

**Environmental Assessment for the Construction and
Operation of an Armed Forces Reserve Center Complex at
Moffett Field, California**



Prepared for:

Combat Support Training Center

Prepared by:

US Army Corps of Engineers

Mobile District

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San Francisco, California

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ENVIRONMENTAL ASSESSMENT ORGANIZATION

This environmental assessment (EA) addresses the proposed action to implement the BRAC recommendations at Moffett Field, California. The EA has been developed in accordance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (40 CFR Parts 1500 – 1508) and the Army (32 CFR Part 651). Its purpose is to inform decision-makers and the public of the likely environmental and socioeconomic consequences of the proposed action and alternatives.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, and the other proposed alternatives, environmental and socioeconomic impacts, and any mitigation measures.

SECTION 1.0: PURPOSE, NEED, AND SCOPE summarizes the purpose of and need for the proposed action and describes the scope of the environmental impact analysis process.

SECTION 2.0: DESCRIPTION OF THE PROPOSED ACTION describes the proposed action to implement the BRAC's action at Moffett Field, California.

SECTION 3.0: ALTERNATIVES examines alternatives for implementing the proposed action.

SECTION 4.0: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES describes the existing environmental conditions that could be affected by the proposed action and identifies potential environmental effects that could occur if the alternatives were implemented.

SECTION 5.0: CONCLUSIONS summarizes the resulting environmental effects.

SECTION 6.0: LIST OF PREPARERS identifies persons who prepared this EA.

SECTION 7.0: DISTRIBUTION LIST identifies recipients of this EA.

SECTION 8.0: REFERENCES provides the bibliographical information for cited sources of information.

SECTION 9.0: AGENCIES AND INDIVIDUALS CONSULTED provides a listing of persons and agencies consulted during the preparation of this EA.

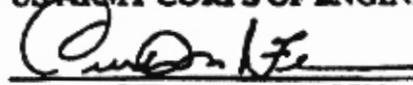
SECTION 10.0: ACRONYMS AND ABBREVIATIONS provides a list of acronyms and abbreviations used in this EA.

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**ENVIRONMENTAL ASSESSMENT
CONSTRUCTION AND OPERATION OF AN ARMED RESERVE FORCES
CENTER
COMPLEX AT MOFFETT FIELD, CALIFORNIA**

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ENVIRONMENTAL ASSESSMENT

LEAD AGENCY: US Army, Combat Support Training Center

TITLE OF PROPOSED ACTION: Construction and Operation of an Armed Forces Reserve Center Complex at Moffett Field, California

AFFECTED JURISDICTIONS: The city of Mountain View and the county of Santa Clara

PREPARED BY: Curtis M. Flakes, Chief, Planning and Environmental Division, US Army Corps of Engineers, Mobile District

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ABSTRACT: This environmental assessment (EA) considers the proposed implementation of the Army's BRAC recommendations at Moffett Field, California. This report identifies, evaluates, and documents the effects of demolishing 346,876 square feet that would include all the housing units and other existing facilities on the 30-acre project site, and constructing 270,000 square feet that would include an Armed Forces Reserve Center AFRC, a center for the Southwest Regional Readiness Sustainment Command, an organizational maintenance shop, two storage buildings, and a fitness center. Approximately 413 full-time employees would staff the facilities at the project site. The facilities would support a total of 1,500 Soldiers for weekend classroom and administrative training, of which up to 735 would train on a peak training weekend. Demolition and construction activities would take approximately 30 months.

A no action alternative is also evaluated. Implementing the proposed action is not expected to result in significant environmental impacts, so an environmental impact statement is not required and a finding of no significant impact (FNSI) would be published, in accordance with Army's National Environmental Policy Act regulations.

REVIEW COMMENT DEADLINE: The EA and draft FNSI were made available for review and comment for 30 days, from July 13, 2007, through August 12, 2007. Comments on the EA were received from the US Environmental Protection Agency, National Aeronautic and Space Administration, California Regional Water Quality Control Board (San Francisco Bay Region), the City of Mountain View, Center for Public Environmental Oversight, and Bob Moss, a member of the Moffett Field restoration advisory board. The text of the EA was revised in response to these comments.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

The BRAC Commission recommended the closure in California of three United States Army Reserve Centers (USARC) in Moffett Field, San Jose, and Mountain View, and relocating the units to a new Armed Forces Reserve Center (AFRC) with an organizational maintenance shop (OMS) on Army Reserve property at Moffett Field. The BRAC recommendation included the disestablishment of the 63rd Regional Readiness Command Headquarters, Robinson Hall, USARC and activation of the Southwest Regional Readiness Sustainment Command (RRSC) Headquarters, in a new AFRC, at Moffett Field. The Moffett Field facilities would also have the capability to support California Army National Guard units. This environmental assessment (EA) identifies and analyzes the environmental effects associated with the Army's proposed action at Moffett Field.

BACKGROUND

The project site, of approximately 30 acres, is at the north corner of a 76.6-acre parcel in the Moffett Field US Army Reserve Complex (part of the former Naval Air Station Moffett Field), in northern Santa Clara County, near the southwest shoreline of San Francisco Bay. The project site is managed by the US Army Combat Support Training Center.

The project site is composed of the residential neighborhood Orion Park and temporary facilities for the Family Child Care Program Onizuka Air Force Station. Two other neighborhoods, Macon Terrace II and Macon Terrace III, are to the south of the project site. Under the Army Residential Communities Initiative (RCI) program, the Army constructed and renovated 190 military housing units in the Wescoat area, approximately 1,350 feet to the southeast of the project site. Residential units at the project site and the two other neighborhoods have been vacant since August 2006. The Army prepared an EA to analyze the impacts of the RCI and signed a Finding of No Significant Impact on August 29, 2003.

PROPOSED ACTION AND ALTERNATIVES

Proposed Action

Under the proposed action, the Army proposes to demolish 346,876 square feet of housing and facilities. Demolition would proceed in accordance with federal, state, and local regulations.

The Army would construct 270,000 square feet of facilities, which would include an AFRC, a center for the Southwest RRSC, an OMS, two storage buildings, and a fitness center. The 103,500-square-foot AFRC and the 69,500-square-foot Southwest RRSC facility would provide training facilities that would include administrative, educational, assembly, library, and learning facilities. The AFRC also would contain a weapons simulator, a vault, and physical fitness areas. The 25,000-square-foot OMS would provide work bays and maintenance and administrative support. Additionally, the proposed project would include a 51,000-square-foot storage building and a 15,000-square-foot unheated storage building for military equipment. The proposed construction also would include a 15,100-square-yard military-equipment parking lot around the OMS and two parking lots near the AFRC and RRSC. The two parking lots and the military-equipment parking lot would be paved with asphalt.

Approximately 413 full-time employees would staff the facilities at the project site. The facilities would support 1,500 Soldiers for weekend classroom and administrative training, up to 735 of which would train on a peak training weekend.

On weekdays, the full-time employees at the project site would generate an estimated 826 personal vehicle trips per day. On weekends, the AFRC and the Southwest RRSC facility would generate up to an estimated 2,000 personal vehicle trips on Saturday and 2,000 personal vehicle trips on Sunday.¹ Training activities conducted at the AFRC complex would typically include physical training and classroom lectures.

The OMS would service approximately 20 military vehicles each month. No fueling activities would be conducted as part of OMS operations.

Demolition and construction activities would take approximately 30 months, beginning as early as June 2008.

To protect environmental resources present at the project site, measures that the Army would undertake as part of the proposed action address worker protection, vapor intrusion control, dust control, protection of cultural resources, pollution prevention, protection of steelhead trout, burrowing owl and other migratory birds, noise protection, tree protection, traffic control, monitoring wells, and wastewater collection. Additional mitigation measures were identified to reduce adverse impacts for indoor noise and indoor air quality.

No Action Alternative

The Council on Environmental Quality's regulations requires inclusion of the no action alternative, which serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated. Under the no action alternative, no activities to support unit realignment would be conducted at Moffett Field. The no action alternative would not meet Congressional BRAC mandate.

ENVIRONMENTAL CONSEQUENCES

The environmental effects of the proposed action and the No Action Alternative are summarized in Table ES-1. There would be no effect from the proposed action on land use, geology, mineral resources, prime farmland, groundwater, quality of life, environmental justice, communications, or from polychlorinated biphenyls, or radon.

CONCLUSION

Based on the analysis performed in this EA, implementing the proposed action would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment. An environmental impact statement need not be prepared, and a finding of no significant impact can be issued.

¹Estimated vehicle trips during the weekdays is the assumed number of trips generated by the employees at the project site. Estimated number of vehicle trips during the weekend reflects the maximum number of trips by the reservists.

**Table ES-1
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
Land Use	No effects	No effects	None identified	None identified
Aesthetic and Visual Resources	Long-term minor adverse and beneficial	Long-term minor adverse	<ul style="list-style-type: none"> Where feasible, the Army would avoid removing mature trees that have a main trunk or stem measuring 37.7 inches or greater in circumference at a height of 4.5 feet above ground level. Mature trees not removed would be protectively fenced to prevent activities that result in soil compaction over the root zone. As part of the landscaping plan, the Army would replace mature trees with two-inch to three-inch-diameter trees for each four inches of tree diameter removed. 	None identified
Air Quality	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> Provide dust suppression measures during demolition and construction activities to assure that dust, debris, materials, and trash do not become airborne and travel off the project site. 	None identified

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
Noise	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> Implement OSHA² requirement on noise and hearing conservation during the demolition and construction activities. Coordinate with NASA³ to address outdoor noise during wind tunnel testing periods. 	Use design and construction techniques to achieve noise level reduction of 25 dB ⁴ inside structures constructed in area subject to noise levels of 70 to 75 dB. For structures constructed in area subject to noise levels above 75 dB use construction and design techniques to achieve an indoor noise level reduction of 30 dB.
Geology and Soils				
• Geology	No effects	No effects	None identified	None identified
• Seismicity	Long-term minor adverse	Long-term minor adverse	None identified	None identified
• Mineral resources	No effects	No effects	None identified	None identified
• Soils	Short-term minor adverse	No effects	<ul style="list-style-type: none"> Prepare a Stormwater Pollution Prevention Plan (SWPPP) Implement best management practices, such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm sewer inlets, vegetation restoration in disturbed areas, and street sweeping. A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or 	None identified

²OSHA: Occupational Safety and Health Administration

⁴NASA: National Aeronautic and Space Administration

⁴ dB: Noise is measured in decibels.

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			groundwater that may be encountered during construction, excavation, or trenching activities	
• Prime farmland	No effects	No effects	None identified	None identified
Water Resources				
• Surface water	Short-term minor adverse	No effects	<ul style="list-style-type: none"> • Prepare an SWPPP. • Implement best management practices, such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm sewer inlets, vegetation restoration in disturbed areas, and street sweeping. 	None identified
• Groundwater	No effects	No effects	<ul style="list-style-type: none"> • Prevent groundwater use at the property • A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or groundwater that may be encountered during construction excavation or trenching activities. 	None identified
Biological Resources	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> • To protect steelhead trout, prepare an SWPPP, maintain a 75-foot buffer zone between construction and Stevens Creek, revegetate with native species, and use fences or other barriers during construction and demolition. • To protect burrowing owls conduct preconstruction surveys no more than one month prior to the beginning of any ground 	None identified

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			<p>disturbance, in accordance with CDFG⁵ and CBOC⁶ guidelines.</p> <ul style="list-style-type: none"> • Implement CDFG and CBOC avoidance and mitigation measures. • To protect nesting migratory birds tree removal would be timed to avoid the bird breeding season (February through July) and trees would be replaced as part of the landscaping plan. • If demolition would occur during nesting, buildings would be surveyed by a biologist, and nests would be removed from buildings prior to egg-laying. 	
Cultural Resources				
• Archaeological Resources	No effects	No effects	<p>Before starting the project, the Army would brief the construction staff on procedures for handling the discovery of archaeological resources. Should evidence of archaeological resources be found, staff would immediately notify the US Army CSTC Cultural Resources Office at Fort Hunter Liggett and would suspend excavation or other activities that could damage such resources. An archaeologist would assess the potential significance of the find and would recommend measures to minimize potential effects on archaeological resources, including consultations with the California State</p>	None identified
• Native American Resources	No effects	No effects		
• Architectural Resources	No effects	No effects		

⁵ CDFG: California Department of Fish and Game.

⁶ CBOC: California Burrowing Owl Consortium.

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			Historic Preservation Office, as needed. If human remains were encountered, the Army would comply with the requirements of the Native American Graves Protection and Repatriation Act.	
Socioeconomics				
• Regional Economic Activity	Long-term minor beneficial	No effects	None identified	None identified
• Demographics	Long-term minor adverse	No effects		
• Housing	Long-term minor adverse	No effects		
• Quality of life	No effects	No Effects		
• Environmental justice	No effects	No effects		
• Protection of children	Long-term beneficial and short-term minor adverse	No effects		

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
Transportation	Short-term and long-term adverse	No effects	<ul style="list-style-type: none"> • Implement a Transportation Demand Management program to reduce vehicle trip generation along R. T. Jones Road, Moffett Boulevard, Highway 101, and State Route 85. • To reduce the weekday and weekend intersection impacts, the Army would implement the following improvements: <ul style="list-style-type: none"> - Provide manual control⁷ at the intersection of R. T. Jones Road and Moffett Boulevard to facilitate the movement of project traffic by avoiding the existing stop control sign and reducing the queues, particularly on R. T. Jones Road during the evenings on peak training weekends. - Stagger work hours⁸ to shift traffic from the evening peak hour and reduce that traffic to fewer than 335 vehicles during the weekday and weekend evening peak hour. 	None identified
Utilities				
• Potable water supply	Long-term beneficial	No effects	Design the connection to the water distribution system to include the necessary backflow preventing devices.	None identified
• Wastewater Collection	Long-term beneficial	No effects	Provide design or conforming documentation of the wastewater system to the City of Mountain View to	None identified

⁷ Manual control is governed by a flagperson who would replace the stop-sign control and facilitate the flow of traffic from and into the project site.

⁸This strategy can help reduce peak period traffic at the worksite by staggering the times when employees arrive and leave work so they do not all access the site at the same time.

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			verify that flows are within the approved values and that the existing system is capable of conveying and treating the additional flows from the proposed project.	
• Stormwater	Long-term minor adverse	No effects	Prepare an SWPPP.	None identified
• Energy	Long-term beneficial	No effects	None identified	None identified
• Communications	No effects	No effects	None identified	None identified
• Solid waste	Short-term minor adverse	No effects	None identified	None identified
Hazardous and Toxic Substances				
• Petroleum, Oils, and Lubricants	Long-term minor adverse	No effects	Implement a spill control plan	None identified
• Site contamination and cleanup	Short-term minor adverse	No effects	<ul style="list-style-type: none"> All personnel involved in soil-disturbing activities would be required to take OSHA training in handling hazardous materials and wastes. Implement institutional controls, including restrictions prohibiting residential use of the property; prevent groundwater use at the property; A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or groundwater that may be encountered during construction excavation or trenching activities. 	<ul style="list-style-type: none"> Vapor intrusion barriers and active ventilation systems in new building system construction; Long-term monitoring of potential vapor intrusion into the indoor air of new buildings constructed on the property; and Building Operations and Maintenance (O&M) programs which include routine inspection of building vapor control systems.
• Asbestos	Short-term minor adverse	No effects	All potentially affected workers would be notified of any potential health hazards so that proper safety measures could be used. Demolition would be conducted only by personnel trained and certified by OSHA to	None identified

Table ES-1 (Continued)
Summary of Environmental Effects

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			handle and properly dispose of these materials.	
• PCBs	No effects	No effects	None identified	None identified
• Contamination from lead	Short-term minor adverse	No effects	All potentially affected workers would be notified of any potential health hazards so that proper safety measures could be employed. Demolition activities would be conducted only by personnel trained and certified by OSHA to handle and properly dispose of these materials.	None identified
• Pesticides	Long-term minor adverse	No effects	None identified	None identified
• Radon	No effects	No effects	None identified	None identified
• Waste Disposal	Long-term minor adverse	No effects	None identified	None identified

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SECTION 1.0
PURPOSE, NEED, AND SCOPE

SECTION 1.0 PURPOSE, NEED, AND SCOPE

1.1 INTRODUCTION

On September 8, 2005, the Defense Base Closure and Realignment Commission (BRAC Commission) recommended that realignment actions occur at Moffett Field, California. These recommendations were approved by the President on September 23, 2005, and were forwarded to Congress. The Congress did not alter any of the BRAC Commission's recommendations, and on November 9, 2005, the recommendations became law. The BRAC Commission recommendations must now be implemented as provided for in the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as amended.

The BRAC Commission recommended the closure in California of the United States Army Reserve Center (USARC) at Moffett Field, the George Richey USARC, San Jose, and the Jones Hall USARC, Mountain View. The BRAC Commission recommended relocating the units to a new Armed Forces Reserve Center (AFRC) with an organizational maintenance shop (OMS) on Army Reserve property at Moffett Field. The BRAC recommendation included the disestablishment of the 63D Regional Readiness Command (RRC) Headquarters, Robinson Hall, USARC and activation of the Southwest Regional Readiness Sustainment Command (RRSC) Headquarters, in a new AFRC, at Moffett Field. The Moffett Field facilities would also have the capability to support four Army National Guard units. This environmental assessment (EA) identifies and analyzes the environmental effects associated with the Army's proposed action at Moffett Field. Details on the proposed action are set forth at Section 2.2.

1.2 PURPOSE AND NEED

The purpose of the proposed action is to implement the BRAC Commission's recommendation pertaining to Moffett Field and to support the mission requirements of current and future tenants with long-term planning actions for optimum use of the resources at the project site.

The need for the proposed action is to enhance military value, to improve homeland defense capability, to greatly improve training and deployment capability, to create significant efficiencies and cost savings, and to be consistent with the Army's force structure plans and transformation objectives. The Army is legally bound to defend the United States and its territories, to support national policies and objectives, and to defeat nations responsible for aggression that endangers the peace and security of the United States. To carry out these tasks, the Army must adapt to changing world conditions and must improve its capabilities to respond to a variety of circumstances across the full spectrum of military operations. The following is a discussion of two major initiatives that contribute to the Army's need for the proposed action.

1.2.1 Base Realignment and Closure

In previous rounds of BRAC, the explicit goal was to save money and downsize the military in order to reap a "peace dividend." In the 2005 BRAC round, the Department of Defense sought to

reorganize its installation infrastructure to most efficiently support its forces, increase operational readiness and facilitate new ways of doing business. Thus, BRAC represents more than cost savings. It supports advancing the goals of transformation, improving military capabilities, and enhancing military value. The Army needs to carry out the BRAC recommendations at Moffett Field in order to achieve the objectives for which Congress established the BRAC process.

1.2.2 Installation Sustainability

On October 1, 2004, the Secretary of the Army and the Chief of Staff issued *The Army Strategy for the Environment*, which focuses on the interrelationships of mission, environment, and community. A sustainable installation simultaneously meets current and future mission requirements, safeguards human health, improves quality of life, and enhances the natural environment. A sustained natural environment is necessary to allow the Army to train and maintain military readiness.

1.3 SCOPE

The 1990 Defense Base Closure and Realignment Act specifies that the National Environmental Policy Act (NEPA) does not apply to actions of the President, the Commission, or the Department of Defense, except “(i) during the process of property disposal, and (ii) during the process of relocating functions from a military installation being closed or realigned to another military installation after the receiving installation has been selected but before the functions are relocated” (Section 2905[c][2][A], Public Law 101-510, as amended). The law further specifies that in applying the provisions of NEPA to the process, the Secretary of Defense and the secretaries of the military departments concerned do not have to consider “(i) the need for closing or realigning the military installation which has been recommended for closure or realignment by the Commission, (ii) the need for transferring functions to any military installation which has been selected as the receiving installation, or (iii) military installations alternative to those recommended or selected” (Section 2905[c][2][B]). Because the BRAC Commission’s deliberation and decision, as well as the need for closing or realigning a military installation, are exempt from NEPA, this EA does not address the need for realignment. Because NEPA does apply to the activities proposed to support unit realignment, the Army is addressing those actions in this document. Therefore, the scope of this NEPA analysis is limited to the demolition, construction, and operations activities at Moffett Field. In keeping with the BRAC direction, the facilities at Moffett Field are being designed with capacity to accommodate California Army National Guard units. Operations of the California Army National Guard are included in the proposed action and alternatives and would be consistent with the proposed operations of the AFRC and RRSC. However, because relocation of those units was not directed by the BRAC decision, it is not included in the proposed action and alternatives evaluated in this EA. Should relocation be proposed, the California Army National Guard would prepare the appropriate level of NEPA environmental impact analysis.

Under the Residential Communities Initiative (RCI) program, the Army constructed and renovated 190 military housing units in the Wescoat area, approximately 1,350 feet to the southeast of the project site. Residential units at the project site have been vacant since August

2006. The Army prepared an EA to analyze the impacts of the RCI, and a finding of no significant impact (FNSI) was signed on August 29, 2003.

1.4 PUBLIC INVOLVEMENT

The Army invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision making process.

Public participation opportunities with respect to this EA and decision making on the proposed action are guided by 32 CFR Part 651. On its completion, the EA is made available to the public for 30 days, along with a draft FNSI. At the end of the 30-day public review period, the Army considers any comments submitted by individuals, agencies, or organizations on the proposed action, the EA, or the draft FNSI. As appropriate, the Army may then execute the FNSI and proceed with implementing the proposed action. If, before a final FNSI is issued, the Army determines that implementing the proposed action would result in significant impacts, it publishes in the *Federal Register* a notice of intent to prepare an environmental impact statement.

Comments on the EA were received from the US Environmental Protection Agency, National Aeronautic and Space Administration, California Regional Water Quality Control Board (San Francisco Bay Region), the City of Mountain View, Center for Public Environmental Oversight, and Bob Moss, a member of the Moffett Field restoration advisory board. Copies of the comment letters and the Army's responses are provided in Appendix E. The text of the EA was revised in response to these comments.

Throughout this process, the public may obtain information on the status and progress of the proposed action and the EA by contacting Mr. Gary Houston at (831) 386-2763 or at public.comment@liggett-emh1.army.mil.

1.5 IMPACT ANALYSIS PERFORMED

This EA has been developed in accordance with NEPA and its implementing regulations, issued by the President's Council on Environmental Quality and the Army.¹ Its purpose is to inform decision makers and the public of the likely environmental consequences of the proposed action and alternatives.

¹ Council on Environmental Quality *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*, 40 *Code of Federal Regulations* (CFR) Parts 1500-1508, and the *Army NEPA Regulations*, 32 CFR Part 651.

An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, archaeologists, historians, and military technicians has analyzed the proposed action and alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the action. The proposed action that includes the demolition, construction, and operation activities, as well as the protection measures, is described in Section 2.0, and alternatives, including the No Action Alternative, are described in Section 3.0. Conditions existing as of November 2005, considered to be the baseline conditions, are described in Section 4.0, Affected Environment and Environmental Consequences. The expected effects of the proposed action, also described in Section 4.0, are presented immediately following the description of baseline conditions for each environmental resource addressed in the EA. Section 4.0 also addresses the potential for cumulative effects, and mitigation measures are identified where appropriate.

1.6 FRAMEWORK FOR DECISION MAKING

A decision on whether to proceed with the proposed action rests on numerous factors, such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, Moffett Field is guided by relevant statutes and their implementing regulations and by executive orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. These include the Clean Air Act (CAA), Clean Water Act, Noise Control Act, Endangered Species Act (ESA), National Historic Preservation Act (NHPA), Archaeological Resources Protection Act, Resource Conservation and Recovery Act, and Toxic Substances Control Act. EOs bearing on the proposed action include EO 11988 (Floodplain Management), EO 11990 (Protection of Wetlands), EO 12088 (Federal Compliance with Pollution Control Standards), EO 12580 (Superfund Implementation), EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), EO 13045 (Protection of Children from Environmental Health Risks and Safety Risks), EO 13101 (Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition), EO 13123 (Greening the Government Through Efficient Energy Management), EO 13148 (Greening the Government Through Leadership in Environmental Management), EO 13175 (Consultation and Coordination with Indian Tribal Governments), and EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds). These authorities are addressed in various sections throughout this EA when relevant to particular environmental resources and conditions. The full text of the laws, regulations, and EOs is available on the Defense Environmental Network & Information Exchange Web site at <http://www.denix.osd.mil>.

SECTION 2.0
PROPOSED ACTION

SECTION 2.0

DESCRIPTION OF THE PROPOSED ACTION

2.1 INTRODUCTION

This section describes the Army's preferred alternative for carrying out the BRAC Commission's recommendations.

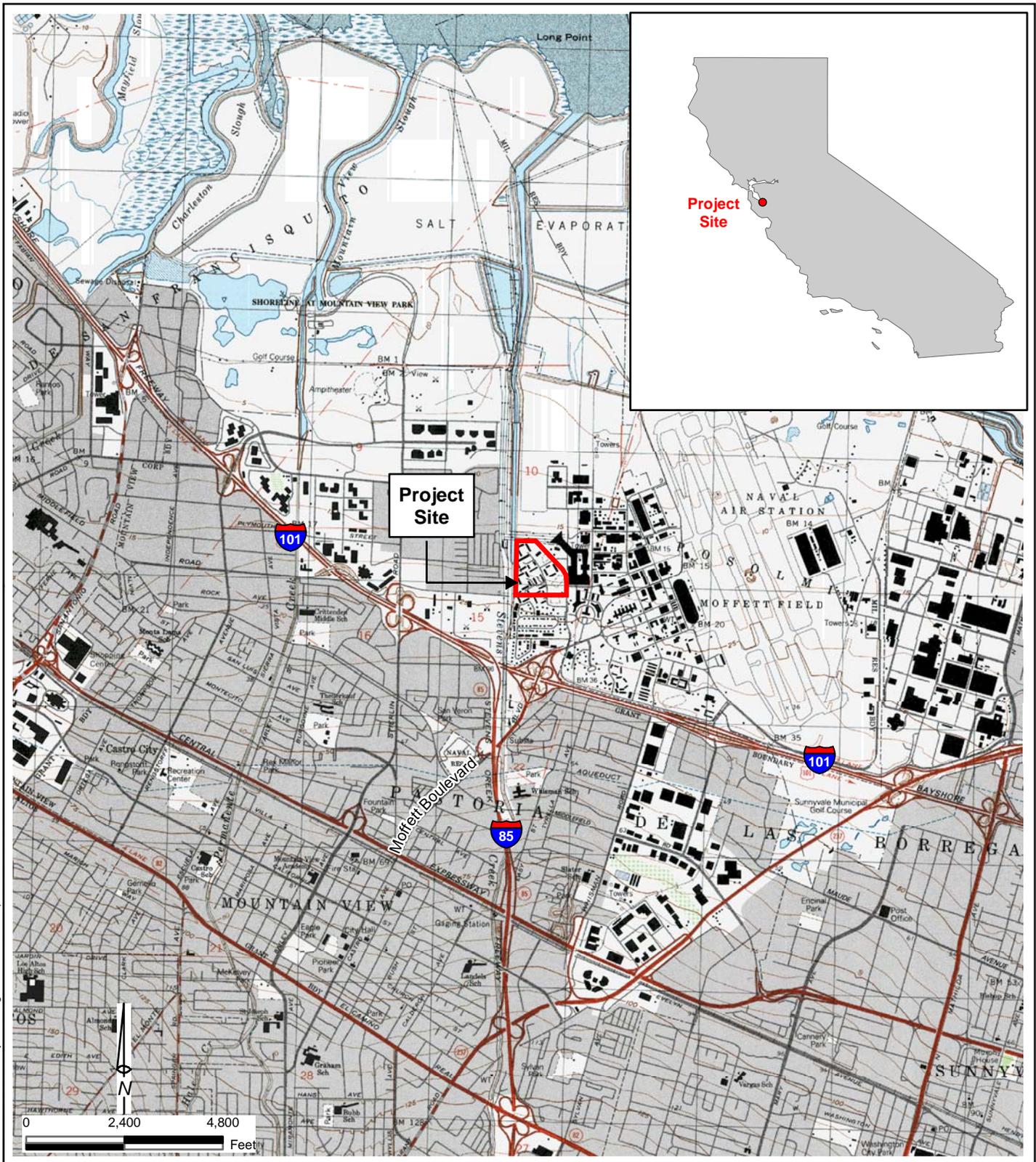
The BRAC Commission made the following recommendation concerning Moffett Field:

“Close the United States Army Reserve Center, Moffett Field, California, the George Richey United States Army Reserve Center, San Jose, California, and the Jones Hall United States Army Reserve Center, Mountain View, California, and relocate units to a new Armed Forces Reserve Center with an Organizational Maintenance Shop on existing Army Reserve property on Moffett Field, California. The new AFRC shall have the capability to accommodate California National Guard Units from the following California ARNG Readiness Centers: Sunnyvale, California, San Lorenzo, California, Redwood City, California, and the Organizational Maintenance Shop, San Jose, California, if the state decides to relocate those National Guard units.

“Realign the Joint Force Training Base Los Alamitos, [California] by disestablishing the 63D Regional Readiness Command (RRC) Headquarters, Robinson Hall, USARC and activating a Southwest Regional Readiness Command Headquarters at Moffett Field, CA in a new AFRC.”

The approximately 30-acre project site is on the north side of a 76.6-acre parcel in the Moffett Field US Army Reserve (USAR) Complex. As part of the former Naval Air Station (NAS) Moffett Field, the site is in northern Santa Clara County, near the southwest shoreline of San Francisco Bay (Figures 2-1 and 2-2). The project site is managed by the US Army Combat Support Training Center (CSTC).

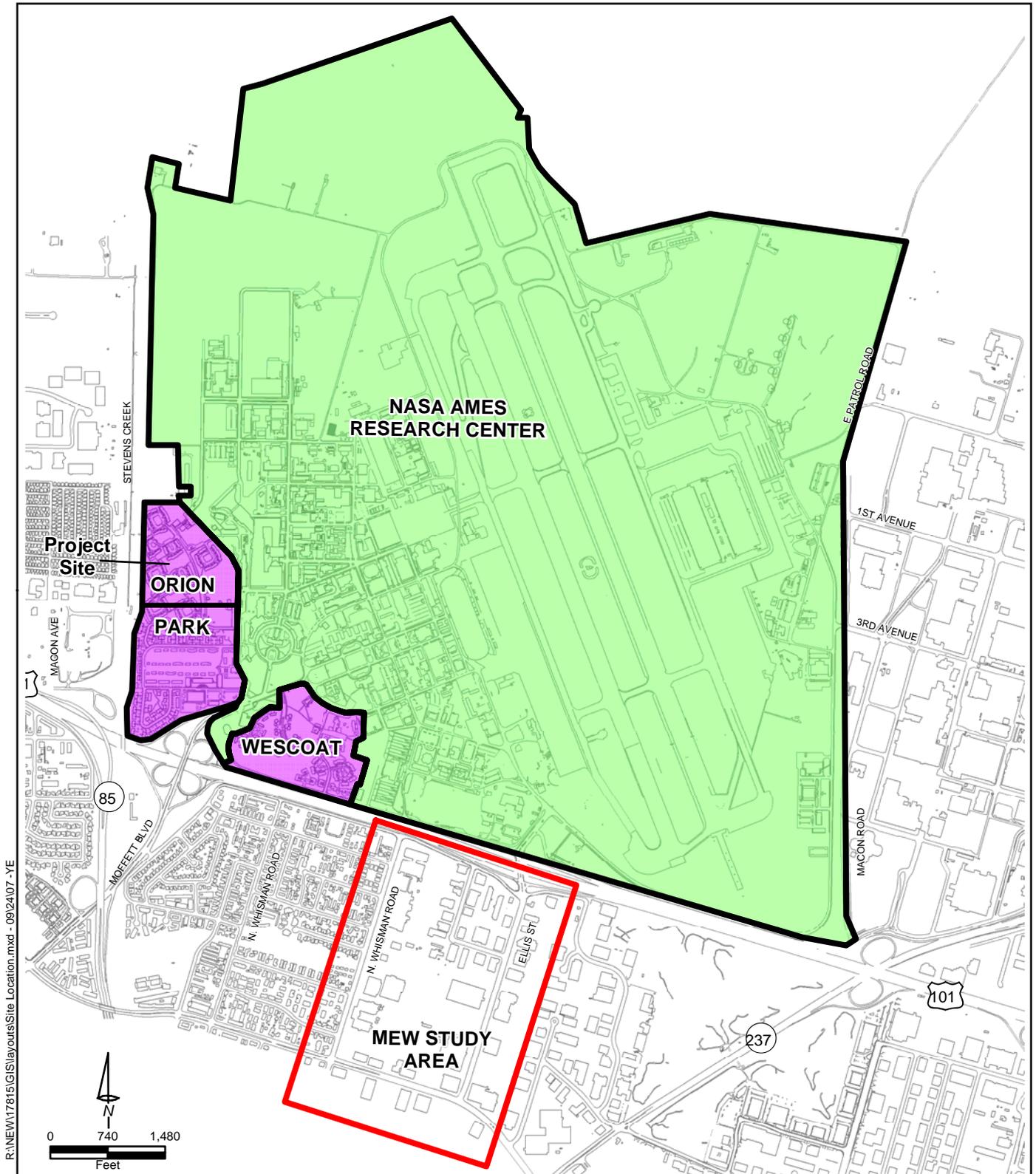
The project site is composed of the vacant residential neighborhood Orion Park and temporary facilities for the Family Child Care Program Onizuka Air Force Station (Figure 2-3). Two other vacant neighborhoods, Macon Terrace II and Macon Terrace III, are to the south of the project site. Also to the south, at the southeast corner of the 76.6-acre parcel, are the Military Entrance Processing Station (MEPS), the California Air National Guard (CANG) 129th Rescue Wing (RQW) Medical Training, the Navy Lodge, and the Navy Exchange (shoppette). Under the RCI program, replacement housing is built elsewhere on the Moffett Field USAR Complex (USACE 2005). The USAR Complex parcel is adjacent to the city of Mountain View to the southwest and is just northwest of the city of Sunnyvale. The US Highway 101 (Highway 101) and California State Route 85 (State Route 85) interchange forms the southern border of the complex. The National Aeronautic and Space Administration (NASA) complex, which includes the NASA Ames Research Center and the former Naval Air Station Moffett Field at NASA Ames Research Center, is to the north and east of the project site.



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Regional Location

Moffett Field, California

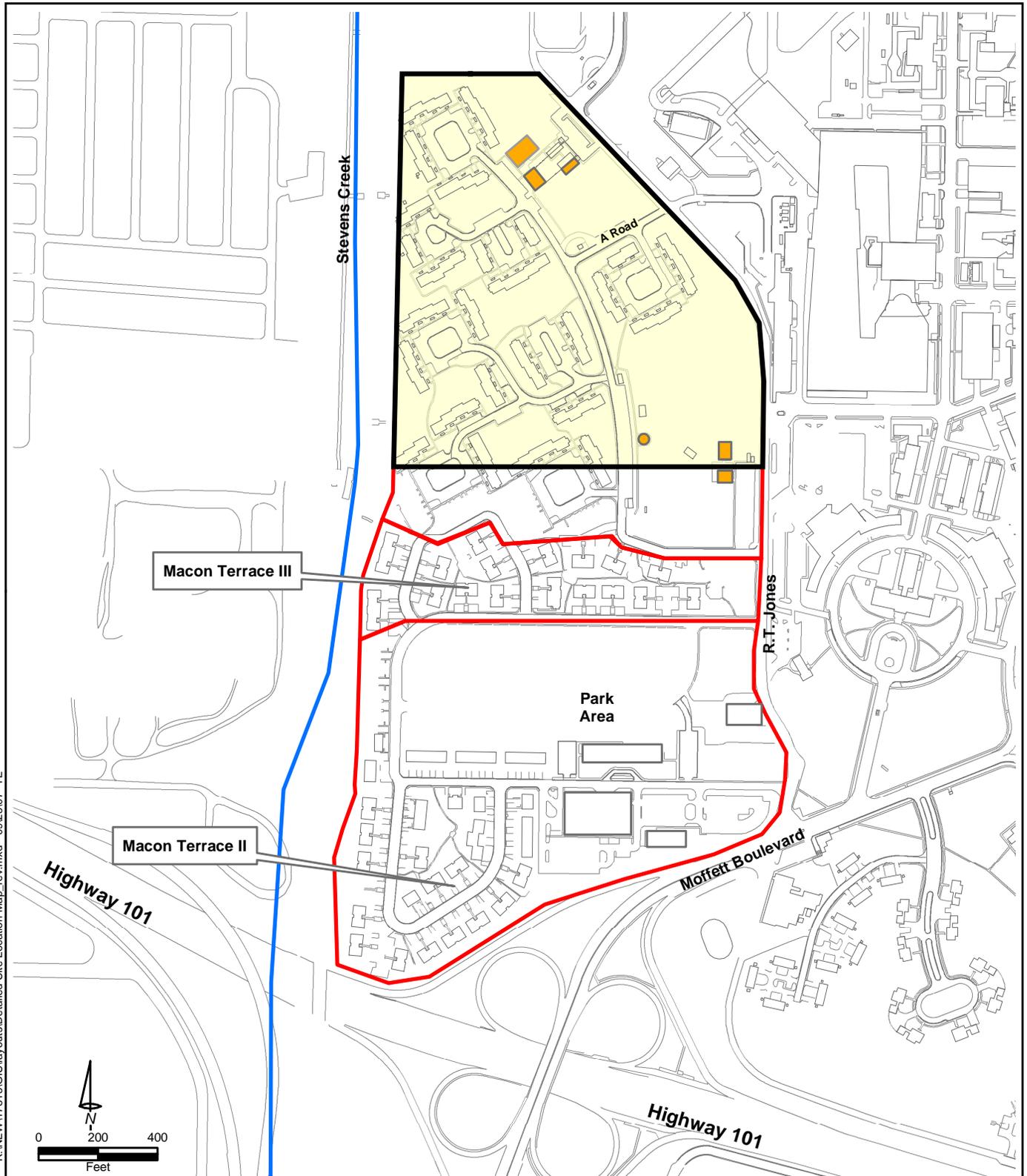


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Site Location

Moffett Field, California

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Legend

-  Project Site
-  Onizuka Air Station Family Child Care
-  US Army Reserve Parcel

Project Site

Moffett Field, California

2.2 PROPOSED ACTION

The Army proposes to implement demolition, construction, and operations activities, as well as environmental protection measures at the project site.

2.2.1 Demolition

Under the proposed action, the Army proposes to demolish all the housing units and other existing facilities located on the 30-acre project site. Following building demolition, vegetation would be removed from portions of the project site, and the site would be graded.

As summarized in Table 2-1, the proposed demolition includes ancillary facilities and 29 residential buildings encompassing 155 townhouses at Orion Park, two community support facilities (Buildings 923B and 923D), two buildings previously used by the Onizuka Air Station Family Child Care Center (Buildings 576 and 577), and two storage facilities in the recreation area (Buildings 578 and 597).

All asbestos-containing materials (ACM), lead-based paint (LBP), and other hazardous materials in buildings to be demolished would be managed in accordance with federal, state, and local laws and regulations.

**Table 2-1
Buildings to be Demolished**

Building	Square Feet
Orion Park housing (29 buildings)	292,856
Orion Park carports	45,780
923 B	1,440
923D	700
576 and 577	4,368
578	851
597	881
Total	346,876

2.2.2 Construction

The Army would construct an AFRC, a center for the Southwest RRSC, an OMS, a storage building, an unheated storage building, and a fitness center (Table 2-2). The 103,500-square-foot AFRC, and the 69,500-square-foot Southwest RRSC facility would provide training facilities that would include administrative, educational, assembly, library, and learning facilities. The AFRC also would contain a weapons simulator, a vault, and physical fitness areas. The OMS would be 25,000 square feet and would provide work bays and maintenance-administrative support. The proposed project would include a 51,000-square-foot storage building, a 15,000-square-foot unheated storage building, and a 6,000-square-foot fitness center. The two storage buildings would be used for military equipment. A 15,100-square-foot military-equipment parking would be located around the OMS. The proposed construction includes two parking lots. The military

equipment parking and the two parking lots would be paved, with asphalt. Storm water retention ponds would be created to capture surface flow and discharge it to Stevens Creek.

As part of utilities' upgrade on the project site, the Army would change the water meter, located on the southwestern side of the 76.6-acre parcel (at approximately 200 feet south from the project site), and would install the needed backflow devices.

**Table 2-2
Construction**

Building	Square Feet
Armed Forces Reserve Center	103,500
Southwest Regional Readiness Sustainment Command Facility	69,500
OMS	25,000
Storage building	51,000
Unheated Storage Building	15,000
Fitness Center	6,000
Total	270,000

In accordance with Army policy, the proposed action would achieve the SILVER level of LEED NC (New Construction) of the US Green Building Council Leadership in Energy and Environmental Design (LEED®) rating system. Use of the SILVER LEED program would reduce energy consumption and optimize life-cycle economic performance (US Army 2006c).

Demolition and construction activities would occur during normal business hours.

