exceed regional significance levels established by BAAQMD under the California Clean Air Act (Bay Area Clean Air Plan).

On August 9, 2002, the EPA published its NOA for NADP FPEIS in the *Federal Register*, and on August 20, 2002, NASA published its NOA for the NADP FPEIS in the *Federal Register*. In addition, notices were published in the *San Jose Mercury News* (August 23, August 30, September 6, and September 13, 2002), the *La Oferta Review* (August 23 and August 30, 2002), *The Sunnyvale Sun* (August 28, 2002) and the *Mountain View Voice* and the *Palo Alto Daily News* (August 23, 2002). NASA also mailed the NOA and Fact Sheet for the FPEIS directly to Federal, State, and local agencies, individuals, and organizations.

The minimum 30-day waiting period prior to issuing a ROD extended from August 20, when the latter of the EPA and NASA notices were published, to September 20, 2002. Comments were received during the waiting period from the EPA and the City of Mountain View. EPA's letter was favorable, noting that NASA had incorporated all of the recommendations that had been contained in EPA's comments on the DPEIS, and that the carbon monoxide (CO) hotspot analysis in the FPEIS satisfies general conformity requirements. The City of Mountain View comments concerned implementation of the housing mitigation measures, identification of relevant and reasonable traffic and circulation mitigation measures, the viability of the Transportation Management Plan, the City's desire for a NASA commitment to provide an ongoing City review and comment process during the NADP implementation, and a request for copies of mitigation monitoring reports.

Major environmental requirements under other laws, regulations, and executive orders addressed in the EIS include: §176(c)(1) CAA General Conformity determination, §106 National Historic Preservation Act consultation, §7 Endangered Species Act consultation, §307(c) Coastal Zone Management Act (CZMA) consistency determination, §404 Clean Water Act review, and E.O. 11988 Floodplain Management determination.

Alternatives Considered

Alternative 1: The No Project Alternative. Under the No Project Alternative, NASA would not propose new development for ARC at this time. However, NASA would implement several

projects at ARC that are already approved under the NASA ARC CUP EA and FONSI and the California Air National Guard Master Plan EA and FONSI.

Alternative 2: In Alternative 2, NASA would propose to develop approximately 363,000 square meters (3.9 million square feet) of new space in the NRP, Bay View, and Eastside/ Airfield areas. Within the NRP area, there would be approximately 192,000 square meters (2.1 million square feet) of new educational, office, research and development, museum, conference center, housing and retail development. Approximately 52,000 square meters (560,000 square feet) of existing non-historic structures would be demolished and approximately 46,000 square meters (500,000 square feet) of existing space would be renovated. In this alternative, NASA proposes approximately 121,000 square meters (1.3 million square feet) of new educational and housing development in the Bay View area, and approximately 51,000 square meters (550,000 square feet) of new low-density research and development and light industrial space. Hangars 2 and 3 in the Eastside Airfield area would be renovated. Total build out under this alternative would be approximately 845,000 square meters (9.1 million square feet).

Alternative 3: Based on the ideas of Traditional Neighborhood Design, NASA, in Alternative 3 would create a new mixed-use development within the NRP. In this alternative, NASA proposes to: 1) add approximately 284,000 square meters (3 million square feet) of new educational, office, research and development, museum, conference center, housing and retail development, 2) demolish approximately 52,000 square meters (560,000 square feet) of non-historic structures, and 3) renovate approximately 46,000 square meters (500,000 square feet) of existing space.

NASA does not propose any new construction in the Bay View or Eastside/Airfield areas, although Hangars 2 and 3 in the Eastside/Airfield area would be renovated for low-intensity research and development or light industrial uses. The total build out under Alternative 3 would be approximately 760,000 square meters (8.2 million square feet).

Alternative 4: In Alternative 4, NASA would concentrate more of the new development in the Bay View area than it would in the other alternatives, while creating less dense development in the NRP area. In Alternative 4, NASA proposes to: 1) add approximately 145,000 square meters (1.6 million square feet) of new educational, office, research and development, museum, conference center, housing and retail space in the NRP area, 2) demolish approximately 52,000 square meters (560,000 square feet) of non-historic structures, and 3) renovate approximately 46,000 square meters (500,000 square feet) of existing space. In the Bay View area, NASA proposes approximately 251,000 square meters (2.7 million square feet) of new office, research and development, laboratory, educational, and student/faculty housing development. In the Eastside/ Airfield area, NASA proposes to: 1) create approximately 62,000 square meters (670,000 square feet) of new light industrial, research and development, office and educational facility development, and 2) renovate the historic hangars. The total build out under Alternative 4 would be approximately 940,000 square meters (10.1 million square feet).