2.2.3 Operations

The proposed construction is required to provide adequate facilities to accommodate the relocation of 23 Army Reserve and 4 California Army National Guard units and to support BRAC realignment of Moffett Field USARC; George Richey USARC, San Jose; and Jones Hall USARC, Mountain View. The proposed construction would also support the establishment of a Southwest RRSC. The Southwest RRSC would provide garrison-type support to Army Reserve units, Soldiers, and facilities (TEC Planning 2006). It is intended to be fully operational by the end of 2009. The California Army National Guard would store an empty 5,000-gallon-capacity fuel truck in the military equipment parking. The truck would be parked in a dedicated spot within a containment area to prevent potential spills or leak. The truck would be used off-site and would not be fueled at the project site.

Approximately 413 full-time employees would staff the facilities at the project site. The facilities would support 1,500 Soldiers for weekend classroom and administrative training, up to 735 of whom would train on a peak training weekend. Training activities conducted at the AFRC Complex would typically include physical training and classroom lectures.

On weekdays, the full-time employees at the project site would generate an estimated 826 personal vehicle trips per day. The AFRC and the RRSC complex (referred to collectively as the AFRC Complex) would generate up to an estimated 2,000 personal vehicle trips on Saturday and

2,000 personal vehicle trips on Sunday.¹ Training conducted at the AFRC Complex would typically include physical training and classroom lectures. The OMS would service approximately 20 military vehicles each month. No fueling activities would be conducted as part of OMS operations. Weekday operations would occur during normal business hours.

The demolition and construction activities would be completed over a period of 30 months, beginning as early as June 2008.

2.2.4 Environmental Protection Measures

To protect environmental resources present at the project site, the following measures would be undertaken as part of the proposed action.

2.2.4.1 Worker Protection

As documented in Section 4.13, a plume of trichloroethylene (TCE) has contaminated the groundwater under the project site. All personnel involved in soil-disturbing activities would require Occupational Safety and Health Administration (OSHA) training in handling hazardous materials and wastes. Protective measures and disposition requirements would be detailed in the redevelopment design and construction specifications.

ACM and LBP are present in buildings proposed for demolition. All potentially affected workers would be notified of any potential health hazards so that proper health and safety measures could be employed. Demolition activities would be conducted only by personnel trained and certified by OSHA to handle and properly dispose of these materials.

2.2.4.2 Dust Control

To minimize the amount of dust generated during demolition and construction activities, the Army would implement the following dust control practices:

- Minimize the area disturbed by clearing, earthmoving, or excavation;
- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 miles per hour. Reclaimed (nonpotable) water should be used whenever possible;
- Spray all dirt stock pile areas daily, as needed;
- Implement permanent dust control measures, such as revegetation and landscaping as soon as practicable following completion of any soil-disturbing activities;
- Sow exposed ground areas that are planned to be reworked at dates greater than one month after initial grading with a fast-germinating native grass seed and water until vegetation is established;
- Stabilize all disturbed soil areas not subject to revegetation using state- and federally approved chemical soil binders;

¹Estimated vehicle trips during the weekdays is the assumed number of trips generated by the employees at the project site. Estimated number of vehicle trips during the weekend reflects the maximum number of trips by the reservists.

- Complete paving of all roadways, driveways, sidewalks, and other areas as soon as possible. In addition, lay building pads as soon as possible after grading unless seeding or soil binders are used;
- Limit vehicle speeds for all construction vehicles to 15 miles per hour on any unpaved surface at the construction site;
- Cover or maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) on all trucks hauling dirt, sand, soil, or other loose materials in accordance with California Vehicle Code Section 23114;
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Use water sweepers with reclaimed water where feasible; and

Designate a person to monitor the dust control program and to increase watering or other measures to prevent off-site transportation of dust. The name and telephone number of the monitor would be provided to the Bay Area Air Quality Management District (BAAQMD).

2.2.4.3 Protection of Cultural Resources

Prior to undertaking project activities, the Army would brief the construction staff on procedures for handling the unexpected discovery of archaeological resources. Should evidence of archaeological resources be found during ground disturbance, construction staff would immediately notify the US Army CSTC Cultural Resources Office at Fort Hunter Liggett and would suspend excavation or other activities that could damage such resources. An archaeologist would assess the potential significance of the find and would recommend measures to minimize potential effects on archaeological resources, including consultations with the California State Historic Preservation Office, as needed.

If human remains were encountered, the Army would comply with the requirements of the Native American Graves Protection and Repatriation Act (NAGPRA).

2.2.4.4 Pollution Prevention

Because the proposed action would disturb greater than one acre of soil, the Army would submit a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB) and would obtain a National Pollutant Discharge Elimination System General Construction Storm Water Permit that would meet all the minimum requirements set forth in the waste discharge requirements of the permit. These requirements include developing and implementing a Storm Water Pollution Prevention Plan (SWPPP). Additionally, best management practices (BMPs), such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm sewer inlets, vegetation restoration in disturbed areas, and street sweeping, would be implemented during project construction, as appropriate. The Army would also implement a Spill Control Plan that includes the procedure, instructions, and reports to be used in the event of an accidental spill.

To minimize contaminant exposure as much as possible, the Army would also implement the following measures:

- Implement institutional controls, including restrictions prohibiting residential use of the property;
- Prevent groundwater use at the property; and

- Implement a groundwater and soil management plan for potentially contaminated soil and/or groundwater that may be encountered during construction, excavation, or trenching activities.

2.2.4.5 Steelhead Trout

To avoid impacts on steelhead trout and its critical habitat in Stevens Creek, the Army has concluded Endangered Species Act (ESA) Section 7 consultation with the National Marine Fisheries Service (NMFS) and has determined that the project would have no effect on the species or its critical habitat. BMPs and the SWPPP would be implemented as part of all on-site activities to avoid potential effects on the creek and the associated riparian corridor. A 75-foot buffer proposed between construction and the creek edge would be established to assure that no project activities would occur in or immediately adjacent to Stevens Creek. Demolition would impinge slightly on the buffer but would remain at least 80 feet away from the creek edge, and all future construction would maintain the 75-foot buffer.

2.2.4.6 Burrowing Owl and Other Migratory Birds

Although no burrowing owls or signs of occupied burrows were observed during an October 2006 field survey, there is some habitat within the study area suitable to support breeding burrowing owls or dispersing juveniles. Preconstruction surveys of potential habitat within the project area and within a 500-foot buffer zone would be conducted to determine if burrowing owls or other migratory birds were occupying this area. A qualified biologist would conduct these surveys according to professional standards and adopting California Burrowing Owl Consortium (CBOC) and California Department of Fish and Game (CDFG) guidelines where applicable (CBOC 1993; CDFG 1995). Surveys would be conducted no more than one month prior to the beginning of any ground disturbance or construction activities. If ground-disturbing activities were delayed or suspended for more than 30 days after the preconstruction survey, the site would be resurveyed (CDFG 1995).

Occupancy of suitable burrowing owl habitat would be verified by detecting a burrowing owl, its molted feathers, cast pellets, prey remains, eggshell fragments, or excrement at or near a burrow entrance (CDFG 1995).

If any owls are sighted by the biologist during these surveys, or by other reliable sources, then four dawn or dusk burrow occupancy surveys (also based on CDFG 1995 and CBOC 1993 guidelines) would be initiated to help identify and avoid occupied burrows in the project area and its immediate vicinity. Avoidance and monitoring, in consultation with the CDFG, would reduce potential impacts.

CDFG- and CBOC-suggested avoidance and mitigation measures are summarized as follows:

- If feasible, no disturbance would occur within approximately 160 feet of occupied burrows during the nonbreeding season of September 1 through January 31, or within approximately 250 feet during the breeding season of February 1 through August 31;
- Occupied burrows would not be physically disturbed during the nesting season (February 1 through August 31);

- If destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris), or new artificial burrows should be created at a ratio of two to one; and

If owls must be moved from the disturbance area, passive relocation techniques should be used rather than trapping.

To protect nesting migratory birds and comply with the Migratory Bird Treaty Act, tree removal would be timed to avoid the bird breeding season (typically February through July). In the event that building demolition would occur during the nesting season, a biologist will survey the buildings for nests. The nests would be removed from buildings prior to egg-laying to prevent harm to eggs and chicks.

2.2.4.7 Outdoor Noise

During construction, the Army would comply with OSHA requirements on noise and hearing conservation. BMPs, such as requiring workers to wear earplugs to protect them from excessive ambient noise, would be implemented.

To address outdoor noise levels, the Army would coordinate with NASA to provide military personnel at the project site with advance notice (preferably 24 hours) of planned wind tunnel testing.

2.2.4.8 Trees

Where feasible, the Army would avoid removing mature trees, which have a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4.5 feet above ground level. Mature trees that would not be removed would be protectively fenced to prevent activities that result in soil compaction over the root zone. As part of the landscaping plan, the construction contractor would replace mature trees with two- to three-inch-caliper trees for each four inches of mature tree diameter removed. The Army would identify and document mature trees prior to beginning any demolition.

2.2.4.9 Traffic

To reduce the vehicle trip generation during the operational activities, the Army would implement the Transportation Demand Management (TDM) program to reduce vehicle trip generation along R. T. Jones Road and Moffett Boulevard as well as Highway 101 and State Route 85. The TDM program could include transit alternatives, such as shuttle service from the Mountain View Caltrain station and incentives for weekday employees to use transit, as well as staggered² work hours to shift traffic from the peak hour and disperse arrivals and departures throughout the peak period.

To reduce the weekday and weekend intersection impacts, the Army would implement the following traffic control measures:

²This strategy can help reduce peak period traffic at the worksite by staggering the times when employees arrive and leave work so they do not all access the site at the same time.

- Adjust work hours to shift traffic from the evening peak hour and reduce that traffic to fewer than 335 vehicles during the weekday and weekend evening peak hour. This goal could also be accomplished by the TDM program designed to reduce trip generation of the proposed project by at least 19 percent.

And,

- Provide manual control³ at the intersection of R. T. Jones Road and Moffett Boulevard to facilitate the movement of project traffic by avoiding the existing stop sign and reducing the queues, particularly on R. T. Jones Road during the evenings on peak training weekends.

The Army would conduct traffic monitoring of weekday and weekend intersection operations.

2.2.4.10 Monitoring Wells

During demolition, construction, and operations at the project site, the Army would clearly mark the 11 existing groundwater monitoring wells to avoid disturbance or damage to the wells. The Army would maintain access to these wells for investigation and cleanup activities conducted by the EPA, the Navy, and other parties. Detailed procedures for protecting current groundwater monitoring and investigation systems would be included in the design and construction specifications.

2.2.4.11 Wastewater Collection

The Army would provide design or conforming documentation of the wastewater system to the City of Mountain View to verify that flows are within the approved values and that the existing system is capable of conveying and treating the additional flows from the proposed project.

³Manual control is governed by a flagperson who would replace the stop-sign control and facilitate the flow of traffic from and into the project site.

SECTION 3.0
ALTERNATIVES

SECTION 3.0 ALTERNATIVES

3.1 INTRODUCTION

To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be ready for decision making (any necessary preceding events having taken place), it must be affordable and capable of being implemented, and it must meet the purpose of and need for the proposed action. The following discussion identifies alternatives considered by the Army and whether they are feasible and, hence, subject to detailed evaluation in this EA.

Alternatives to the proposed action have been examined according to three variables: means to physically accommodate realigned units, siting of new construction, and schedule. This section presents the Army's development of alternatives and addresses alternatives available for the proposed action and describes the no action alternative.

3.2 NO ACTION ALTERNATIVE

The Council on Environmental Quality's regulations require inclusion of the no action alternative, which serves as a baseline against which the impacts of the proposed action and alternatives can be evaluated. Under the no action alternative, no activities to support unit realignment would be conducted at Moffett Field. The no action alternative does not fulfill the Congressional BRAC mandate.

3.3 PROPOSED ACTION

The proposed action, as described in Section 2.2, is the Army's preferred alternative.

3.4 ADDITIONAL ALTERNATIVES

Because the BRAC direction specified that facilities be constructed at Moffett Field, the alternative locations for those facilities were limited. Also, while the Army Reserve owns three properties at Moffett Field, two of those are dedicated to family housing. Therefore, no alternate locations were available for construction of these facilities. While other facility configurations were considered during project planning, they included the same number, size, and type of facilities and did not differ substantially from the proposed action.

The existing facilities on the project site are not adequate in size or configuration to support the relocating units and their activities. Additionally, these facilities could not be feasibly renovated or modified to accommodate the needs of the relocating units.

Selection of the project location on the 76.6-acre parcel was based on the following criteria:

- An easily accessible site;
- A high public visibility of the training center building;
- A buffered area of the site should be available to mask the noise and disruption caused by exterior training exercises and military equipment usage;

- The standard Army Reserve training facility consists of the training building, the OMS with military equipment parking (MEP) area, and the privately owned vehicle (POV) parking area. The interrelationship of these spaces and their appropriate site orientation require careful study. As the major point of activity and public access, the training center building should dominate the community interface of the entire facility and must be visible from adjacent public areas. The MEP and OMS also should be located relatively near the training center building for economical accessibility and to afford a showcase for public relations purposes;
- The training center building, due to its high usage and the desire to provide high community visual presence, should be located on the most visible side of the site. The POV parking area is best located behind or adjacent to the training center building. The OMS is an individual structure located away from the training center building to minimize noise and disruption;
- Site access must be direct, safe, and efficient to minimize the environmental impact of military vehicle traffic;
- The building and main facility entrance should be apparent to passing traffic while meeting Antiterrorism/Force Protection (AT/FP) requirements to ensure community visibility and ease of access. Visitor parking and the main entry to be used by building visitors should be readily identifiable; and
- The AT/FP site criteria require, at a minimum, provision of standoff zones to separate buildings from parking, roadways, and other buildings. The standoff zones increase the minimum amount of land required to provide a compliant and functional site layout and should be considered during site selection.

For these reasons, no additional alternatives are evaluated in detail in this EA.

SECTION 4.0
AFFECTED ENVIRONMENT AND ENVIRONMENTAL
CONSEQUENCES

SECTION 4.0

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section contains baseline information on the resources potentially affected and a discussion of the potential environmental effects of the proposed action and alternatives. These resources include land use, aesthetic and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics, transportation, utilities, and hazardous and toxic substances.

The conditions presented for the potentially affected resources along with information presented for the no action alternative, constitute the baseline for impact analysis. Both beneficial and adverse effects are identified and discussed in this section. Section 4.14 presents the cumulative impacts of the proposed action and alternatives when added to other past, present, and reasonably foreseeable future actions.

4.2 LAND USE

4.2.1 Affected Environment

The region of influence (ROI) for land use includes the project site and immediately adjacent lands.

4.2.1.1 Regional Setting

The project site is within USAR Complex, an unincorporated part of Santa Clara County. The project site is approximately one mile south of the shoreline of San Francisco Bay (see Figure 2-1). The city of Mountain View is adjacent to the western and southern boundaries of the project site. Downtown San Jose is about seven miles southeast, and San Francisco is about 32 miles northwest. US Highway 101 is to the south of the project site. The NASA complex, which includes the NASA Ames Research Center and the former Naval Air Station Moffett Field, lies to the east of the project site.

4.2.1.2 Land Use

The 30-acre project site contains 29 housing buildings encompassing 155 townhouses; other facilities at the project site are temporary buildings that were used by the Family Child Care Program of the Onizuka Air Force Station. Recreational land uses are limited to playground facilities, including a baseball field. Housing buildings and facilities at the project site were vacant since August 2006.

4.2.1.3 Surrounding Land Uses

Land uses surrounding the project site include military, research, residential, open space and recreational lands, as described below.

West

Stevens Creek Trail Regional Park forms the western boundary of the project site. The trail is used for restoration and preservation, recreation and community access, and youth and adult education. The 1992 Mountain View General Plan designates Stevens Creek as “Regional Park” (City of Mountain View 1992). To the west of Stevens Creek lies a mobile home park (Santiago Villa Mobile Home Park) and an industrial park. The mobile home park encompasses 37 acres and has approximately 358 mobile homes. An industrial park composed of several office buildings with surrounding landscaping and commercial support services is located to the southwest of the project site.

East

The NASA complex lies to the northeast of the project site, and recreational areas are approximately one mile northeast of the project site. To the southeast of the project site lies the Wescoat military family housing area. A daycare center is located within NASA Ames Research Center across R.T. Jones Rd., at approximately 800 feet to southeast of the project site.

South

The residential neighborhoods Macon Terrace III and II are south of the project site. US Highway 101 forms the southern boundary of Macon Terrace II, beyond which lies open space, commercial, and residential land uses within the city limits of Mountain View. The Mountain View General Plan designates these areas as “Regional Park,” “Neighborhood Commercial,” and “Low Density Residential (1-6 units/acre)” (City of Mountain View 1992).

North

To the north of the project site lies an electrical substation operated by Pacific Gas & Electric (PG&E). To the north of the electrical substation there is an undeveloped parcel belonging to the NASA Ames Research Center.

4.2.2 Environmental Consequences**4.2.2.1 Proposed Action**

No effects on land use are expected. The proposed action would result in a change in land use of the 30-acre parcel, from residential to training facilities (completely non-residential) on USAR property. The change would not conflict with any land use plans, and would not constitute a significant impact. No effects on surrounding land use are expected from the proposed action, because proposed operations are compatible with the surrounding land uses and there would be no conflicts with existing Mountain View land use plans.

4.2.2.2 No Action Alternative

No adverse land use effects would be expected under the no action alternative. There would be no conflicts with surrounding land use because there would be no change in land use on the project site.

4.3 AESTHETICS AND VISUAL RESOURCES

The ROI for this analysis includes all areas within the line of sight of the project site. The presence of the NASA facilities, the electrical substation, Stevens Creek, and US Highway 101, around the project site largely limits the viewshed from the southern side.

4.3.1 Affected Environment

The surrounding land use is described in Section 4.2.1.

The residential neighborhood at the project site, Orion Park, constructed in 1968, occupies the northern portion of the rectangular area. It comprises 200 three-bedroom units and 224 townhouse units, divided into six-plexes. Numerous landscape trees are located at Orion Park. Between Orion Park and the NASA property to the north and east are large open playing fields with numerous trees, mostly evergreens, and open expanses of lawn.

There are no designated scenic highways in the vicinity of the project site (California Department of Transportation 2006). The project site is visible from Stevens Creek Trail. Trees along the western edge of the project site block some of the views from the industrial park and the mobile home park located to the west of the trail. The project site is visible along the southern border, from Macon Terrace III and along R. T. Jones Road. Views from the NASA complex are screened by landscaping and facilities.

4.3.2 Environmental Consequences

4.3.2.1 Proposed Action

Long-term minor adverse and beneficial effects are expected. Once demolition and construction is completed, the new buildings would have beneficial impacts on the visual character or quality of the project site, because the proposed action would replace aging housing units and other aging structures with new buildings that would be designed in accordance with applicable design, construction, and maintenance guidelines and requirements. This would have long-term beneficial impacts on the visual character and quality of the project site and its surroundings.

The proposed construction would be one to two stories tall, consistent with existing structures. Removal of the mature trees during demolition would have a long-term adverse impact on the visual character of the project site. However, as described in Section 2.2.4.9, the Army would avoid removal of mature trees, where feasible, and would place protective fences around trees to prevent soil compaction in the root zone. As part of the landscaping plan, the construction contractor would replace mature trees with two to three inch caliper trees for each four inches of mature tree diameter removed.

The long-term impacts on scenic vistas from new construction would be minor because surrounding areas are primarily developed (Section 4.2) and the proposed action replaces existing development. Because the surrounding areas are currently developed, there are already nearby

sources of nighttime light and glare. Nighttime light and glare from the project site is expected to be similar to the surrounding sources of nighttime light and glare, and similar to the site's current sources of nighttime light and glare. Long-term adverse impacts on nighttime light and glare would be minor, because the proposed action would have similar nighttime light and glare as surrounding sources and the site's current sources.

There are no designated scenic highways in the vicinity of the project site, so there would be no impact on these resources.

4.3.2.2 No Action Alternative

Long-term minor adverse impacts are expected. Under the no action alternative, the vacant buildings would continue to be visible.

4.4 AIR QUALITY

4.4.1 Affected Environment

4.4.1.1 Air Quality Standards

The US Environmental Protection Agency (EPA) has established ambient air quality standards for several different pollutants, which are often referred to as criteria pollutants (ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, suspended particulate matter, and lead). Standards for suspended particulate matter have been set for two size fractions: inhalable particulate matter (PM₁₀) and fine particulate matter (PM_{2.5}). Federal ambient air quality standards are based primarily on evidence of acute and chronic health effects.

California has adopted ambient air quality standards that are more stringent than the comparable federal standards and that address pollutants not covered by federal ambient air quality standards. Most state ambient air quality standards are based primarily on health effects data but can reflect other considerations, such as protecting crops and materials or avoiding nuisance conditions, such as objectionable odors (CARB 2006). Federal and state ambient air quality standards are presented in Appendix C, Table C-1.

4.4.1.2 Regional Air Quality Conditions

The federal CAA requires each state to identify areas that have ambient air quality in violation of federal standards. States are required to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce federal ambient air quality standards in these nonattainment areas. Deadlines for achieving the federal air quality standards vary according to air pollutant and the severity of existing air quality problems. The SIP must be submitted to and approved by EPA. SIP elements are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. In California, local and regional air pollution control agencies have primary responsibility for developing SIPs, generally in coordination with local and regional land use and transportation planning agencies. The Bay Area Air Quality Management District (BAAQMD) is the responsible for regional air pollution control agency in the San Francisco Bay Area. The ozone SIP for the Bay Area was initially prepared in 1991 and was amended in 1999 and 2001. State-mandated clean air plans were developed in 1994, 1997, 2000, and 2005.

An area's compliance with federal ambient air quality standards is categorized as nonattainment, attainment (better than national standards), unclassifiable, or attainment/cannot be classified. The unclassified designation includes attainment areas that comply with federal standards, as well as areas for which monitoring data are lacking. Unclassified areas are treated as attainment areas for most regulatory purposes. Simple attainment designations generally are used only for areas that transition from a nonattainment status to an attainment status. Areas that have been reclassified from nonattainment to attainment of federal air quality standards are automatically considered maintenance areas, although this designation is seldom noted in status listings. The San Francisco Bay Area is designated as nonattainment for the federal 8-hour ozone standard and is a

maintenance area for the federal carbon monoxide standards. The Bay Area is designated as attainment or unclassified for the other federal ambient air quality standards.

California classifies areas of the state as attainment, nonattainment, nonattainment-transitional, or unclassified with respect to the state ambient air quality standards. The Bay Area is designated as nonattainment for the state ozone, PM₁₀, and PM_{2.5} standards and as attainment or unclassified for the other state ambient air quality standards.

4.4.1.3 Regulatory Considerations

Section 176(c) of the federal CAA contains specifications that apply specifically to federal agency actions, including actions receiving federal funding. This section of the CAA requires federal agencies to ensure that their actions are consistent with the CAA and with applicable state air quality management plans. Federal agencies are required to evaluate their proposed actions to make sure that they will not cause or contribute to new violations of any federal ambient air quality standards, that they will not increase the frequency or severity of any existing violations of federal ambient air quality standards, and that they will not delay the timely attainment of federal ambient air quality standards.

The EPA has promulgated rules establishing conformity analysis procedures for transportation-related actions and for other federal actions. The EPA general conformity rule requires preparation of a formal conformity determination document for actions that are undertaken by, approved by, or funded in federal nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. Compliance with the general conformity rule is demonstrated if project emissions fall below threshold values. The relevant specified thresholds in the Moffett Field area are 100 tons per year of ozone precursors (reactive organic gases [ROG] and nitrogen oxides [NOx]) and 100 tons per year of carbon monoxide (CO).

4.4.2 Environmental Consequences

4.4.2.1 Proposed Action

No significant air quality impacts would result from demolition or construction under the proposed action. Potential impacts from the proposed action include demolition, construction, and operational emissions. The project would have an adverse impact on air quality if it were to conflict with or obstruct implementation of the applicable air quality plan, if it were to produce emissions that would violate state or federal ambient air quality standards or otherwise expose people to an adverse health risk, or if it would generate cumulative emissions for a calendar year that exceeded the specified thresholds established by the EPA's general conformity rule (100 tons per year of ROG, NOx, or CO). In addition, the BAAQMD has published guidelines (BAAQMD California Environmental Quality Act [CEQA] Guidelines [BAAQMD 1999]) to evaluate air quality impacts during project construction and operation. The BAAQMD has not established quantitative impact significance thresholds for construction or demolition but instead emphasizes implementing fugitive dust control measures. However, the BAAQMD CEQA guidelines do establish quantitative impact significance thresholds for operational emissions. The BAAQMD

significance thresholds for operation are 15 tons per year, or 80 pounds per day, each for ROG, NO_x, or PM₁₀. In addition, the BAAQMD has adopted an operational impact significance threshold of 550 pounds per day for CO emissions.

Demolition and Construction Emissions

Demolition- and construction-related emissions are generally short term but may still have adverse impacts on air quality. PM₁₀ is the pollutant of greatest concern with respect to these activities. PM₁₀ emissions can result from a variety of activities, including demolition, excavation, grading, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust. Construction-related emissions, particularly site grading, can substantially increase localized concentrations of PM₁₀. Particulate emissions from construction can lead to adverse health effects and nuisance concerns, such as reduced visibility. Implementing dust control measures can significantly reduce PM₁₀ emissions from construction.

The air quality issues associated with construction under the proposed action include emissions from demolition, site grading, and construction. Implementing standard management practices, as described in Section 2.2.4.2, to reduce fugitive dust emissions during construction would minimize the potential impacts on air quality. Measures to reduce fugitive dust could be included as a requirement of development plans. The BAAQMD has identified a range of basic, enhanced, and optional control measures to reduce emissions of PM₁₀ (BAAQMD 1999). Most of these measures are incorporated into expected management practices, as discussed in Section 2.2.4.2.

Many of the structures to be demolished contain lead-based paint or asbestos-containing materials. Removal of these materials prior to demolition would follow federal and state rules and regulations pertaining to the handling and disposal of these materials. In addition, the Army would comply with the requirements of BAAQMD Regulation 11, Rule 2 for the removal of asbestos-containing materials from buildings that will be demolished.

Expected demolition and construction emissions have been estimated using a detailed spreadsheet model. The model evaluates emissions from equipment engines, fugitive dust emissions from site disturbance and building demolition, emissions associated with curing asphalt pavement, and emissions associated with painting of buildings or structures. The construction equipment database incorporated into the model covers 93 equipment types, with each type subdivided into multiple engine size and fuel type categories. The spreadsheet model accounts for federal and state emission standards that apply to off-highway vehicles and equipment, federal and state fuel sulfur limits, the estimated PM₁₀ fraction of local soils, and the expected effectiveness of fugitive dust control measures. A more detailed description of the spreadsheet model is provided in Appendix C-3. Appendix C-4 is a summary of the building information used for the demolition and construction emissions analyses.

Table 4-1 is a summary of annual demolition and construction emissions from the proposed action. The emissions identified in Table 4-1 would occur over 2.5 years. Buildings on the site are expected to be demolished in 2007. Construction of the AFRC, RRSC, and OMS buildings would begin in 2008 and would continue into 2009. Construction of the storage buildings and the fitness center has been assumed to occur in 2009, overlapping with the final stages of construction for

the AFRC, RRSC, and OMS buildings. Appendix C-5 provides additional details from the demolition and construction emissions analyses summarized in Table 4-1.

Table 4-1
Summary of Demolition and Construction Emissions

Activity	Year	Demolition and Construction Emissions, Tons Per Year				
		ROG	NOx	CO	SOx	PM ₁₀
Orion Park building demolition	2007	0.30	3.24	2.00	0.21	1.06
AFRC, RRSC, OMS construction	2008	0.61	4.55	3.32	0.19	3.28
AFRC, RRSC, OMS construction	2009	0.63	0.93	0.79	0.03	1.89
AFRC, RRSC, OMS construction	2009	0.63	0.93	0.79	0.03	1.89
Other construction, asphalt parking	2009	0.51	2.16	1.70	0.07	1.93
Subtotal, 2009, asphalt parking	2009	1.14	3.09	2.49	0.09	3.83

ROG = reactive organic compounds

NOx = nitrogen oxides

CO = carbon monoxide

SOx = sulfur oxides

PM₁₀ = inhalable particulate matter

Emissions estimated using a detailed spreadsheet model for demolition and construction activity.

Source: Tetra Tech staff analysis

Table 4-1 shows annual emissions resulting from the proposed demolition and construction activities. Maximum annual emissions for 2007 through 2009 would be less than the CAA conformity thresholds for ROG, NOx, and CO (100 tons per year of each pollutant). Appendix C-2 presents a draft record of nonapplicability. Fugitive dust emission estimates included in the table assume implementation of normal dust control practices. Because BAAQMD recommended that dust control measures be used and because demolition and construction emissions would be less than the applicable CAA conformity thresholds, demolition and construction would have a less than significant impact on air quality.

Operational Emissions

Traffic from full-time personnel and Soldiers would not result in emissions higher than the CAA conformity threshold of 100 tons per year of ROG, NOx, and CO. Similarly, traffic-related operational emissions would not exceed the BAAQMD thresholds of 15 tons per year or 80 pounds per day of ROG or NOx, or the BAAQMD threshold of 550 pounds per day for CO. Typical weekday operations would generate 826 vehicle trips per day during commute periods, and typical weekend training would generate 2,000 vehicle trips per day during commute periods. Table 4-2 is a summary of annual emissions from vehicle traffic associated with operating the proposed facilities.

Similarly, Table 4-3 is a summary of daily emissions from vehicle traffic associated with operating the proposed facilities.

Daily and annual PM₁₀ emissions would be below the BAAQMD impact significance thresholds. Appendix C-6 provides additional details for the vehicle emissions analyses summarized in

Tables 4-2 and 4-3. Long-term minor adverse operational air quality impacts are expected. Traffic from full-time personnel and Soldiers would not result in emissions higher than the CAA conformity threshold of 100 tons per year of ROG, NO_x, and CO or the BAAQMD threshold of

Table 4-2
Summary of Estimated Annual Vehicle Emissions

Activity	Year	Annual Traffic Emissions, Tons Per Year				
		ROG	NO _x	CO	SO _x	PM ₁₀
Weekday vehicle travel	2010	1.44	1.18	14.62	0.01	1.77
Weekend vehicle travel	2010	0.78	0.55	6.97	0.00	0.77
Subtotal	2010	2.22	1.73	21.59	0.02	2.54

ROG = reactive organic compounds

NO_x = nitrogen oxides

CO = carbon monoxide

SO_x = sulfur oxides

PM₁₀ = inhalable particulate matter

Emissions include both off-site vehicle travel and on-site vehicle travel.

Vehicle emissions and paved road resuspended dust emissions estimated using the URBEMIS 2002 program.

Source: Tetra Tech staff analysis

Table 4-3
Summary of Estimated Daily Vehicle Emissions

Activity	Year	Daily Traffic Emissions, Pounds per Day				
		ROG	NO _x	CO	Sox	PM ₁₀
Weekday vehicle travel	2010	12.03	9.86	121.85	0.09	14.77
Weekend vehicle travel	2010	21.06	15.24	193.50	0.14	21.25

ROG = reactive organic compounds

NO_x = nitrogen oxides

CO = carbon monoxide

SO_x = sulfur oxides

PM₁₀ = inhalable particulate matter

Emissions include both off-site vehicle travel and on-site vehicle travel.

Vehicle emissions and paved road resuspended dust emissions estimated using the URBEMIS 2002 program.

Source: Tetra Tech staff analysis

15 tons per year ROG, NO_x, or PM₁₀. Vehicle trip generation during weekdays would not be high enough to increase traffic congestion on off-site area roadways to a level that would pose any carbon monoxide hotspot problems. While morning and afternoon commute periods are the normal peak traffic periods for weekday traffic, weekend peak traffic periods typically occur in mid-day periods on off-site roadways. Weekend training period commute traffic would generally not overlap with peak background traffic periods on off-site area roadways. Consequently, weekday training event traffic associated with the proposed project would not be expected to increase traffic congestion to a level that would pose any carbon monoxide hotspot problems. While weekend training traffic would create peak hour congestion at internal Moffett Field intersections, the total volume of traffic would be too low to create a significant air quality problem. There have been no violations of federal or state carbon monoxide standards anywhere in the San Francisco Bay Area in the last decade.

As documented in Section 4.13.1.2, volatile chemicals and TCE were found in select indoor and outdoor air samples at levels above EPA interim action levels. The Army would implement the

mitigations noted in Section 4.13.2.1 to control vapor intrusion and TCE concentrations inside the buildings.

4.4.2.2 No Action Alternative

Under the no action alternative, air emissions are not expected to increase or decrease. No long-term adverse operational air quality impacts are expected.

4.5 NOISE

The ROI for noise depends on the intensity of noise generation. For most common noise sources, the ROI is limited to areas within one-half mile (one kilometer) of the noise source. The ROI for this analysis is defined as the project site and the adjacent areas within one-half mile of the project site.

4.5.1 Affected Environment

4.5.1.1 Noise Overview

Noise is defined as unwanted sound. There is a wide diversity of human responses to noise, which vary according to the type and characteristic of the noise source. The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. Sound quality criteria promulgated by the EPA, the US Department of Housing and Urban Development (HUD), and the DoD have specified noise levels to protect public health and welfare with an adequate margin of safety.

The five factors identified by the EPA, HUD, and the DoD as indicators for estimating negative community reaction to noise are: type of noise, amount of repetition, type of neighborhood, time of day, and amount of previous exposure.

Noise is measured in decibels (dB), and then a frequency-dependent adjustment is applied because the human ear is not equally sensitive to sound at all frequencies; this is called A-weighting to achieve the A-weighted dB (dBA). Unless otherwise noted, all references to noise levels in this section are A-weighted. Table 4-4 presents a range of decibel sound levels. Average noise exposure over 24 hours can be presented as a day-night average sound level (DNL). DNL values are calculated from 24-hour averages in which nighttime values (10 PM to 7 AM) are increased by 10 dB to account for the greater disturbance potential from nighttime noises.

4.5.1.2 Army Noise Guidelines

The Army's Environmental Noise Management Program (outlined in Army Pamphlet 200-1) provides a framework for evaluating land use compatibility based on day-night average noise levels. Noise is calculated as an A-weighted day-night level (ADNL), which is weighted toward frequencies similar to those of human hearing. Noise can also be calculated as a C-weighted day-night level (CDNL), which is weighted toward low frequencies. After determining the noise levels, they can be grouped into the following three standard zones for level of noise disturbance:

- Zone I—Low level of annoyance (less than 15 percent of the population), less than 65 dBA ADNL, and less than 62 C-weighted decibels (dBC) CDNL;
- Zone II—Moderate level of annoyance (15 to 39 percent of the population), 65 to 75 dBA ADNL and 62 to 70 dBC CDNL; and

**Table 4-4
Common Sound Levels**

Characterization	dBA	Example Noise Condition or Event
Threshold of pain	130	Surface detonation, 30 pounds of TNT at 1,000 feet
Possible building damage	120	Mach 1.1 sonic boom under aircraft at 12,000 feet
Extremely noisy	95	Locomotive horn at 100 feet; 2-mile-range fog horn at 100 feet
8-hour OSHA limit	90	Heavy truck, 35 mph at 20 feet; Leaf blower at 5 feet
Very noisy	85	Power lawn mower at 5 feet; City bus at 30 feet
Noisy	75	Street sweeper at 30 feet; Idling locomotive at 50 feet
Moderately noisy	65	Typical daytime busy downtown background conditions
Quiet	45	Typical rural area daytime background conditions
Very quiet	30	Quiet rural area, winter night, no wind
Barely audible	10	Audiometric testing booth
Threshold of Hearing	0	---

Notes:

OSHA = Occupational Safety and Health Administration

Indicated noise levels are average dBA levels for stationary noise sources or peak dBA levels for brief noise events and noise sources moving past a fixed reference point.

Average and peak dBA levels are not time-weighted 24-hour average CNEL or DNL levels.

Decibel scales are not linear. Apparent loudness doubles with every 10 dBA increase in noise level, regardless of the dBA value.

Source: Data compiled by Tetra Tech staff.

- Zone III—High level of annoyance (more than 39 percent of the population), greater than 75 dBA ADNL and greater than 70 dBC CDNL.

The guidelines include suggested land use compatibility with the different noise zones. Land use reduction is defined for land uses in each zone. These guidelines generally apply to long-term noise exposures, not the short-term exposures associated with construction and demolition (US Army 2002).

4.5.1.3 Existing On-Site and Off-Site Noise Conditions

There are no noise sources at the project site. The housing buildings were vacated in August 2006, and the other facilities are unoccupied.

Off-site noise sources are mainly associated with the facilities of the NASA Ames Research Center. Many of these NASA facilities will be leased by the US Air Force and are anticipated to operate at the previous NASA noise baseline beginning in September 2007. The NASA noise-producing operations include the following:

- *National Full-Scale Aerodynamics Complex (NFAC) Wind Tunnels (40- by 80-Foot Wind Tunnel and 80- by 120-Foot Wind Tunnel)*. Maximum noise levels are approximately 70 dB for the 40- by 80-foot wind tunnel and approximately 80 dB for the 80- by 120-foot wind tunnel on the project site (NASA 1998).

The NFAC wind tunnels have not been used since approximately October 2003. In the year or two immediately prior to that, use of the wind tunnels was lower than described above (Nickison 2005). However, the Air Force began testing the wind tunnels in January 2007

and will increase the operating level to reach the previous levels of 200 days per year by September 2007 (Betzina 2007).

- *Unitary Plan Wind Tunnels (11-Foot Wind Tunnel, 9- by 7-Foot Wind Tunnel, and 8- by 7-Foot Wind Tunnel)*. These three wind tunnels are operated by the same drive system; therefore, only one can operate at a time. Maximum noise levels for these wind tunnels (measured in October 2000) ranged from 80 to 85dB at a distance of 50 to 75 feet (NASA 2002). The noise contour map generated by NASA indicated that the DNL on the project site would be less than 55 dB (NASA 2002).
- *Arc Jets*. The frequency of use of the arc jets is not indicated in NASA documents; however, maximum noise levels were measured to be 80 dB at 146 feet. A noise exposure contour map published in 2002 indicated that the DNL on the project site would be less than 55 dB (NASA 2002).
- *Outdoor Aerodynamic Research Facility (OARF)*. The OARF is approximately 3,000 feet north of the project site in the Bay View area. High noise-generating projects run an average of two hours per day, some up to seven hours per day. High noise levels (102 dBA) from rocket fuel tests are generated for 10 to 20 seconds. The rocket plume faces away from the project site (NASA 2002).
- *Moffett Field Airstrip*. Moffett Field Airstrip is used by a number of government aircraft. Noise exposure from the airstrip has been evaluated for the period 1999 to 2010, and a noise exposure contour map published in 2002 indicated that the DNL at the project site would be less than 60 dB (NASA 2002).

A variety of outside noise sources also affect the surrounding community. Major sources include traffic along US Highway 101 and California Highway 85. In addition, the Shoreline Amphitheater can be a considerable source of noise during concerts or similar activities (NASA 1998).

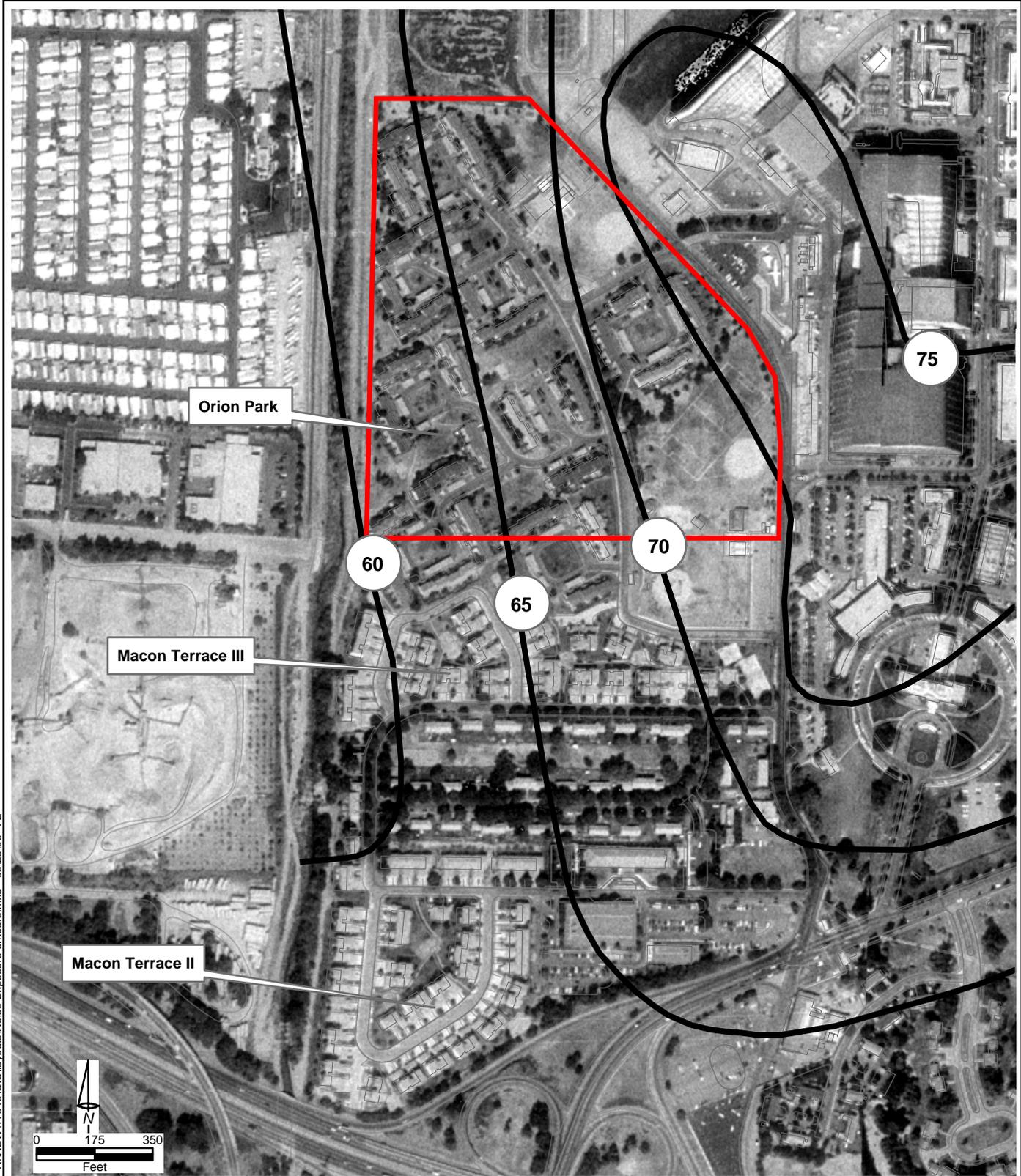
Figure 4.5-1 illustrates composite annual DNL noise exposure levels from existing noise sources in the vicinity of the project site. The noise contour was developed for the NASA Ames Development Plan Programmatic Environmental Impact Statement (EIS) (NASA 2002). Based on these noise contours, some portions of the project site fall within Zone II and Zone III.

4.5.1.4 Sensitive Receptors

The closest sensitive receptors to the project site are the NASA daycare center across R. T. Jones Road to the east, the Wescoat military housing area, which is approximately 1,350 feet to the southeast, and the mobile home park, which is approximately 300 feet to the west.

4.5.2 Environmental Consequences

The following section analyzes direct and indirect noise impacts from the proposed action and the no action alternative.



R:\NEW\17815\GIS\layouts\Noise Exposure contours.mxd - 08/23/06 -YE

Noise Exposure Contours

Moffett Field, California

- Legend**
- Project Boundary
 - Noise Levels in Decibels

4.5.2.1 Proposed Action

Short-term and long-term minor adverse effects are expected. Demolition and construction activities could affect sensitive receptors at the NASA daycare center (approximately 800 feet to the southeast of the project site), the Wescoat parcel, and the mobile home park. Additionally, an open parade ground where outdoor ceremonies are held is east of the project site and could also occasionally and temporarily affect these receptors. Although the type and quantity of demolition and construction vehicles and equipment have not been identified, typical construction site equipment and their sound levels range from 84 dB to 113 dB (Center to Protect Worker's Rights 2003). As a point of reference, a conversation is held at approximately 70 dB, and 73 dB is twice as loud as 70 dB. Demolition and construction noise levels would decrease with increasing distance from the project site and would be temporary and intermittent. Minor noise impacts are expected on the Wescoat parcel and the mobile home park, considering the distance and the limiting of demolition and construction activities to normal business hours, when people are likely to be away from home. Therefore, noise from the demolition and construction activities is expected to have short-term minor impacts.

During the demolition and construction activities, ambient noise levels might affect workers involved with those activities. As noted in Section 2.2.4.8, the Army would comply with OSHA requirements on noise and hearing conservation. BMPs, such as wearing earplugs, would be initiated to protect worker from excessive ambient noise, thus effects of ambient noise would be minor.

During the operation phase of the project, military personnel would be exposed to the existing noise sources at the project site, including the adjacent National Full-Scale Aerodynamics Complex (NFAC) wind tunnels. Based on the Army's noise guidelines, the proposed project would be incompatible in the areas that fall with the Zones II and III. To reduce noise inside the proposed new buildings, in accordance with the noise guidelines, the Army would implement the mitigation measures described below.

If occupied structures are constructed within the area subject to noise levels of 70 to 75 dB, the Army would use design and construction techniques to achieve a noise level reduction of 25 dB inside those structures. If structures are constructed within the area subject to noise levels above 75 dB, the Army would use design and construction techniques to reduce noise levels by 30 dB inside those structures. With the incorporation of these mitigation measures, the proposed action would have less than significant impacts on indoor noise.

To address outdoor noise levels, as described in Section 2.2.4.8, the Army would coordinate with NASA to provide military personnel at the project site with advance notice (preferably 24 hours) of planned wind tunnel testing.

Military operations would typically include physical training and classroom lectures and would not create noise sources greater than the surrounding sources. Additionally, where possible, the building layout would be developed to locate areas of concentrated vehicle operations and associated noise away from neighboring properties for which noise may be an issue. Therefore, noise generated by the proposed action would have minor impacts on local sensitive receptors.

4.5.2.2 No Action Alternative

Under the no action alternative, no demolition or construction noise would be produced. Also, no military personnel would be training at the project site, and therefore, no additional noise sources would be created.

4.6 GEOLOGY AND SOILS

4.6.1 Affected Environment

This section describes the geologic setting and soils of the project site, adjacent contiguous land, the underlying geologic formations, and regional faults. Regional geologic features are discussed to provide a context for evaluating the geology at the project site, because some geologic conditions and processes (such as movement along faults) occurring outside the project site may affect the project site.

4.6.1.1 Geologic Setting

Physical Geography

Topography of the project site is portrayed on the Mountain View 7.5-minute quadrangle (USGS 1997). The project area is on the southern margin of the extreme south end of San Francisco Bay on filled land that was historically inland from the tidal marshland (Nichols and Wright 1971). The ground surface slopes downward gently to the north. The elevation of the ground surface at the project site is 15 feet above msl.

The project area is within the Coast Ranges physiographic province. The southern San Francisco Bay occupies a sediment-filled structural trough in the Franciscan bedrock between the San Andreas and Hayward Faults (Figuers 1998). The bedrock surface is more than 1,000 feet below msl, beneath the east-central portion of southern San Francisco Bay, north of the Dumbarton Bridge. It is approximately 200 feet below msl beneath US Highway 101 at former Naval Air Station Moffett Field at NASA Ames Research Center (Figuers 1998).

The principal surface drainage feature in the area is Stevens Creek. North of Moffett Field are diked salt evaporation ponds, and north of these ponds are mudflats.

Geology and Stratigraphy

The project site is underlain by fine-grained Holocene (less than 10,000 years old) alluvial fan and floodplain overbank deposits (Knudsen et al. 2000a). These deposits lie on the far downslope margin of alluvial fans that emanate from the Santa Cruz Mountains to the southwest and are dominated by clay and silt, with interbedded discontinuous lobes of coarse sand that become thinner in the direction of San Francisco Bay. The depth to groundwater is generally less than 10 feet below the ground surface within these deposits. Helly and Brabb (1971) further distinguish basin deposits, which they describe as mainly organic-rich clay and silty clay, from fluvial (stream) deposits that occur on the outer edges of young alluvial fans and that form levees between them and the basin deposits. The principal difference between them is that the fluvial deposits tend to have more variable grain size and lower organic content than basin deposits. Fluvial deposits underlie the project site adjacent to Stevens Creek.

The upper 250 feet of alluvial fill material underlying the region of the site are divided into four separate Holocene/Pleistocene stratigraphic units that represent changes in deposition associated

with sea level changes during glacial periods. These units contain the area's three major aquifers (NASA 2001).

Beginning in the early 1900s, land subsidence started to occur over a large area of the Santa Clara Valley due to extensive withdrawal from groundwater aquifers for agriculture and domestic water use. Between 1938 and 1972, the land surface subsided approximately five feet in the region of the project (NASA 2001). This subsidence is largely the result of irreversible compression of the clay sediments from which groundwater gradually drained as the water table was drawn down. Some of the subsidence was reversible, resulting from reduction in the buoyant forces of confined groundwater in the sandy aquifer units. Beginning in the 1970s, the Santa Clara Valley Water District has successfully halted subsidence by instituting a program to artificially recharge the aquifers with recharge basins located throughout the valley.

Seismicity and Geologic Hazards

The three major active northwest-trending strike-slip faults passing through the San Francisco Bay Area are the San Andreas, Hayward, and Calaveras Faults. All three faults belong to the San Andreas Fault System, which marks the boundary between the Pacific and North American tectonic plates. Between Mendocino and Baja California, the Pacific Plate has been moving northward relative to the continent for the past 15 to 20 million years. Although the motion averages just a few centimeters per year, it occurs in sudden short events along segments of the faults and may be separated by many years. Some of these events have resulted in well-known destructive earthquakes during historic time.

There are four additional northwest-trending faults in the Santa Clara Valley: the San Jose, Palo Alto, Stanford, and Silver Creek Faults. The San Jose Fault trace passes through NASA Ames Research Center; the Palo Alto and Stanford Faults are one and three miles southwest of NASA Ames Research Center, respectively; and the Silver Creek Fault is five miles northeast of the site. Although movement has occurred on these faults during the last 1.6 million years, they are not currently active (Jennings 1994). There are no Alquist-Priolo Fault Hazard Zones mapped within the project area (CGS 2002a).

Seismic activity in the area has occurred mostly along the San Andreas Fault. At least a dozen large earthquakes having magnitudes greater than 6.0 on the Richter scale, including the San Francisco earthquake of 1906 and the Loma Prieta earthquake of 1989, have occurred in the Greater Bay Area in the past 100 years. The October 17, 1989, Loma Prieta earthquake, measuring 6.8 on the Richter scale and centered in the Santa Cruz Mountains about 30 miles southwest of the project area, did not cause considerable structural damage at the Ames Research Center (NASA 2001).

The California Geological Survey (formerly the Division of Mines and Geology) identifies the entire region from the margin of the San Francisco Bay to slightly south of the Central Expressway (about one mile south of US Highway 101) to be an area potentially subject to liquefaction, based on historic occurrence of liquefaction or local conditions indicative of liquefaction potential (CGS 2002b). The US Geological Survey identified the region of the project site as having a high liquefaction susceptibility (Knudsen et al. 2000b). Clayey soils are

generally not considered susceptible to liquefaction, although sandy and silty aquifer layers could liquefy during strong seismic shaking and result in settlement. The California Geological Survey Seismic Hazard Zones study indicates that additional site-specific geotechnical studies may be needed to further define the liquefaction potential of a specific site, and the study reports no evidence of past liquefaction or ground settlement in the immediate vicinity of the project site (CGS 2002b).

Mineral Resources

No recoverable mineral resources have been identified in the project area. Solar evaporation ponds on tidal lands adjacent to San Francisco Bay have been used in the past to recover salt from bay waters, but these ponds are no longer in use.

4.6.1.2 Soils

Most of the project site is underlain by Sunnyvale silty clay, which consists of silty clay to a depth of 11 to 18 inches, with a dark gray color, fine texture, poor drainage, moderate alkalinity, and high fertility. The subsoil is light gray and gray calcareous silty clay to a depth of 26 to 32 inches. Adjacent to Stevens Creek is Pacheco loam, which consists of a fine sandy loam, loam, or clay loam to a depth of 14 to 18 inches. Pacheco loam is characterized by its grayish-brown color, poor drainage, and moderate alkalinity and fertility. Seasonal water tables sometimes lie within as little as two feet of the surface. The subsoil is moderately alkaline loam, mottled light gray, in a layer between 18 and 25 inches deep. Both soils have a high shrink-swell potential and slow permeability (NASA 2002).

4.6.1.3 Prime Farmland

Although the soil types within the project area are considered prime farmland, the land within the project area is developed urban land and does not qualify as farmland.

4.6.2 Environmental Consequences

4.6.2.1 Proposed Action

Geology

The proposed action would not change the geological formation at the project site; therefore, no effects are expected.

Seismicity and Geologic Hazards

Long-term minor adverse effects are expected. The project area is in one of the most active seismic areas of California and is subject to strong ground shaking in the event of a large earthquake. The California Geological Survey estimated that in the region of the project, there is a 10 percent chance that the peak ground acceleration from an earthquake in the 50 years beginning in 1998 would exceed 0.5 to 0.6 times the acceleration of gravity. This is a moderately high level of ground shaking that is somewhat higher than the average acceleration assumed for

estimation of lateral forces in the Uniform Building Code for seismic zone 4, which includes the project site. Seismicity impacts could be adverse; however, the new facilities would be constructed to current building code standards, and therefore the effects would be minor.

The project is in an area identified by the US Geological Survey as highly susceptible to liquefaction and by the California Geological Survey as having “a potential for permanent ground displacements [from liquefaction] such that mitigation as defined in Public Resources Code Section 2693 would be required.”

For similar construction planned in adjacent Moffett Field areas, it has been estimated that “the maximum total settlement [from liquefaction] would be less than 3.8 centimeters (1.5 inches), and the differential settlement would be about 2.5 centimeters (1 inch), at the ground surface after a moderate to strong earthquake” (NASA 2002). This assumes that proposed new structures would be on either mat foundations or shallow spread footing foundations. While these calculations have not been performed for the proposed action, geotechnical studies would be conducted at the project site, and new facility foundations would be designed to resist predicted ground movement. The proposed action is expected to result in minor adverse effects from liquefaction because the facilities would be designed to meet current requirements.

Mineral Resources

No recoverable mineral resources have been identified in the project area; therefore, no effects are expected.

Soils

Short-term minor adverse effects are expected. Ground disturbance due to demolition and construction activities could increase the potential for soil erosion. Because the project involves disturbance of more than one acre of land, a SWPPP would be prepared and implemented, as discussed in Section 2.2.4.4.5. The plan would identify appropriate BMPs to reduce nonpoint pollution, including discharge of sediment, during construction. BMPs include directing stormwater runoff away from disturbed areas, capturing site runoff in sediment settling basins, seeding the surface with grasses to hold the soil, contouring to decrease runoff velocity, placing sediment barriers, such as hay bales or sediment fences around areas subject to erosion, and other similar measures. The erosion impacts under the proposed action are expected to be minor.

The proposed action would increase paved surfaces by approximately 187,300 square feet (4.3 acres). The increase in pavement and structures on the site may reduce the amount of permeable ground area by approximately 34 percent. Increased paved surfaces at the project site may have an impact on soil erosion due to higher surface runoff. However, the proposed project would include retention ponds designed to capture the projected storm water flow. Additionally, the Army would implement the BMPs listed in Section 2.2.4.5, as necessary. Therefore, increased impermeable surfaces are expected to have less-than-significant effects on erosion at the project site.

As documented in Section 4.13, TCE has contaminated the groundwater under the project site. Because of this contamination, all personnel involved in soil-disturbing activities would require OSHA training in handling hazardous materials and wastes, as described in Section 2.2.4.1. Additionally, as described in Section 2.2.4.4, a groundwater and soil management plan would be implemented for the management of potentially contaminated soil and/or groundwater that may be encountered during construction, excavation, or trenching activities.

Prime Farmland

The land within the project area is developed urban land and does not qualify as farmland; therefore, no effects are expected.

4.6.2.2 No Action Alternative

Under the no action alternative, no demolition or construction would occur. Also, no military personnel would be training at the project site.

Geology, Mineral Resources, Soils, and Prime Farmland

Under the no action alternative, the project site conditions would remain unchanged; therefore, no effects are expected.

Seismicity and Geologic Hazards

Long-term minor adverse effects on seismicity and geologic hazards are expected. Existing facilities at the project site were designed to past, possibly less stringent; standards than are currently required; therefore seismic events could adversely impact the existing housing buildings and facilities.

4.7 WATER RESOURCES

The ROI includes surface water resources within the Stevens Creek watershed. The ROI for groundwater resources are the three principal aquifers beneath the project site (aquifers A, B, and C).

4.7.1 Affected Environment

4.7.1.1 Climate

Mean annual rainfall in the area is slightly over 13 inches, 90 percent of which falls from November through April. The monthly mean relative humidity ranges from 66 percent to 75 percent, with an annual average of 74 percent (NASA 2001).

4.7.1.2 Surface Water

Regional Hydrology and Drainage

Stevens Creek, one of three major streams in Santa Clara County, is adjacent to the western boundary of the project site. Stevens Creek drains a watershed of 38.35 square miles (NASA 2001). Stevens Creek is a perennial stream, with seasonally variable flow, and runs along the east side of Highway 85. The creek is conveyed in a box culvert beneath Moffett Boulevard and emerges on the north side of Moffett Boulevard. Stevens Creek discharges to San Francisco Bay on the northwest side of the flight line of former Naval Air Station Moffett Field at NASA Ames Research Center.

Part of the surface runoff from the project site is discharged via storm sewer lines to the channel of Stevens Creek (FWEC 2002). Another part is conveyed into the NASA property (McCartin 2007).

Surface Water Quality

Stevens Creek is listed on the Clean Water Act Section 303(d) list of impaired water bodies for urban runoff pollution, storm sewers, and unknown sources (RWQCB 2006).

4.7.1.3 Groundwater

The project lies within the Santa Clara Valley groundwater basin, which consists of 240 square miles of principal aquifers. Groundwater beneath the project site is encountered in the A, B, C, and Deep aquifers (Navy 2006). The A aquifer has been subdivided into the A1 and A2 aquifer zones. The uppermost zone, known as the A1 aquifer zone, extends from a depth of approximately 22 to 27 feet below ground surface (bgs) below the project site. The A1 and A2 aquifer zones are separated in some areas by the A1/A2 aquitard. The thickness of the aquitard ranges from zero to approximately 12 feet. The top of the A2 aquifer zone is first encountered between 25 to 35 feet bgs. The A2 aquifer zone extends to at least 55 feet bgs (Navy 2006). Both

zones are hydraulically connected. Groundwater in the A aquifer flows generally toward the north-northeast and discharges to San Francisco Bay.

A plume of dissolved VOCs, consisting primarily of the chlorinated hydrocarbon solvent TCE, exists in the groundwater beneath the project site. Groundwater is not used as a source of domestic (potable) or industrial water at the project site. Potable water is supplied by the San Francisco Public Utilities Commission, which obtains water from the Hetch Hetchy reservoir in the Sierra Nevada. More detailed information about water supply is provided in Section 4.12.

The Navy installed 11 groundwater monitoring wells on the 76.6-acre parcel in August 2005 as part of the remedial investigation activities of the NAS Moffett Field National Priorities List (NPL) Site.

4.7.1.4 Floodplains

Historically, the potential for 100-year flooding has existed at the project site from San Francisco Bay and Stevens Creek. Levees along Stevens Creek and the northern boundary of the site were elevated several feet to reduce the potential of tidal flooding (NASA 2001). Because the Stevens Creek channel is designed to contain the 100-year flow in the reach near the project area, the project site is not within the 100-year floodplain of the creek.

The US Army Corps of Engineers estimated that the 100-year tide elevation in the vicinity is 8.1 feet above mean sea level. The limit of 500-year tidal flooding is not significantly different from the 100-year limit, because the difference between the 100-year high tide and 500-year high tide is only about three inches (NASA 2001). Because the elevation of the ground surface at the project site is 15 feet above mean sea level, none of the project area is within the elevation range that would be flooded by extreme high tides.

4.7.2 Environmental Consequences

4.7.2.1 Proposed Action

Surface Water

Short-term minor adverse effects are expected on surface water as a result of the proposed action. During the demolition and construction activities, disturbed soils may be exposed to storm water runoff, with the potential for the runoff to carry sediments or contaminants from accidental spills into the storm system. The Army would comply with all regulatory requirements, including preparation and implementation of a stormwater pollution prevention plan (SWPPP) that would include BMPs developed to minimize potential impacts associated with increased runoff. As stated in Section 2.2.4.5, the Army would submit a NOI to the State Water Resources Control Board and would obtain a National Pollutant Discharge Elimination System General Construction Storm Water Permit that would meet all the minimum requirements set forth in the waste discharge requirements of the permit. Additionally, best management practices, such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm

sewer inlets, vegetation restoration in disturbed areas, and street sweeping, would be implemented during project construction, as appropriate.

The proposed action would increase impervious surfaces by approximately 187,300 square feet (4.3 acres). The increase in pavement and structures on the site may reduce the amount of permeable ground area by approximately 34 percent, thereby increasing the volume of stormwater runoff. However, the proposed project would include retention ponds designed to capture the projected stormwater flow. Additionally, the Army would implement the BMPs listed in Section 2.2.4.5, as necessary.

Groundwater

No impacts are expected on groundwater quality or quantity.

Due to the presence of shallow groundwater (less than five feet below the surface in some areas), it is possible that excavation for site development may require dewatering. If so, any water generated by construction dewatering could contain VOCs, which would be contained, tested, and disposed of appropriately, if required.

As described in Section 2.2.4.10, during demolition, construction, and operations at the project site, the Army would clearly mark the 11 existing groundwater monitoring wells to avoid disturbance or damage to the wells. The Army would maintain access to these wells for investigation and cleanup activities conducted by the EPA, the Navy, and other parties. Detailed procedures for protecting current groundwater monitoring and investigation systems would be included in the design and construction specifications.

Additionally, as described in Section 2.2.4.4, a groundwater and soil management plan would be implemented for the management of potentially contaminated soil and/or groundwater that may be encountered during construction, excavation, or trenching activities.

Floodplains

The proposed action is not expected to alter flooding conditions. New storm drainage systems would be adequately sized and designed to prevent flooding.

4.7.2.2 No Action Alternative

Under the no action alternative conditions at the project site would remain unchanged; therefore, no effects on water resources are expected.

4.8 BIOLOGICAL RESOURCES

Biological resources discussed are vegetation, sensitive habitats, wildlife, and special status species. The biological resource region of influence (ROI) is the project site (Figure 2-1) and a 500-foot buffer, based on the potential dispersion of noise and fugitive dust. A site visit of the ROI was conducted on May 1, 2006, during which species and habitat conditions were noted. Biological resources data for the ROI were collected from various sources, including the California Native Plant Society (CNPS) rare species list (CNPS 2006), California Natural Diversity Database (CNDDB 2006), and the US Fish and Wildlife Service (USFWS), Sacramento office, sensitive species list (USFWS 2006). USFWS correspondence is included in Appendix A.

The project site is developed and bordered by developed areas and by Stevens Creek, which is a modified natural community along the western edge of the ROI. Don Edwards National Wildlife Refuge and other San Francisco Bay baylands are found to the north of the project but outside of the ROI. The project site is limited to residential buildings, landscaped yards, and a baseball field (Figure 2-1).

4.8.1 Regulatory Overview

Biological resources in the ROI were evaluated in accordance with the applicable provisions of the statutes, executive orders, permits, and regulations. Federal Regulations that apply to the project site are the ESA of 1973 (16 USC §§ 1531-1534); Migratory Bird Treaty Act of 1918 (MBTA) (16 USC §§ 703-712); Fish and Wildlife Conservation Act, 16 USC 2901; EO 13112: Invasive Species (February 3, 1999); and EO 13186: Responsibilities of Federal Agencies to Protect Migratory Birds (January 10, 2001). State Regulations that apply to the project site are California Endangered Species Act (California Fish and Game Code §§2050 – 2097).

Due to the proximity to occupied critical habitat for the Central Coast Steelhead in Steven's Creek, the Army completed ESA Section 7 consultation with the NMFS. The response letter from NMFS is discussed in Section 4.8.3 and is included in Appendix A.

4.8.2 Affected Environment

The project site is characterized by buildings, paved roadways, landscaping, and mowed disturbed grassland. It is immediately adjacent to Stevens Creek and is near the San Francisco Bay, two areas with high ecological value. The ROI includes Stevens Creek and its riparian corridor although the direct effects would occur exclusively in the existing developed areas.

4.8.2.1 Vegetation

The ROI is primarily developed with patches of ruderal grassland and landscaped shrub, trees, and flowers. Aquatic and riparian habitats are present in Stevens Creek outside the boundaries of the project site and buffered from the project site by a dirt road and levees.

Ruderal areas and nonnative grasslands typically support wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), fescues (*Vulpia* spp.), clovers (*Castilleja* spp. and *Trifolium* spp.), lupines

(*Lupinus* spp.), filaree (*Erodium* spp.), and tarweeds and thistles (Asteraceae). The riparian area in Stevens Creek supports willows (*Salix* spp.), walnut (*Juglans* spp.), sycamores (*Platanus racemosa*), and coyote brush (*Baccharis pilularis*).

4.8.2.2 Sensitive Habitats

Stevens Creek, located in the western portion of the ROI, is a protected habitat as waters of the United States and is bordered by a riparian community. Stevens Creek is designated critical habitat for the Central California Coast steelhead distinct population segment (DPS) (NOAA Fisheries 2005). The riparian corridor that borders the creek along the western portion of the ROI is composed of willow riparian and willow scrub communities and includes mature willows, walnut trees, sycamores, and coyote brush. Riparian habitat is a rare and highly important habitat to wildlife in California (Riparian Habitat Joint Venture 2004).

4.8.2.3 Wildlife

The developed and landscaped habitats that make up the ROI provide limited habitat value for wildlife. Due to development, human activity, and broken, discontinuous habitat, the wildlife using this community consist chiefly of species tolerant of humans. Natural habitat in Stevens Creek provides more valuable habitat for wildlife. Many common bird species expected to occur on the site were observed during the site visit.

4.8.2.4 Special Status Species

Special status species are those wildlife or plant species that are federally or state listed as threatened or endangered, or species that are considered state species of special concern. Species considered environmentally sensitive include CNPS 1A (presumed extinct) and 1B (rare and endangered in California and elsewhere) plant species.

Information on special status species potentially occurring in the Mountain View US Geological Survey (USGS) 7.5 minute quadrangle that contains the project ROI was obtained through an official list generated on the USFWS Web site (USFWS 2006) (Appendix A) and the California Natural Diversity Database (CNDDB 2006) (Appendix B). Most special status species that were listed as potentially occurring in the Mountain View quadrangle require unique habitat types, such as northern coastal salt marsh, dense woodlands, and native grasslands. None of these habitats occurs in the project area. There are some riparian and riverine habitats which occur on the western border of the ROI, in the Stevens Creek area and any species that could potentially occur in this portion of the ROI are considered in the discussion below.

Due to minimal availability of high-quality or high-value habitat in the project area and ROI, the majority of special status species identified in the USFWS list are considered unlikely to occur within this area. No special status plants are known to exist within the ROI. Those special status species considered to have the potential to occur in the ROI are addressed in more detail below. These include the following:

- Marginal burrowing owl habitat is present in the project area. A burrowing owl survey was performed on October 17, 2006, and no owls were sighted, nor were any active burrows found (Tetra Tech 2006b);
- Central California Coastal steelhead are known to exist within Stevens Creek;
- Migratory birds such as black phoebes and swallows are known from the project area; and
- Two sensitive bat species (pallid bat [*Antrozous pallidus*] and Western mastiff bat [*Eumops perotis*]) have the potential to occur within the project area in vacated houses and trees. There are no documented sightings in this area.

Central California Coast Steelhead (*Oncorhynchus mykiss*)

Central California Coast steelhead is federally listed as threatened (NOAA Fisheries 2006). Upstream migration from San Francisco Bay occurs from December through May, and peak spawning occurs in April. This DPS is threatened by sedimentation and channel restructuring due to floods, resulting in part from poor land management practices (NatureServe 2006).

Central California coast steelhead DPS is known to occur throughout Stevens Creek (Leidy et al 2005). Federally designated critical habitat, finalized in September 2005, identifies Stevens Creek as critical habitat for this DPS (NOAA Fisheries 2005). The stormwater sewer system for the project site drains into Stevens Creek, west of the project site and within the ROI. This system predates designation of critical habitat and federal listing of this species.

Migratory Birds

Migratory birds and their eggs are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). Migratory birds, many of which are not ESA listed, such as swallows, sparrows, and finches, may nest on buildings and in urban trees. Eggs and young are at risk of being disturbed or destroyed during demolition and construction during the nesting season (typically February through July). Many common bird species expected to occur on the site were observed during the site visit. This includes the following MBTA (non-ESA listed) species: American bittern (*Botaurus lentiginosus*), American crow (*Corvus brachyrhynchos*), barn swallow (*Hirundo rustica*), brewer's blackbird (*Euphagus cyanocephalus*), great blue heron (*Ardea herodias*), great egret (*A. alba*), tree swallow (*Tachycineta bicolor*), black phoebe (*Sayornis nigricans*), mallard (*Anas platyrhynchos*), mourning dove (*Zenaida macroura*), northern mockingbird (*Mimus polyglottos*), Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), and American robin (*Turdus migratorius*).

Western Burrowing Owl (*Athene cunicularia hypugaea*)

The western burrowing owl is a California species of special concern and is also protected by the Migratory Bird Treaty Act of 1918 (16 USC 703-711). It inhabits open dry grasslands, agricultural and range lands, desert, ponderosa, and pine habitats (California Department of Fish and Game [CDFG] 1995). The breeding season is February through August (CDFG 1995), with a

peak from mid-April to mid-July (CBOC 1993). Nesting burrows are often in former small mammal burrows. Burrowing owls show high nesting site fidelity, and burrows can be assumed to be occupied if a burrowing owl was observed in it within the last three years (CDFG 1995). The western burrowing owl is declining throughout its range, in part as a result of urban development and other physical disturbances to owl burrows (Trulio 1995).

While burrowing owls have been known to occur within the general vicinity of the project area (NASA 2002), habitat within the ROI is marginally suitable, with the greatest potential for occurrence being the northern portion of the ROI or in areas adjacent to the ROI but outside of the boundaries of the project site. Results of a CNDDDB search for documentation on burrowing owl occurrences in the project area show that 13 burrowing owl sightings have been recorded in the Mountain View Quadrangle (Santa Clara County) in the vicinity of the ROI. Of the four closest sightings, all from 2005, two were 0.83 mile and 0.88 mile from the study area, with the farthest sighting being 1.3 miles away. A burrowing owl survey was performed on October 17, 2006, and no burrowing owls were sighted, nor were any active burrows found (Tetra Tech 2006b).

Bats

The ROI is within the range of two bat species that are California species of special concern: the pallid bat (*Antrozous pallidus*) and western mastiff bat (*Eumops perotis*). These bats can be found throughout northern California (Zeiner et al. 1990) and are generally known to roost or hibernate in buildings and mature trees (Bat Conservation International 2006). Mating occurs in the fall to midwinter, with young born after a 50- to 70-day gestation period, from April to July (Zeiner et al. 1990; NatureServe 2006).

4.8.3 Environmental Consequences

4.8.3.1 Proposed Action

The proposed action would have minor short- and long-term adverse impacts on biological resources, with protection measures incorporated into the project design (Section 2.2.4). Key avoidance measures include a setback from Stevens Creek and pollution prevention measures, avoidance of migratory birds nests or removal of nests prior to egg-laying, preconstruction burrowing owl surveys, and dust and noise minimization measures.

Most impacts would be short-term direct impacts, limited to the demolition and construction period. Long-term minor impacts would result from the removal of mature trees. The short-term impacts of demolition and construction activities include elevated noise and dust and disturbance associated with demolition and construction. Disturbance would be both indirect (noise and increased human presence) and direct (crushing and mechanical impacts from equipment). This would adversely affect wildlife by making the site temporarily inhospitable to birds or other urban wildlife that currently use the site. There would also be adverse impacts on vegetation due to trampling and dust related photosynthesis impairment. These impacts are considered minor due to the existing high level of human activity and adjacent aircraft flight activity, both of which result in high baseline noise and dust levels and an already disturbed environment.

NOAA Fisheries concurred with an assessment that the project actions are not likely to adversely affect central California coast steelhead or any designated critical habitat as no in-water work is proposed as part of the project action. NOAA Fisheries concurrence letter is included in Appendix A. Measures included to minimize impacts (both short term and long term) from actions in the ROI are setback distances, revegetating with native species, using fencing or other barriers during construction and demolition, and using standard best management practices (BMPs), including a new stormwater retention basin. All these measures would reduce impacts so that there would be no adverse impacts on steelhead or on its critical habitat.

The primary long-term impact on biological resources would be the loss of trees in the project site that support roosting birds and possibly bats. This habitat, though heavily disturbed by human influences, such as trampling, noise, and dust, and marked by invasive species, such as nonnative grasses and forbs, was observed to support insects and foraging swallows. Trees within the project area would be removed when avoidance is not feasible. As described in Section 2.2.4, trees would be replaced as part of the landscaping plan to minimize habitat loss and would be removed outside the bird breeding season to avoid loss of nesting birds.

4.8.3.2 No Action Alternative

No adverse impacts on biological resources are expected. Under the no action alternative, the ROI would not be altered from existing conditions, and there would be no changes to the existing condition of biological resources.

4.9 CULTURAL RESOURCES

Cultural resources can be prehistoric, Native American, or historic. Prehistoric resources are physical properties resulting from human activities that predate written records.

Native American resources are sites, areas, and materials important to Native Americans for religious, spiritual, or traditional reasons. Activities that can affect sacred areas, their accessibility, or the availability of materials used in traditional practices are of primary concern.

Historic resources consist of physical properties, structures, or built items resulting from human activities that post-date written records. Generally, architectural resources are considered historic if they are over 50 years old.

The ROI for cultural resources is the area of potential effect (APE), which for this project encompasses the surfaces and depths that would be disturbed by the removal of structures and utilities at the project site, as well as construction of the new structures. Most of this discussion is based on past cultural resources and environmental studies for the Moffett Field area. These reports are supplemented by a cultural resources record search at the Northwest Information Center (NWIC), a sacred lands file search through the Native American Heritage Commission (NAHC) and a request for local Native American contacts, a May 1, 2006, site visit, and a September 2006 formal survey of the APE. During the site visit, ground surfaces were observed and unlandscaped portions of the APE were inspected, but a formal cultural resource survey of the area was not conducted. Due to the archaeologically sensitive nature of the APE, discussed further below, a pedestrian survey and subsurface testing program was conducted over a 76.6-acre parcel of the USAR Complex that includes the project site (Tetra Tech 2006a).

Moffett Field is within the traditional territory of the Costanoan linguistic group (Levy 1978). Costanoan groups associated with the Moffett Field region are not federally recognized by US government.

During the Historic Period the Moffett Field coastline incorporated landings used to transport commodities to San Francisco by boat. Two such landings were located in the general area: Whisman Landing (also known as the Bernard Landing and the Jagel Landing) and the Rengstorff Landing (also known as the Guth Landing) (David Chavez and Associates 1981). Both landings and the roads leading to them have since been covered by more recent construction and filling activities.

The 1859 Plat of Rancho Posolmi indicates that the project site was within the boundaries of Rancho Posolmi or “Ynigo Reservation” at that time (NWIC 2006). The reservation accommodated Mission Indians from the Santa Clara Mission during and following secularization of the California missions. Large tracts of such grants and public lands were later subdivided into small farms (David Chavez and Associates 1981). This first indication of historic modification of the current APE is on an 1865 General Land Office Plat Map (NWIC 2006) that shows land ownership and structures, most likely farms, existing in the area by that time. By 1899, it appears that several other structures and roads had been developed in the APE (USGS 15” Palo Alto Quadrangle, Reprinted 1901; NWIC 2006). Although none of the structures are known to exist

today within the APE, these maps indicate the possibility of buried historic resources. Moffett Field first appears on the US Army Corps of Engineers (USACE) Palo Alto Quadrangle in 1940 (NWIC 2006).

4.9.1 Regulatory Context

The project site is a federal property and thus federal and military regulations, policies, and laws apply including Sections 106 and 110 of the NHPA, the Native American Graves Protection and Repatriation Act, the American Indian Religious Freedom Act, Executive Orders 13007 and 13175, and the Department of Defense's Annotated Policy on American Indians and Alaska Natives (dated October 27, 1999).

4.9.2 Affected Environment

4.9.2.1 Archaeological Resources

Basin Research Associates, Inc. (Basin Research) completed a survey of NAS Moffett Field and NASA Ames Research Center in 1990 (Basin Research Associates 1991). Several archaeologically sensitive areas were identified by Basin Research based on archival and literature research. Three of the sensitive areas are within the APE. Basin Research indicated that surveys and subsurface testing have failed to provide evidence of past cultural activity in these areas.

A supplemental site record search was conducted by the NWIC. The results, dated May 16, 2006, indicated there are no previously recorded sites within the APE, but numerous historic structures and prehistoric sites are within a half-mile radius. It also indicated that only portions of the APE have been previously surveyed (David Chavez and Associates 1980, 1981). A separate survey was conducted along the Stevens Creek border of the APE in 1978 (Holman and Associates 1978). None of the surveys returned by the record search indicated prehistoric or historic cultural resources within the APE.

Although none of the past surveys or research covering the APE have found indications of remaining cultural materials, it was observed during the site visit that the soil in the archaeologically sensitive areas is different from that in surrounding areas. Without additional investigation it was not possible to confirm if these were marsh sediments from the nearby marshlands or if the soil color difference is a result of cultural materials. Additionally, a buried midden site and associated burials were recently unearthed during an unrelated construction project in the Wescoat housing area, southeast of the project site. This site is potentially associated with the sensitive area to the southeast of the current APE.

Due to observations made during the site visit and the recent discovery of a buried site potentially associated with one of the archaeologically sensitive areas, the Army undertook a pedestrian survey and subsurface testing program before implementing the project (Tetra Tech 2006a). In that survey, the Army found no surface archaeological resources and low potential for subsurface, intact archaeological resources. The State Historic Preservation Office (SHPO) has concurred with the finding of no adverse effect. The SHPO letter is included in Appendix A.

4.9.2.2 Native American Resources

The Army contacted the NAHC to request a sacred lands file search to identify any traditional cultural properties (TCPs) that may exist on or near the project site. In a letter dated May 26, 2006, the NAHC responded with a list of Native Americans culturally affiliated with the Moffett Field area. All interested parties were contacted by letter on May 31, 2006 and requested to notify the Army of any TCPs or other cultural concerns regarding the project site. As of this publication, no responses have been received.

4.9.2.3 Architectural Resources

All structures proposed for demolition are less than 50 years old, according to the Army and Navy real estate records. As such, they are not eligible for inclusion on the NRHP.

The NRHP-listed Shenandoah Plaza Historic District neighbors the cultural APE to the east and southeast. The APE is within the historic landscape of this historic district, but does not include any of the listed buildings nor is it within the district boundaries. Shenandoah Plaza Historic District is considered significant at the national level for its association with the expanding coastal defense capabilities of the US Navy as well as for its association with the airship technology during the inter-war years between 1932 and 1945. Additionally, the district is considered significant for its distinctive architectural style of Mediterranean or Spanish Colonial Revival, popular in California in the 1920s and 1930s. The layout of the buildings is also considered significant as it is representative of the Navy Bureau of Yards and Docks' adherence to good planning design (NASA 2002).

There are other historic structures to the east of the cultural APE, specifically buildings N-200, the Administration Building, and N-221, a 40 x 80 Wind Tunnel.

4.9.3 Environmental Consequences

The proposed action is an undertaking as defined by 36 CFR 800.3 and is subject to Section 106 and consideration under other federal requirements. Cultural resources impacts are considered significant if the proposed action would 1) Disturb or destroy prehistoric or historic resources that are potentially eligible for or are formally listed on the National Register of Historic Places (NRHP); or 2) Desecrate or destroy, visually or aurally intrude upon, or impede access to Native American resources. The criteria used to assess NRHP-eligibility (36 CFR 60.4) are as follows:

- A. Association with events that have made a significant contribution to the broad patterns of our history;
- B. Association with the lives of persons significant to our past;
- C. Resources that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

- D. Resources that have yielded or may be likely to yield information important in prehistory or history.

In addition to historic significance, a property must have integrity to be eligible for the NRHP. This is the property's ability to convey its demonstrated historical significance through location, design, setting, materials, workmanship, feeling, and association.

4.9.3.1 Proposed Action

No impacts on cultural resources are expected pending results of surveys and assessments described below. The US Army and the California SHPO have agreed that no adverse effects on historic properties are expected from this action. The SHPO letter is included in Appendix A.

Archaeological Resources

Because no archaeological sites have been confirmed in the APE, no impacts on archaeological resources are expected from the proposed action. Although the potential for subsurface archaeological resources to exist within the APE is considered low, in order to avoid any inadvertent significant impacts on unrecorded subsurface resources, accidental discovery measures have been incorporated into the project (see Section 2.2.4.4).

Native American Resources

No Native American concerns or TCPs have been identified at the time of publication of this report. Additionally, there are no federally recognized tribes associated with the Moffett Field area. As such, no impacts on Native American resources are expected from the proposed action.

Architectural Resources

None of the buildings proposed for demolition are considered historic properties. As such, their removal would not constitute an impact on historic architectural resources.