Alternative 5: Under Alternative 5, NASA would allow some new construction in each of the four development areas but would concentrate most of this construction in the NRP area. In this alternative, NASA proposes to: 1) add approximately 192,000 square meters (2.1 million square feet) of new educational, office, research and development, museum,

conference center, housing and retail space in the NRP Area, 2) demolish approximately 52,000 square meters (560,000 square feet) of non-historic structures, and 3) renovate approximately 56,000 square meters (600,000 square feet) of existing space. In the Bay View area, NASA proposes addition of approximately 93,000 square meters (1 million square feet) of new development, primarily for housing. In the Eastside / Airfield area, NASA proposes to construct approximately 1,100 square meters (12,000 square feet) of new space in a new control tower, to replace the control tower that would be demolished in the NRP area. Finally, in the Ames Campus area, NASA proposes to demolish approximately 37,000 square meters (400,000 square feet) of existing buildings to make way for 46,000 square meters (500,000 square feet) of high density office and research and development space. Total build out under Alternative 5 would be approximately 777,000 square meters (8.4 million square feet).

Mitigated Alternative 5: The Preferred Alternative. Under Mitigated Alternative 5, development would be the same as in Alternative 5, with several exceptions. In the NRP area, the land area of parcel 1, which is proposed to accommodate the Lab Project proposed under the baseline, would be decreased. The development potential of this parcel would be kept the same through an increase in the parcel's allowed FAR. The land area of NRP Parcel 6, which is proposed for housing, would be increased, with a corresponding increase in its development potential. As well, a portion of building 19 and all of building 20 would be redesigned for use as dormitory housing. This would be in keeping with the historic use of these buildings, which were originally built as enlisted personnel and officer's housing, respectively. In the Bay View area, the land area and FAR of parcel 1, which is proposed for housing would be increased to accommodate the additional residential development, while the land area for educational reserve

in the Bay View area, and ARC facilities in the Ames Campus would be decreased to keep the open space in Bay View unchanged.

Key Environmental Issues Evaluated

1. Jobs / Housing Imbalance

The housing impact was evaluated by calculating the additional housing demand in the Housing Impact Area (HIA) generated by each NADP alternative. The proposed onsite housing is subtracted from the housing demand, resulting in the number of households that would need to find housing outside of ARC and in the HIA. This additional demand represents the housing impact of the NADP at buildout in 2013. It is expressed as a percentage of new households in the HIA between 2000 and 2015, as projected by the Association of Bay Area Governments (ABAG). Additional household demand, greater than 1 percent of total new households in the HIA, is considered a significant impact because it aggravates the housing shortage projected over the next 15 years by ABAG and the Metropolitan Transportation Commission.

NEW EMPLOYEE AND HOUSEHOLD DEMAND

Alternative	New Employees	Additional Household Demand in HIA	% of Total New Households in HIA 2000 - 2015
1	0	NA	NA
2	13,068	7,182	5.74 %
3	11,047	6,236	4.98 %
4	15,599	8,460	6.76 %
5	7,222	3,523	2.81 %
Mitigated 5	7,088	3,074	2.45 %

2. Traffic

The implementation of the NADP would increase the demand for transportation infrastructure and services both within the project area and the region. The transportation component of the NADP includes improvements for circulation within the Ames Campus, as well as strategies to minimize or mitigate impacts in the regionally- significant local facilities that provide access to ARC. These mitigation strategies include onsite housing and transportation demand management (TDM). The amount of traffic distributed to the study roadways was estimated using the three-step process of trip generation, trip distribution, and trip assignment.