The Secretary of the Interior's Standards for the Treatment of Historic Properties (Weeks and Grimmer 1995) consider new construction within the historic landscape of NRHP structures or districts to be an impact on historic properties. For this project construction would be occurring within the historic landscape of the NRHP-listed Shenandoah Plaza Historic District and near other historic properties. However, given that the historic landscapes of the Shenandoah Plaza Historic District and other historic properties are currently occupied with other modern structures, the new construction is not expected to adversely impact these historic properties.

Additionally, the Shenandoah Plaza Historic District is only minimally visible from the cultural APE as it is screened by buildings and landscaping.

The SHPO concurrence letter for the Army's finding of no adverse effect is included in Appendix A.

4.9.3.2 No Action Alternative

Under the no action alternative, no demolition or associated ground disturbance would occur. As such, no impacts on cultural resources would occur.

4.10 SOCIOECONOMICS

4.10.1 Affected Environment

4.10.1.1 Economic Development

This section describes the socioeconomic conditions of the ROI, including economic development, demographics, housing, quality of life, environmental justice, and the protection of children. The geographical area in which the predominant social and economic impacts of the project alternatives would occur defines the ROI for this study. The major factors used to determine the ROI are the residency distribution of the site's employees and training Soldiers, commuting distances and times, and the location of businesses providing goods and services to the project site and to their personnel and dependents. Based on these criteria, the ROI for the proposed action is the San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA). Additional data were analyzed for Santa Clara County, which is part of the San Jose-Sunnyvale-Santa Clara MSA.

While the baseline year is 2005, the most recent socioeconomic data were obtained primarily from the 2004 Census. When available, more recent data are used to best characterize the current conditions of the socioeconomic ROI. For example, unemployment rates are presented for December 2006, based on the most recent data available.

4.10.1.2 Regional Economic Activity

In 2004, the unemployment rate in the San Jose-Sunnyvale-Santa Clara MSA was 6.7 percent, with 854,200 people in the labor force (EDD 2004a). By December 2006, the unemployment rate had dropped to 4.2 percent, with 857,300 people in the labor force (EDD 2007c). Between December 2005 and December 2006, payroll employment in the San Jose-Sunnyvale-Santa Clara MSA rose by 11,900 jobs, or 1.4 percent (EDD 2007c). Santa Clara County's labor force declined by almost 12 percent from 2000 to 2004 (EDD 2004b). In December 2006, unemployment dropped by 0.2 percent from the previous year (EDD 2007b).

The largest source of jobs in the ROI was the manufacturing industry, which in December 2006 generated 19.0 percent of total employment in the San Jose-Sunnyvale-Santa Clara MSA, followed by professional and business services industry at 18.3 percent and the trade, transportation, and utilities industry at 15.5 percent (EDD 2007a).

In 2004, the per capita personal income in the San Jose-Sunnyvale-Santa Clara MSA was \$48,530, approximately nine percent less than the per capita personal income for 2000 (BEA 2004). The reported per capita personal income for 2004 in Santa Clara County was \$35,230, higher than the per capita personal incomes of both California (\$25,411) and the United States (\$24,020) (US Census Bureau, 2004a, 2004b, 2004c).

4.10.1.3 Demographics

In July 2004, the total population in the San Francisco-San Jose-Oakland MSA was estimated at 7,159,693, an approximately 0.6 percent increase from July 2000 (US Census 2004h). The San Francisco-San Jose-Oakland MSA is used, as it was the defined MSA for the project site prior to December 2005.

Total population for 2004 was estimated at 1,656,128 for Santa Clara County (US Census Bureau 2004d). Although population has been decreasing since 2000, by 2020 Santa Clara County population is expected to exceed 2 million residents (EDD 2004b).

4.10.1.4 Housing

Table 4-5 shows the housing unit characteristics for Santa Clara County. The number of housing units increased from 2000 to 2004 at an average rate of 5,339 housing units per year. Vacancy rates have increased, from 2.3 percent to 6 percent from 2000 to 2004 (US Census 2000, 2004e).

Table 4-5
Characteristics of the Housing Units in Santa Clara County

	Santa Clara County	
	2000	2004
Total Housing Units	579,329	600,685
Occupied Housing Units	565,863	564,670
Vacant Housing Units	13,466	36,015
Owner-Occupied	291,771	343,633
Renter-Occupied	223,473	221,037

US Census Bureau 2000, 2004e.

4.10.1.5 Quality of Life

Law Enforcement Services

Security and law enforcement at the project site is provided by the Santa Clara County Sheriff's Office, composed of approximately 635 personnel (Santa Clara County Office of the Sheriff 2006).

Fire Protection Services

Fire protection services are provided to the site through NASA by the Moffett Federal Field Fire Department. The NASA Ames Fire Department consists of one fire battalion chief/shift supervisor, three fire captain/company officers, and nine firefighters, who operate an engine company, a two-piece truck company, and a two-piece aircraft rescue fire-fighting company from an on-center fire station located at 580 Zook Road, north of Bushnell Road. Additional resources are cross-staffed by the truck company, as required. Staff (40-hour work week) personnel include a fire chief and a battalion chief/training and safety officer (NASA Ames Fire Department 2006).

Medical Services

Health care is provided primarily by off-base facilities in the local communities: El Camino Hospital, Mountain View Health Center, and El Camino Surgery Center.

Schools

Santa Clara County has 21 elementary school districts, 5 high school districts, 6 unified districts and 4 community college districts. The total school enrollment for the 2003-2004 school year was 251,198 students (Santa Clara County Office of Education 2006). The Mountain View-Whisman School District has 9 public schools and provided K-8 education for 4,321 elementary and middle school students in the 2005-2006 school year.

The Mountain View-Los Altos Union District provides high school education to dependents of personnel residing at Moffett Community Housing. The district has three high schools and provides grade 9-12 education for 3,683 students.

Family Support

Family support services available to employees and current residents at the project site include Child Development Services, which includes center-based and quarters-based child care programs operated by NASA.

Shops and Services

A commissary and exchange operated by NASA are located near the project site at Moffett Federal Field, along with post office, credit union, and banking services. In addition, a lodge and shopette (operated by Navy Exchange Service) are approximately 500 feet south of the project site. Additional shops and services are available in the surrounding communities of Mountain View and Sunnyvale.

Recreation

Recreational facilities near the project site include the Moffett Field Golf Course, the Sunnyvale Golf Course on the opposite side of US Highway 101, the Shoreline Golf Course in Mountain View, and various small community parks in Mountain View and Sunnyvale. The Don Edwards National Wildlife Refuge is to the north and northeast, with headquarters in Newark, and Great America Theme Park is approximately three miles southeast.

4.10.1.6 Environmental Justice

On February 11, 1994, President Clinton issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. Environmental justice is analyzed to identify potential disproportionately high and adverse impacts to minority and low-income populations from proposed actions and to identify alternatives that might mitigate the impacts.

The ROI has fewer individuals reporting to be Black or African American or American Indian and Alaska Native than in California or the United States but a significantly higher percentage of Asians than in California or the United States. The percentage of Hispanics or Latinos in the ROI is lower than for California but higher than for the United States as a whole.

**Table 4-6
Race, Ethnicity, and Poverty Status for Santa Clara County,
California and for the United States (2004)**

	Santa Clara County	California	United States
White	57.4%	63.0%	75.6%
Black or African American	2.4%	6.1%	12.2%
American Indian and Alaska Native	0.5%	0.7%	0.7%
Asian	29.4%	12.1%	4.2%
Native Hawaiian and other Pacific Islander	0.4%	0.3%	0.1%
Hispanic or Latino ¹	24.7%	35%	14.2%
Other	6.5%	14.5%	5.2%
Persons living in poverty	8.7%	13.3%	13.1%

Source: US Census Bureau 2004a, 2004b, 2004c, 2004d, 2004f, 2004g.

¹Persons of Hispanic origin may be of any race.

The Census Bureau bases the poverty status of families and individuals on 48 threshold variables, including income, family size, number of family members under the age of 18 and over 65 years of age, and amount spent on food. In 2004, approximately 8.7 percent of the Santa Clara County residents were classified as living in poverty, lower than for California and lower than for the United States as a whole.

4.10.1.7 Protection of Children

Executive Order 13045 seeks to protect children from disproportionately incurring environmental health or safety risks that might arise as a result of Army policies, programs, activities, and standards. As discussed in Section 4.13, previous investigations have identified hazardous materials at the project site. Although these materials are now known to be hazardous, they were widely used in the building products industry and for housing maintenance for many years. Hazardous materials at the site include ACM, LBP, and possibly pesticides and polychlorinated biphenyls (PCBs).

4.10.2 Environmental Consequences

4.10.2.1 Proposed Action

The proposed action would result in approximately 413 full-time employees and 1,500 Soldiers that would train on drill weekends.

Regional Economic Activity

The project would result in minor long-term beneficial impacts on the economy in the area. The proposed action would slightly increase employment and regional spending during demolition, construction, and operations.

Demographics

Long-term minor adverse effects are expected on the ROI population as a result of the proposed action. The proposed action would only relocate 170 employees belonging to the 63D Regional Readiness Center from another metropolitan statistical area (Santa Ana-Anaheim-Irvine Metropolitan Statistical Area). The rest of the employees would be from the same metropolitan area (San Jose-Sunnyvale-Santa Clara Metropolitan Area). Because the employees who would be relocating from other areas to staff the new facilities would be a marginal addition to the existing ROI population, the proposed action would have a minor effect on the total ROI population.

Housing

Long-term minor adverse effects are expected on housing within the ROI. The number of available housing units has been significantly increasing in Santa Clara County. The BRAC action would only relocate 170 employees belonging to the 63D Regional Readiness Center from another metropolitan statistical area (Santa Ana-Anaheim-Irvine Metropolitan Statistical Area). The rest of the employees would be from the same metropolitan area (San Jose-Sunnyvale-Santa Clara Metropolitan Area). Based on Census Bureau housing data, 36,015 housing units were vacant in 2004 in Santa Clara County, adequate to accommodate the potential demand for 170 units generated by the proposed action. Therefore, the marginal increase in population would have a minor effect on housing.

Quality of Life

Minor effects on law enforcement, schools, medical services, family support services, recreation, or other special programs are expected to result from implementing the proposed action.

Environmental Justice

There would be no effect on environmental justice, and there would be no disproportionately high or adverse human health or environmental effects on minority or low-income populations as a result of the proposed action. The closest residential areas to the project site are the mobile home park and the Wescoat housing area. Stevens Creek Trail and Highway 101 separate the project site from the mobile home park and the Wescoat housing area, respectively.

Protection of Children

At the end of August 2006 all the houses were vacated, and no children are living at the project site. A daycare is located within the NASA Ames Research Center, and children may be present in the Wescoat housing area and the mobile homes. The day care center and the Wescoat housing area are approximately 400 feet to the southeast and 1,350 to southeast, respectively. The Stevens Creek Trail Regional Park and Stevens Creek separate the project site from the mobile homes. Temporary and minor noise and air impacts on children are expected during the demolition and

construction period. The Army would take standard precautions to ensure the safety of children during demolition, construction, and operation activities, including limiting access to the project site.

4.10.2.2 No Action Alternative

With all the housing units vacant since August 2006, no impacts on demographics, housing, or quality of life would result from the no action alternative. No disproportionate impacts on children or minority or low-income populations are also expected. Children are no longer exposed to hazardous materials present in the houses, including ACM and LBP. No other hazardous materials are handled or stored at the site; therefore, no impacts are expected on children or minority populations present near the project site.

4.11 TRANSPORTATION

The primary affected roadways considered in this analysis are the Mountain View roadway system, particularly Highway 101, State Route 85, and R. T. Jones Road, a secondary road along the eastern boundary of the project site.

4.11.1 Affected Environment

4.11.1.1 On-Site Roadways and Parking Spaces

As shown on Figure 2-3, the primary roads serving the project site are A Road, which is a tertiary road and typical of residential roadways, and R. T. Jones Road, which is a secondary road owned and maintained by NASA (USAR 2006).

The main access to the project site is along R. T. Jones Road. Moffett Boulevard intersects with R. T. Jones Road and provides direct access from the site to both Highway 101 and State Route 85 (NASA 2002).

Orion Park has several common parking spaces near the housing buildings.

4.11.1.2 Off-Site Roadways

The major interstates and highways in the vicinity include Highway 101 and State Route 85. Highway 101, located south of the project site, extends southward past San Jose and northward past San Francisco (USAR 2006). Highway 101 has four lanes in each direction, and the posted speed limit is 65 miles per hour. State Route 85, which ties into Highway 101 south of the project site, provides a second route between south of San Jose and Mountain View. Moffett Boulevard is the primary north-south arterial near the project site, and Whisman Road is the closest north-south residential arterial (City of Mountain View 1992).

4.11.1.3 Traffic

Highway 101 and State Route 85

Level of Service (LOS) is a qualitative measure of operating conditions within a traffic stream, and their perception by motorists and/or passengers. Individual LOSs are rated from “A” for most favorable to “F” for least favorable, with each rating representing a range of conditions.

The project site falls within the limits of the Santa Clara Valley Transportation Authority (SCVTA), which implements the Congestion Management Program (CMP) (NASA 2002). CMP facilities in the area include Highway 101 and State Route 85. The SCVTA has established LOS E as the standard for congestion management program facilities. In general, Mountain View considers LOS D to be the minimum acceptable level of peak hour operation for signalized intersections on routes not covered by the CMP. According to the general plan of the city of Mountain View, Highway 101 west of Moffett Boulevard is currently operating at a substandard LOS (City of Mountain View 1992).

R. T. Jones Road and Moffett Boulevard Intersection

As presented in Table 4-7, under existing conditions, 159 vehicles, 70 vehicles and 32 vehicles travel north on R.T. Jones Road during the AM, PM and Sunday peak hours, respectively, and 11 vehicles, 169 vehicles, and 44 vehicles travel south on R.T. Jones Road during the same periods. Based on traffic analyses conducted by Dowling Associates in 2006 and 2007, R. T. Jones Road carries about 3,400 daily vehicles, which is well below its capacity of 5,300 vehicles per day; this is equivalent to an LOS C,¹ based on the planning level analysis (Dowling Associates 2007).

**Table 4-7
Existing Traffic Volumes at R. T. Jones Road**

	Traffic Volumes		
	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Weekend peak hour
Right lane (vehicles coming to the project site)	159	70	32
Left lane (vehicles leaving the project site)	11	169	44

Source: Dowling Associates 2007

The intersection of Moffett Boulevard and R. T. Jones Road is unsignalized, with stop signs on each approach. Figure 4.11-1 presents the traffic volumes at this intersection. This intersection operates at LOS A and B during the AM and PM peak hours, respectively. On weekends, the intersection operates at LOS A. LOS A and B imply that the average delay is 0 to 15 seconds per vehicle.

4.11.1.4 Bus Transportation

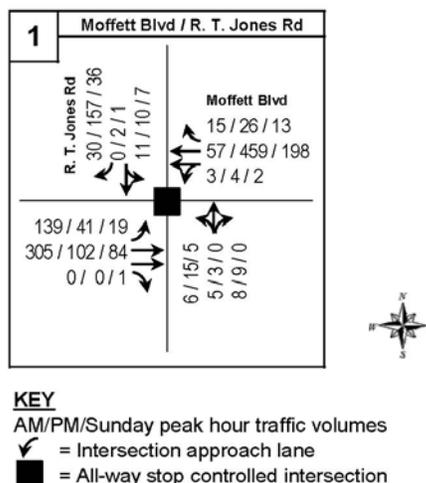
The SCVTA provides local and express bus service in the area around the project site (SCVTA 2006). These routes serve main arterial streets, neighborhoods/residential areas, shopping, schools, employment areas and other businesses in the surrounding cities of Mountain View, Los Altos, Sunnyvale, and Santa Clara. Approximately 80 percent of Santa Clara County residents are within a quarter mile of a transit route (SCVTA 2006).

4.11.1.5 Rail Transportation

The closest Bay Area Regional Transit (BART) station to the proposed site is in Millbrae, approximately 24 miles to the northeast. Parking and carpool spaces are available at the Millbrae station (BART 2006). BART provides service to Oakland, San Francisco, Dublin/Pleasanton, Fremont, Pittsburg/Bay Point and Richmond. The closest Caltrain station to the project site is at

¹Using Florida DOT Quality of Service, Table 4-1 Generalized Annual Average Daily Volumes for Urbanized Areas for a two-lane undivided Non-State roadway. The Florida DOT manual provides a planning-level analysis based on the Highway Capacity Manual.

Figure 4.11-1 Existing Traffic Volumes and Geometry at Moffett Boulevard and R. T. Jones Road



West Evelyn Avenue (Caltrain 2006). It has bicycle lockers, light rail connection, ticket vending machines, all day parking, public telephones, and wheelchair accessibility. Caltrain provides service between San Francisco and Gilroy.

The closest light rail transit stations to the proposed sites are the Mountain View Transit Center (located between Central Expressway and the Caltrain tracks) and the Bayshore/NASA Station (located on the north side of Manila Drive east of Ellis Street) (SCVTA 2006). These stations are on a line that runs east and south from Mountain View. In the 2005, the SCVTA public transportation system had a total ridership of approximately 37 million boardings, and a total paratransit ridership of 913,000 trips. Ridership on bus and rail increased from July 2004 to July 2005 by 1.2 percent and 9 percent, respectively (SCVTA 2005).

4.11.1.6 Air Transportation

Moffett Federal Airfield is the closest airport to the project site and is approximately half a mile to the east. The supervision of many Moffett's facilities, two runways, and three aircraft hangars was turned over to NASA Ames Research Center (Ames Research Center 2006).

San Jose International Airport and San Francisco International Airport are the closest airports to the proposed site that offer domestic and international public flights. San Jose International Airport is approximately 7.5 miles to the southeast, and San Francisco International Airport is approximately 24 miles to the northeast. There are also smaller airstrips in the region, such as the Palo Alto Airport of Santa Clara County and San Carlos Airport.

4.11.1.7 Plans and Policies

City of Mountain View

The Mountain View General Plan includes traffic policies aimed at improving the traffic and commute conditions in the area. The General Plan supports mixed-use developments and higher-density developments near rail stations. The city's main strategies to improve traffic conditions include TDM, more efficient operation of existing roads, and improvements to the rail, bus, bicycle, and, pedestrians circulation systems (City of Mountain View 1992).

The General Plan goals also include:

- Supporting improvements that will allow freeways and expressways to operate more efficiently;
- Building and maintaining a safe and efficient local street system with the aim of meeting LOS goals;
- Improving Rail Transit serving the city of Mountain View; and
- Ensuring balanced funding for transportation systems.

Santa Clara Valley Transportation Authority (SCVTA)

The SCVTA is implementing the Valley Transportation Plan 2030. The long-range plan of transportation projects considers all transportation modes and lists efforts to improve mobility, increase access and reduce traffic congestion. The Valley Transportation Plan 2030 includes highway, roadway, bicycle, and pedestrians' improvements (SCVTA 2005).

4.11.2 Environmental Consequences

4.11.2.1 Proposed Action

Short-term and long-term adverse impacts on transportation are expected, which, with implementation of the traffic control measures stated in Section 2.2.4.9, would be less than significant. Transportation enhancements within the project site would be designed and constructed in accordance with applicable local, state, and federal roadway regulations/guidelines. Parking would be provided in project parking lots and on adjacent Army property for weekend reservists. As a result, there would be no impacts from hazards due to roadway design, inadequate emergency access, or parking capacity.

Demolition and construction workers would use company or personal vehicles to access sites, so there would be no increased demand on public transportation during demolition and construction.

Demolition and construction activities would be completed over a period of 30 months, beginning as early as August 2007. During demolition and construction, short-term minor impacts on traffic are expected from the workers and the demolition and construction equipment. These impacts would be temporary and limited to the duration of demolition and construction.

The number of users of public transportation resulting from the proposed action is unknown. However, the SCVTA plans target an increased use of public transportation to minimize congestion on the major roadways. The increase in the number of public-transportation users as a result of the proposed action is expected to be marginal, resulting in minor impacts on public transportation.

To analyze the long-term impacts on the roadway system near the project's site, a traffic study was completed in March 2007 (Dowling Associates 2007). Potential transportation impacts were evaluated for R. T. Jones Road and its intersection with Moffett Field Boulevard and the project entrance.

Significance Criteria

- The project roadway impact is considered significant if the project were to cause the existing roadway LOS to degrade to LOS E, more than 15,500 daily vehicles.
- The project intersection impact is considered significant if the project were to cause the intersection LOS to degrade to LOS E or F. At the intersection of Moffett Boulevard and R. T. Jones Road, this threshold would be crossed if the project were to generate more than 450 vehicles during the morning peak hour and more than 335 vehicles during the evening peak hour.

Roadway Impacts

Highway 101 and State Route 85

As noted earlier, Highway 101 west of Moffett Boulevard is currently operating at a substandard LOS. Vehicles generated by the proposed project could add to the traffic congestion on the off-site roadways.

Implementing the TDM program, as described in Section 2.2.4.9, would reduce vehicle trip generation along Highway 101 and State Route 85, resulting in minor adverse traffic impacts.

R. T. Jones Road

Based on a traffic count conducted on September 28, 2006, R. T. Jones Road carries about 3,400 daily vehicles, which is well below its capacity of 5,300 vehicles per day, equivalent to an LOS C. The traffic volumes on R. T. Jones Road during the morning and evening peak hours range between 300 and 350 vehicles, generating LOS C conditions. With the addition of the 413 project trips during the peak hours, the LOS could drop to D during the morning peak hour, assuming that a left-turn lane is not provided to access the project.

As a two-lane roadway that serves as a collector for the adjacent uses, R. T. Jones Road has the capacity to accommodate the increased traffic. However, the peak hour LOS on two-lane roadways is based on the percent of time spent following other vehicles and is also affected by the delays at the intersections (as described below). Given the length of R. T. Jones from the Ames Center to Moffett Boulevard and the limited access points, the operations of this roadway

could be impacted by project vehicles stopped to make the left-turn from R. T. Jones Road into the project site.

For the peak weekend trainings, when up to 735 soldiers arrive on Saturday and Sunday mornings and depart on Saturday and Sunday evenings, the project-generated traffic alone on R. T. Jones Road could cause the roadway to operate at LOS D assuming all the project-generated traffic would arrive and depart during a single peak hour and the amount of background traffic on R. T. Jones Road would be minimal.

Implementing the TDM programs, as described in Section 2.2.4.9, would reduce vehicle trip generation along R. T. Jones Road and Moffett Boulevard, resulting in minor adverse traffic impacts. The TDM program could include transit alternatives, such as shuttle service from the Mountain View Caltrain station, incentives for weekday employees and weekend trainees to use transit, subsidies for public transportation for federal employees, preferential carpool parking, bike lockers, and staggered work hours to shift traffic from the peak hour and disperse arrivals and departures throughout the peak period.

Intersection Impacts

The methodology used to analyze intersection LOS is that outlined in the Transportation Research Board's Highway Capacity Manual, 2000. LOS is a qualitative indication of the level of delay and congestion experienced by motorists using an intersection. LOS is designated by the letters A through F, with A being the best condition and F being the worst condition (high delay and congestion).

At all-way stop intersections, the LOS is determined by the weighted average delay for all vehicles entering the intersection. The methods for measuring traffic at these types of intersections calculate a single weighted average delay and LOS for the intersection. Table 4-8 presents the average delay criteria used to determine the level of service at all-way stop intersections.

**Table 4-8
Level of Service Criteria for Unsignalized Intersections**

Level of Service	Average Control Delay (seconds per vehicle)
A	0 to 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	>50

Source: Transportation Research Board, *Highway Capacity Manual 2000*, Exhibits 17-2 and 17-22

Dowling Associates performed intersection turning movement counts at the intersection of Moffett Boulevard and R. T. Jones Road between 7:00 AM and 9:00 AM for the weekday morning peak period on September 27, 2006, between 4:00 PM and 6:00 PM for the weekday afternoon

peak period on September 26, 2006, and between 5:00 PM and 7:00 PM² for the weekend evening peak period on March 4, 2007. The existing intersection operations with and without the proposed action are summarized in Table 4-9.

**Table 4-9
Intersection Level of Service Summary (Without Environmental Protection Measures)**

Intersection			Existing		With Project	
			LOS	Delay	LOS	Delay
Moffett Boulevard and R. T. Jones Road	Weekday	AM	A	9.1	D	27.1
		PM	B	11.7	F	58.4
	Weekend	PM	A	8.3	F	97.6
Project Site Entrance and R. T. Jones Road	Weekday	AM	-	-	A	8.1
		PM	-	-	B	12.7
	Weekend	PM	-	-	C	23.4

Note: At the project entrance and R. T. Jones Road, the existing operations would be LOS A because there is no current activity at the entrance.

Moffett Boulevard and R. T. Jones Road Intersection

With the addition of project traffic, the delays for the southbound right-turn lane during the evening peak hour could result in LOS F, more than 50 seconds delay per vehicle. During the evening peak hour, the average queue for the right-turn lane on R. T. Jones Road is estimated at 17 vehicles, which could extend about 425 feet along R. T. Jones Road from the intersection at Moffett Boulevard. All other turning movements at the intersection could operate at LOS C or better with minimal delays.

During training weekends, the additional traffic generated by the project could result in LOS F. The southbound right-turn from R. T. Jones Road onto Moffett Boulevard could back up along R. T. Jones Road due to the all-way stop control at this intersection. The average queue is estimated at 26 vehicles.

With implementation of the measures noted in Section 2.2.4.9, the proposed action would have minor impacts on traffic at this intersection. Implementation of these measures would result in LOS A during the morning peak period, LOS C during the evening peak period, and LOS B during the weekends.

²The weekday evening peak hour is considered between 4:00 PM and 6:00 PM and the weekend peak hour is considered between 5:00 PM and 7:00 PM.

Project Site Entrance and R. T. Jones Road Intersection

At the project site entrance on R. T. Jones Road, the analysis assumed that the traffic leaving the project would be stop-controlled. The project site entrance on R. T. Jones Road would operate at LOS B or better during both the weekday morning and evening peak hours. The stop-controlled project traffic could experience average delays of 8.1 seconds in the morning and 12.7 seconds in the evening.

During training weekends, when all 735 Soldiers are leaving the project site, this intersection could operate at LOS C due to delays associated with the stop-controlled right turns, despite the minimal traffic on R. T. Jones Road.

With the implementation of the measures noted in Section 2.2.4.9, the proposed action would have minor impacts on traffic at this intersection.

4.11.2.2 No Action Alternative

Under the no action alternative, there would be no impacts to roadways, traffic, and public transportation at the project site because the site would remain vacant.

4.12 UTILITIES

4.12.1 Affected Environment

4.12.1.1 Potable Water Supply

Potable water is supplied to the project site through the NASA- and California-permitted water distribution system. NASA receives its potable water and fire protection supply from the San Francisco Water Department. Approximately 85 percent of the water supply comes from the Hetch Hetchy Reservoir, and the remaining 15 percent comes from East Bay Municipal Utility District sources (NASA 2002).

The water distribution system for the project site is tied to the system supplying water to the NASA Research Park (NRP). The primary water supply to the project site enters the NRP from a San Francisco Water Department meter at Tyrella Street.

The original freshwater distribution system at the project site (via the NRP) was installed in 1932 and is composed of cast-iron 6-inch to 8-inch pipes (NASA 2002). A large portion of the distribution center has deteriorated and must be operated at a lower pressure to reduce leaks and other malfunctions. Some sections have required repair in recent years, and the most problematic water lines and gate valves have been replaced, some by asbestos-cement, ductile iron, or plastic pipe (NASA 2002).

Groundwater is not extracted for any purpose at the project site.

4.12.1.2 Sanitary Wastewater

Wastewater collection is provided to the project site through NASA's wastewater collection systems, which enter into Mountain View's wastewater collection system.

Wastewater from the project site is collected via a 27-inch trunk line that runs along Moffett Boulevard to the east. The gravity line is operated by the City of Mountain View and carries wastewater from the project site to a lift station near the Mountain View Golf Course. The lift station has a capacity of 10 million gallons per day and is operating at full capacity (NASA 2002). Wet weather flows exceed the station capacity two or three times a year (NASA 2002). During these events, the pumps shut off automatically, and flow is bypassed to the Palo Alto Regional Water Quality Control Plant.

Wastewater collected through the Mountain View sewer system is treated at the Palo Alto Regional Water Quality Control Plant, which has a capacity of approximately 39 million gallons per day (mgd) dry weather flow and 80 mgd peak wet weather flow. Current total peak wet weather flow to the plant is approximately 60 mgd. Mountain View has a current treatment allocation of 14.4 mgd dry weather flow and 30 mgd peak wet weather flow and uses approximately 8.5 mgd dry weather flow and 22 mgd peak wet weather flow (Miks 2005). NASA Ames Research Center, through which the project site is provided wastewater collection, has a contract with the Palo Alto Regional Water Quality Control Plant for treating up to 0.3 mgd peak

flow. Current dry weather flow is approximately 0.2 mgd, with approximately 0.6 mgd wet weather flow (Miks 2005).

4.12.1.3 Storm Water Collection

A portion of the storm water from the project site flows to storm drain mains that drain to Stevens Creek. The other portion flows into the NASA Western Drainage System (NASA 2002). The NASA Western Drainage System discharges into a storm water retention pond approximately 2,500 feet north of the project site. This retention pond has no outfall, and during most of the year water is removed by evaporation only (NASA 2002). During the wet season when flow into the pond exceeds the storage capacity, water is pumped directly into Stevens Creek.

4.12.1.4 Energy Sources

PG&E supplies both natural gas and electricity to the project site through NASA. Electricity is provided via three major 12-kilovolt (kV) feeders that serve switchgear in the NRP area at the northwest corner of the intersection of Bailey Road and South Perimeter Road, to the southeast of the project site. The system has a load capacity of 11.2 megavolt amperes. The distribution system is underground and is composed of a combination of terra cotta (maximum size 3.5 inch), calcium silicate board, and 4- to 5-inch polyvinyl chloride conduits (NASA 2002).

4.12.1.5 Communication

AT&T provides phone service to the housing areas at the project site; NASA provides phone service to all nonresidential structures on the project site.

4.12.1.6 Solid Waste Management

A private contractor collects solid waste from the project site, which contracts through NASA to collect solid waste. The primary contractor for disposing of NASA's refuse is Southbay Maintenance (NASA 2002). Waste is delivered to the Newby Island Landfill in Milpitas, which has a remaining capacity of 12 million cubic meters (as of December 2001) and is expected to reach capacity in 2020. The Newby Island Landfill has a maximum permitted throughput of 4,000 tons per day (SWIS 2006) and an average daily throughput of 3,250 tons per day, with a peak of 4,000 tons per day (LEA 2006).

4.12.2 Environmental Consequences

4.12.2.1 Proposed Action

The sections below discuss the effects of implementing the proposed action on the utility systems at the project site. Impacts on utilities would be less than under existing conditions. Not only would the needs of the AFRC be less for water, wastewater, electricity, and natural gas, but sustainable design principles in construction are proposed to optimize energy and resource conservation and to minimize waste.

As presented in Section 2.2.4.2, all potentially affected workers would be notified of any potential health hazards so that proper health and safety measures are employed during improvements activities in any of the underground utilities at the project site.

Potable Water Supply

Long-term beneficial effects are expected. New facilities would include water-saving technologies that would further reduce water needs at the site. Additionally, design of the connections to the water distribution system would include the necessary backflow preventing devices. Given the antiquated condition of most of the water distribution system at the project site, any improvements to the infrastructure proposed by the Army would have a beneficial impact. The Army would not extract groundwater at the site for drinking water or for any other purposes.

Wastewater Collection

Long-term beneficial effects are expected. Demolishing old homes and existing structures and building new facilities at the project site would improve the wastewater collection system. As noted in Section 2.2.4.11, the Army would provide design or conforming documentation of the wastewater system to the City of Mountain View to verify that flows are within the approved values and that the existing system is capable of conveying and treating the additional flows from the proposed project. The capacity of the wastewater collection system would be sufficient.

Storm Water Collection

Long-term minor adverse effects are anticipated. The proposed action would increase impervious surfaces by 187,300 square feet (4.3 acres), which would increase the amount of storm water flow and decrease the surface area available for absorbing storm water. Engineering design would ensure that the increase in projected storm water flow would be accommodated by the on-site retention ponds. Storm water from the project site would no longer flow into the NASA storm water system. All roof and impervious surface drainage would be conveyed to the new on-site ponds before outletting to Stevens Creek. The Army would implement the BMPs listed in Section 2.2.4.5 as necessary to avoid impacts on the critical habitat in Stevens Creek.

Energy Sources

Long-term beneficial effects are expected. Removing old, low-efficiency housing units and structures and constructing new, high-efficiency buildings could reduce the site's energy demands.

Communications

No effects are expected. The existing infrastructure would be adjusted to meet the needs of the proposed action.

Solid Waste Management

Short-term minor adverse effects associated with waste generation during demolition and construction are expected. Demolishing buildings, structures, streets, parking lots, and walkways would generate 971,622 cubic feet (35,986 cubic yards) of solid waste, which is estimated to weigh 14,089 tons. This waste volume represents approximately 3.5 days of maximum permitted waste flow into the landfill, or 4.3 days of average waste flow. Construction would also generate solid waste, but not as much as demolition. Solid waste would be reduced by mandated waste reduction and recycling and would be generated throughout the demolition and construction phases of the project. These waste streams are not expected to adversely affect solid waste management or to exceed the capacities of the local landfills. Operational solid waste generation is expected to be less than existing solid waste generation at the site.

4.12.2.2 No Action Alternative

Under the no action alternative, conditions at the project site would remain unchanged; therefore, no effects on utilities are expected.

4.13 HAZARDOUS AND TOXIC SUBSTANCES

The ROI for the hazardous materials and waste analysis is the approximately 30-acre parcel where the project would take place.

4.13.1 Affected Environment

This section addresses specific hazardous materials and conditions of concern related to materials and wastes that may be used or stored within the project area. Hazardous materials and solid wastes can affect the environment and often have specific regulations that govern their use, storage, and disposal. The following specific hazardous materials, waste, and hazards are addressed:

- Petroleum, oils, and lubricants;
- Site contamination and cleanup;
- Asbestos;
- Polychlorinated biphenyls (PCBs);
- Contamination from lead;
- Pesticides;
- Radon; and
- Waste disposal.

No ordnance has been disposed of within the project area. No radioactive materials or mixed wastes are known to have been released or disposed of in the project area or greater Moffett Field regions (US Air Force 1999, 2000). There is no indication that industrial or other hazardous waste has been disposed in the sanitary sewer systems associated with housing at Moffett Field. Mold is not considered a risk during building demolition and it is assumed that proposed new buildings would not harbor mold and would otherwise include design measures to minimize mold. Therefore, these issues are not discussed or evaluated further.

4.13.1.1 Petroleum, Oils, and Lubricants

There are no known oil/water separators within the project boundaries (US Air Force 1999, 2000). There are no aboveground or underground storage tanks located at the project site (US Air Force 2000). There are no existing petroleum, oils, and lubricants (POLs) concerns within the project area.

4.13.1.2 Site Contamination and Cleanup

Background

It should be noted that this NEPA EA addresses future effects of the proposed action based on intended future use. The EA is not a detailed assessment of prior releases of hazardous materials that have affected the groundwater at the project site. Detailed groundwater investigation and

contamination delineation has been addressed under the NAS Moffett Field NPL Site program. Section 8.0, References, includes documents associated with the groundwater issues outlined in this EA.

The groundwater at the project site contains levels of VOCs (primarily TCE) above existing drinking water standards. The Army acknowledges that the vapor intrusion pathway into existing structures on the property is complete as evidenced by indoor air sampling that yielded concentrations above EPA interim action levels for residential properties.

Based on existing groundwater and vapor intrusion investigative data, the Army acknowledges the need for worker and occupant protection measures during the redevelopment and future occupation and use of the property.

Protective measures planned for the future development and use of the property include:

- Restrictions on the use of groundwater at the site;
- Restrictions on residential and other sensitive uses of new buildings constructed on the property;
- Protection of workers from contaminated groundwater and soils that may be encountered during site development and construction;
- Vapor intrusion barriers and active ventilation systems in new building system construction;
- Long-term monitoring of potential vapor intrusion into the indoor air of new buildings constructed on the property; and
- Building Operations and Maintenance (O&M) programs which include routine inspection of building vapor control systems.

Detailed system and program requirements for the above will be included in the site redevelopment design and construction specifications and new facilities O&M programs. Should plans for future use of the project site change, the appropriate level of NEPA analysis would be prepared, and further coordination with state and federal regulators would be required to ensure that the proposed use is protective of human health and the environment.

Groundwater

Groundwater at the project site is located in both shallow (A1 aquifer zone) and deep (A2 aquifer zone) aquifer systems. Groundwater depth in the upper aquifer, although varying geographically and temporally, can be as shallow as five feet below ground surface. The groundwater flow direction is generally north toward the San Francisco Bay, although local trends and variations exist.

Numerous groundwater investigations conducted at the property confirm the presence of TCE and other volatile compounds in groundwater beneath the project site. TCE is the primary contaminant in groundwater underlying the project site. TCE occurs at the highest concentrations and is more widespread than any other VOC. TCE concentrations detected in recent (2005) groundwater samples ranged from not detected to 610 ppb at depths of 5 to 20 feet below the

ground surface (within the A1 aquifer zone). The highest TCE concentration was 1,200 ppb at a depth of about 35-45 feet below ground surface (within the A2 aquifer zone) (Naval Facilities Engineering Command 2006). TCE concentrations in groundwater are shown in Figures 4.13-1 and 4.13-2.

The Army conducted an additional investigation in 2006 to determine if soils and groundwater contaminated by VOCs will be encountered during construction of new facilities on the property. The results of the investigation confirmed the potential for encountering VOC-impacted groundwater across the site in areas of the planned new construction. TCE was detected at concentrations up to 100 ppb in the shallow groundwater at the site. The depth at which impacted groundwater would be encountered depends on the actual groundwater level, assumed to experience short term and seasonal variations, which could be as high as five feet below the ground surface.

Protective measures for site preparation and construction workers who may come in contact with VOC-contaminated groundwater, and VOC-contaminated groundwater management and disposition requirements will be specified in the redevelopment design and construction specifications.

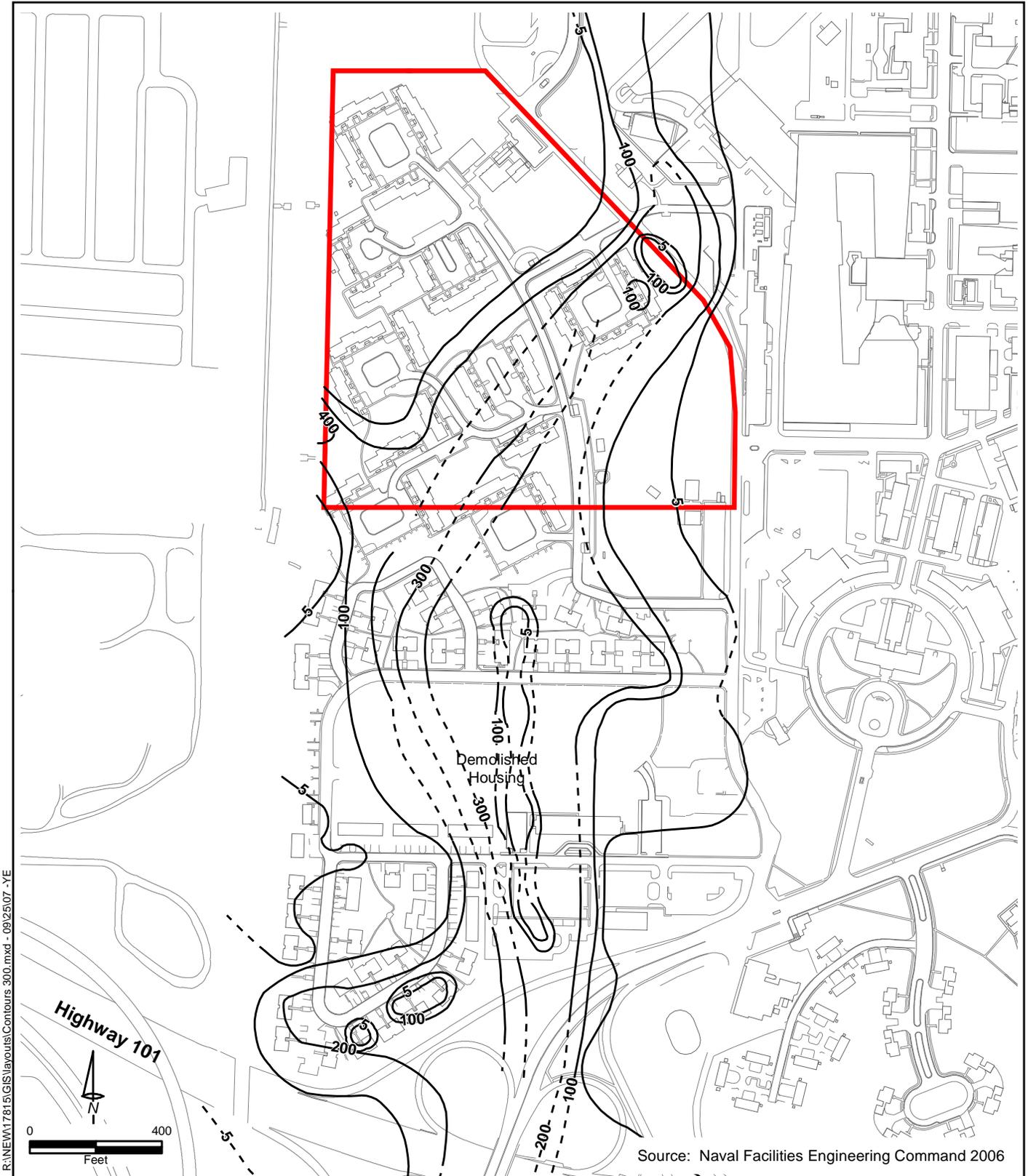
Surface/Subsurface Soils

Most of the contamination investigations to date have focused on groundwater and identification of sources contributing to contaminated groundwater plumes beneath the project site. Limited soil sampling and analysis data exists. The groundwater investigations and limited soil sampling and analysis data suggest that soils at the project site may contain low levels of VOC (primarily TCE) contamination.