PROJECT TRIP GENERATION SUMMARY

Alternative	Total Daily Trips	Onsite Housing Reduction	TDM Reduction	Total Net Trips
1	5,847	0	263	5,584
2	33,494	4.990	6,059	22,445
3	24,473	3,300	5,178	15,895
4	41,115	6,187	7,348	27,580
5	26,763	7,033	5,364	14,366
Mitigated 5	33,440	13,051	5,425	14,964*

*Note– This is 84 more trips than shown in Table 4.3-5A in the FPEIS, resulting from an error in Table 5.3-3 in the FPEIS. However, this error will not result in any additional traffic or air quality impacts.

The project traffic volumes generated by each alternative were added to the Future Cumulative No Project volumes and the Level of Service (LOS) was recalculated for each location. In addition to LOS, change in critical delay and critical volume-to-capacity (V/C) was derived. Significant impact is then determined using the traffic congestion impact criteria of Mountain View, Sunnyvale, and the Santa Clara Valley Transportation Authority, depending on the location of the intersection.

NUMBER OF INTERSECTIONS WITH SIGNIFICANT IMPACTS

Alternative	Number of Intersections Operating at Unacceptable Levels
1	NA
2	7
3	7
4	10
5	1
Mitigated 5	1

Freeway analysis was conducted for both the highway segments near ARC, and for those segments located farther away and in adjacent counties that would likely serve some project-generated traffic. Commuter trips, which represent approximately 40 to 50 percent of the total net new project vehicle trips depending on the peak hour, were distributed to the regional freeway system based on the projected residences of commuters to the Sunnyvale/Mountain View employment superdistrict published by the MTC. Freeway impacts are identified as significant for those segments where the project implementation would add more than one percent of a segment's capacity, for those segments currently operating at LOS E or F. Project implementation would cause a significant impact on all nearby (within 1 mile) segments of Highways 85, 101, and 237.

PERCENT OF CAPACITY ADDED TO NEARBY FREEWAY SEGMENTS CURRENTLY OPERATING AT LOS E OR F

Alternative	% Added Capacity
1	NA
2	1 – 9.6%
3	1 – 8.3%
4	1 – 11%
5	1 – 7 %
Mitigated 5	1 – 3.4 %

Project-generated commute traffic is expected to exceed one percent of capacity on a number of the 24 external study segments.

EXTERNAL STUDY SEGMENTS

Alternative	Number > 1%
1	NA
2	16
3	16
4	18
5	9
Mitigated 5	3

3. Air

Air quality planning in the Bay Area addresses both the CAA and the Bay Area Clean Air Plan.

a. CAA Requirements

Section 176(c)(1) of the CAA requires Federal agencies to ensure that their actions conform to applicable State Implementation Plans (SIP) for achieving and maintaining the National Ambient Air Quality Standards (NAAQS).

Annual emissions associated with the build out and operations of the NADP are evaluated to determine if the levels would exceed established *de minimus* levels for specific pollutants, and thus, trigger the need for a §176(c)(1) CAA conformity determination. Emissions calculated included direct emissions from any new stationary sources, traffic generated by the project, area source emissions such as natural gas for space and water heating, and construction emissions.

MAXIMUM ANNUAL EMISSIONS: 10-YEAR BUILDOUT IN METRIC TONS PER YEAR (TONS PER YEAR)

Alternative	ROG	NOx	CO
1	NA	NA	NA
2	17 (19)	112 (123)	363 (399)
3	14 (15)	95 (104)	322 (354)
4	21 (23)	136 (149)	439 (482)
5	13 (15)	83 (91)	287 (315)
Mitigated 5 (11-year buildout)	15 (17)	91 (100)	356 (390)
CAA de minimus levels	*91 (100)*	*91 (100)*	*91 (100)*

Note: Alternatives 1-5, assuming a 10-year buildout, and Mitigated Alternative 5, assuming an 11-year buildout, are compared to the CAA *de minimus* levels.

Because the CO emissions would exceed *de minimus* levels of 91 tonnes (100 tons) per year under the CAA, a §176(c)(1) conformity determination was required. An air quality analysis using CO dispersion modeling was conducted. The analysis indicates that predicted CO concentrations would not cause or contribute to new violations of the NAAQS for CO, nor increase the frequency or severity of any existing violation of the CO NAAQS.