Due to shallow groundwater occurrence at the site (potentially less than five feet below ground surface), soils contacted by groundwater may contain low levels of VOC contamination. Investigatively-derived waste soils recently collected as part of initial geotechnical studies for construction design contained low levels of TCE but did not exceed hazardous waste classification thresholds.

Additional soil sampling and analysis was conducted in November 2006 to further characterize contamination levels in soils in the areas proposed for future development. The additional soil sampling and analysis was used to determine if soil and groundwater contaminated with VOCs would be encountered during construction, to develop prudent soil and groundwater management measures associated with the construction, to help identify appropriate engineering controls in new building construction, and to help ensure the safety and health of site development and construction workers.

The results of the additional soil investigation indicate that VOCs generally are not present in soil above shallow groundwater at concentrations at or above laboratory reporting limits. VOC levels detected in soil samples collected in the vadose (saturated) zone within about one foot of shallow groundwater, at a depth of about 9.2 feet below the ground surface, yielded a maximum concentration of 53 ppb. Based on the results of the investigation, the potential for encountering



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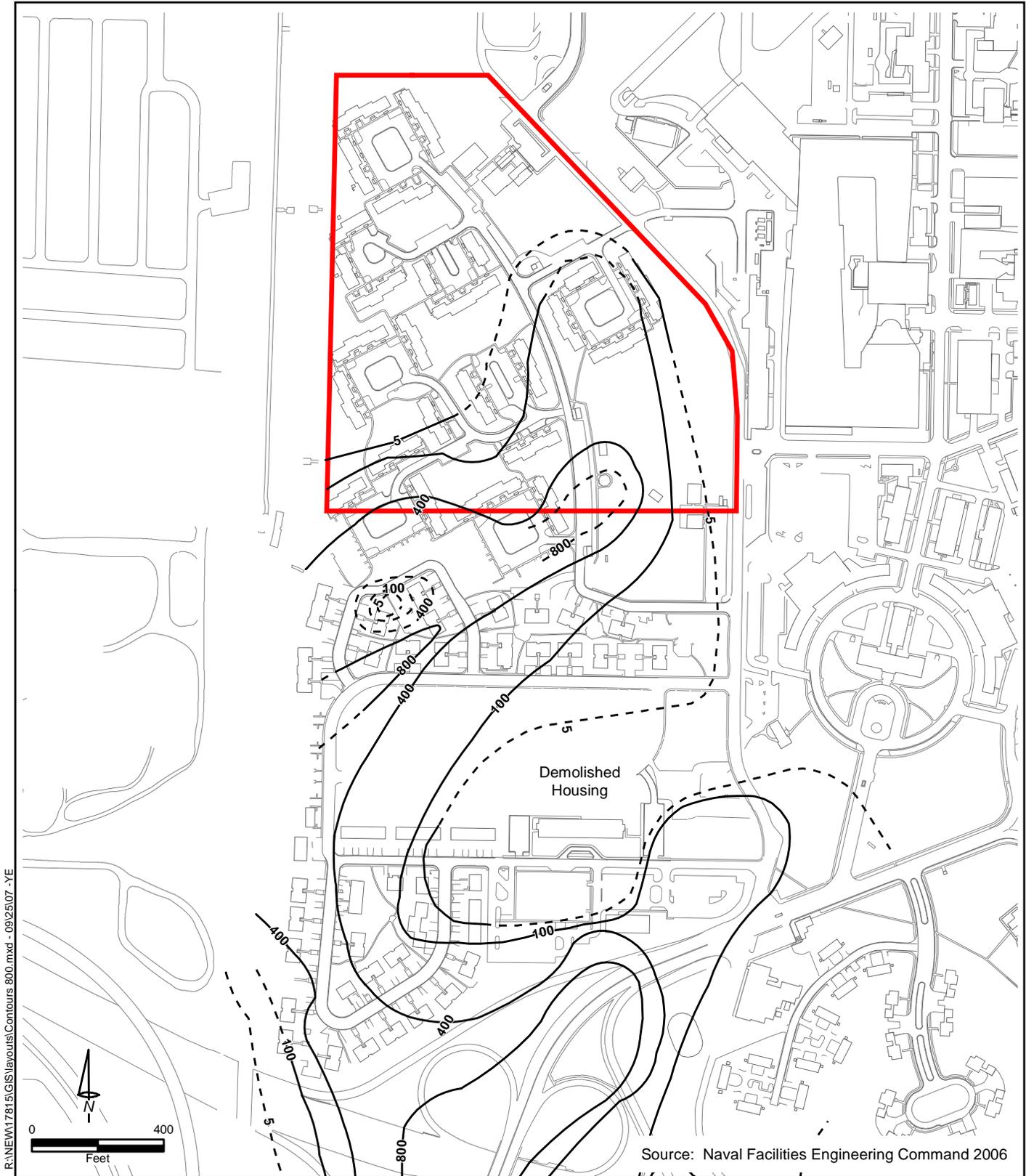
Source: Naval Facilities Engineering Command 2006

TCE Concentrations in the A1 Aquifer Zone

Legend

- 300 Concentration Contour (ug/L)
 Dashed where Inferred
- Project Site

Moffett Field, California



TCE Concentrations in the A2 Aquifer Zone

Legend

- 800 — Concentration Contour (ug/L)
Dashed where Inferred
- Project Site

Moffett Field, California

VOC-impacted soils during construction of new facilities on the property would be limited, unless site excavation and grading activities extend to within 1 to 2 feet of the groundwater levels. Construction of new buildings will be slab on grade and will not include sub structures or basements. (Braun Intertec 2007).

Protective measures for site preparation and construction workers who may come in contact with VOC-contaminated soils, and VOC-contaminated soil management and disposition requirements will be specified in the redevelopment design and construction specifications.

Vapor Intrusion

Shallow groundwater and soils in the vadose zone (soils directly above groundwater) at the site contain low levels of VOCs. There is a potential for encountering VOCs in soil vapors during development activities at the property.

In 2005, EPA conducted indoor air, outdoor air, and sub-slab soil gas sampling in existing buildings on the property. The data showed the presence of TCE in the soil gas beneath several existing concrete slab foundations and in indoor air, verifying that the potential subsurface vapor intrusion pathway is complete. EPA's indoor air sampling results from several residential housing units (built during the late 1960s to early 1970s) indicated TCE concentrations above EPA's interim action level for TCE in air for residential occupancy (1 microgram per cubic meter [$\mu\text{g}/\text{m}^3$]). EPA's action level is to protect residential occupants from long-term exposure to airborne TCE. These structures will be demolished as part of the new development. There is no residential use planned in the future development of the property. However, based on existing groundwater data, sub-slab soil gas data, and indoor air data at the property, EPA believes there is a potential for vapor intrusion into new buildings overlying the subsurface contamination at levels exceeding EPA's TCE interim action level of $2.7 \mu\text{g}/\text{m}^3$ for commercial settings.

In order to minimize the potential for exposures to airborne VOCs via the vapor intrusion pathway to occupants in new buildings, the Army will install vapor barriers and active ventilation systems in the new building construction. Detailed requirements for these systems will be incorporated in the design and construction specifications. The systems will be designed to maintain any airborne concentrations of TCE that may result from vapor intrusion from subsurface contamination at the property to below EPA's recommended standard for commercial settings.

Human Health Risk Assessment

Based on indoor air sampling conducted in existing residential buildings at the project site, there is the potential for subsurface vapor intrusion into existing structures overlying the shallow groundwater TCE plume. None of the groundwater, soil, soil gas, or air monitoring data to date indicates any immediate or short-term health threat to building occupants from this pathway. The EPA's main concern is whether the chemical concentrations in indoor air pose an unacceptable risk of chronic health effects due to long-term exposure. Some of the sampled buildings indicated indoor air contaminant concentrations that were above EPA's interim long-term health protective risk range and the California EPA health-based screening level for residential use.

Several Human Health Risk assessments have been performed and/or opinions rendered based on the groundwater, soil, and air data available for contamination conditions at the site. Various agencies including the Agency for Toxic Substances and Disease Registry (ASTDR), the Federal Occupational Health Component of the U.S. Public Health Service, and the U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM), have indicated that based on the level of contamination and potential for exposure to occupants and users of the property, the level of risk is low, would only be chronic if at all, and can be adequately managed through the use of institutional controls.

In order to minimize exposures as much as practicable, the Army plans to implement institutional controls which include restrictions on residential use of the property, restrictions on groundwater use at the property, protection of site development and construction workers, contaminated soil and groundwater management and disposition, vapor barriers and active venting systems in new building construction, long-term monitoring of indoor air in new buildings, and vapor control system inspections in new facility operations and maintenance programs.

4.13.1.3 Asbestos

The EPA and OSHA regulate ACM remediation. Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Standards for Hazardous Air Pollutants. These standards address the demolition or renovation of buildings with ACM.

Two categories are used to describe ACM. Friable ACM is defined as any material containing more than one percent asbestos, as determined by polarized light microscopy, that when dry can be crumbled, pulverized, or reduced to a powder by hand pressure. Nonfriable ACM is material that contains more than one percent asbestos and does not meet the criteria for friable ACM.

Due to the age of many of the buildings within the project area, ACM is potentially present in building materials. An asbestos survey of the project area conducted in 1995 included a representative survey of the three housing areas at the project site. Based on this limited survey, it is highly probable that ACM is present in all the housing units at the project site. Types of ACM identified in the non-housing units (i.e., medical/dental clinic, family housing maintenance) included floor tile and mastic, sheet flooring, pipe insulation, calcium silicate board sheeting, and roofing material (US Air Force 2000).

A limited survey was conducted within the project area, in December 2004, and ACM was identified in structural components of each of seven units sampled (USAR 2006).

4.13.1.4 PCBs

PCBs are industrial compounds used in electrical equipment, primarily capacitors and transformers, because they are electrically nonconductive and are stable at high temperatures. Because of their chemical stability, PCBs persist in the environment, bioaccumulate in organisms, and become concentrated in the food chain. The Toxic Substances Control Act regulates the

removal and disposal of contaminated equipment containing PCBs at concentrations greater than 50 parts per million (ppm).

As of June 1998, all PCB equipment within the housing parcels had been removed (US Air Force 2000). There is no other known PCB-containing equipment or PCB contamination within the project area.

4.13.1.5 Contamination from Lead

Lead-based Paint

Lead is a highly toxic metal that was used for many years in products found in and around homes including building materials and in surface paints. In accordance with Title X, the Residential Lead-Based Paint Hazard Reduction Act, of the Housing and Community Development Act of 1992 (42 USC 4851), US Department of Housing and Urban Development (HUD) specifies a lead content limit of 5,000 milligrams per kilogram (mg/kg) (or 0.5% by weight) in paint (USC 1998). An LBP survey was conducted in May 1993 and January 1998 at housing units in the project area. Analysis of samples indicated positive results for the housing units located in the Orion Park housing area. Based on this limited survey, it is highly probable that LBP is present in the housing units of similar type and period of construction. Painted surfaces were noted to be in good condition during the site inspection (US Air Force 2000).

More recently, a limited survey was conducted within the project area, in December 2004, to identify LBP, ACM, PCBs, mercury, and other miscellaneous hazardous materials. In the Orion Park housing area, LBP was identified in structural components of each unit examined.

Lead Contamination in Soils

EPA Region IX's California-modified preliminary remediation goal (PRGs) of 150 ppm for lead in residential soils is used in this EA to represent the minimum action level applicable to soils at the project site (USEPA 2004a). The PRGs are not regulatory standards but are goals that are used for preliminary screening to determine if further assessment of hazards is needed.

No evidence of contamination associated with lead in soils has been found within the project area (US Air Force 2000). Lead may be present from air deposition related to automobile exhaust prior to the phase out of leaded gasoline in the 1970s. Traffic on Highway 101 would be a potential source of this lead fallout. Furthermore, structures covered in flaking paint potentially containing lead indicate that lead may be present in soils adjacent to these surfaces. No confirmatory soil studies however have been conducted. Because no LBP was identified in the Macon Terrace II or III housing areas, soils surrounding these housing units would not be affected.

Lead in Drinking Water

Public drinking water utilities are required to provide drinking water that meets state and federal drinking water standards, to periodically test the water to confirm that the standards are met, and to report the results of this testing to their customers. However, lead can enter tap water from plumbing fixtures in older buildings, and from solder connections in copper piping. Even in

homes with piping that contains lead, the amount of lead that dissolves in the water depends on the chemistry of the water (for example, pH), and on the amount of time that the water is in contact with the solder. As a result, despite the quality of the water coming into a home, the lead concentrations in tap water inside a home can vary widely. Water utility companies often increase the pH of the water to prevent lead from dissolving from piping.

Many of the homes at the project site were built before the restriction on the use of lead in plumbing and fixtures. In May 1997 a survey was conducted in representative Moffett housing areas to test for lead in tap water. The results indicated that lead concentrations in tap water at family housing are within federal and state regulatory limits (US Air Force 1999, 2000).

4.13.1.6 Pesticides

Maintaining the housing and recreation areas requires the use of pesticides and other regulated chemicals. Currently, all pesticides used on the project site are approved for general use, and such chemicals are handled and applied by trained and qualified personnel. Although past sampling events have tested for certain constituents of pesticides such as VOCs, there is no evidence to indicate pesticide-specific contamination or uses of pesticides greater than household quantities are found within the project area. Prior to residential development, the area was agricultural, and agricultural pesticides may have been used; however, there are no data to suggest elevated concentrations of pesticides are present in soils.

4.13.1.7 Radon

Radon a toxic, colorless, gaseous radioactive element that naturally occurs in the earth and rock beneath homes, is found within well water, and is used in building materials (USEPA 2006). A radon-monitoring program of all housing at the project site was developed in 1993 based on elevated results of a 1991 radon study in the neighboring Wescoat housing area. According to the 1993 survey summary report, all units within project area were below the action level of 4.0 pCi/L (US Air Force 2000).

4.13.1.8 Waste Disposal

For the purpose of waste management, the project area has been vacant since August 2006, and no hazardous waste is generated at the site. The CSTC Army Environmental Office recently acquired management responsibility of the project site. Nonhazardous solid waste disposal is discussed further in Section 4.11.

4.13.2 Environmental Consequences

The following section analyzes the effects of the proposed action and the no action alternative on hazardous and toxic substances.

As detailed in Section 2.2.4.1, all personnel involved in construction activities would require OSHA training in handling hazardous materials and wastes. All personnel would be informed of potential and likely hazards, specifically subsurface TCE contamination, the potential for vapor

release and the presence of lead and asbestos in building materials in many of the older buildings. Appropriate abatement measures would be employed prior to demolition activities. Other mitigations are identified in this section.

4.13.2.1 Proposed Action

Petroleum, Oils, and Lubricants

Long-term minor adverse effects are expected. The proposed action would include the construction of a new OMS facility, which would be used to maintain military vehicles. No fueling activities would be associated with the OMS; however, other POLs would be used in maintenance such as oils, lubricants, and hydraulic fluids. The Army Environmental Office would monitor these activities in accordance with the Army's protocols for handling and disposing hazardous materials. No new fueling station is proposed. The California Army National Guard would store an empty 5,000-gallon capacity fuel truck in the military equipment parking. The truck would be parked in a dedicated spot within a containment area to prevent potential spills or leak. The truck would be used off-site and would not be fueled at the project site. Minor adverse impacts related to POLs are anticipated to result from the additional personnel and the proposed OMS activities.

Site Contamination and Cleanup

Future planned development of the project site includes demolishing most of the structures and building new administrative, training, and industrial (vehicle maintenance) buildings. Residential buildings are not part of the new development.

Short-term minor adverse impacts are expected. The proposed activities are not anticipated to positively or negatively affect the present conditions of the TCE plume. As stated in Section 2.2.4.1, construction personnel would be trained to work in these conditions and would be aware of all potential hazards. A health and safety plan would be prepared prior to construction and demolition activities and all personnel would comply with OSHA requirements including regular health screenings. Also, as stated in Section 2.2.4.4, to minimize contaminant exposure as much as practicable, the Army plans to implement institutional controls, including restrictions prohibiting residential use of the property, preventing groundwater use at the property, protecting site development and construction workers, and directing contaminated soil and groundwater management and disposition.

As such, appropriate protection measures are considered part of the project design and impacts from site contamination would be minor.

Based on the results of recent soil and groundwater sampling, the potential for construction workers to encounter VOC-impacted soil is low unless site excavation and grading activities extend to within one to two feet of groundwater. New buildings would be slab on grade and would not include sub structures or basements. If construction workers were to encounter groundwater, it is likely that it would contain VOCs. The depth at which groundwater would be encountered would depend on the actual groundwater level, which is assumed to experience short

term and seasonal fluctuations (Braun Intertec 2007). As described in Section 2.2.4.10, the Army would continue to facilitate access to the 11 monitoring wells for remedial activities at the project site.

Based on the results of human-health risk assessments, the potential for construction workers and future industrial workers to be exposed to unsafe levels of VOCs via vapor intrusion or dermal contact with groundwater are low. However, construction specifications for the planned future development of the property include detailed soil and groundwater management requirements to protect construction workers and the appropriate disposition of potentially contaminated soils and groundwater (USACHPPM 2007). To minimize any possible risk of contaminated vapor from the TCE groundwater plume migrating through the soil and into the indoor air, the Army would implement the following mitigation measures:

- Vapor intrusion barriers and active ventilation systems in new building system construction;
- Long-term monitoring of potential vapor intrusion into the indoor air of new buildings constructed on the property; and
- Building Operations and Maintenance (O&M) programs which include routine inspection of building vapor control systems.

Asbestos

Short-term minor adverse impacts are expected. ACM is known to be present in buildings proposed for demolition. As presented in Section 2.2.4.1, all potentially affected workers would be notified of any potential health hazards so that proper health and safety measures would be employed. These materials would be demolished only by personnel trained and certified by OSHA to handle and properly dispose of them. Demolition would comply with the Bay Area Air Quality Management District Regulation 11, Rule 2 in regard to demolition, renovation, and removal procedures (BAAQMD 1998). As mentioned in Section 2.2.1, proper abatement would be conducted before and during demolition on buildings known to contain ACM or similar in design and age to those known to contain ACM. The Army would notify the Bay Area Air Quality Management District at least 10 days before demolition including the associated asbestos operations and inspection fees as authorized by the California Health and Safety Code (BAAQMD 2006). Therefore, demolition impacts would be minor. New construction would not be built using asbestos-containing materials. Materials used for the surface of the parking lots would comply with Bay Area Air Quality Management District Regulation 11, Rule 14, which prohibits the use of serpentine surfacing material, unless the material has an asbestos content of five percent or less.

PCBs

There is no known PCB-containing equipment on the project site. No PCB-related impacts are anticipated to result from the proposed action.

Contamination from Lead

Short-term minor adverse impacts are expected. LBP is known to be present in buildings proposed for demolition. As presented in Section 2.2.4.1, all potentially affected workers would be notified of any potential health hazards and proper health and safety measures would be employed. These materials would be demolished only by personnel trained and certified by OSHA to handle and properly dispose of them. Pursuant to Title 17 of the California Code of Regulations, a supervisor and crew involved in demolition and renovation of structures containing LBP must be certified by the California Department of Health Services. Building surfaces and materials would require testing as necessary for profiling and proper disposal (Raybourn 2006). Demolition impacts would be minor. New construction would not be built using LBP.

No evidence of contamination from lead is known to exist in the soils of the project area. Furthermore, drinking water tested on the project site confirmed levels below EPA action levels. No impacts are expected and new construction would only use new structural materials and plumbing fixtures.

Pesticides

Long-term minor impacts are expected. Although there is no evidence of elevated levels of pesticides in the soils, as presented in Section 2.2.4.1, all personnel that may be involved in soil disturbance would be OSHA-certified. Household quantities of pesticides would continue to be sold and used on the project site. Pesticide use would be done according to pesticides labels.

Radon

No impacts are expected. Radon levels tested in the region were found to be below the EPA action level of 4.0 pCi/L. Additionally, with the proposed use of vapor intrusion controls to limit TCE vapors, potential radon migration would likely be inhibited.

Waste Disposal

Long-term minor adverse effects are expected. As previously mentioned, the US Army CSTC Environmental Office recently acquired management responsibility of the project site. Under the proposed action, CSTC would manage and oversee hazardous waste operations at the project site. While the proposed OMS facility would generate hazardous waste, a new hazardous waste management plan would be developed to account for these new practices and operations. The Army would provide past and projected waste generation information to the EPA and Santa Clara County Department of Environmental Health to determine if projected operations surpass general thresholds of hazardous waste generation. Based on the amount of waste generated on the site, the Army may apply for an EPA Identification Number and acquire a county permit for waste generation and disposal. These effects are not anticipated to be significant, and the facilities would be maintained in accordance with federal, state, and local regulations.

4.13.2.2 No Action Alternative

Under the no action alternative, there would be no demolition and no construction. The ground would not be disturbed at this time for site development, limiting exposure to subsurface contamination. Structures containing ACM or LBP would remain, and future potential for material degradation would continue. As such, there would be no effect under the no action alternative.

4.14 CUMULATIVE EFFECTS

4.14.1 Introduction

This section identifies the cumulative effects of the proposed alternatives. A cumulative impact is defined in the Code of Federal Regulations (40 CFR 1508.7) as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Impacts of the proposed alternatives presented in this EA are assessed for cumulative impacts with other actions in the region. Unless otherwise specified, the ROI for a particular resource in the cumulative analysis is the same as the ROI for that resource in the analysis of the environmental effects for the proposed action, and No Action Alternative.

Current or reasonably foreseeable actions, in the affected region, that have been identified are described below.

4.14.2 Cumulative Actions

4.14.2.1 Moffett Residential Communities Initiative Program

The Army undertook redevelopment of the Wescoat parcel within Moffett Community Housing. The Wescoat parcel consists of the Wescoat, Berry Court, Berry Drive, and Macon Terrace I neighborhoods. The redevelopment increases the total housing inventory from 105 to 190 units by constructing 181 units, demolishing 96 units, and retaining nine historic units at Berry Drive. The redevelopment was completed in October 2006 (Winters 2007).

Additionally, as part of the Residential Communities Initiative program, the Army will transfer ownership of Shenandoah Square, located one half-mile southwest of the project site, to the Residential Communities Initiative partnership, who will sell the property for redevelopment. It is anticipated that a developer could construct as many as 200 housing units on the undeveloped six acres (subject to rezoning with the city of Mountain View). Rezoning for this area would take approximately 24 months, with construction to occur over the subsequent 48 months. The development may include multi-family apartments, condominiums, and townhouses with an average size between 1,500 and 1,800 square feet. A small amount of retail space (10,000 to 15,000 square feet) may be incorporated into the ground floor of some of the buildings, particularly those along Moffett Boulevard. The existing 126 units may be renovated and operated as rental apartments or condominiums for sale. Before redeveloping Shenandoah Square, a developer would complete the appropriate level of California Environmental Quality Act documentation and would follow the Mountain View development approval process.

4.14.2.2 NASA Ames Research Center

Under the NASA Ames Development Plan (NASA 2002), NASA would construct 3.6 million square feet of new facilities and demolish 960,000 square feet of existing facilities. The development plan is structured around four planning areas: Ames Campus (234 acres), NASA Research Park (213 acres), Eastside/Airfield District (952 acres), and Bay View District (95 acres). The proposed buildout would generate an estimated 7,088 new employees and

approximately 3,000 students using the facilities on a daily basis, and 4,909 residents living in 1,930 housing units (NASA 2002).

4.14.2.3 Former Naval Air Station Moffett Field at NASA Ames Research Center

No specific projects proposed to occur at the Airfield at NASA Ames Research Center have been identified. A master plan prepared for the 76.6-acre parcel of the USAR Complex includes a conceptual design for a commissary and a multiservice exchange complex. However, there is not enough detail at this time to evaluate the full cumulative impacts of these actions. Should those actions be proposed, the appropriate level of NEPA environmental impact analysis would be prepared.

4.14.2.4 Cities of Mountain View and Sunnyvale

The cities of Mountain View and Sunnyvale have several projects that are pending, approved, or under construction. Size and status of approved and pending projects are presented in Appendix D.

The city of Sunnyvale finalized a Moffett Park Specific Plan in May 2004, which allows for up to 8.7 million square feet of additional development to the east of Moffett Federal Airfield. Full buildout of the Moffett Park Specific Plan will not be considered in the cumulative analysis because it is not known when or if this area will be built out; however, all specific projects pending within the city of Sunnyvale, including the Moffett Park Area, are included for analysis.

4.14.3 Cumulative Impacts

4.14.3.1 Land Use

Because the proposed alternatives would not result in any land use impacts, they would not contribute to any cumulative land use impacts.

4.14.3.2 Aesthetics and Visual Resources

Short-term minor adverse effects are expected. Cumulative impacts on visual resources would involve construction vehicles. Although the proposed alternatives and the cumulative projects include construction vehicles, the vehicles are not expected to be concentrated in any one particular area. Therefore, the impacts on visual resources from construction vehicles are expected to be minor and short-term.

No long-term cumulative effects are expected. The NASA Ames Development Plan project is not anticipated to have a visual impact within the viewshed of the project site. There are no other cumulative projects within the view shed of the project site.

4.14.3.3 Air Quality

Minor adverse cumulative effects are expected. Regional air emissions would increase as a result of the cumulative projects. Because the San Francisco Bay Area is classified as nonattainment for state PM₁₀ standards, emissions from cumulative projects would affect the local area. Impacts should be minimal, however, because the proponents of the cumulative projects are expected to use BMPs (such as dust abatement) to reduce emissions.

4.14.3.4 Noise

Minor adverse cumulative effects are expected. The proposed alternatives would produce increased short-term noise during the demolition and construction phases of the project. However, this noise would not result in a significant change in the existing noise environment, based on current noise produced in the area. Cumulative development projects in the ROI would result in greater noise levels from new sources, including vehicle traffic. In addition, cumulative development projects could introduce new sensitive land uses into areas already affected by noise. Any such cumulative noise impacts would be controlled through the planning process and land use compatibility guidelines in place, and would be enforced by the local regulations.

4.14.3.5 Geology and Soils

Minor adverse cumulative impacts are expected. The cumulative geological resource effects of the proposed alternatives and other developments in the ROI would likely increase the disturbance of soil and the overall volume of soil in stormwater runoff. However, these effects would be mitigated by preparing SWPPPs and using appropriate construction practices to minimize runoff. Depending on the types of soil on which they would be constructed, the cumulative projects may increase the potential for soil erosion and slope instability. Proponents of the individual projects would be responsible for conducting soils investigations and other activities to reduce the potential impacts on soil erosion and slope instability.

4.14.3.6 Water Resources

Minor adverse cumulative effects are expected. Cumulative construction and demolition activities would increase the potential for soil erosion and sedimentation of Stevens Creek. However, project developers would use BMPs to control erosion and to minimize the potential for sedimentation. Any construction projects on sites greater than one acre would be required to implement a SWPPP to minimize their effects on surface water. These projects also would increase the demand on regional sources of potable water.

4.14.3.7 Biological Resources

Minor adverse cumulative effects are expected. The proposed alternatives would contribute to adverse impacts on biological resources within the ROI. Proposed construction projects would cause elevated noise and dust, and increase human activity within the vicinity of the project ROI, and could further disturb and diminish natural communities unless properly avoided or mitigated. These impacts would be low intensity and are expected to have limited effects on plants and wildlife within the ROI, given the existing disturbed nature of the area, the predominance of nonnative and invasive plants and human tolerant wildlife species, and lack of connectivity with larger areas due to fencing and impassable barriers such as Highway 101. Impacts on sensitive habitats and species within the northern and western edge of the ROI is expected to be minimal as there are no projects proposed for these areas and regulatory restrictions should prevent discharge or other deleterious cumulative effects, since there are federally and state protected species that could be harmed. Burrowing owl burrows may be lost due to the NASA Ames project and other construction related projects in the area, which would compound any loss due to the proposed project.

4.14.3.8 Cultural Resources

Because no impacts on cultural resources are expected to occur, no cumulative impacts on cultural resources are expected. Should cultural resources be discovered during the planned survey and subsurface testing program or during construction, efforts would be made to limit the cumulative impacts on these resources. This would include those protective measures described in Section 2.2.4.4.

4.14.3.9 Socioeconomics

Minor adverse and beneficial cumulative effects are expected. The cumulative projects would increase economic activity and demand for services within the region. These projects would temporarily increase regional employment and spending during their construction phases. The commercial developments would create new employment opportunities for current residents and likely would draw new residents from outside the region.

4.14.3.10 Transportation

Short-term minor adverse effects are expected from demolition and construction traffic. Although the proposed action would contribute to the traffic volume during the demolition and construction period, cumulative traffic is not expected to be concentrated in any one particular area. Therefore, the impacts on congestion and reduced LOS from demolition and construction traffic are expected to be minor and short-term.

The proposed NASA Ames Development Plan and other smaller cumulative projects in close proximity to the project site would contribute to the generation of long-term traffic. Given present conditions on local roadways (such as LOS C and D+) and the cumulative increase in the number of people living and working in the area, additional traffic could result in long-term adverse impacts. However, planned roadway improvements and traffic reduction programs implemented by the SCVTA and the city of Mountain View would lower the adverse impacts of road congestion. Additionally, and in the event that NASA initiates the planned development at the NASA Ames Research Center, it would include major road developments at the intersections of Moffett Field Boulevard with R. T. Jones Road and the southbound and northbound exits from Highway 101. Continued improvement of roadway conditions by Mountain View and implementation of appropriate mitigation measures by major developments, such as NASA Ames Development Plan, would reduce the cumulative impacts on traffic.

4.14.3.11 Utilities

Minor adverse cumulative effects are expected. Impacts from the proposed alternatives would combine with impacts from other development projects within Mountain View and Sunnyvale to increase the amount of solid waste produced, and increase the amount of storm water generated in the area from an increase in impervious surfaces.

The projected date of reaching capacity at the Newby Island Landfill in Milpitas is based on an assumed rate of construction and demolition debris in the area, and implementation of any of the proposed alternatives would not constitute a substantial deviation from that rate. The proposed alternatives would not result in a cumulatively significant impact on solid waste production in the project area.

Minor cumulative impacts are expected from storm water runoff. It is assumed that new developments would comply with the SWRCB and meet the waste discharge requirements that include developing and implementing a SWPPP. This would reduce the cumulative impacts of runoff into Stevens Creek.

4.14.3.12 Hazardous and Toxic Substances

Minor adverse cumulative impacts are anticipated, and the proposed project alternatives would negligibly contribute to these impacts.

Cumulative projects involving demolition and/or construction (i.e., the Moffett Residential Communities Initiative program) would require similar environmental protection measures as discussed under the project evaluation. There are two EPA-designated NPL sites affecting groundwater at Moffett Field: the NAS Moffett Field NPL Site, discussed in Section 4.13.1.3 (Site Contamination and Cleanup), which includes the project site, and the adjacent MEW Study Area. The MEW Study Area collectively includes a group of three NPL sites south of Highway 101, and is largely contained east of the proposed project area. Remedial actions and investigations are ongoing for each of these NPL sites and should be considered in planning of any activities in the region. Similarly, demolition activities would require appropriate abatement and removal, as appropriate, to contain ACM, LBP, and any presence of PCB-containing equipment.

Proposed and planned activities, located with five-mile radius from the project site, such as the Shell Car Wash, the Honda/Ducati Car Parts Store, and the Chevron gas station would use and store hazardous materials such as lubricants, solvents, POLs, and oils.

SECTION 5.0
CONCLUSIONS

SECTION 5.0 CONCLUSIONS

5.1 SUMMARY OF CONSEQUENCES

The environmental effects of the proposed action and the no action alternative are presented in Table 5-1. The proposed action would have no effect on land use, cultural resources, or environmental justice. The adverse effects on air quality, aesthetics, noise, geology and soils, water resources, biological resources, socioeconomics, transportation, public utilities, and hazardous and toxic materials and waste would not be significant. No adverse effects would be expected under the no action alternative.

To protect environmental resources at the project site, measures that the Army would undertake as part of the proposed action include worker protection, dust control, cultural resources protection, pollution prevention, noise protection, tree protection, traffic control, and measures to protect steelhead trout, burrowing owl and other migratory birds. Without traffic control measures, increases in on-site traffic would result in significant impacts to local, on-site roadways. Traffic control measures include staggered work hours and manual control at the intersection of R.T. Jones Road and Moffett Boulevard.

5.2 PROPOSED MITIGATION MEASURES

The environmental analysis identified adverse noise and hazardous and toxic substances impacts. With the incorporation of the mitigation measures described below, the proposed action would have less than significant environmental and socioeconomic impacts.

Noise Reduction

Noise levels on portions of the project site are 70 dB and higher. If occupied structures are constructed within the area subject to noise levels of 70 to 75 dB, the Army would use design and construction techniques to reduce noise levels by 25 dB inside those structures. If occupied structures are constructed within the area subject to noise levels above 75 dB, the Army would use design and construction techniques to achieve a noise level reduction of 30 dB inside those structures.

Vapor Intrusion Control

A plume of TCE has contaminated the groundwater under the project site. To minimize any possible risk of contaminated vapor from the TCE groundwater plume migrating through the soil and into the indoor air, the Army would implement the following mitigation measures:

- Vapor intrusion barriers and active ventilation systems in new building system construction;
- Long-term monitoring of potential vapor intrusion into the indoor air of new buildings constructed on the property; and
- Building Operations and Maintenance (O&M) programs which include routine inspection of building vapor control systems.

5.3 CONCLUSIONS

Implementing the proposed action would have no significant direct, indirect, or cumulative effects on the resources above, so an environmental impact statement need not be prepared. This EA supports the issuance of a finding of no significant impact.

**Table 5-1
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
Land Use	No effects	No effects	None identified	None identified
Aesthetic and Visual Resources	Long-term minor adverse and beneficial	Long-term minor adverse	<ul style="list-style-type: none"> Where feasible, the Army would avoid removing mature trees that have a main trunk or stem measuring 37.7 inches or greater in circumference at a height of 4.5 feet above ground level. Mature trees not removed would be protectively fenced to prevent activities that result in soil compaction over the root zone. As part of the landscaping plan, the Army would replace mature trees with two-inch to three-inch-diameter trees for each four inches of tree diameter removed. 	None identified
Air Quality	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> Provide dust suppression measures during demolition and construction activities to assure that dust, debris, materials, and trash do not become airborne and travel off the project site. 	None identified

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
Noise	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> Implement OSHA¹ requirement on noise and hearing conservation during the demolition and construction activities. Coordinate with NASA² to address outdoor noise during wind tunnel testing periods. 	Use design and construction techniques to achieve noise level reduction of 25 dB ³ inside structures constructed in area subject to noise levels of 70 to 75 dB. For structures constructed in area subject to noise levels above 75 dB use construction and design techniques to achieve an indoor noise level reduction of 30 dB.
Geology and Soils				
• Geology	No effects	No effects	None identified	None identified
• Seismicity	Long-term minor adverse	Long-term minor adverse	None identified	None identified
• Mineral resources	No effects	No effects	None identified	None identified
• Soils	Short-term minor adverse	No effects	<ul style="list-style-type: none"> Prepare a Stormwater Pollution Prevention Plan (SWPPP) Implement best management practices, such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm sewer inlets, vegetation restoration in disturbed areas, and street sweeping. A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or 	None identified

¹OSHA: Occupational Safety and Health Administration

⁴NASA: National Aeronautic and Space Administration

³ dB: Noise is measured in decibels.

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			groundwater that may be encountered during construction, excavation, or trenching activities	
• Prime farmland	No effects	No effects	None identified	None identified
Water Resources				
• Surface water	Short-term minor adverse	No effects	<ul style="list-style-type: none"> • Prepare an SWPPP. • Implement best management practices, such as silt fences, rock construction entrances, temporary sediment ponds, sediment protection at storm sewer inlets, vegetation restoration in disturbed areas, and street sweeping. 	None identified
• Groundwater	No effects	No effects	<ul style="list-style-type: none"> • Prevent groundwater use at the property • A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or groundwater that may be encountered during construction excavation or trenching activities. 	None identified
Biological Resources	Short- and long-term minor adverse	No effects	<ul style="list-style-type: none"> • To protect steelhead trout, prepare an SWPPP, maintain a 75-foot buffer zone between construction and Stevens Creek, revegetate with native species, and use fences or other barriers during construction and demolition. • To protect burrowing owls conduct preconstruction surveys no more than one month prior to the beginning of any ground 	None identified

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			disturbance, in accordance with CDFG ⁴ and CBOC ⁵ guidelines. <ul style="list-style-type: none"> • Implement CDFG and CBOC avoidance and mitigation measures. • To protect nesting migratory birds tree removal would be timed to avoid the bird breeding season (February through July) and trees would be replaced as part of the landscaping plan. • If demolition would occur during nesting, buildings would be surveyed by a biologist, and nests would be removed from buildings prior to egg-laying. 	
Cultural Resources				
• Archaeological Resources	No effects	No effects	Before starting the project, the Army would brief the construction staff on procedures for handling the discovery of archaeological resources. Should evidence of archaeological resources be found, staff would immediately notify the US Army CSTC Cultural Resources Office at Fort Hunter Liggett and would suspend excavation or other activities that could damage such resources. An archaeologist would assess the potential significance of the find and would recommend measures to minimize potential effects on archaeological resources, including consultations with the California State	None identified
• Native American Resources	No effects	No effects		
• Architectural Resources	No effects	No effects		

⁴ CDFG: California Department of Fish and Game.

⁵ CBOC: California Burrowing Owl Consortium.

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			Historic Preservation Office, as needed. If human remains were encountered, the Army would comply with the requirements of the Native American Graves Protection and Repatriation Act.	
Socioeconomics				
• Regional Economic Activity	Long-term minor beneficial	No effects	None identified	None identified
• Demographics	Long-term minor adverse	No effects		
• Housing	Long-term minor adverse	No effects		
• Quality of life	No effects	No Effects		
• Environmental justice	No effects	No effects		
• Protection of children	Long-term beneficial and short-term minor adverse	No effects		
Transportation	Short-term and long-term adverse	No effects	<ul style="list-style-type: none"> • Implement a Transportation Demand Management program to reduce vehicle trip generation along R. T. Jones Road, Moffett Boulevard, Highway 101, and State Route 85. • To reduce the weekday and weekend intersection impacts, the Army would implement the following improvements: <ul style="list-style-type: none"> - Provide manual control⁶ at the intersection of R. T. Jones Road and Moffett Boulevard to facilitate the movement of project traffic by avoiding the existing stop control sign and 	None identified

⁶ Manual control is governed by a flagperson who would replace the stop-sign control and facilitate the flow of traffic from and into the project site.

⁷This strategy can help reduce peak period traffic at the worksite by staggering the times when employees arrive and leave work so they do not all access the site at the same time.

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			<p>reducing the queues, particularly on R. T. Jones Road during the evenings on peak training weekends.</p> <ul style="list-style-type: none"> - Stagger work hours⁷ to shift traffic from the evening peak hour and reduce that traffic to fewer than 335 vehicles during the weekday and weekend evening peak hour. 	
Utilities				
<ul style="list-style-type: none"> • Potable water supply 	Long-term beneficial	No effects	Design the connection to the water distribution system to include the necessary backflow preventing devices.	None identified
<ul style="list-style-type: none"> • Wastewater Collection 	Long-term beneficial	No effects	Provide design or conforming documentation of the wastewater system to the City of Mountain View to verify that flows are within the approved values and that the existing system is capable of conveying and treating the additional flows from the proposed project.	None identified
<ul style="list-style-type: none"> • Stormwater 	Long-term minor adverse	No effects	Prepare an SWPPP.	None identified
<ul style="list-style-type: none"> • Energy 	Long-term beneficial	No effects	None identified	None identified
<ul style="list-style-type: none"> • Communications 	No effects	No effects	None identified	None identified
<ul style="list-style-type: none"> • Solid waste 	Short-term minor adverse	No effects	None identified	None identified
Hazardous and Toxic Substances				
<ul style="list-style-type: none"> • Petroleum, Oils, and Lubricants 	Long-term minor adverse	No effects	Implement a spill control plan	None identified
<ul style="list-style-type: none"> • Site contamination and cleanup 	Short-term minor adverse	No effects	<ul style="list-style-type: none"> • All personnel involved in soil-disturbing activities would be required to take OSHA training in handling hazardous materials and wastes. 	<ul style="list-style-type: none"> • Vapor intrusion barriers and active ventilation systems in new building system construction; • Long-term monitoring of

**Table 5-1 (Continued)
Summary of Environmental Effects**

Resource	Proposed Action	No Action Alternative	Environmental Protection Measures	Mitigation Measures
			<ul style="list-style-type: none"> Implement institutional controls, including restrictions prohibiting residential use of the property; prevent groundwater use at the property; A groundwater and soil management plan would be implemented to manage potentially contaminated soil and/or groundwater that may be encountered during construction excavation or trenching activities. 	<p>potential vapor intrusion into the indoor air of new buildings constructed on the property; and</p> <ul style="list-style-type: none"> Building Operations and Maintenance (O&M) programs which include routine inspection of building vapor control systems.
<ul style="list-style-type: none"> Asbestos 	Short-term minor adverse	No effects	All potentially affected workers would be notified of any potential health hazards so that proper safety measures could be used. Demolition would be conducted only by personnel trained and certified by OSHA to handle and properly dispose of these materials.	None identified
<ul style="list-style-type: none"> PCBs 	No effects	No effects	None identified	None identified
<ul style="list-style-type: none"> Contamination from lead 	Short-term minor adverse	No effects	All potentially affected workers would be notified of any potential health hazards so that proper safety measures could be employed. Demolition activities would be conducted only by personnel trained and certified by OSHA to handle and properly dispose of these materials.	None identified
<ul style="list-style-type: none"> Pesticides 	Long-term minor adverse	No effects	None identified	None identified
<ul style="list-style-type: none"> Radon 	No effects	No effects	None identified	None identified
<ul style="list-style-type: none"> Waste Disposal 	Long-term minor adverse	No effects	None identified	None identified

SECTION 6.0
LIST OF PREPARERS

SECTION 6.0

LIST OF PREPARERS

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SECTION 8.0
REFERENCES

SECTION 8.0 REFERENCES

- Ames Research Center. 2006. Moffett Field. Internet Web site:
<http://www.nasa.gov/centers/ames/about/aboutames-moffetfield.html>.
- BART (San Francisco Bay Area Rapid Transit District). 2006. Internet Web site:
<http://www.bart.gov/index.asp>.
- Basin Research Associates. 1991. Archaeological Overview and Survey, Naval Air Station Moffett Field, Santa Clara County, California and Naval Auxiliary Landing Field, Crows Landing, Stanislaus County. Prepared for Western Division Naval Facilities Engineering Command. San Leandro, California. October (revised December). In NASA 2002. NASA Ames Development Plan, Final Programmatic Environmental Impact Statement. Volumes I and II. July 1991.
- Bat Conservation International. 2006. Which bats are likely to use buildings? Internet Web site:
<http://www.batcon.org/home/index.asp?idPage=51&idSubPage=44>.
- Bay Area Air Quality Management District. 1998. District Regulation 11 (Hazardous Pollutants), Rule 2 (Asbestos Demolition, Renovation and Manufacturing). October 7, 1998.
- _____. 1999. BAAQMD CEQA Guidelines. Assessing the Air Quality Impacts of Projects and Plans. San Francisco, California.
- _____. 2006. Asbestos – General Description. Internet Web site:
<http://www.baaqmd.gov/enf/asbestos/faq.htm>.
- _____. 2007. Ambient Air Quality Standards and Bay Area Attainment Status. Internet Web site:
http://www.baaqmd.gov/pln/air_quality/ambient_air_quality.htm
- BEA 2004. Bureau of Economic Analysis. Per Capita Personal Income by Metropolitan Statistical Area. Internet Web Site: <http://www.bea.gov/bea/regional/reis/CA1-3fn.cfm>.
- Betzina, Mark. 2006. Deputy Director of National Full-Scale Aerodynamics Complex. Personal communication with Rima Ghannam, Tetra Tech, Inc. June 9, 2006.
- Betzina, Mark. 2007. Deputy Director of National Full-Scale Aerodynamics Complex. Personal communication with Rima Ghannam, Tetra Tech, Inc. March 26, 2007.
- Braun Intertec. 2007. *Soil Investigation: Armed Forces Reserve Center and Army Reserve Readiness Sustainment Center, Moffett Field, California*. Project BL-04-06187C. January 5, 2007.

- California Air Resources Board. 2004. 2004 Area Designations and Maps: Attachment C - Maps and Tables of Area Designations for State and National Ambient Air Quality Standards. Internet Web site: <http://arb.ca.gov/regact/area05/area05.htm>.
- _____. 2005. Ambient Air Quality Standards Fact Sheet. Sacramento, California.
- California Air Resources Board. 2006. Ambient Air Quality Standards. Sacramento, California. Internet Web site: <http://www.arb.ca.gov/aqs/aaqs2.html>. California Department of Education. 2006a. Educational Demographics Unit. California Public Schools –District Report. Mountain View-Whiseman Elementary School. Internet Web site: <http://data1.cde.ca.gov/>.
- California Department of Education. 2006b. Educational Demographics Unit. California Public Schools –District Report. Mountain View-Los Altos Union School. Internet Web Site: <http://data1.cde.ca.gov/>.
- California Department of Transportation. 2006. Santa Clara County. Internet Web site: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.
- California Native Plant Society (CNPS). 2006. Inventory of Rare and Endangered Plants (online edition, v7-06a). California Native Plant Society. Sacramento, California. Internet Web site: <http://www.cnps.org/inventory>.
- Caltrain. 2006. Caltrain Stations. Internet Web site: http://www.caltrain.com/caltrain_stations.html.
- CBOC (California Burrowing Owl Consortium). 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines, April 1993. Internet Web site: http://www.dfg.ca.gov/hcpb/species/stds_gdl/bird_sg/boconsortium.pdf.
- CDFG (California Department of Fish and Game). 1995. Burrowing Owl Mitigation, October 17, 1995. Internet Web site: http://www.dfg.ca.gov/hcpb/species/stds_gdl/bird_sg/burowlmit.pdf.
- _____. 2006a. Special Animals (824 taxa). Biogeographic Data Branch. California Natural Diversity Database. February 2006.
- _____. 2006b. Mammals Species of Special Concern. List and Species Accounts. Internet Web site: <http://www.dfg.ca.gov/hcpb/species/ssc/sscmamml/sscmamml.shtml>.
- Center to Protect Workers' Rights. 2003. Construction Noise Hazard Alert. December 29, 2003.
- CGS (California Geological Survey). 2002a. Index to Alquist-Priolo Earthquake Fault Rupture Hazard Zones, Map 4B. Internet Web site: http://www.consrv.ca.gov/CGS/rghm/ap/Map_index/F4B.htm.

- CGS. 2002b. Seismic Hazard Zone Report for the Mountain View 7.5-Minute Quadrangle, Santa Clara County, California, Including Official Map, Seismic Hazard Zones, Mountain View Quadrangle, 1:24,000. Released June 21, 2002. Internet Web site: <http://gmw.consrv.ca.gov/shmp/getgisdata.html>.
- CNDDDB (California Natural Diversity Database). 2006. California Department of Fish and Game. Wildlife & Habitat Data Analysis Branch. Version 3.05. March 30, 2006.
- David Chavez & Associates. 1980. Cultural Resources Evaluations for the Proposed Navy Housing Locations at Moffett Field, Santa Clara County, California. Letter report to Mr. Tom Crews, EIP Corporation, San Francisco, California. July 21, 1980. On file at NWIC.
- _____. 1981. Cultural Resources Evaluations for the Proposed Navy Housing Locations at Moffett Field, Santa Clara County, California. Prepared for EIP Corporation, San Francisco, California. March 1981. On file at NWIC.
- Department of Finance. 2003. Per Capita Personal Income, by County, California, 1993 to 2003. Source: US Department of Commerce, Bureau of Economic Analysis. Internet Web site: <http://www.bea.doc.gov>.
- Dowling Associates. 2007. Transportation Impact Analysis for: Army Reserve Complex at Moffett Field. Prepared for Tetra Tech, Inc. March 22, 2007.
- DTSC (Department of Toxic Substances Control). 2005. Interim Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air for Volatile Organic Compounds. December 15, 2004; Revised February 7, 2005.
- EDD (Employment Development Department) Labor Market Information Division. 2004a. Employment and Unemployment California Metropolitan Areas. 2004.
- _____. 2004b. Santa Clara County Employment by Industry 2004 Annual Average. 2004.
- _____. 2007a. San Jose-Sunnyvale-Santa Clara Metropolitan Statistical Area (MSA) – San Benito and Santa Clara Country. Seasonal Trends dominated north – Over Job Changes. January 19, 2007.
- _____. 2007b. California Labor Market Info. Historical Data for unemployment rate and Labor Force in Santa Clara County. Internet Web site: <http://www.labormarketinfo.edd.ca.gov/>.
- _____. 2007c. California Labor Market Info. Unemployment Rate (Labor Force). Internet Web site: <http://www.labormarketinfo.edd.ca.gov/>.
- EPA (US Environmental Protection Agency). 2004a. Region 9 PRG Table. October 2004.

- EPA. 2004b. First Five-Year Review Report for Middlefield-Ellis-Whisman (MEW) Superfund Study Area, Mountain View, California. September 2004.
- _____. 2005a. Letter correspondence between the USEPA and the NAS Moffett Field BRAC coordinator. Dated January 10, 2005.
- _____. 2005b. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, Dept. of Toxic Substances Control, California Environmental Protection Agency. Revised February 7, 2005.
- _____. 2005c. EPA's Orion Park Housing Area, Indoor Air Quality and Sub-slab Soil Gas Results, April 2005. Received via e-mail from Alana Lee, US Environmental Protection Agency, Region 9, on September 5, 2007.
- _____. 2006. Radon Frequently Asked Questions. Internet Web site: <http://www.epa.gov/radon/radonqa1.html#Definition>.
- Executive Office of the President. 2005. OMB Bulletin NO. 06 – 01. Update of Statistical Area Definitions and Guidance on their Uses. December 5, 2005.
- Figuers, S. 1998. Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, California. Prepared for The Friends of the San Francisco Estuary by Norfleet Consultants, Livermore, California. June 15, 1998.
- Franklin Associates. 1998. Characterization of Building-Related Construction and Demolition Debris in the United States. Prepared for the US Environmental Protection Agency, Municipal and Industrial Solid Waste Division, Office of Solid Waste. Report No. EPA530-R-98-010. June 1998.
- FWEC (Foster Wheeler Environmental Corp.). 2002. Final Phase 1 Environmental Site Assessment for Orion Park and Wescoat Housing Areas. February 11, 2002.
- _____. 2003. *Draft Final Site Characterization and Baseline Human Health Risk Assessment Report for Orion Park and Wescoat Housing Areas. Revision 0*. Prepared for Southwest Division, Naval Facilities Engineering Command. October 17, 2003.
- Helly, E. J., and E. E. Brabb. 1971. Geologic Map of Late Cenozoic Deposits, Santa Clara County, California. US Geological Survey Miscellaneous Field Investigations Map MF-335. 1:62,500.
- Holman & Associates. 1978. An archaeological field reconnaissance of Stevens Creek between the Bay and Homestead Boulevard in Mountain View, California. Letter report to Mr. Tito Patri, The Planning Collaborative, San Francisco, California. March 3, 1978. On file at NWIC.

- Hykelma, Mark. 2002. "Tidal Marsh, Oak Woodlands, and Cultural Florescence in the Southern San Francisco Bay Region." *In: Catalysts to Complexity: Late Holocene Societies of the California Coast*. Jon M. Erlandson and Terry L. Jones, editors. *In: Perspectives in California Archaeology, Volume 6*. Jeanne E. Arnold, Series Editor. Cotsen Institute of Archaeology, University of California, Los Angeles.
- Jennings, C. 1994. Fault Activity Map of California and Adjacent Areas. Prepared by Department of Conservation, Division of Mines and Geology. Geologic Data Map No. 6. 1:750,000.
- Jones & Stokes Associates. 2005. Software User's Guide: URBEMIS2002 for Windows with Enhanced Construction Module. Version 8.7 Emissions Estimation for Land Use Development Projects. Prepared for South Coast Air Quality Management District. Diamond Bar, California.
- Knudsen, K. L., J. Sowers, R. C. Witter, C. M. Wentworth, and E. J. Helley. 2000a. Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California: A Digital Database. US Geological Survey Open-File Report 00-444, Version 1.0. Internet Web site: <http://geopubs.wr.usgs.gov/open-file/of00-444/>.
- _____. 2000b. Preliminary Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California. US Geological Survey Open-File Report 00-444, Sheet 2 of 2. 1:275,000. Internet Web site: <http://geopubs.wr.usgs.gov/open-file/of00-444/>.
- LEA (Local Enforcement Agency). 2006. Marty Pardun. Personal communication with Andrew Gentile of Tetra Tech, Inc. June 13, 2006.
- Lee, Alana. 2006. USEPA, Region IX. Personal communication with Leslie Garlinghouse, Tetra Tech, Inc. July 18, 2006.
- Leidy, R. A., G. S. Becker, B. N. Harvey. 2005. Historical distribution and current status of steelhead/rainbow trout (*Oncorhynchus mykiss*) in streams of the San Francisco Estuary, California. Center for Ecosystem Management and Restoration, Oakland, California.
- Levy, Richard. 1978. "Costanoan." *In: Handbook of North American Indians, Volume 8 (California)*. Robert F. Heizer, editor. Smithsonian Institution, Washington, DC.
- McCartin, Diane. 2007. Project Manager, Support Team, Army Reserve. Personal communication with Rima Ghannam, Tetra Tech, Inc. April 9, 2007.
- Miks, Bill. 2005. Manager, Palo Alto Regional Water Quality Control Plant. Personal communication with Andrew Gentile, Tetra Tech, Inc. April 19, 2005.

- Mountain View, City of. 1992. City of Mountain View General Plan, Circulation Chapter.
Internet Web site: http://www.ci.mtnview.ca.us/citydepts/cd/cp/pdf/CMV_General_Plan_Circulation_Chapter.pdf.
- _____. 2007. Planning Division Project List. January 2007.
- NASA (National Aeronautic and Space Administration). 1998. NASA Ames Aerodynamics Testing Program Final Environmental Impact Statement. October 1998.
- _____. 2001. *Environmental Resources Document*. September 2001
- _____. 2002. NASA Ames Development Plan Final Programmatic EIS. Prepared for the NASA Ames Research Center, Berkeley, California. July 2002.
- _____. 2005. Moffett Federal Airfield Storm Water Retention Pond Tidal Restoration Feasibility Study Fact Sheet. March 2005.
- NASA Ames Fire Department. 2006. NASA Ames Protective Services. Internet Web Site:
http://pso.arc.nasa.gov/ES/Ames_Fire.html.
- NatureServe. 2006. NatureServe Explorer: An online encyclopedia of life (Web application).
Version 4.5. NatureServe, Arlington, Virginia. Internet Web site:
<http://www.natureserve.org/explorer>.
- Naval Facilities Engineering Command. 2003. Draft Final Site Characterization and Baseline Human Health Risk Assessment Report for Orion Park and Wescoat Housing Areas.
October 17, 2003.
- _____. 2006. Draft Groundwater Monitoring Well Installation and Sampling Report for Orion Park Housing Area, Moffett Community Housing, Moffett Field, California. Prepared by Base Realignment and Closure Program Management Office West. August 4, 2006.
- Nichols, D. R., and N. A. Wright. 1971. Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. US Geological Survey Open File Map. San Francisco Bay Region Environment and Resources Planning Study Basic Data Contribution 9.
- Nickison, Don. 2005. Wind Tunnel Operations, NASA Ames Research Center. Personal communication with Antonia Fairbanks, Tetra Tech, Inc. April 15, 2005.
- NOAA Fisheries (National Oceanic and Atmospheric Administration National Marine Fisheries Service). 2005. Endangered and Threatened Species; Designation of Critical Habitat for Seven Evolutionarily Significant Units of Pacific Salmon and Steelhead in California. Federal Register / Vol. 70, No. 170 // Pp 52488 -52627. September 2, 2005.

- NOAA Fisheries. 2006. ESA Salmon listings, Salmon Populations, Steelhead. Internet Web site: <http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Steelhead/STCCC.cfm>.
- NWIC (Northwest Information Center). 2006. Site Records Search for BRAC Activities at Moffett USAR Complex. NWIC File No. 05-1027. May 16, 2006.
- Rambaldini, Daniela A. 2005. *Antrozous Palludus*. Prepared by Rick Sherwin, 1998. Internet Web site: <http://www.wbwg.org/>.
- Raybourn, Michael. 2006. California Department of Health Services. Personal communication with Leslie Garlinghouse, Tetra Tech, Inc. July 20, 2006.
- Regional Water Quality Control Board (RWQCB). 2006. Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments. San Francisco Bay Regional Board. October 25, 2006.
- Riparian Habitat Joint Venture. 2004. The riparian bird conservation plan: a strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. Internet Web site: <http://www.prbo.org/calpif/riparian.v-2.pdf>.
- Rubin, Peter. 2006. Director of Public Works at the CSTC. Personal communication with Megan Chen, CSTC. July 10, 2006.
- Santa Clara County Office of the Sheriff. 2006. Sheriff Office Facts. Internet Web site: <http://www.sccgov.org/portal/site/sheriff/>.
- Santa Clara Office of Education. 2006. Facts about Santa Clara County Public Schools. Internet Web site: <http://www.sccoe.k12.ca.us/newsandfacts/sccpublicschools/>.
- SCVTA (Santa Clara Valley Transportation Authority). 2005. 2005 Progress Report Celebrating 10 Years of Service.
- _____. 2006. Welcome Aboard. Internet Web site: <http://www.vta.org/>.
- SFB-RWQCB (San Francisco Bay Region - Regional Water Quality Control Board). 1995. San Francisco Bay Basin, Water Quality Control Plan. Oakland, California. June 21, 1995.
- Siders, Melissa S. 2005. *Eumops perotis*. Original account by: Elizabeth D. Pierson, 1998. Internet Web site: <http://www.wbwg.org/>. Sunnyvale, City of. 2007. City of Sunnyvale Development Update. January 2007.
- SWIS (Solid Waste Information System). 2006. California Integrated Waste Management Board. Internet Web site: <http://www.ciwmb.ca.gov/SWIS/>.

- TEC Planning. 2006. Moffett U.S. Army Reserve Complex - Draft Submittal: Facilities and Relocation Assessment. February 27, 2006.
- Tetra Tech, Inc. 2006a. Cultural Resources Survey of Approximately 76.6 Acres for BRAC 2005 Activities at Moffett Field USAR Complex, Santa Clara County, California. Prepared for US Army Corps of Engineers, Mobile District, Mobile, Alabama. Contract No. W91278-06-D-001. Prepared by Tetra Tech, Inc., San Francisco, California. Fred Budinger, MA, RPA, Principal Investigator. Project No. 100-SFO-T18685. October 2006.
- _____. 2006b. Draft Final Orion Park Burrowing Owl Survey Report. Prepared for RSP Architects, Ltd., Minneapolis, Minnesota. November 2006.
- Trulio, L. A. 1995. Passive Relocation-A Method to Preserve Burrowing Owls on Disturbed Sites. *Journal of Field Ornithology* 66 (1): 99-196 WIN 1995.
- USACE (US Corps of Engineers). 2005. Supplemental Environmental Assessment of Implementation of the Army Residential Communities Initiative at Moffett Community Housing, California. Prepared for Commander, Combat Support Training Center. August 2005.
- USACHPPM. 2007. Health Risk Assessment No. 39-DA-060F-07: Vapor Intrusion Study for the Combined Armed Forces Reserve Center and the Army Reserve Regional Readiness Sustainment Command Headquarters, Moffett Field, California.
- USAF (US Air Force). 1999. *Supplemental Environmental Baseline Survey for Onizuka Annex Shenandoah Housing Property*. Onizuka Air Force Base, California. May 20, 1999.
- _____. 2000. *Supplemental Environmental Baseline Survey for Onizuka Housing Property, Annex 11 and 111*. Onizuka Air Force Station, California. June 21, 2000.
- USAR (United States Army Reserve). 2003. Environmental Baseline Survey, Proposed USAR Center, Orion Park Housing Area, Moffett Field, California, US Army Reserve, 63D Regional Support Command, May 2003.
- USAR (US Army Reserve). 2006. Moffett USAR Complex Real Property Master Plan. Draft. May 10, 2006.
- USC (United States Code). 1998. Title 42 – The Public Health and Welfare. Chapter 63A – Residential Lead-Based Paint Hazard Reduction. US Code as of 01/26/1998. Internet Web site:
<http://www.washingtonwatchdog.org/documents/usc/ttl42/ch63A/sec4851.html>.
- USFWS (US Fish and Wildlife Service). 2006. Letter and species list for USGS 7.5-minute quadrangles of Mountain View. Species List for Moffett Field. Document #060530115324. May 30, 2006.

- USGS (United States Geological Survey). 1997. Mountain View 7.5-Minute Quadrangle.
- US Army. 2002. Department of the Army Pamphlet 200-1: Environmental Protection and Enhancement. 17 January 2002.
- _____. 2006a. FY 2007 Military Construction Project Data. Project Number CAR 07-64591. March 2006.
- _____. 2006b. Inventory of Military Real Property as of 03-APR-2006.
- _____. 2006c. Memorandum on Sustainable Design and Development Policy Update – SpiRiT to LEED Transition. Joseph W. Whitaker, Deputy Assistant Secretary of the Army (Installations and Housing). January 5, 2006.
- US Census Bureau 2000. Profile of Selected Housing Characteristics 2000. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004a. United States. Selected Economic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004b. California. Selected Economic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004c. Santa Clara County. Selected Economic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004d. Santa Clara County. Selected Demographic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004e. Santa Clara County. Selected Housing Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004f. California. Selected Demographic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004g. United States. Selected Demographic Characteristics: 2004. Internet Web site: <http://factfinder.census.gov/>.
- _____. 2004h. San Francisco-San Jose-Oakland, California CMSA: General Demographic Characteristics 2004. Internet Web site: <http://factfinder.census.gov/>.
- US Navy. 2003. Site Characterization and Baseline Human Health Assessment Report for Orion Park and Wescoat Housing Areas, Dept. of the Navy. January 16, 2003.

- US Navy. 2005. Air Sampling Report for Orion Park and Wescoat Housing Areas, Dept. of the Navy. March 11, 2005.
- _____. 2006. Class 2 Property Record for CSO NAS Moffett Field, California; Facility Name: Navy Lodge.
- Weeks, Kay D., and Anne E. Grimmer. 1995. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings. US Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services. Washington, DC.
- Weller, Theodore J. 2005. *Myotis thysanodes*. Original account prepared by: Pete Bradley and Mark Ports, 1998. Internet Web site: <http://www.wbwg.org/>.
- Winters, Jodi. Development Executive, Park Realty. 2007. Personal communication with Rima Ghannam, Tetra Tech, Inc. March 6, 2007.
- Zeiner, David C., William F. Laudenslayer, Jr., Kenneth E. Mayer, and Marshall White. 1990. *California's Wildlife: Volume III Mammals*. California Department of Fish and Game. April 1990.

**SECTION 9.0
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SECTION 10.0
ACRONYMS AND ABBREVIATIONS

SECTION 10.0

ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ACM	asbestos-containing materials
ADNL	A-weighted day-night level
AFRC	Armed Forces Reserve Center
APE	area of potential effect
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Regional Transit
bgs	below ground surface
BMPs	best management practices
BRAC	Base Closure and Realignment
CAA	Clean Air Act
CANG	California Air National Guard
CBOC	California Burrowing Owl Consortium
CDFG	California Department of Fish and Game
CDNL	C-weighted day-night level
cis-1,2-DCE	cis-1,2-dichloroethene
CMP	Congestion Management Program
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CSTC	Combat Support Training Center
dB	decibels
dBA	A-weighted decibels
dBC	C-weighted decibels
DNL	day-night average sound level
DoD	Department of Defense
DPS	distinct population segment
DTSC	Department of Toxic Substance Control
EA	environmental assessment
EDD	Employment Development Department
EIS	environmental impact statement
EO	executive order
EPA	US Environmental Protection Agency

Acronym	Meaning
ESA	Endangered Species Act
FFCA	Federal Facilities Compliance Agreement
FNSI	finding of no significant impact
gpm	gallons per minute
HUD	US Department of Housing and Urban Development
HRA	health risk assessment
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LOS	level of service
MBTA	Migratory Bird Treaty Act
MEPS	Military Entrance Processing Station
MEW	Middlefield-Ellis-Whisman
mgd	million gallons per day
MSA	Metropolitan Statistical Area
msl	mean sea level
NAHC	Native American Heritage Commission
NAS	Naval Air Station
NAGPRA	Native American Graves Protection and Repatriation Act
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NFAC	National Full-Scale Aerodynamics Complex
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	notice of intent
NOx	nitrous oxides
NPL	National Priorities List
NRHP	National Register of Historic Places
NRP	NASA Research Park
NWIC	Northwest Information Center
O&M	operations and maintenance
OARF	Outdoor Aerodynamic Research Facility
OMG	Office of Management and Budget
OMS	organizational maintenance shop
OSHA	Occupational Safety and Health Administration
PCBs	polychlorinated biphenyls
pCi/L	picocuries per liter

Acronym	Meaning
PG&E	Pacific Gas & Electric
PM ₁₀	inhalable particulate matter
PM _{2.5}	fine particulate matter
POLs	petroleum, oils, and lubricants
ppb	parts per billion
ppm	parts per million
PRG	preliminary remediation goal
psi	pounds per square inch
PVC	polyvinyl chloride
RCI	Residential Communities Initiative
ROG	reactive organic gases
ROI	region of influence
RQW	Rescue Wing
RRC	Regional Readiness Command
RRSC	Regional Readiness Sustainment Command
SCVTA	Santa Clara Valley Transportation Authority
SIP	state implementation plan
SHPO	State Historic Preservation Office
SPiRiT	Sustainable Project Rating Tool
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TCE	Trichloroethylene
TCPs	traditional cultural properties
TDM	transportation demand management
USACHPPM	US Army Center for Health Promotion and Preventative Medicine
USACE	US Army Corps of Engineers
USAR	US Army Reserve
USARC	United States Army Reserve Center
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VOCs	volatile organic compounds

APPENDIX A
AGENCY CORRESPONDENCE

STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION

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May 26, 2006

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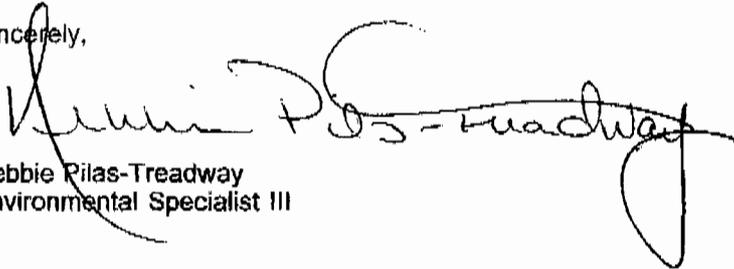
RE: Native American Contact List - Base Realignment and Closure Activities at Moffett USAR
Complex, Santa Clara County

Dear Mr. Houston:

Attached for your use is a list of Native American individuals/organizations that may have knowledge of cultural resources for the above referenced project. This list should provide a starting place in locating areas of potential adverse effect. The Commission makes no recommendation or preference of one individual, or group over another. I suggest you contact all of those listed. If they cannot supply specific information, they may recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult. If a response has not been received within two weeks of any project notifications from your office, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of changes in addresses and/or telephone numbers from any of the individuals or groups on the list, please notify me. With your assistance we will be able to assure that the list is complete and contains current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,


Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Santa Clara County
May 26, 2006

Jakki Kehl
 720 North 2nd Street
 Patterson, CA 95363
 jakki@bigvalley.net
 (209) 892-2436
 (209) 892-2435 - Fax

Ohlone/Costanoan

Amah/Mutsun Tribal Band
 Michelle Zimmer, Cultural Resource Coordinator
 PO Box 62-558
 Woodside, CA 94062
 (408) 810-2024

Ohlone/Costanoan

Amah Mutsun Tribal Band
 Valentin Lopez, Chairperson
 3015 Eastern Ave, #40
 Sacramento, CA 95821
 (916) 481-5785

Ohlone/Costanoan

Amah/Mutsun Tribal Band
 Irene Zwielerlein, Chairperson
 789 Canada Road
 Woodside, CA 94062
 amah_mutsun@yahoo.com
 (650) 851-7747 - Home
 (650) 851-7489 - Fax

Ohlone/Costanoan

Amah Mutsun Tribal Band
 Edward Ketchum
 35867 Yosemite Ave
 Davis, CA 95616
 aerieways@aol.com

Ohlone/Costanoan
 Northern Valley Yokuts

Indian Canyon Mutsun Band of Costanoan
 Ann Marie Sayers, Chairperson
 P.O. Box 28
 Hollister, CA 95024

Ohlone/Costanoan

Amah Mutsun Tribal Band
 Quirina Luna
 PO Box 852
 San Juan Bautista, CA 93638
 831-623-2635

Ohlone/Costanoan

The Ohlone Indian Tribe
 Andrew Galvan
 PO Box 3152
 Mission San Jose, CA 94539
 chochenyo@AOL.com
 (510) 656-0787 - Voice
 (510) 882-0527 - Cell
 (510) 687-9393 - Fax

Ohlone/Costanoan
 Bay Miwok
 Plains Miwok
 Patwin

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural for the proposed
 * Base Realignment and Closure Activities at Moffett USAR Complex, Santa Clara County.

**Native American Contacts
Santa Clara County
May 26, 2006**

Trina Marine Ruano Family
Ramona Garibay, Representative
5816 Thornton Ave
Newark, CA 94560
510-300-5971 - cell

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

**This list is only applicable for contacting local Native Americans with regard to cultural for the proposed
* Base Realignment and Closure Activities at Moffett USAR Complex, Santa Clara County.**

United States Department of the Interior
FISH AND WILDLIFE SERVICE



Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

May 30, 2006

Document Number: 060530115324

Jeanette Weisman
Tetra Tech, Inc
180 Howard Street, Ste 250
San Francisco, CA 94105

Subject: Species List for Construction and Operation of an Armed Forces Reserve Center Complex at MoffetField, California. The Army proposes to implement demolition, construction, and operations activities, as well as environmental protection measures at the project site.

Dear: Ms. Weisman

We are sending this official species list in response to your May 30, 2006 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be August 28, 2006.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found at www.fws.gov/sacramento/es/branches.htm.

Endangered Species Division

TAKE PRIDE

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the Counties and/or
U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 060530120626
Database Last Updated: May 5, 2006

Species of Concern - The Sacramento Fish & Wildlife Office no longer maintains a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See www.fws.gov/sacramento/es/spp_concern.htm for more information and links to these sensitive species lists.

Red-Legged Frog Critical Habitat - The Service has designated final critical habitat for the California red-legged frog. The designation becomes final on May 15, 2006. See our [map index](#).

Species

Listed Species

Invertebrates

Euphydryas editha bayensis
bay checkerspot butterfly (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardii
vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus kisutch
coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Birds*Haliaeetus leucocephalus*

bald eagle (T)

Rallus longirostris obsoletus

California clapper rail (E)

Sterna antillarum (=albifrons) browni

California least tern (E)

Mammals*Reithrodontomys raviventris*

salt marsh harvest mouse (E)

Candidate Species**Fish***Oncorhynchus tshawytscha*

Central Valley fall/late fall-run chinook salmon (C) (NMFS)

Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Selected Quads

MOUNTAIN VIEW (428A)

County Lists

No county species lists requested.

Key:(E) *Endangered* - Listed as being in danger of extinction.(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.*Critical Habitat* - Area essential to the conservation of a species.(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.(C) *Candidate* - Candidate to become a proposed species.(V) *Vacated* by a court order. Not currently in effect. Being reviewed by the Service.(X) *Critical Habitat* designated for this species**Important Information About Your Species List****How We Make Species Lists**

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the area covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online [Inventory of Rare and Endangered Plants](#).

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the [Guidelines for Conducting and Reporting Botanical Inventories](#). The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All animals identified as listed above are fully protected under the Endangered Species Act of 1973, amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by or of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal [consultation](#) with the Service.

During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See [critical habitat page](#) for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be August 28, 2006.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

January 26, 2007

In response refer to:
2006/05374

Colonel W. Scott Wood
U.S. Army
Headquarters, U.S. Army Combat Support Training Center
790 5th Street
Dublin, California 94568-5201

Dear Colonel Wood:

Thank you for your letter of September 21, 2006, regarding the proposed construction and operation of an Armed Forces Reserve Center (AFRC) complex at Moffett Field in Santa Clara County, California. The U.S. Army Combat Support Training Center has requested NOAA's National Marine Fisheries Service's (NMFS) concurrence with the Army's determination that the proposed project is not likely to adversely affect listed steelhead or designated critical habitat.

The proposed project would be constructed on a 76.6-acre parcel at Moffett Field adjacent to Stevens Creek in south San Francisco Bay. Approximately 75 existing facilities at the project site would be demolished and the site would be graded. The Army would construct approximately 350,000 square feet of new Army Reserve facilities and an additional 250,000 square feet of training and support facilities on the site. Construction is scheduled to begin as soon as June 2007 and would be completed within five years. The project would include construction of a storm water drainage system with at least one retention (or detention) pond with filtration for discharge into Stevens Creek. The pond would be designed to accommodate a 100-year storm event while keeping water levels on site at least one foot below building floor levels. The storm water drainage system would use an existing outfall that drains to Stevens Creek.

The Army has included several measures to avoid and minimize both temporary and permanent impacts to Stevens Creek. Although some existing buildings are as close as 50 feet from the bank of the creek, all new permanent facilities would be set back at least 75 feet from the normal high water line of Stevens Creek. Existing structures would be demolished and a landscaping plan with native grasses and forbs would be used to re-vegetate the 75-foot stream buffer zone. Invasive plant species would not be used in any project landscaping. Demolition and construction activities would be separated from Stevens Creek by an existing chain link fence or existing concrete wall. Best management practices to protect water quality in Stevens Creek



include use of silt fences, temporary sediment ponds, rock construction entrances, and street sweeping.

Available information indicates that the threatened Central California Coast (CCC) steelhead Distinct Population Segment (*Oncorhynchus mykiss*) spawn and rear in Stevens Creek. Stevens Creek is also designated critical habitat for this species (September 2, 2005, 70 FR 52488). Adult steelhead migrate from the ocean to their natal spawning areas in Stevens Creek during the winter and early spring months. Juvenile steelhead smolts migrate downstream in Stevens Creek through the project site from February through May. Adults are not expected to spawn in lower Stevens Creek near the Army's project site due to existing habitat conditions and tidal influence from San Francisco Bay. Juvenile steelhead rearing occurs in upstream areas of Stevens Creek where water temperatures are cooler during the summer months and instream habitat conditions provide greater diversity and complexity. Few, if any, juvenile steelhead are expected to be present in the project area during the summer/fall months due to high water temperatures and poor habitat conditions.

Project construction and operation are not expected to adversely affect threatened CCC steelhead. The facilities under demolition/construction are above the stream and set back from the top of bank by a minimum of 50 feet. No work within the waters of Stevens Creek is proposed. This distance from the stream combined with the measures to prevent sediment or contaminants from entering the stream, avoid adverse effects to CCC steelhead during construction. Following completion of construction, stormwater runoff from the project site has the potential to degrade water quality in Stevens Creek and impact CCC steelhead. The proposed creation of a stormwater retention (or detention) basin will collect all storm runoff up to a 100-year event and filter out contaminants to the maximum extent practicable as required under provisions of the federal Clean Water Act. Weekly street sweeping is expected to minimize the degradation of water quality and remove trash that would otherwise end up in Stevens Creek. These measures are expected to reduce the project's potential impacts to water quality to the level of being insignificant and discountable.

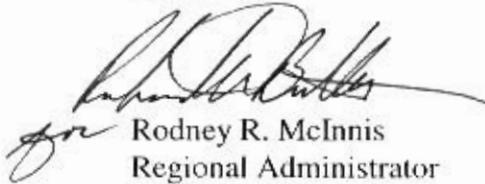
Primary constituent elements (PCEs) of designated critical habitat for CCC steelhead in the action area include water quality and quantity, foraging habitat, natural cover including large substrate and aquatic vegetation, and migratory corridors free of obstructions. Potential effects to designated critical habitat include minor, short-term increases in turbidity during construction and operation of the facilities. The proposed use of silt fences, sediment detention ponds, and revegetation of areas adjacent to the stream are expected to avoid the introduction of sediment during construction. Street sweeping and the construction of a stormwater retention (or detention) basin with filtration are expected to prevent the degradation of water quality in Stevens Creek post-construction. In addition, the restored buffer zone and revegetated upper bank area are expected to benefit the riparian corridor of Stevens Creek when construction is completed. Considering the location of the facilities under demolition/construction and the measures designed to avoid the introduction of sediment or contaminants into the stream, potential impacts to PCEs of designated critical habitat are minimal and discountable. Project

construction and operation are not expected to result in either a net change to existing habitat values, or result in adverse impacts to designated critical habitat.

Based on the best available information, NMFS concurs with the Army's determination that threatened CCC steelhead are not likely to be adversely affected by this project. Regarding designated critical habitat, NMFS has determined the proposed project is not likely to adversely affect essential physical or biological features associated with designated critical habitat. This concludes consultation in accordance with 50 CFR §402.13(a) for the proposed construction and operation of AFRC complex at Moffett Field in Santa Clara County, California. However, **further consultation may be required if: (1) new information becomes available indicating that listed species or critical habitat may be affected by the project in a manner or to an extent not previously considered; (2) current project plans change in a manner that causes an effect to listed species or critical habitat in a manner not previously considered; or (3) a new species is listed or critical habitat designated that may be affected by the action.**

If you have questions concerning these comments, please contact Gary Stern at (707) 575-6060.

Sincerely,



Rodney R. McInnis
Regional Administrator

cc: Russ Strach, NMFS, Sacramento, California
Ryan Olah, USFWS, Sacramento, California
Jane Hicks, Corps, San Francisco, California
Admin. File #151422SWR2006SR00636

**OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION**

P O BOX 342896
SACRAMENTO, CA 94296-0001
(916) 653-6624 Fax: (916) 653-9824
calshpo@ohp.parks.ca.gov



February 16, 2007

In reply refer to: USA061103A

Gary Houston
Chief, Environmental Management Division
Department of the Army
Installation Management Agency
U. S. Army Combat Support Training Center
Building 238 California Avenue
Fort Hunter Liggett, CA 93928-7000

Re: Base Realignment and Closure Activities at Moffett Field USAR Complex, Santa Clara County, California.

Dear Mr. Houston:

Thank you for your 11 January 2007 letter continuing our consultation per 36 CFR Part 800, the regulations that implement Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f), as amended, regarding the construction of new Armed Forces Reserve Center (AFRC) at Moffett Field.

The US Army is proposing to construct an AFRC on a 76.6-acre site at Moffett Field. As I understand it, the undertaking would include the demolition of the existing buildings, removal of existing landscaping, grading of the site, and the construction of nine new buildings. When you initiated consultation in a letter dated 1 November 2006, you requested that I concur with your determination that the undertaking would not affect historic properties per 36 CFR § 800.4(d)(1). At that time I could not concur because I did not believe, based on the information presented, that the Army had made a reasonable effort to identify historic properties pursuant to 36 CFR § 800.4(b)(1), with regard to archaeological resources, or had appropriately applied the criteria of adverse effects, 36 CFR § 800.5(a)(1) with regard to the built environment. I did agree with your finding that Building E52 was not eligible for inclusion in the National Register.

Based upon the information you provided in your 11 January 2007 letter and a February 2006 email from Ernie Seckinger to David Byrd of my staff, I can now agree that the level of archaeological investigation was appropriate given the contamination within the Area of Potential Effects. I can also agree that the Army has adequately taken into account the potential of the undertaking to adversely affect the adjacent historic district. I would suggest that the appropriate finding for the undertaking would be that of No Adverse Effect, per 36 CFR § 800.5(b), rather than the no historic properties affected you have proposed. If I do not hear from you within 15 days of receipt of this letter, I will assume that the Army agrees with my suggestion. Please be advised that under certain circumstances, such as unanticipated discovery or a change in project description, the Army may have additional future responsibilities for this undertaking under 36 CFR Part 800.