By adding housing as mitigation in Alternative 5, assuming a 10-year buildout, the NADP would cause NOx emissions to exceed *de minimus* levels. Assuming an 11-year buildout for Mitigated Alternative 5, the preferred alternative, the NADP emissions levels of NOx would not exceed *de minimus* levels of 91 tonnes (100 tons) per year for NOx. No §176(c)(1) CAA conformity determination was, thus, required for NOx for Mitigated Alternative 5 assuming an 11-year buildout. The rate of project construction will be controlled to keep NOx emissions from exceeding 91 tonnes (100 tons) per year.

Emissions of ROG under Mitigated Alternative 5 would not exceed *de minimus* levels; therefore, no conformity determination was required.

Implementation of Mitigated Alternative 5 will, thus, conform with the BAAQMD SIP for ROG, NOx, and CO, in accordance with the Federal Clean Air Act (CAA).

b. Bay Area Clean Air Plan

Project emissions are also evaluated for consistency with the 2000 Bay Area Clean Air Plan, including State of California thresholds of significance for the region as established by the BAAQMD. Because this alternative would exceed BAAQMD thresholds of significance for ROG, NOx, and PM_{10}, implementation of Mitigated Alternative 5 will result in an unavoidable significant environmental impact, as measured against the 2000 Bay Area Clean Air Plan thresholds.

AIR POLLUTANT EMISSIONS ASSOCIATED WITH PROJECT OPERATION IN KILOGRAMS PER DAY (pounds per day)

Alternative	ROG	NOx	PM_{10}
1	NA	NA	NA
2	35 (77)	135 (299)	65 (144)
3	26 (57)	101 (224)	47 (105)
4	43 (96)	163 (363)	80 (177)
5	25 (56)	104 (230)	47 (101)
Mitigated 5 (11-year buildout)	38 (85)	135 (299)	62 (137)
BAAQMD Thresholds of Significance	36 (80)	36 (80)	36 (80)

Note: Table 4.4-8 in the FPEIS gives the BAAQMD threshold of significance for PM_{10} as 29.8 (80). This is an error in Table 4.4-8. The value shown above is correct.

AIR POLLUTANT EMISSIONS FROM CONSTRUCTION ACTIVITIES IN METRIC TONS PER YEAR (tons per year)

Alternative	ROG	NOx	PM_{10}
1	NA	NA	NA
2	7 (8)	106 (116)	12 (132)
3	6 (7)	91 (100)	73 (88)
4	8 (9)	127 (140)	137 (151)
5	5 (6)	75 (82)	117 (129)
Mitigated 5 (11-year buildout)	5 (6)	80 (88)	127 (140)
BAAQMD Thresholds of Significance	14 (15)	14 (15)	14 (15)

Note: Table 4.4-11 of the FPEIS gives the total annual emissions instead of construction-related emissions for Mitigated Alternative 5. The values shown above are correct.

Environmental Consequences

Fifty-nine significant environmental impacts were identified in the FPEIS. There were seven traffic impacts, seven air quality impacts, three infrastructure impacts, one services impact, two hazardous materials impacts, four geologic impacts, nineteen biological impacts, two noise impacts, six aesthetics impacts, two recreational impacts, three cultural impacts, and three socioeconomic impacts. With the mitigation measures described in the attached Mitigation Implementation and Monitoring Plan (MIMP), these impacts would be reduced to a less than significant level, except for the following six significant unavoidable impacts.

SUMMARY OF SIGNIFICANT UNAVOIDABLE IMPACTS FOR EACH ALTERNATIVE

Impact*	SOCIO-1	CIR-1	CIR-4	CIR-5	AQ-1	BIO-16
Alternative						
1						
2	X	X		X	X	
3	X	X			X	
4	X	X	X	X	X	X
5	X	X			X	
Mitigated 5	X	X			X	

Impacts are summarized as follows:

SOCIO-1: Alternatives 2 through 5, and Mitigated Alternative 5 would generate one percent or more of the new households in the Housing Impact Area between 2000 and 2015, and contribute to the regional jobs/housing imbalance.

CIR-1: Alternatives 2 through 5, and Mitigated Alternative 5 would increase vehicle trips and traffic congestion on segments of Highways 101, 85, and 237 within 1 mile of ARC, as well as on external highway segments. On all nearby segments projected to operate at LOS F, the project would add more than one percent of capacity in at least one direction during the AM and/or PM peak hour. The project is also expected to add more than one percent of capacity to numerous segments outside the immediate vicinity of the project in Santa Clara County, as well as on several segments in adjacent counties.

CIR-4: Alternative 4 would increase vehicle trips and traffic congestion at the following intersections:

Moffett Boulevard/ Highway 101 SB ramps,

Moffett Boulevard/ Highway 101 NB ramps,

Central Expressway/ Mary Avenue.

CIR-5: Alternatives 2 and 4 would increase vehicle trips and traffic congestion at the following intersections:

Moffett Boulevard/ Middlefield Road,

SR 237 EB Ramps/ Mathilda Avenue,

SR 237 WB Ramps/ Mathilda Avenue,

Moffett Park Drive/ Mathilda Avenue.

AIR-1: Alternatives 2 through 5 and Mitigated Alternative 5 would result in population and vehicle use projections that are inconsistent with regional air quality planning and in emissions of air pollutants from automobiles and construction equipment that would exceed significance thresholds established by the BAAQMD in the Bay Area Clean Air Plan.

BIO-16: Alternative 4 would result in the loss of approximately 11 hectares (27 acres) of burrowing owl habitat in the Bay View area.

C. Assessment of the Analysis

The major findings drawn from the analysis of environmental consequences are that implementation of Mitigated Alternative 5, the preferred alternative and the environmentally preferred alternative, despite implementation of all reasonable mitigation measures as described

in the attached MIMP, will result in significant, unavoidable impacts to the regional housing supply, freeway traffic congestion, and regional air quality.

Choice of Alternative

Mitigated Alternative 5, the preferred alternative and environmentally preferred alternative, has been identified as the option that best meets NASA's purpose and need and has the lowest significant environmental impact.

D. Additional Information

Other environmental review requirements addressed in the FPEIS include:

Biological Assessment

A Biological Assessment (BA) was prepared to review the NADP development in sufficient detail to determine whether the proposed action may affect any of the threatened, endangered, proposed or candidate species listed with the United States Fish and Wildlife Service (USFWS). The BA was prepared in accordance with the legal requirements set forth under §7 of the Endangered Species Act. The BA concluded that based on the impact analysis and proposed mitigation measures the proposed NADP is not likely to adversely affect or jeopardize any threatened or endangered species, including the salt marsh harvest mouse (*Reithrodontomys raviventris raviventris*), California clapper rail (*Rallus longirostris obsoletus*), California least tern (*Sterna antillarum browni*), western snowy plover

(*Charadrius alexandrinus nivosus*), and California brown pelican (*Pelecanus occidentalis*). All mitigation measures requested by the USFWS have been incorporated into the BA, and have been added as mitigation measures in the FPEIS, and the MIMP. Based upon NASA's incorporation of these mitigation measures into the BA the FPEIS, and the MIMP, USFWS issued its determination that the NADP is not likely to adversely affect the salt marsh harvest mouse, California clapper rail, California least tern, California brown pelican, or western snowy plover.

Burrowing Owl Habitat Management Plan

The Burrowing Owl Habitat Management Plan was prepared to evaluate the potential impacts to burrowing owls (*Athene cunicularia hypugea*), a State species of special concern, due to development under the NADP. The report also describes mitigation measures to avoid these potential impacts. The report concludes that, with implementation of the described mitigation measures, none of the proposed development will significantly impact the burrowing owl population at NASA ARC.

General Conformity Determination

Section 176(c)(1) of the CAA requires Federal agencies to assure that their actions conform to applicable plans for achieving and maintaining the NAAQSs. NASA has completed a General Conformity Determination that concluded that implementation of the Proposed Action (Mitigated Alternative 5) will conform to the BAAQMD SIP for CO, that is, the Bay Area Redesignation Request and Maintenance Plan for the National Carbon Monoxide Standard, approved by the EPA on June 1, 1998.

Coastal Zone Management Act/ BCDC Consistency Determination.

The CZMA of 1972 addresses actions affecting coastal zones and requires that Federal actions be consistent with State coastal zone management plans. Under §307 of the CZMA, Federal actions must be consistent with local coastal zone management programs. In California, these programs generally include the California Coastal Act and Local Coastal Plans. In the case of NASA ARC, the operative coastal zone management program is administered by the San Francisco Bay Conservation and Development Commission (BCDC). BCDC concurred with NASA's consistency determination on July 18, 2002.