Thank you for continuing the consultation on this undertaking and for considering historic properties in planning your projects. If you have any questions or concerns, please contact David Byrd, Project Review Unit historian, at (916) 653-9019 or at dbyrd@parks.ca.gov.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

MWD:db

APPENDIX B
BIOLOGICAL RESOURCES

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
Mountain View USGS 7.5 minute quadrangle

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS/R-E-D
1 Alameda song sparrow <i>Melospiza melodia pusillula</i>	ABPBXA301S			G5T2?	S2?	SC
2 California black rail <i>Laterallus jamaicensis coturniculus</i>	ABNME03041		Threatened	G4T1	S1	
3 California clapper rail <i>Rallus longirostris obsoletus</i>	ABNME05016	Endangered	Endangered	G5T1	S1	
4 California least tern <i>Sterna antillarum browni</i>	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2S3	
5 California seablite <i>Suaeda californica</i>	PDCHE0P020	Endangered		G1	S1.1	1B/3-3-3
6 Congdon's tarplant <i>Centromadia parryi ssp. congdonii</i>	PDAST4R0P1			G4T3	S3.2	1B/2-2-3
7 Hoover's button-celery <i>Eryngium aristulatum var. hooveri</i>	PDAP10Z043			G5T2	S2.1	1B/3-3-3
8 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
9 Point Reyes bird's-beak <i>Cordylanthus maritimus ssp. palustris</i>	PDSCR0J0C3			G4?T2	S2.2	1B/2-2-2
10 alkali milk-vetch <i>Astragalus tener var. tener</i>	PDFAB0F8R1			G1T1	S1.1	1B/3-2-3
11 burrowing owl <i>Athene cunicularia</i>	ABNSB10010			G4	S2	SC
12 mimic tryonia (=California brackishwater snail) <i>Tryonia imitator</i>	IMGASJ7040			G2G3	S2S3	
13 northern harrier <i>Circus cyaneus</i>	ABNKC11010			G5	S3	SC
14 salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	AMAFF02040	Endangered	Endangered	G1G2	S1S2	
15 salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	AMABA01071			G5T1	S1	SC
16 saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	ABPBX1201A			G5T2	S2	SC
17 western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened		G4T3	S2	SC

**Table B-1
Special Status Species Potentially Present in the ROI**

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS, CDFG, or WBWB)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
FEDERALLY AND STATE LISTED						
Plants						
California seablite	<i>Suaeda californica</i>	E/-1B	NA	Margins of coastal salt marshes	U	No suitable habitat within the ROI.
Bay checkerspot butterfly	<i>Euphydryas editha bayensis</i>	T/-/-	Resident	Restricted to native grassland on outcrops of serpentine soil in the vicinity of the San Francisco Bay	U	No suitable habitat within the ROI.
San Bruno elfin butterfly	<i>Incisalia mossii bayensis</i>	E/-/-	Resident	Colonies are located on steep, north-facing slopes within the fog belt of coastal, mountainous areas. Require with grassy ground cover, and occur mainly in the vicinity of San Bruno mountain and San Mateo county.	U	No suitable habitat within the ROI.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	E/-/-	Resident	Vernal pool	U	No suitable habitat within the ROI.

Table B-1 (Continued)
Special Status Species Potentially Present in the ROI

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
Amphibians						
California red-legged frog	<i>Rana aurora draytonii</i>	T,CH/-/CSC	Resident	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation	U	No on-site breeding habitat. Unlikely estivation or dispersal area due to the absence of suitable water source, fencing, and disturbed nature of project area.
California tiger salamander	<i>Ambystoma californiense</i>	T/-/CSC	Resident	Need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding	U	No on-site breeding habitat. Unlikely estivation or dispersal area due to the absence of suitable water source, fencing, and disturbed nature of project area.
Birds						
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T/E/FP	Winter	Requires large bodies of freshwater or free-flowing rivers with abundant fish and with adjacent snags or other perches	U	No suitable habitat within the ROI.
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	-/T/-	Resident	Occurs in tidal salt marsh heavily grown to pickleweed; also in fresh-water and brackish marshes	U	No suitable habitat within the ROI.

**Table B-1 (Continued)
Special Status Species Potentially Present in the ROI**

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
California Clapper Rail	<i>Rallus longirostris obsoletus</i>	E/E/-	Resident	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of san francisco bay	U	No suitable habitat within the ROI.
California Least Tern	<i>Sterna antillarum (=albifrons) browni</i>	E/E/-	Migratory	Colonial breeder on bare or sparsely vegetated flat substrates: sand beaches, alkali flats, land fills, or paved areas	U	No suitable habitat within the ROI.
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T/-/CSC	Resident & Migratory	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting	U	No suitable habitat within the ROI.
Mammals						
Salt marsh harvest mouse	<i>Reithrodontomys raviventris</i>	E/E/-	Resident	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat.	U	No habitat within the ROI.
Fish						
Delta smelt	<i>Hypomesus transpacificus</i>	T/T/-	Resident	Resides primarily in the interface between salt and fresh water	U	The ROI does not overlap with this species' distribution.
Central California coast Coho salmon	<i>Oncorhynchus kisutch</i>	E/E/-	Migratory	Brackish waters of the San Francisco Bay, open ocean. Spawns in freshwater streams	U	The ROI does not overlap with this species' distribution.

Table B-1 (Continued)
Special Status Species Potentially Present in the ROI

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
Central California Coastal steelhead	<i>O. mykiss</i>	T,CH/T/-	Migratory	Brackish waters of the San Francisco Bay, open ocean. Spawns in freshwater streams	C	Known to occur in Stevens Creek, which is located on the western side of the ROI.
Central Valley steelhead	<i>O. mykiss</i>	T/T/-	Migratory	Brackish waters of the San Francisco Bay, open ocean. Spawns in freshwater streams	U	The ROI does not overlap with this species' distribution.
Central Valley spring-run Chinook salmon	<i>O. tshawytscha</i>	T/T/-	Migratory	Brackish waters of the San Francisco Bay, open ocean. Spawns in freshwater streams	U	The ROI does not overlap with this species' distribution.
CANDIDATE SPECIES						
Fish						
Central Valley fall/late fall-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	C/-/-	Migrant	Brackish waters of the San Francisco Bay, open ocean. Spawns in freshwater streams	U	The ROI does not overlap with this species' distribution.
OTHER SPECIES OF CONCERN						
Plants						
Congdon's tarplant	<i>Centromadia parryi</i> ssp. <i>congdonii</i>	-/-/1B	NA	Valley and foothill grassland and alkaline soils, sometimes described as heavy white clay	U	No suitable habitat within the ROI.

Table B-1 (Continued)
Special Status Species Potentially Present in the ROI

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
Hoover's button-celery	<i>Eryngium aristulalatum</i> var. <i>hooveri</i>	-/-1B	NA	Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast	U	No suitable habitat within the ROI.
Alkaki milk-vetch	<i>Astragalus tener</i> var. <i>tener</i>	-/-1B	NA	Low ground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools	U	No suitable habitat within the ROI.
Birds						
Alameda Song Sparrow	<i>Melospiza melodia pusillula</i>	MBTA-/CSC	Resident	Resident of salt marshes bordering south arm of san francisco bay. Inhabits salicornia marshes; nests low in grindelia bushes (high enough to escape high tides) and in salicornia	U	No suitable habitat within the ROI.
Northern Harrier	<i>Circus cyaneus</i>	MBTA-/CSC	Resident	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas	U	No suitable habitat within the ROI.
Saltmarsh Common Yellowthroat	<i>Geothlypis trichas sinuosa</i>	MBTA-/CSC	Resident	Resident of the san francisco bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	U	No suitable habitat within the ROI.

Table B-1 (Continued)
Special Status Species Potentially Present in the ROI

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>	MBTA/-/CSC	Resident	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation	C	Confirmed in the northern portion of the ROI outside of the project area. Marginally suitable habitat exists in the project area.
Mammals						
Salt-marsh wandering shrew	<i>Sorex vagrans halicoetes</i>	-/-/CSC	Resident	Salt marshes of the south arm of san francisco bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among salicornia.	U	No suitable habitat within the ROI.
Western mastiff bat	<i>Eumops perotis</i>	-/-/CSC, High Priority	Resident	Many open, semi-arid to arid habitats, including conifer & deciduous woodlands, coastal scrub, grasslands, chaparral etc	P	May roost in buildings and trees within the ROI
Pallid bat	<i>Antrozous pallidus</i>	-/-/CSC, High Priority	Resident	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	P	May roost in buildings and trees within the ROI

**Table B-1 (Continued)
Special Status Species Potentially Present in the ROI**

Common Name	Scientific Name	Status ¹ (Fed/CA/CNPS or CDFG)	Season ²	Primary Habitat ³	Likelihood of Occurrence	Comments
Fringed myotis	<i>Myotis thysanodes</i>	-/-/High Priority	Resident	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	P	May roost in buildings and trees within the ROI
NATURAL COMMUNITIES OF SPECIAL CONCERN						
Northern Coastal Salt Marsh		NA	NA	NA	U	Not found within the ROI.

Source: CNDDB 2006; USFWS 2006

¹Status

- E = Federally or state listed as endangered.
- T = Federally or state listed as threatened.
- CH = Critical habitat.
- C = As of February 28, 1996 (Federal Register Vol. 61, No. 40), the USFWS has reclassified former Candidate Category 1, 2, and 3 species as "Candidates." Species formerly considered Category 1 are generally now considered Candidate species. Species formerly considered Category 2 and 3 are of concern to the agency but have no specific status with regard to the Federal Endangered Species Act.
- CSC = California Department of Fish and Game "Species of Special Concern." / Species with declining populations in California.
- = No California, federal, or state status.
- CNPS = California Native Plant Society Listing (does not apply to wildlife species).
- CDFG = California Department of Fish and Game Listing (does not apply to plant species).
- FP = Fully protected.
- 1B = Plants, rare, threatened or endangered in California and elsewhere and are rare throughout their range. Plants constituting List 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection) of the California Department of Fish and Game Code and are eligible for state listing.
- NA = Not applicable

Likelihood of Occurrence

C = Recorded in the ROI, P = Possibly occurs in the ROI, U = Not recorded in the ROI and not likely to occur

APPENDIX C
AIR QUALITY

APPENDIX C-1

OVERVIEW OF THE CNSTEMIS SPREADSHEET MODEL FOR CONSTRUCTION AND DEMOLITION EMISSIONS ANALYSES

**Table C-1
State and National Ambient Air Quality Standards Applicable in California**

Pollutant	Averaging Time	Standards in Parts Per Million by Volume (ppm)		Standards in Micrograms Per Cubic Meter		Violation Criteria	
		California	National	California	National	California	National
Ozone	1 Hour	0.09	Standard rescinded	180	Standard rescinded	If exceeded	Not applicable
	8 Hours	0.070	0.08	137	157	If exceeded	If exceeded by the mean of annual 4 th highest daily values for a 3-year period
Carbon Monoxide	1 Hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day per year
	8 Hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day per year
	8 Hours (Lake Tahoe Basin only)	6.0	9	7,000	10,000	If equaled or exceeded	If exceeded on more than 1 day per year
Nitrogen Dioxide	Annual Average	No standard	0.053	No standard	100	Not applicable	If exceeded
	1 Hour	0.25	No standard	470	No standard	If exceeded	Not applicable
Sulfur Dioxide	Annual Average	No standard	0.03	No standard	80	Not applicable	If exceeded
	24 Hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day per year
	3 Hours	No standard	0.5	No standard	1,300	Not applicable	If exceeded on more than 1 day per year
	1 Hour	0.25	No standard	655	Not applicable	If exceeded	Not applicable

Table C-1 (continued)
State and National Ambient Air Quality Standards Applicable in California

Pollutant	Averaging Time	Standards in Parts Per Million by Volume (ppm)		Standards in Micrograms Per Cubic Meter		Violation Criteria	
		California	National	California	National	California	National
Inhalable Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	Not applicable	Not applicable	20	Standard rescinded	If exceeded	Not applicable
	24 Hours	Not applicable	Not applicable	50	150	If exceeded	For 1997 non-attainment areas, if exceeded on more than 1 day per year. For other areas, if exceeded by the mean of annual 99 th percentile values over 3 years
Fine Particulate Matter (PM _{2.5})	Annual Arithmetic Mean	Not applicable	Not applicable	12.0	15.0	If exceeded	If exceeded as a 3-year spatial average of data from designated stations
	24 Hours	Not applicable	Not applicable	No standard	35	Not applicable	If exceeded by the mean of annual 98 th percentile values over 3 years

Table C-1 (continued)
State and National Ambient Air Quality Standards Applicable in California

Pollutant	Averaging Time	Standards in Parts Per Million by Volume (ppm)		Standards in Micrograms Per Cubic Meter		Violation Criteria	
		California	National	California	National	California	National
Lead Particles (TSP sampler)	Calendar Quarter	Not applicable	Not applicable	No standard	1.5	Not applicable	If exceeded
	30 Days	Not applicable	Not applicable	1.5	No standard	If exceeded	Not applicable
Sulfate Particles (TSP sampler)	24 Hours	Not applicable	Not applicable	25	No standard	If equaled or exceeded	Not applicable
Hydrogen Sulfide	1 Hour	0.03	No standard	42	No standard	If exceeded	Not applicable
Vinyl Chloride	24 Hours	0.010	No standard	26	No standard	If equaled or exceeded	Not applicable

Notes:

All standards except the national PM₁₀ and PM_{2.5} standards are based on measurements corrected to 25 degrees C and 1 atmosphere pressure.

The national PM₁₀ and PM_{2.5} standards are based on direct flow volume data without correction to standard temperature and pressure.

Decimal places shown for standard reflect the rounding conventions used for evaluating compliance.

The national 1-hour ozone standard was rescinded for 41 states (including California) prior to June 2005, but remains in effect for portions of 9 states (Colorado, Georgia, Maryland, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia). Maintenance plan requirements for the 1-hour ozone standard remain in effect for portions of 22 states, including some parts of California.

The California 8-hour ozone standard was adopted in April 2005, and became effective in May 2006.

The California annual average standard for PM₁₀ was changed from an annual geometric mean of 30 micrograms per cubic meter to an annual arithmetic mean of 20 micrograms per cubic meter in June 2002.

The national annual average standard for PM₁₀ was rescinded effective December 17, 2006.

The national 24-hour standard for PM_{2.5} was revised from 65 micrograms per cubic meter to 35 micrograms per cubic meter effective December 17, 2006.

The “10” in PM₁₀ and the “2.5” in PM_{2.5} are not particle size limits; these numbers identify the particle size class (aerodynamic diameter in microns) collected with 50% mass efficiency by certified sampling equipment. The maximum particle size collected by PM₁₀ samplers is about 50 microns. The maximum particle size collected by PM_{2.5} samplers is about 6 microns.

Data Sources:

40 CFR Parts 50, 53, and 58.
 California Air Resources Board. 2006. Ambient Air Quality Standards.
 U.S. Environmental Protection Agency. 2006. National Ambient Air Quality Standards (NAAQS).

APPENDIX C-2

DRAFT RECORD OF NONAPPLICABILITY

**DRAFT RECORD OF NONAPPLICABILITY FOR MOFFETT FIELD
ARMY RESERVE COMPLEX BUILDING DEMOLITION AND
CONSTRUCTION**

The U.S. Army proposes to demolish several existing buildings and construct several new buildings at the Moffett Field US Army Reserve Complex, California. Under the proposed action, all existing housing units and other buildings on the Orion Park site (37.9 acres) would be demolished. New facilities would be constructed on a 30-acre portion of the Orion Park site to accommodate actions recommended by the Base Realignment and Closure (BRAC) Commission. New facilities would include an Armed Forces Reserve Center (ARFC) building, a Southwest Regional Readiness Sustainment Command (RRSC) building, an Organizational Maintenance Shop (OMS), two storage buildings, and a fitness center. In addition, vehicle parking and military equipment parking areas would be constructed.

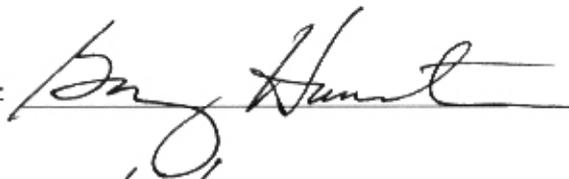
Moffett Field is located in the San Francisco Bay Area Air Basin. The San Francisco Bay Area has recently been designated a marginal ozone nonattainment area under the federal 8-hour ozone standard. In addition, urbanized portions of the San Francisco Bay Area, including Moffett Field, are classified as carbon monoxide maintenance areas. The San Francisco Bay Area is either unclassified or in attainment for all other federal ambient air quality standards.

The proposed Army action has been evaluated for compliance with Section 176(c) of the Clean Air Act (42 USC 7506) and with the U.S. Environmental Protection Agency (EPA) rule promulgated at 40 CFR Part 93.

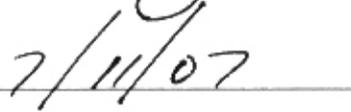
The Environmental Assessment (EA) prepared for the proposed action estimates the quantities of direct and indirect emissions resulting from demolition, construction, and operational activities at Total direct and indirect emissions would be less than the relevant Clean Air Act conformity *de minimis* levels for marginal ozone nonattainment areas and carbon monoxide maintenance areas (100 tons per year of relevant pollutant and precursor emissions).

Pursuant to 40 CFR 93.153(c)(1), I find that the requirements of the EPA general conformity rule are not applicable to the proposed Army action.

Signature: _____



Date: _____



APPENDIX C-3

OVERVIEW OF THE CNSTEMIS SPREADSHEET MODEL FOR CONSTRUCTION AND DEMOLITION EMISSIONS ANALYSES

OVERVIEW OF THE CNSTEMIS MODEL

Construction and demolition emissions have been estimated using a proprietary spreadsheet model (CNSTEMIS). Version 9 of the CNSTEMIS model includes a database of 93 basic equipment types, subdivided into engine size and fuel type categories that correlate with California and EPA emission standards that have been adopted in recent years. In addition to equipment powered by conventional diesel, gasoline, and propane/LPG/CNG engines, the database includes information for stationary diesel engines, cutting torches, and large equipment powered by diesel-electric or turbine engines. Metal fume emissions have been incorporated into the emission rates for arc welders and cutting torches. Database entries also address multi-engine equipment designs for scrapers, concrete pavers, mining shovels, and off-road haul trucks. Default database entries are provided for the appropriate range of small, medium, and large engine sizes for each equipment type. The current database provides default data for 395 combinations of equipment type, engine size range, and fuel type. Default engine sizes are representative of current equipment models from several major manufacturers (Caterpillar, Komatsu, Terex, John Deer, Case, Bobcat, and others) as well as older equipment models that are still in use.

The calculation shell of the CNSTEMIS model allows construction or demolition projects to be divided into four activity stages. Multiple calculation shell worksheets can be used for projects involving more than four activity stages. The calculation shell provides for simple user data entry of lookup table codes for equipment types by size range, number of items of each type by construction activity stage, and active hours per day for each equipment type by construction activity stage. Default equipment parameters (engine horsepower, average load factor, and typical use time within active hours) are automatically loaded into the calculation shell. User can modify default equipment parameters under each activity stage. Users can select from three primary emission rate datasets: emission rates based on the original 1991 EPA non-road equipment database (useful only for comparisons to uncontrolled emission rates), emission rates adjusted for California and EPA emission standards and fuel sulfur limits (for projects in California), or emission rates adjusted for EPA emission standards and fuel sulfur limits (for projects in states other than California). When the user specifies the construction activity year, the database sheet calculates appropriate average emission rates for the mix of older and newer equipment models of each equipment entry, recognizing the implementation years for relevant California or EPA emission standards and fuel sulfur limits. Most equipment entries are assigned 10, 15, or 20 year lifetimes.

In addition to equipment engine emissions, CNSTEMIS calculates fugitive dust emissions from construction and demolition activity, volatile organic compound emissions from the curing of asphalt pavement, volatile organic compound emissions from paints and surface coatings and PM10 emissions from spray painting activities. CNSTEMIS also includes information that can be used to estimate demolition debris volumes and building areas to be covered by architectural coatings. The fugitive dust database sheet in the model provides a range of default fugitive dust generation rates for construction activity and building demolition, information on the PM10

content of soils according to soil texture class, information on water application rates for fugitive dust control, and a calculator to estimate the required number of water trucks. The fugitive volatile organic compound (VOC) database includes a database of 49 categories of paints and coatings; a database of federal, state, and APCD limits for the VOC content of architectural coatings; and a calculator to generate project-specific fugitive VOC emission rates for up to 4 types of coatings (e.g., exterior paints, interior paints, roof coatings, and floor coatings). The VOC emission rates account for the number and thickness of applied paint coats. Additional database sheets in the model provide information on typical material densities and typical heavy equipment work rates. A detailed unit conversion factor database sheet also is included in the model.

The emissions summary sheet in the model allows the extent of overlap among work phases to be identified and used for summarizing maximum day and maximum calendar quarter emissions as well as total annual emissions.

APPENDIX C-4

**BUILDING DATA USED FOR DEMOLITION
AND CONSTRUCTION EMISSIONS ANALYSES**

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	TOTAL FLOOR AREA, SQ FT	NUMBER OF BUILDINGS OR CLUSTERS	NUMBER OF SEGMENTS OR UNITS	NUMBER OF STORIES PER BLDG	DEMO YEAR
Orion Park Housing	292,856	30	112	2	2007
Orion Park Carports	45,780	35	35	1	2007
Building 576	1,968	1	1	1	2007
Building 577	2,400	1	1	1	2007
Building 578	851	1	1	1	2007
Building 597	881	1	1	1	2007
Building 923B	1,440	1	1	1	2007
Building 923D	750	1	1	1	2007
STRUCTURE TOTALS	346,926	71	153		
Paving removal (street, walkway, parking)	165,092	1	1	1	2007
TOTALS	512,018				

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	COMBINED FOOTPRINTS		MEAN BUILDING OR CLUSTER FOOTPRINT		MEAN SQ FT PER BLDG OR CLUSTER	MEAN SQ FT PER UNIT OR SEGMENT
	SQ FT	ACRES	SQ FT	ACRES		
Orion Park Housing	146,428	3.36	4,881	0.11	9,762	2,615
Orion Park Carports	45,780	1.05	1,308	0.03	1,308	1,308
Building 576	1,968	0.05	1,968	0.05	1,968	1,968
Building 577	2,400	0.06	2,400	0.06	2,400	2,400
Building 578	851	0.02	851	0.02	851	851
Building 597	881	0.02	881	0.02	881	881
Building 923B	1,440	0.03	1,440	0.03	1,440	1,440
Building 923D	750	0.02	750	0.02	750	750
STRUCTURE TOTALS	200,498	4.60				
Paving removal (street, walkway, parking)	165,092	3.79				
TOTALS	365,590	8.39				

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	FLOOR AREA MULTIPLIERS FOR RAW DEBRIS GENERATION				
	EXT. WALLS	INT. WALLS	CEILINGS	SLABS	ROOFS
Orion Park Housing	1.14	0.86	1.00	0.50	0.55
Orion Park Carports	0.00	0.00	0.00	1.00	1.00
Building 576	0.92	0.70	1.00	1.00	1.00
Building 577	0.83	0.63	1.00	1.00	1.00
Building 578	1.40	1.05	1.00	1.00	1.00
Building 597	1.38	1.04	1.00	1.00	1.00
Building 923B	1.07	0.81	1.00	1.00	1.00
Building 923D	1.50	1.12	1.00	1.00	1.00
STRUCTURE TOTALS					
Paving removal (street, walkway, parking)	0.00	0.00	0.00	1.00	0.00
TOTALS					

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	RAW DEBRIS VOLUME ESTIMATE, CUBIC FEET				
	EXT. WALLS	INT. WALLS	CEILINGS	SLABS	ROOFS
Orion Park Housing	139,107	83,464	97,619	61,012	80,535
Orion Park Carports	0	0	0	19,075	11,445
Building 576	754	456	656	820	984
Building 577	830	500	800	1,000	1,200
Building 578	496	298	284	355	426
Building 597	507	304	294	367	441
Building 923B	642	386	480	600	720
Building 923D	469	280	250	313	375
STRUCTURE TOTALS	142,805	85,688	100,382	83,541	96,125
Paving removal (street, walkway, parking)	0	0	0	68,789	0
TOTALS	142,805	85,688	100,382	152,329	96,125

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	RAW DEBRIS VOLUME		VOID SPACE (BULKING) FACTOR	PILED DEBRIS VOLUME	
	CUBIC FEET	CUBIC YARDS		CUBIC FEET	CUBIC YARDS
Orion Park Housing	461,736	17,101	75.0%	808,039	29,927
Orion Park Carports	30,520	1,130	75.0%	53,410	1,978
Building 576	3,670	136	75.0%	6,423	238
Building 577	4,330	160	75.0%	7,578	281
Building 578	1,858	69	75.0%	3,252	120
Building 597	1,912	71	75.0%	3,346	124
Building 923B	2,828	105	75.0%	4,950	183
Building 923D	1,686	62	75.0%	2,951	109
STRUCTURE TOTALS	508,541	18,835		889,947	32,961
Paving removal (street, walkway, parking)	68,789	2,548	50.0%	103,183	3,822
TOTALS	577,330	21,383		993,130	36,783

DEMOLITION DEBRIS VOLUME CALCULATIONS, ORION PARK

STRUCTURES OR BUILDING GROUPS	TRUCK LOADS		RAW DEBRIS DENSITY, TONS PER CUBIC YARD		DEBRIS WEIGHT, TONS	VOLUME RATIO, RAW DEBRIS VS STANDING BLDG, %
	9-YARD TRUCKS	20-YARD TRUCKS	WALLS/ROOFS	SLABS		
Orion Park Housing	3,325	1,496	0.42	1.53	9,640	15.8%
Orion Park Carports	220	99	0.42	1.53	1,260	6.7%
Building 576	26	12	0.42	1.53	90	18.7%
Building 577	31	14	0.42	1.53	108	18.0%
Building 578	13	6	0.42	1.53	43	21.8%
Building 597	14	6	0.42	1.53	45	21.7%
Building 923B	20	9	0.42	1.53	68	19.6%
Building 923D	12	5	0.42	1.53	39	22.5%
STRUCTURE TOTALS	3,663	1,649			11,294	14.7%
Paving removal (street, walkway, parking)	425	192	0.00	1.04	2,642	
TOTALS	4,088	1,841			13,936	16.6%

Notes:

Number of Orion Park building clusters, building segments, and number of carport structures identified from satellite photo of Orion Park area (www.google.com/maps).

Orion Park buildings are composed of rectangular segments, some of which include more than one housing unit. The rectangular building segments are used as the basis for estimating demolition debris.

Size of Building 923D estimated.

Floor area multipliers for exterior and interior wall debris estimates are a function of building floor area, building length:width ratio, and number of building stories.

Floor area multipliers for debris estimates assume a nominal 10-foot height per floor, with factors for roofs and slabs adjusted for the number of building stories.

In multi-story buildings, the ceiling of a lower level is assumed to be the floor of the level above it. Consequently, floors do not need to be addressed as separate demolition debris elements.

Debris volume estimates assume 5" thickness for exterior walls, 4" thickness for interior walls, 6" thickness for roofs, 4" thickness for ceilings, and 5" thickness for slabs (concrete plus gravel).

Carport debris volume estimates assume a 3" roof thickness and a 5" slab thickness with no walls or ceilings.

Paving removal area estimated at 10% of overall project site area.

Raw debris volume estimates need to be inflated for void space in piled debris as transported in trucks.

Debris from paving removal will have a smaller void space factor than general demolition debris, since debris from paving removal will include both asphalt or concrete pavement and the underlying gravel base.

Material densities assumed for estimating debris tonnage: wood = 0.4 tons/cubic yard; wallboard = 1.08 tons/cubic yard; insulation and other wall material = 0.1 tons/cubic yard; gravel = 1.323 tons/cubic yard; concrete = 1.85 tons/cubic yard; asphalt = 0.608 tons/cubic yard.

Component volumes assumed for calculating weighted average debris densities of walls, ceilings, and roofs are: 40% wood, 20% wallboard, and 40% insulation and other materials.

Component volumes assumed for calculating weighted average debris densities of slabs, foundations, and paved areas are: 60% gravel and 40% concrete or asphalt (as appropriate).

NEW BUILDING CONSTRUCTION SUMMARY, ORION PARK

BUILDING OR AREA	TOTAL FLOOR AREA, SQ FT	NUMBER OF BUILDINGS	STORIES PER BLDG	CONST YEAR
Armed Forces Reserve Center	103,500	1	2	2008, 2009
SW Regional Readiness Sustainment Command	69,500	1	2	2008, 2009
OMS	25,000	1	1	2008, 2009
Hazmat Storage 1	819	1	1	2009
Hazmat Storage 2	492	1	1	2009
Unit Storage Building	51,000	1	1	2009
Fitness Center	6,000	1	1	2009
Unheated Storage Building	15,000	1	1	2009
Military Equipment Parking (gravel or asphalt)	135,900	1	1	2009
Vehicle Parking (445 spaces; gravel or asphalt)	155,750	1	1	2009
Roads and walkways total (gravel or asphalt)	76,739	1	1	2009
North entrance road	12,083			
South entrance road	28,467			
UHS access	4,342			
Unit Storage building access	4,178			
AFRC delivery access	4,096			
RRSC delivery access	11,100			
Walkways from parking lots	12,472			
BUILDING TOTALS	271,311			
PAVING TOTALS	368,389			

NEW BUILDING CONSTRUCTION SUMMARY, ORION PARK

BUILDING OR AREA	COMBINED FOOTPRINTS		BUILDING FOOTPRINTS		BUILDING L:W RATIO
	SQ FT	ACRES	SQ FT	ACRES	
Armed Forces Reserve Center	51,750	1.19	51,750	1.19	1.35
SW Regional Readiness Sustainment Command	34,750	0.80	34,750	0.80	1.92
OMS	25,000	0.57	25,000	0.57	1.60
Hazmat Storage 1	819	0.02	819	0.02	1.50
Hazmat Storage 2	492	0.01	492	0.01	1.33
Unit Storage Building	51,000	1.17	51,000	1.17	1.64
Fitness Center	6,000	0.14	6,000	0.14	2.00
Unheated Storage Building	15,000	0.34	15,000	0.34	2.31
Military Equipment Parking (gravel or asphalt)	135,900	3.12	135,900	3.12	0.00
Vehicle Parking (445 spaces; gravel or asphalt)	155,750	3.58	155,750	3.58	0.00
Roads and walkways total (gravel or asphalt)	76,739	1.76	76,739	1.76	0.00
North entrance road					
South entrance road					
UHS access					
Unit Storage building access					
AFRC delivery access					
RRSC delivery access					
Walkways from parking lots					
BUILDING TOTALS	184,811	4.24	184,811	4.24	
PAVING TOTALS	368,389	8.46	368,389	8.46	

NEW BUILDING CONSTRUCTION SUMMARY, ORION PARK

BUILDING OR AREA	PAINTED SURFACE MULTIPLIER FACTORS				
	EXT. WALLS	INT. WALLS	CEILINGS	FLOORS	ROOF
Armed Forces Reserve Center	0.16	1.56	1.00	0.00	0.50
SW Regional Readiness Sustainment Command	0.20	1.71	1.00	0.00	0.50
OMS	0.23	1.82	1.00	0.00	1.00
Hazmat Storage 1	1.28	1.28	1.00	0.00	1.00
Hazmat Storage 2	1.64	1.64	1.00	0.00	1.00
Unit Storage Building	0.19	1.58	1.00	0.00	1.00
Fitness Center	0.49	2.23	1.00	0.00	1.00
Unheated Storage Building	0.32	1.80	1.00	0.00	1.00
Military Equipment Parking (gravel or asphalt)	0.00	0.00	0.00	0.00	0.00
Vehicle Parking (445 spaces; gravel or asphalt)	0.00	0.00	0.00	0.00	0.00
Roads and walkways total (gravel or asphalt)	0.00	0.00	0.00	0.00	0.00
North entrance road					
South entrance road					
UHS access					
Unit Storage building access					
AFRC delivery access					
RRSC delivery access					
Walkways from parking lots					
BUILDING TOTALS					
PAVING TOTALS					

NEW BUILDING CONSTRUCTION SUMMARY, ORION PARK

BUILDING OR AREA	ESTIMATE OF PAINTED SURFACE AREA, SQUARE FEET				
	EXT. WALLS	INT. WALLS	CEILINGS	FLOORS	ROOF
Armed Forces Reserve Center	16,560	161,460	103,500	0	51,750
SW Regional Readiness Sustainment Command	13,900	118,845	69,500	0	34,750
OMS	5,750	45,500	25,000	0	25,000
Hazmat Storage 1	1,049	1,049	819	0	819
Hazmat Storage 2	806	806	492	0	492
Unit Storage Building	9,690	80,580	51,000	0	51,000
Fitness Center	2,940	13,380	6,000	0	6,000
Unheated Storage Building	4,800	27,000	15,000	0	15,000
Military Equipment Parking (gravel or asphalt)	0	0	0	0	0
Vehicle Parking (445 spaces; gravel or asphalt)	0	0	0	0	0
Roads and walkways total (gravel or asphalt)	0	0	0	0	0
North entrance road					
South entrance road					
UHS access					
Unit Storage building access					
AFRC delivery access					
RRSC delivery access					
Walkways from parking lots					
BUILDING TOTALS	55,495	448,620	271,311	0	184,811
PAVING TOTALS					

Notes:

Architect's "base bid" package proposes gravel for MEP, vehicle parking areas, and streets.

Bid options provide for lighting and asphalt paving of streets, MEP, and vehicle parking areas, if funding is available.

Vehicle parking lot area estimated at 350 square feet per parking stall; 445 total parking spaces shown on site plan.

Hazmat building sizes scaled from site plan.

Area of roads and walkways scaled from site plan.

Painted surface multiplier factors are a function of building floor area, building length:width ratio, number of building stories, and extent of non-painted surfaces.

APPENDIX C-5

**SUMMARIES OF DEMOLITION AND
CONSTRUCTION EMISSIONS ANALYSES**

MOFFETT FIELD ORION PARK BUILDING DEMOLITIONS

DEMOLITION YEAR: 2007

EQUIPMENT USE SUMMARY:

PROJECT PHASE	ACTIVITY DURATION, CALENDAR WORKING DAYS	ACREAGE SUBJECT TO DISTURBANCE	NUMBER OF EQUIPMENT ITEMS	HOURS OF ON-SITE EQUIPMENT USE	TRUCK TRAFFIC (1-way trips)	
					TRUCK TRIPS TO/ FROM SITE	TRUCK TRIPS PER DAY
BUILDING CLEANOUT	90	2.3	6	606	12	0
BUILDING KNOCKDOWN	64	9.2	7	1,312	0	0
PAD & DEBRIS REMOVAL	70	15.3	21	2,191	3,640	52
SITE RE-GRADING	30	37.9	7	704	60	2
NET DAYS AND TOTALS:	118			4,812	3,712	
MINIMUMS:		2.3	6			0
WEIGHTED AVERAGES:		25.5	23			31
MAXIMUMS:		37.9	21			52

Multiple subareas with overlapping phases.

CALENDAR QUARTER OVERLAP CALCULATOR, 63 work days per quarter: Total Work Days = 118

PHASE	WORK DAYS PER QUARTER			
	Q1	Q2	Q3	Q4
BUILDING CLEANOUT	0	0	63	27
BUILDING KNOCKDOWN	0	0	25	39
PAD & DEBRIS REMOVAL	0	0	15	55
SITE RE-GRADING	0	0	0	30
POLLUTANT	EMISSIONS BY QUARTER, TONS			
	Q1	Q2	Q3	Q4
ROG	0.00	0.00	0.07	0.23
NOx	0.00	0.00	0.81	2.44
CO	0.00	0.00	0.52	1.49
SOx	0.00	0.00	0.05	0.16
PM10	0.00	0.00	0.29	0.77

Emission partitioning is based on phase subtotals, not separate partitioning by component; minor inaccuracies possible.

MOFFETT FIELD ORION PARK BUILDING DEMOLITIONS

DEMOLITION YEAR: 2007

TYPICAL DEMOLITION DAY EMISSIONS:

PROJECT PHASE	COMPONENT	DAILY EMISSIONS, POUNDS PER DAY				
		ROG	NOx	CO	SOx	PM10
BUILDING CLEANOUT	Equipment	0.24	1.99	1.48	0.08	0.15
	Fugitive Dust	0.00	0.00	0.00	0.00	0.31
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.24	1.99	1.48	0.08	0.46
BUILDING KNOCKDOWN	Equipment	2.55	29.67	19.15	1.92	3.22
	Fugitive Dust	0.00	0.00	0.00	0.00	13.42
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	2.55	29.67	19.15	1.92	16.64
PAD & DEBRIS REMOVAL	Equipment	4.32	49.70	30.99	3.19	4.87
	Fugitive Dust	0.00	0.00	0.00	0.00	4.36
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	4.32	49.70	30.99	3.19	9.23
SITE RE-GRADING	Equipment	3.77	30.94	16.03	2.02	2.42
	Fugitive Dust	0.00	0.00	0.00	0.00	10.08
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	3.77	30.94	16.03	2.02	12.50
TOTALS	Equipment	10.89	112.30	67.66	7.21	10.66
	Fugitive Dust	0.00	0.00	0.00	0.00	28.17
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	10.89	112.30	67.66	7.21	38.83
MAXIMUM DAY	Equipment	10.89	112.30	67.66	7.21	10.66
	Fugitive Dust	0.00	0.00	0.00	0.00	28.17
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	10.89	112.30	67.66	7.21	38.83

Totals apply only if phase durations or subarea sequencings require all phases to overlap at some point during the demolition period.

Multiple subareas with overlapping phases.

Maximum day estimates made on a pollutant-by-pollutant basis based on expected calendar quarter overlaps among demolition phases.

MOFFETT FIELD ORION PARK BUILDING DEMOLITIONS

DEMOLITION YEAR: 2007

CUMULATIVE DEMOLITION EMISSIONS:

PROJECT PHASE	COMPONENT	CUMULATIVE EMISSIONS, TONS OVER DEMOLITION PERIOD				
		ROG	NOx	CO	SOx	PM10
BUILDING CLEANOUT	Equipment	0.01	0.09	0.07	0.00	0.01
	Fugitive Dust	0.00	0.00	0.00	0.00	0.01
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.01	0.09	0.07	0.00	0.02
BUILDING KNOCKDOWN	Equipment	0.08	0.95	0.61	0.06	0.10
	Fugitive Dust	0.00	0.00	0.00	0.00	0.43
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.08	0.95	0.61	0.06	0.53
PAD & DEBRIS REMOVAL	Equipment	0.15	1.74	1.08	0.11	0.17
	Fugitive Dust	0.00	0.00	0.00	0.00	0.15
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.15	1.74	1.08	0.11	0.32
SITE RE-GRADING	Equipment	0.06	0.46	0.24	0.03	0.04
	Fugitive Dust	0.00	0.00	0.00	0.00	0.15
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.06	0.46	0.24	0.03	0.19
TOTALS	Equipment	0.30	3.24	2.00	0.21	0.32
	Fugitive Dust	0.00	0.00	0.00	0.00	0.75
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	0.30	3.24	2.00	0.21	1.06
MAX CALENDAR QUARTER	Equipment	0.23	2.44	1.49	0.16	0.24
	Fugitive Dust	0.00	0.00	0.00	0.00	0.54
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	0.23	2.44	1.49	0.16	0.77

Maximum calendar quarter estimates made on a pollutant-by-pollutant basis assuming 63 working days per quarter.

Notes:

ROG = reactive organic compounds (ozone precursor)

NOx = nitrogen oxides (ozone precursor)

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter (below 50 microns aerodynamic equivalent diameter); the "10" in PM10 is the size with 50% mass collection efficiency in a certified sampler, not an upper particle size limit

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2008

EQUIPMENT USE SUMMARY:

PROJECT PHASE	ACTIVITY DURATION, CALENDAR WORKING DAYS	ACREAGE SUBJECT TO DISTURBANCE	NUMBER OF EQUIPMENT ITEMS	HOURS OF ON-SITE EQUIPMENT USE	TRUCK TRAFFIC (1-way trips)	
					TRUCK TRIPS TO/ FROM SITE	TRUCK TRIPS PER DAY
UTILITY LINES	30	3.8	14	653	60	2
FOUNDATIONS & PADS	30	5.1	30	921	540	18
BUILDING SHELL CONST	180	2.6	48	22,500	2,160	12
	0	0.0	0	0	0	0
NET DAYS AND TOTALS:	240			24,074	2,760	
MINIMUMS:		2.6	14			2
WEIGHTED AVERAGES:		3.0	42			12
MAXIMUMS:		5.1	48			18

Concurrent work on 3 buildings; sequential phases with no overlap.