NASA Floodplain and Wetlands Analyses and E.O. 11988, Floodplain Management Determination

NASA is limited in where it can locate housing for a number of reasons, including proximity to potentially contaminated sites, noise sources, and other incompatible uses, and thus has chosen Bay View, which is located within the 100 year floodplain, as the most appropriate location for housing, in addition to the housing that will be built in the NRP area. Title 14 CFR, Subpart 1216.2 of NASA's regulations requires that projects affecting floodplains or wetlands be evaluated relative to potential harm to lives and property, the natural and beneficial values of floodplains and wetlands, and the cumulative impacts and multiple actions over the long term.

NASA has completed a floodplain analysis evaluation, which considered the positive and negative impacts (beneficial and harmful), concentrated and dispersed impacts (impacts on site, near site, and remote from site) and short- and long-term impacts (including temporary changes and those that take the form of delayed changes resulting from the cumulative effects of many individual actions). Approximately 22 acres will be filled to bring the finished elevation above the 100-year flood level. Thus there will be no adverse effect on health and safety. The remaining 73 acres of Bay View will remain at its current elevation and will be used as recreation, open space, and burrowing owl habitat. Under E.O. 11988, Floodplain Management, NASA has determined that no practical alternative is available to filling the 22 acres.

To ensure adequate evaluation of impacts to wetlands, NASA included a United States Army Corps of Engineers (Corps) Wetland Delineation report for the Bay View Parcel. Based on the wetlands delineation for the Bay View Parcel, the Bay View boundary was redrawn to exclude wetlands. Based on the revised boundary of Bay View in Mitigated Alternative 5 in the FPEIS, no wetlands will be developed, and therefore a §404 Clean Water Act permit should not be required from the Corps. However, the Corps will be consulted prior to completing any final development plans and starting any construction. A 200-foot buffer zone will be maintained between the residential and recreational areas, and the jurisdictional wetlands. Thus, there will be no adverse effect on wetland values.

Historic Resources Protection Plan

In accordance with Advisory Council on Historic Preservation (ACHP) regulations (36 CFR part 800) for implementing §106 of the National Historic Preservation Act. NASA must consult with the

California SHPO to mitigate potential adverse effects of its undertakings that may affect a property listed on or eligible for listing on the National Register of Historic Places. NASA has prepared a Historic Resources Protection Plan (HRPP) that provides for the protection and treatment of historic properties by establishing guidelines for new construction within the Shenandoah Plaza Historic District. The HRPP includes guidelines for repair, maintenance, rehabilitation, alteration, reuse and leasing of historic resources within the district. These guidelines have been developed to mitigate adverse effects on historic properties. Following review and comment by SHPO, NASA has incorporated the SHPO's comments and forwarded the signature ready copy of the Programmatic Agreement Among NASA ARC, the ACHP, and the California SHPO regarding Implementation of a Historic Resources Protection Plan for Shenandoah Plaza Historic District and for the Remainder of NASA Research Park Moffett Field, California (PA), on September 16, 2002. The SHPO has signed the PA and returned it to NASA for signature and forwarding to the ACHP for signature. In signing the PA with the California SHPO and the ACHP, NASA will commit to implementing the HRPP. NASA will not take any actions that could affect historic properties, until §106 requirements have been met. A copy of the PA will be attached to this ROD, after final signature.

A copy of the letter to the City of Mountain View in response to their comments on the FPEIS is attached.

E. Mitigation

NASA commits to implementing and monitoring the mitigation measures as described in the attached MIMP and the PA.

Decision

Based upon the NADP FPEIS, the §106 PA, the MIMP, and other information summarized in above actions, I have decided that NASA has committed to appropriate environmental mitigation measures in developing the NADP. Therefore, I have decided that NASA will implement Mitigated Alternative 5 of the NADP.

J F Creedon 11/20/02

J. F. Creedon **Date**
Associate Administrator, Aerospace Technology
Attachments: Mitigation Implementation and Monitoring Plan
Response to City of Mountain View comments
USFWS Determination Letter, October 15, 2002
To be attached: Signed PA