CALENDAR QUARTER OVERLAP CALCULATOR, 63 work days per quarter: Total Work Days = 240

PHASE	WORK DAYS PER QUARTER			
	Q1	Q2	Q3	Q4
UTILITY LINES	30	0	0	0
FOUNDATIONS & PADS	30	0	0	0
BUILDING SHELL CONST	0	63	63	54
	0	0	0	0

POLLUTANT	EMISSIONS BY QUARTER, TONS			
	Q1	Q2	Q3	Q4
ROG	0.06	0.20	0.20	0.17
NOx	0.54	1.40	1.40	1.20
CO	0.33	1.05	1.05	0.90
SOx	0.03	0.06	0.06	0.05
PM10	1.11	0.76	0.76	0.65

Emission partitioning is based on phase subtotals, not separate partitioning by component; minor inaccuracies possible.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2008

TYPICAL CONSTRUCTION DAY EMISSIONS:

PROJECT PHASE	COMPONENT	DAILY EMISSIONS, POUNDS PER DAY				
		ROG	NOx	CO	SOx	PM10
UTILITY LINES	Equipment	1.31	11.78	7.19	0.48	0.72
	Fugitive Dust	0.00	0.00	0.00	0.00	30.72
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	1.31	11.78	7.19	0.48	31.44
FOUNDATIONS & PADS	Equipment	2.43	24.39	14.47	1.21	1.81
	Fugitive Dust	0.00	0.00	0.00	0.00	40.96
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	2.43	24.39	14.47	1.21	42.76
BUILDING SHELL CONST	Equipment	6.20	44.50	33.24	1.81	3.56
	Fugitive Dust	0.00	0.00	0.00	0.00	20.48
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	6.20	44.50	33.24	1.81	24.04
	Equipment	0.00	0.00	0.00	0.00	0.00
	Fugitive Dust	0.00	0.00	0.00	0.00	0.00
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00
TOTALS	Equipment	9.94	80.67	54.91	3.50	6.10
	Fugitive Dust	0.00	0.00	0.00	0.00	92.15
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	9.94	80.67	54.91	3.50	98.24
MAXIMUM DAY	Equipment	6.20	44.50	33.24	1.81	1.81
	Fugitive Dust	0.00	0.00	0.00	0.00	40.96
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	6.20	44.50	33.24	1.81	42.76

Totals apply only if phase durations or subarea sequencings require all phases to overlap at some point during the construction period.

Concurrent work on 3 buildings; sequential phases with no overlap.

Maximum day estimates made on a pollutant-by-pollutant basis based on no overlap among construction phases.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2008

CUMULATIVE CONSTRUCTION EMISSIONS:

PROJECT PHASE	COMPONENT	CUMULATIVE EMISSIONS, TONS OVER CONSTRUCTION PERIOD				
		ROG	NOx	CO	SOx	PM10
UTILITY LINES	Equipment	0.02	0.18	0.11	0.01	0.01
	Fugitive Dust	0.00	0.00	0.00	0.00	0.46
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.02	0.18	0.11	0.01	0.47
FOUNDATIONS & PADS	Equipment	0.04	0.37	0.22	0.02	0.03
	Fugitive Dust	0.00	0.00	0.00	0.00	0.61
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.04	0.37	0.22	0.02	0.64
BUILDING SHELL CONST	Equipment	0.56	4.01	2.99	0.16	0.32
	Fugitive Dust	0.00	0.00	0.00	0.00	1.84
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.56	4.01	2.99	0.16	2.16
	Equipment	0.00	0.00	0.00	0.00	0.00
	Fugitive Dust	0.00	0.00	0.00	0.00	0.00
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00
TOTALS	Equipment	0.61	4.55	3.32	0.19	0.36
	Fugitive Dust	0.00	0.00	0.00	0.00	2.92
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	0.61	4.55	3.32	0.19	3.28
MAX CALENDAR QUARTER	Equipment	0.20	1.40	1.05	0.06	0.04
	Fugitive Dust	0.00	0.00	0.00	0.00	1.08
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	TOTAL	0.20	1.40	1.05	0.06	1.11

Maximum calendar quarter estimates made on a pollutant-by-pollutant basis assuming 63 working days per quarter.

Notes:

ROG = reactive organic compounds (ozone precursor)

NOx = nitrogen oxides (ozone precursor)

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter (below 50 microns aerodynamic equivalent diameter); the "10" in PM10 is the size with 50% mass collection efficiency in a certified sampler, not an upper particle size limit

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2009

EQUIPMENT USE SUMMARY:

PROJECT PHASE	ACTIVITY DURATION, CALENDAR WORKING DAYS	ACREAGE SUBJECT TO DISTURBANCE	NUMBER OF EQUIPMENT ITEMS	HOURS OF ON-SITE EQUIPMENT USE	TRUCK TRAFFIC (1-way trips)	
					TRUCK TRIPS TO/ FROM SITE	TRUCK TRIPS PER DAY
INTERIOR FINISHING	120	2.6	27	7,116	960	8
PAINTING	30	2.6	18	1,481	60	2
LANDSCAPING	30	2.5	9	342	60	2
	0	0.0	0	0	0	0
NET DAYS AND TOTALS:	180			8,939	1,080	
MINIMUMS:		2.5	9			2
WEIGHTED AVERAGES:		2.6	23			6
MAXIMUMS:		2.6	27			8

Concurrent work on 3 buildings; sequential phases with no overlap.

CALENDAR QUARTER OVERLAP CALCULATOR, 63 work days per quarter: Total Work Days = 180

PHASE	WORK DAYS PER QUARTER			
	Q1	Q2	Q3	Q4
INTERIOR FINISHING	63	57	0	0
PAINTING	0	0	30	0
LANDSCAPING	0	0	30	0
	0	0	0	0
POLLUTANT	EMISSIONS BY QUARTER, TONS			
	Q1	Q2	Q3	Q4
ROG	0.05	0.05	0.53	0.00
NOx	0.39	0.35	0.19	0.00
CO	0.33	0.30	0.17	0.00
SOx	0.01	0.01	0.01	0.00
PM10	0.67	0.61	0.62	0.00

Emission partitioning is based on phase subtotals, not separate partitioning by component; minor inaccuracies possible.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2009

TYPICAL CONSTRUCTION DAY EMISSIONS:

PROJECT PHASE	COMPONENT	DAILY EMISSIONS, POUNDS PER DAY				
		ROG	NOx	CO	SOx	PM10
INTERIOR FINISHING	Equipment	1.65	12.33	10.44	0.33	0.76
	Fugitive Dust	0.00	0.00	0.00	0.00	20.48
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	1.65	12.33	10.44	0.33	21.24
PAINTING	Equipment	1.23	8.65	7.65	0.20	0.48
	Fugitive Dust	0.00	0.00	0.00	0.00	20.48
	Fugitive ROG	33.70	0.00	0.00	0.00	0.06
	Subtotal	34.93	8.65	7.65	0.20	21.03
LANDSCAPING	Equipment	0.57	4.00	3.37	0.14	0.29
	Fugitive Dust	0.00	0.00	0.00	0.00	20.00
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.57	4.00	3.37	0.14	20.29
	Equipment	0.00	0.00	0.00	0.00	0.00
	Fugitive Dust	0.00	0.00	0.00	0.00	0.00
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.00	0.00	0.00	0.00	0.00
TOTALS	Equipment	3.45	24.98	21.45	0.68	1.54
	Fugitive Dust	0.00	0.00	0.00	0.00	60.96
	Fugitive ROG	33.70	0.00	0.00	0.00	0.06
	TOTAL	37.16	24.98	21.45	0.68	62.55
MAXIMUM DAY	Equipment	1.23	12.33	10.44	0.33	0.76
	Fugitive Dust	0.00	0.00	0.00	0.00	20.48
	Fugitive ROG	33.70	0.00	0.00	0.00	0.00
	TOTAL	34.93	12.33	10.44	0.33	21.24

Totals apply only if phase durations or subarea sequencings require all phases to overlap at some point during the construction period.

Concurrent work on 3 buildings; sequential phases with no overlap.

Maximum day estimates made on a pollutant-by-pollutant basis based on no overlaps among construction phases.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - AFRC, SWRRSC, OMS

CONSTRUCTION YEAR: 2009

CUMULATIVE CONSTRUCTION EMISSIONS:

PROJECT PHASE	COMPONENT	CUMULATIVE EMISSIONS, TONS OVER CONSTRUCTION PERIOD				
		ROG	NOx	CO	SOx	PM10
INTERIOR FINISHING	Equipment	0.10	0.74	0.63	0.02	0.05
	Fugitive Dust	0.00	0.00	0.00	0.00	1.23
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.10	0.74	0.63	0.02	1.27
PAINTING	Equipment	0.02	0.13	0.11	0.00	0.01
	Fugitive Dust	0.00	0.00	0.00	0.00	0.31
	Fugitive ROG	0.51	0.00	0.00	0.00	0.00
	Subtotal	0.52	0.13	0.11	0.00	0.32
LANDSCAPING	Equipment	0.01	0.06	0.05	0.00	0.00
	Fugitive Dust	0.00	0.00	0.00	0.00	0.30
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.01	0.06	0.05	0.00	0.30
TOTALS	Equipment	0.13	0.93	0.79	0.03	0.06
	Fugitive Dust	0.00	0.00	0.00	0.00	1.84
	Fugitive ROG	0.51	0.00	0.00	0.00	0.00
	TOTAL	0.63	0.93	0.79	0.03	1.89
MAX CALENDAR QUARTER	Equipment	0.03	0.39	0.33	0.01	0.02
	Fugitive Dust	0.00	0.00	0.00	0.00	0.65
	Fugitive ROG	0.51	0.00	0.00	0.00	0.00
	TOTAL	0.53	0.39	0.33	0.01	0.67

Maximum calendar quarter estimates made on a pollutant-by-pollutant basis assuming 63 working days per quarter.

Notes:

ROG = reactive organic compounds (ozone precursor)

NOx = nitrogen oxides (ozone precursor)

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter (below 50 microns aerodynamic equivalent diameter); the "10" in PM10 is the size with 50% mass collection efficiency in a certified sampler, not an upper particle size limit

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, GRAVEL PARKING

CONSTRUCTION YEAR: 2009

EQUIPMENT USE SUMMARY:

PROJECT PHASE	ACTIVITY DURATION, CALENDAR WORKING DAYS	ACREAGE SUBJECT TO DISTURBANCE	NUMBER OF EQUIPMENT ITEMS	HOURS OF ON-SITE EQUIPMENT USE	TRUCK TRAFFIC (1-way trips)	
					TRUCK TRIPS TO/ FROM SITE	TRUCK TRIPS PER DAY
UTILITIES & PADS	45	3.4	22	1,222	450	10
BUILDING SHELL CONST	120	1.7	32	10,104	1,440	12
FINISHING & PAINTING	45	1.7	24	2,297	270	6
PARKING, LANDSCAPE	35	10.5	18	639	1,050	30
NET DAYS AND TOTALS:	245			14,262	3,210	
MINIMUMS:		1.7	18			6
WEIGHTED AVERAGES:		3.2	27			13
MAXIMUMS:		10.5	32			30

Concurrent work on multiple buildings; sequential phases with no overlap.

CALENDAR QUARTER OVERLAP CALCULATOR, 63 work days per quarter: Total Work Days = **245**

PHASE	WORK DAYS PER QUARTER			
	Q1	Q2	Q3	Q4
UTILITIES & PADS	45	0	0	0
BUILDING SHELL CONST	16	63	41	0
FINISHING & PAINTING	0	0	20	25
PARKING, LANDSCAPE	0	0	0	35
POLLUTANT	EMISSIONS BY QUARTER, TONS			
	Q1	Q2	Q3	Q4
ROG	0.060	0.092	0.172	0.168
NOx	0.503	0.667	0.542	0.414
CO	0.365	0.556	0.452	0.303
SOx	0.018	0.017	0.014	0.016
PM10	0.747	0.464	0.444	0.324

Emission partitioning is based on phase subtotals, not separate partitioning by component; minor inaccuracies possible.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, GRAVEL PARKING

CONSTRUCTION YEAR: 2009

TYPICAL CONSTRUCTION DAY EMISSIONS:

PROJECT PHASE	COMPONENT	DAILY EMISSIONS, POUNDS PER DAY				
		ROG	NOx	CO	SOx	PM10
UTILITIES & PADS	Equipment	1.63	14.84	9.96	0.62	1.03
	Fugitive Dust	0.00	0.00	0.00	0.00	26.93
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	1.63	14.84	9.96	0.62	27.96
BUILDING SHELL CONST	Equipment	2.94	21.17	17.64	0.53	1.27
	Fugitive Dust	0.00	0.00	0.00	0.00	13.46
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	2.94	21.17	17.64	0.53	14.73
FINISHING & PAINTING	Equipment	1.43	10.75	9.07	0.29	0.67
	Fugitive Dust	0.00	0.00	0.00	0.00	13.46
	Fugitive ROG	9.75	0.00	0.00	0.00	0.02
	Subtotal	11.18	10.75	9.07	0.29	14.15
PARKING, LANDSCAPE	Equipment	1.59	15.99	10.82	0.71	1.22
	Fugitive Dust	0.00	0.00	0.00	0.00	7.20
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	1.59	15.99	10.82	0.71	8.42
TOTALS	Equipment	7.59	62.76	47.49	2.15	4.19
	Fugitive Dust	0.00	0.00	0.00	0.00	61.06
	Fugitive ROG	9.75	0.00	0.00	0.00	0.02
	TOTAL	17.34	62.76	47.49	2.15	65.27
MAXIMUM DAY	Equipment	1.43	21.17	17.64	0.71	1.03
	Fugitive Dust	0.00	0.00	0.00	0.00	26.93
	Fugitive ROG	9.75	0.00	0.00	0.00	0.00
	TOTAL	11.18	21.17	17.64	0.71	27.96

Totals apply only if phase durations or subarea sequencings require all phases to overlap at some point during the construction period.

Concurrent work on multiple buildings; sequential phases with no overlap.

Maximum day estimates made on a pollutant-by-pollutant basis based on no overlaps among construction phases.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, GRAVEL PARKING

CONSTRUCTION YEAR: 2009

CUMULATIVE CONSTRUCTION EMISSIONS:

PROJECT PHASE	COMPONENT	CUMULATIVE EMISSIONS, TONS OVER CONSTRUCTION PERIOD				
		ROG	NOx	CO	SOx	PM10
UTILITIES & PADS	Equipment	0.04	0.33	0.22	0.01	0.02
	Fugitive Dust	0.00	0.00	0.00	0.00	0.61
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.04	0.33	0.22	0.01	0.63
BUILDING SHELL CONST	Equipment	0.18	1.27	1.06	0.03	0.08
	Fugitive Dust	0.00	0.00	0.00	0.00	0.81
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.18	1.27	1.06	0.03	0.88
FINISHING & PAINTING	Equipment	0.03	0.24	0.20	0.01	0.01
	Fugitive Dust	0.00	0.00	0.00	0.00	0.30
	Fugitive ROG	0.22	0.00	0.00	0.00	0.00
	Subtotal	0.25	0.24	0.20	0.01	0.32
PARKING, LANDSCAPE	Equipment	0.03	0.28	0.19	0.01	0.02
	Fugitive Dust	0.00	0.00	0.00	0.00	0.13
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.03	0.28	0.19	0.01	0.15
TOTALS	Equipment	0.27	2.13	1.68	0.06	0.14
	Fugitive Dust	0.00	0.00	0.00	0.00	1.84
	Fugitive ROG	0.22	0.00	0.00	0.00	0.00
	TOTAL	0.49	2.13	1.68	0.06	1.98
MAX CALENDAR QUARTER	Equipment	0.07	0.67	0.56	0.02	0.03
	Fugitive Dust	0.00	0.00	0.00	0.00	0.71
	Fugitive ROG	0.10	0.00	0.00	0.00	0.00
	TOTAL	0.17	0.67	0.56	0.02	0.75

Maximum calendar quarter estimates made on a pollutant-by-pollutant basis assuming 63 working days per quarter.

Notes:

ROG = reactive organic compounds (ozone precursor)

NOx = nitrogen oxides (ozone precursor)

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter (below 50 microns aerodynamic equivalent diameter); the "10" in PM10 is the size with 50% mass collection efficiency in a certified sampler, not an upper particle size limit

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, ASPHALT PARKING

CONSTRUCTION YEAR: 2009

EQUIPMENT USE SUMMARY:

PROJECT PHASE	ACTIVITY DURATION, CALENDAR WORKING DAYS	ACREAGE SUBJECT TO DISTURBANCE	NUMBER OF EQUIPMENT ITEMS	HOURS OF ON-SITE EQUIPMENT USE	TRUCK TRAFFIC (1-way trips)	
					TRUCK TRIPS TO/ FROM SITE	TRUCK TRIPS PER DAY
UTILITIES & PADS	45	3.4	22	1,222	450	10
BUILDING SHELL CONST	120	1.7	32	10,104	1,440	12
FINISHING & PAINTING	45	1.7	24	2,297	270	6
PAVING, LANDSCAPE	35	10.5	23	742	1,260	36
NET DAYS AND TOTALS:	245			14,365	3,420	
MINIMUMS:		1.7	22			6
WEIGHTED AVERAGES:		3.2	27			14
MAXIMUMS:		10.5	32			36

Concurrent work on multiple buildings; sequential phases with no overlap.

CALENDAR QUARTER OVERLAP CALCULATOR, 63 work days per quarter: Total Work Days = **245**

PHASE	WORK DAYS PER QUARTER			
	Q1	Q2	Q3	Q4
UTILITIES & PADS	45	0	0	0
BUILDING SHELL CONST	16	63	41	0
FINISHING & PAINTING	0	0	20	25
PAVING, LANDSCAPE	0	0	0	35
POLLUTANT	EMISSIONS BY QUARTER, TONS			
	Q1	Q2	Q3	Q4
ROG	0.060	0.092	0.172	0.182
NOx	0.503	0.667	0.542	0.450
CO	0.365	0.556	0.452	0.327
SOx	0.018	0.017	0.014	0.018
PM10	0.747	0.464	0.444	0.276

Emission partitioning is based on phase subtotals, not separate partitioning by component; minor inaccuracies possible.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, ASPHALT PARKING

CONSTRUCTION YEAR: 2009

TYPICAL CONSTRUCTION DAY EMISSIONS:

PROJECT PHASE	COMPONENT	DAILY EMISSIONS, POUNDS PER DAY				
		ROG	NOx	CO	SOx	PM10
UTILITIES & PADS	Equipment	1.63	14.84	9.96	0.62	1.03
	Fugitive Dust	0.00	0.00	0.00	0.00	26.93
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	1.63	14.84	9.96	0.62	27.96
BUILDING SHELL CONST	Equipment	2.94	21.17	17.64	0.53	1.27
	Fugitive Dust	0.00	0.00	0.00	0.00	13.46
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	2.94	21.17	17.64	0.53	14.73
FINISHING & PAINTING	Equipment	1.43	10.75	9.07	0.29	0.67
	Fugitive Dust	0.00	0.00	0.00	0.00	13.46
	Fugitive ROG	9.75	0.00	0.00	0.00	0.02
	Subtotal	11.18	10.75	9.07	0.29	14.15
PAVING, LANDSCAPE	Equipment	1.77	18.03	12.21	0.80	1.37
	Fugitive Dust	0.00	0.00	0.00	0.00	4.32
	Fugitive ROG	0.63	0.00	0.00	0.00	0.00
	Subtotal	2.41	18.03	12.21	0.80	5.69
TOTALS	Equipment	7.77	64.80	48.88	2.24	4.34
	Fugitive Dust	0.00	0.00	0.00	0.00	58.18
	Fugitive ROG	10.39	0.00	0.00	0.00	0.02
	TOTAL	18.16	64.80	48.88	2.24	62.53
MAXIMUM DAY	Equipment	1.43	21.17	17.64	0.80	1.03
	Fugitive Dust	0.00	0.00	0.00	0.00	26.93
	Fugitive ROG	9.75	0.00	0.00	0.00	0.00
	TOTAL	11.18	21.17	17.64	0.80	27.96

Totals apply only if phase durations or subarea sequencings require all phases to overlap at some point during the construction period.

Concurrent work on multiple buildings; sequential phases with no overlap.

Maximum day estimates made on a pollutant-by-pollutant basis based on no overlaps among construction phases.

MOFFETT FIELD ORION PARK BUILDING CONSTRUCTION - MISC BLDGS, ASPHALT PARKING

CONSTRUCTION YEAR: 2009

CUMULATIVE CONSTRUCTION EMISSIONS:

PROJECT PHASE	COMPONENT	CUMULATIVE EMISSIONS, TONS OVER CONSTRUCTION PERIOD				
		ROG	NOx	CO	SOx	PM10
UTILITIES & PADS	Equipment	0.04	0.33	0.22	0.01	0.02
	Fugitive Dust	0.00	0.00	0.00	0.00	0.61
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.04	0.33	0.22	0.01	0.63
BUILDING SHELL CONST	Equipment	0.18	1.27	1.06	0.03	0.08
	Fugitive Dust	0.00	0.00	0.00	0.00	0.81
	Fugitive ROG	0.00	0.00	0.00	0.00	0.00
	Subtotal	0.18	1.27	1.06	0.03	0.88
FINISHING & PAINTING	Equipment	0.03	0.24	0.20	0.01	0.01
	Fugitive Dust	0.00	0.00	0.00	0.00	0.30
	Fugitive ROG	0.22	0.00	0.00	0.00	0.00
	Subtotal	0.25	0.24	0.20	0.01	0.32
PAVING, LANDSCAPE	Equipment	0.03	0.32	0.21	0.01	0.02
	Fugitive Dust	0.00	0.00	0.00	0.00	0.08
	Fugitive ROG	0.01	0.00	0.00	0.00	0.00
	Subtotal	0.04	0.32	0.21	0.01	0.10
TOTALS	Equipment	0.28	2.16	1.70	0.07	0.14
	Fugitive Dust	0.00	0.00	0.00	0.00	1.79
	Fugitive ROG	0.23	0.00	0.00	0.00	0.00
	TOTAL	0.51	2.16	1.70	0.07	1.93
MAX CALENDAR QUARTER	Equipment	0.05	0.67	0.56	0.02	0.03
	Fugitive Dust	0.00	0.00	0.00	0.00	0.71
	Fugitive ROG	0.13	0.00	0.00	0.00	0.00
	TOTAL	0.18	0.67	0.56	0.02	0.75

Maximum calendar quarter estimates made on a pollutant-by-pollutant basis assuming 63 working days per quarter.

Notes:

ROG = reactive organic compounds (ozone precursor)

NOx = nitrogen oxides (ozone precursor)

CO = carbon monoxide

SOx = sulfur oxides

PM10 = inhalable particulate matter (below 50 microns aerodynamic equivalent diameter); the "10" in PM10 is the size with 50% mass collection efficiency in a certified sampler, not an upper particle size limit

APPENDIX C-6

**SUMMARIES OF VEHICLE TRAFFIC
EMISSIONS ANALYSES**

URBEMIS 2002 For Windows 8.7.0

File Name: C:\URBEMIS-2002-87\Projects2k2\MOFFETT-WEEKDAY-TRIPS-2010.urb
 Project Name: MOFFETT-WEEKDAY-TRAFFIC
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
WEEKDAY COMMUTE TRIPS	13.09	7.76	121.77	0.10	14.77
TOTAL EMISSIONS (lbs/day)	13.09	7.76	121.77	0.10	14.77

Does not include correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
WEEKDAY COMMUTE TRIPS		2.00 trips/PER EMPLOYEE	413.00	826.00
			Sum of Total Trips	826.00
			Total Vehicle Miles Traveled	9,746.80

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	57.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	16.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	17.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	0.00	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.00	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.00	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.00	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.00	0.00	0.00	100.00
Motor Home	0.00	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
WEEKDAY COMMUTE TRIPS				100.0	0.0	0.0

URBEMIS 2002 For Windows 8.7.0

File Name: C:\URBEMIS-2002-87\Projects2k2\MOFFETT-WEEKDAY-TRIPS-2010.urb
 Project Name: MOFFETT-WEEKDAY-TRAFFIC
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
WEEKDAY COMMUTE TRIPS	10.55	12.80	121.95	0.08	14.77
TOTAL EMISSIONS (lbs/day)	10.55	12.80	121.95	0.08	14.77

Does not include correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
WEEKDAY COMMUTE TRIPS		2.00 trips/PER EMPLOYEE	413.00	826.00
			Sum of Total Trips	826.00
			Total Vehicle Miles Traveled	9,746.80

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	57.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	16.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	17.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	0.00	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.00	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.00	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.00	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.00	0.00	0.00	100.00
Motor Home	0.00	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	11.8	4.6	6.1	11.8	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	100.0	0.0	0.0			
% of Trips - Commercial (by land use)						
WEEKDAY COMMUTE TRIPS				100.0	0.0	0.0

URBEMIS 2002 For Windows 8.7.0

File Name: C:\URBEMIS-2002-87\Projects2k2\MOFFETT-WEEKEND-TRAINING-TRIPS-2010.urb
 Project Name: MOFFETT-WEEKEND-TRIPS
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
WEEKEND TRAINING TRIPS	25.21	12.06	190.53	0.15	21.25
TOTAL EMISSIONS (lbs/day)	25.21	12.06	190.53	0.15	21.25

Does not include correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
WEEKEND TRAINING TRIPS		2.00 trips/WEEKEND DAY	1,000.00	2,000.00
Sum of Total Trips				2,000.00
Total Vehicle Miles Traveled				14,000.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	57.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	16.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	17.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	0.00	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.00	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.00	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.00	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.00	0.00	0.00	100.00
Motor Home	0.00	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	7.0	4.6	6.1	7.0	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	100.0	0.0	0.0			

% of Trips - Commercial (by land use)

WEEKEND TRAINING TRIPS	100.0	0.0	0.0
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URBEMIS 2002 For Windows 8.7.0

File Name: C:\URBEMIS-2002-87\Projects2k2\MOFFETT-WEEKEND-TRAINING-TRIPS-2010.urb
 Project Name: MOFFETT-WEEKEND-TRIPS
 Project Location: San Francisco Bay Area
 On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
WEEKEND TRAINING TRIPS	16.54	19.68	197.65	0.12	21.25
TOTAL EMISSIONS (lbs/day)	16.54	19.68	197.65	0.12	21.25

Does not include correction for passby trips.
 Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
WEEKEND TRAINING TRIPS		2.00 trips/WEEKEND DAY	1,000.00	2,000.00
			Sum of Total Trips	2,000.00
			Total Vehicle Miles Traveled	14,000.00

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	57.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	16.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	17.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	0.00	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.00	0.00	66.70	33.30
Med-Heavy 14,001-33,000	0.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.00	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.00	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.00	0.00	0.00	100.00
Motor Home	0.00	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	7.0	4.6	6.1	7.0	5.0	5.0
Rural Trip Length (miles)	15.0	10.0	10.0	15.0	10.0	10.0
Trip Speeds (mph)	30.0	30.0	30.0	30.0	30.0	30.0
% of Trips - Residential	100.0	0.0	0.0			

% of Trips - Commercial (by land use)

WEEKEND TRAINING TRIPS	100.0	0.0	0.0
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APPENDIX D
CUMULATIVE PROJECTS

**Table D-1
Approved and Pending Projects in Sunnyvale and Mountain View**

Address	Use	Size	Status
City of Sunnyvale Projects			
595 Lawrence Express Way	Shopping Center	22,682 sf	Approved
905 EL Camino Real	Shell – New Car Wash	NA	Under Construction
782 East El Camino Real	Walgreens Retail Building	19,200 sf	Approved
883 Borregas Avenue	Retail/Office Center	5,000 sf	Approved
1044 El Camino Real	Honda/Ducati Sales and Car Parts	10,696 sf	Approved
2502 Town Center Lane	Shopping center redevelopment	292 residential units, 16-screen movie theater, 275,000 sf office space, and 1,000,000 sf retail space.	Pending
144 W. El Camino Real	Sunnyvale Shopping Center	3,500 sf	Under construction
815 Stewart Drive	Planet Granite	24,980 sf	Completed
111 Java Drive	Three new office and research and development buildings	387,196 sf	Pending
1287 Lawrence Station Road	Residential and commercial development	335 residential units and 26,000 square feet of commercial	Pending
1044 E. Duane Avenue	Taylor Woodrow Homes	250 condominium units (60 townhomes and 190 flats)	Pending
975 Benecia Avenue	Over Associates Office Buidlings	113,200 sf	Approved
1111 Lockheed Martin Way	Jay Paul Company	1,582,473 sf of buildings and parking structures	Approved
962 E. Duane Av.	Residential	242 townhouse units	Pending
411 N. Pastoria Avenue	Verizon Wireless Telecom Hotel	40,000	Approved
461 S. Murphy Avenue	Residential	5 townhouses	Under Construction
1165 E. Arques Avenue	Self-Storage Facility	98,200 sf	Approved
901 Thompson Place	Self-Storage Facility	199,155 sf	Under Construction
832 Maria Lane	Residential	4 townhouses	Approved
1108 W. Evelyn Avenue	Sierra Proto Express - Industrial Building	6,438 sf	Under construction
1244 Poplar Avenue	Residential	3 new detached single family homes	Approved
640 Lakehaven Drive	Residential	7 new detached single family homes	Approved
444 S. Taaffe Av.	Residential	4 single-family homes	Under Construction
1049 Kiel Court	Residential	30 condominium flats and 4 townhouse units	Under Construction
1168 Aster Avenue	Residential	80 condominium units	Approved
698 E. Taylor Avenue	Residential	68 townhouses	Approved
1170 Morse Avenue	Residential	48 townhouses	Approved
963 S. Wolfe Road	Residential	7 townhouses	Pending
610 Alberta Avenue	Residential	55 single-family homes	Under Construction
563 Alberta Avenue	Residential	4 single-family homes	Under Construction
1250 Lakeside	Residential	263 hotel units and 250 residential units	Approved
488 Tasman Drive	Residential	43 townhouses	Approved

Table D-1 (Continued)
Approved and Pending Projects in Sunnyvale and Mountain View

Address	Use	Size	Status
108 S. Wolfe Road	Residential	130 townhouses	Approved
1035 N. Fair Oaks Avenue	Residential	30 townhouses	Under Construction
1038 Morse Avenue	Residential	17 townhouses	Approved
508 Tasman Drive	Residential	30 townhouses	Approved
1047 N. Fair Oaks Avenue	Residential	36 townhouses and subdivision of one lot into 36 condo lots	Approved
1156 Aster Avenue	Residential	42 townhouses	Approved
1122 Morse Avenue	Residential	72 townhouses and tentative map for 75 lots	Approved
857- 865 Carlisle Way.	Residential	Convert 60 apartments to 60 condominiums.	Under Construction
430 Toyama Drive	Residential	50 townhouses	Under construction
624 E. Evelyn Avenue	Residential	47 town houses	Under construction
545 E. Weddell Drive	Residential	130 townhouses	Under construction
635 E El Camino Real	Residential	88 room hotel	Under construction
1485 Sunnyvale Saratoga Road	Residential	25 single family Homes	Completed
711 S. Mathilda Avenue	Residential	36 town houses	Under construction
1601 Tenaka Place	Residential	66 apartments with associated community Facilities	Completed
637 E. Arques Avenue	Residential	54 townhouses	Completed
City of Mountain View Projects			
300 Mariposa Avenue	Residential	4-unit small lot project	Incomplete
315 Easy Street	Residential	9-unit row house development	Incomplete
100 Mayfield Avenue	Residential	Mayfield Master Plan, Area 1, Area 3	Under review
126 Fair Oaks Street (Lot 18)	Residential	One new house on less than 5,000 sq. ft. lot	Under review
126 Fair Oaks Street (Lot 19)	Residential	One new house on less than 5,000 sq. ft. lot	Under review
209-405 W. Evelyn Avenue	Residential	98 unit subdivision	Under review
2390 Gabriel Avenue	Residential	Single family residence in R3 zone	Under review
292 College Street	Residential	Variance for rear yard addition and construction of new garage	Under review
831 Jackson Street	Residential	2 homes on 2 substandard lots	Under review
1911 San Ramon Avenue	Residential	3 small-lot single-family homes	Scheduled
2215 Rock Street	Residential	22 row houses	Scheduled
300 Martens Avenue	Residential	2-lot parcel map	Scheduled
125 W. Dana Street	Residential	39 row houses	Approved
1354 Bryant Avenue	Residential	2-lot parcel map	Approved
1958 Rock Street	Residential	19 row houses	Approved
2260 Rock Street	Residential	15 row houses	Approved
1045 Mountain View Avenue	Residential	Flag lot subdivision	Under construction
1115-1123 Boranda Avenue	Residential	7 small-lot single-family homes	Approved
1136 Miramonte Avenue	Residential	58 unit subdivision	Approved
1950 Colony Street	Residential	108 row houses	Plan check
240 Chiquita Avenue	Residential	Duplex	Plan check
220 View Street	Residential	22 condominiums	Under construction

Table D-1 (Continued)
Approved and Pending Projects in Sunnyvale and Mountain View

Address	Use	Size	Status
2392 Rock Street	Residential	3 small-lot single-family homes	Approved
1112 Boranda Avenue	Residential	12 condominiums	Under construction
116 College Avenue	Residential	2 homes on 2 substandard lots	Under construction
115 Evandale Avenue	Residential	6 row houses	Approved
1777 Latham Street	Residential	3 small-lot single-family homes	Approved
180 Evandale Avenue	Residential	35 row houses	Under construction
1939 Rock Street	Residential	19 unit condominium conversion	Approved
2002 W. Middlefield Road	Residential	Conversion of 8 condominium units	Under construction
2367 Wyandotte Street	Residential	7 small-lot single-family homes	Approved
2545-2585 W. Middlefield Road	Residential	75 apartment units	Approved
291 Evandale Avenue	Residential	144 unit R4 project	Approved
646 Willowgate Street	Residential	11 row houses	Approved
669 Chiquita Avenue	Residential	3 small-lot single-family homes	Approved
875 Washington Avenue	Residential	Duplex	Approved
124 Orchard Avenue	Residential	2 units	Plan check
1929 Hackett Avenue Central Park	Residential	104 new senior apartments	Plan check
505 E. Evelyn Avenue	Residential	151 row houses	Plan check
902 Villa Street	Residential	5 residential units	Plan check
1178 Bonita Avenue	Residential	3 small-lot single-family homes	Under construction
274, 290, and 300 Ferguson Drive	Residential	106 row houses	Under construction
276 Sierra Vista Avenue	Residential	23 small-lot single-family homes	Under construction
294 Monroe Drive	Residential	6 small-lot single-family homes	Plan check
3625-3645 Grant Road	Residential	Permit extension	Scheduled
3625-3645 Grant Road	Residential	3 single-family homes	Plan check
1079 Marilyn Drive	Residential	Rezone for 31 R1 homes	Approved
1095 Wright Avenue	Residential	Single family residence	Approved
111 N Rengstorff Avenue	Residential	206 row houses	Approved
919-921 and 923 Mountain View	Residential	4 small-lot single-family homes	Plan check
100 Ferguson Drive	Residential	46 row houses	Under construction
205-233 Granada Drive	Residential	2 townhouses	Under construction
2178, 2184 Leland Avenue	Residential	2 homes on s substandard lots	Under construction
1616 W El Camino Real	Commercial	Fast-food restaurant with drive thru	Incomplete
590 Showers Drive	Commercial	Small collection recycling facility	Incomplete
1015 W El Camino Real	Commercial	Façade enhancement, landscaping and site improvements	Under Review
1032 Castro Street	Commercial	Façade change for Pete's Coffee	Under review
1504 Grant Road	Commercial	Façade enhancement and sign program for Grant Park Plaza	Under review
2603 Charleston Road	Commercial	Fast food restaurant – KFC	Under review
455 San Antonio Road	Commercial	129,060 S.F. Home Depot store	Under review
1477 Plymouth Street	Commercial	Live entertainment permit	Scheduled

Table D-1 (Continued)
Approved and Pending Projects in Sunnyvale and Mountain View

Address	Use	Size	Status
300 Castro Street	Commercial	Downtown restaurant – Castro Bistro & Wine Bar	Approved
300 Moffett Boulevard	Commercial	2,500 sq. ft. office building	Approved
124-126 Castro Street	Commercial	Downtown restaurant	Approved
147 Castro Street	Commercial	Downtown restaurant	Under construction
580 N. Rengstorff Avenue	Commercial	Facade improvements, 4,200 sf building, and Heritage Tree removal	Plan check
645 Ellis Street	Commercial	5,000 sq. ft. retail building with shared parking	Plan check
153-155 Castro Street	Commercial	12,000 sf three-story commercial/office building	Under construction
120 E. El Camino Real	Commercial	31,000 sf office/retail building for BMW	Project complete
1250 Grant Road	Commercial	Facade improvements for Nob Hill	Project complete
365 and 385 Ravendale Drive	Industrial	Exterior modifications to industrial buildings	Incomplete
2144 Wyandotte Avenue	Industrial	Permit for office/storage use	Under review
625-685 Clude Avenue	Industrial	Rezoning request to ML-T	Under review
1950 Leghorn Street	Industrial	Paving and grading business	Scheduled
420 N Bernardo Drive	Industrial	Improvements at an existing office site	Approved
1489 Charleston Road	Industrial	14,000 sf office building	Plan check
288 Castro Street	Commercial	Downtown restaurant – Temptations	Under construction
1060 Rengstorff Avenue	Commercial	Exterior modifications	Project complete
2505 California Street	Commercial	8,000 sf office/retail building	Under construction
555 Clyde Avenue	Industrial	Limited Industrial Condominiums	Under construction
1701-1707 W El Camino Real	Mixed Use	3,200 sf retail and 16 residential condos	Incomplete
1855 Miramonte Avenue	Other	Assisted living and skilled nursing facility	Under review
920 Sierra Vista Avenue	Other	Improvements to church and tree removal	Plan check
2500 Grant Road	Other	550,000 sf hospital, office building, and parking structure	Under construction
701 E. El Camino Real	Other	250,000 sf medical facility	Under construction
850 California Street	Commercial	City parking structure	Under construction

Source: Sunnyvale, City of 2006; Mountain View, City of 2007

APPENDIX E
PUBLIC COMMENTS AND RESPONSES



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, California**

August 14, 2007

Sent via Electronic Mail

Mr. Gary Houston
IMSW-CST-PWE Building 238
Fort Hunter Liggett, CA 93928-7000
E-mail: public.comment@liggett-emh1.army.mil

Subject: EPA Comments on the Army's *Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex at Moffett Field, CA*
Former NAS Moffett Field, Moffett Field, CA

Dear Mr. Houston:

The U.S. Environmental Protection Agency Region 9 (EPA) Superfund Division has reviewed the Army's *Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex at Moffett Field, CA* (EA Report) provided for public review on July 13, 2007.

Several statements in the EA Report regarding the source and extent of groundwater contamination and the potential health risks from the subsurface vapor intrusion pathway are incorrect or misleading and should be revised. Importantly, the EA Report incorrectly describes the Army project area as overlying the nearby groundwater contamination plume from the Middlefield-Ellis-Whisman (MEW) Study Area. EPA's general and specific comments on the EA Report are provided below.

EPA General Comments

1. Vapor Mitigation Measures

EPA is pleased to see that vapor mitigation systems are planned for all new buildings of the proposed development. However, the EA Report should clarify that vapor barriers and sub-slab ventilation systems will be installed to ensure the future occupants are protected from Site contamination via the subsurface vapor intrusion pathway. In addition, confirmation sampling and a long-term monitoring and management plan are needed to ensure that the mitigation measures implemented are effective.

2. Site Contamination and Cleanup (Section 4.13.1.3)

There is no data indicating that the regional volatile organic compound (VOC) groundwater contamination plume (part of the MEW Site) is the source of the trichloroethene (TCE) contamination found at the project site. Although the MEW Site is near the project site to the southeast, the regional VOC groundwater plume is not co-mingled with the VOC contamination beneath the Army's project site. Therefore, all information concerning the MEW Study Area presented in the Background, Groundwater, and Vapor Intrusion sections in the EA Report are not relevant and should be removed from the EA Report. Importantly, however, data do suggest that there are potential onsite TCE source areas in the Orion Park Housing Area and project site as well as potential upgradient sources that still need to be investigated and cleaned up.

3. Site Contamination – Vapor Intrusion

The EA Report fails to include and discuss EPA's 2005 indoor air, outdoor air and sub-slab soil gas sampling data at Orion Park. This data shows the presence of elevated concentrations of TCE both in the soil gas beneath several existing concrete slab foundations and in indoor air indicating that the potential subsurface vapor intrusion pathway is complete. Indoor air sampling results from several housing units indicated TCE concentrations exceeding EPA Region 9's interim action level for TCE in air for residential occupancy. Based on the groundwater data, sub-slab soil gas data, and indoor air data, there is the potential for vapor intrusion into new buildings overlying the subsurface contamination at levels exceeding EPA's TCE interim action level for commercial settings (e.g., 2.7 micrograms per cubic meter [$\mu\text{g}/\text{m}^3$] TCE in air).

4. Vapor Intrusion and Human Health Risk Assessment

EPA's sampling results indicate that the subsurface vapor intrusion pathway is a potential long-term health concern for future occupants of buildings overlying the shallow groundwater contamination plume. Specifically, data indicate elevated levels of soil gas are present beneath the existing building slab foundations at levels that could pose a potential long-term health concern for future occupants of buildings overlying the subsurface contamination. Therefore, vapor intrusion mitigation measures are necessary to ensure the building occupants are protected from subsurface contamination.

It appears that the Human Health Risk Assessment by the U.S. Army Center for Health Promotion and Preventative Medicine (USACHPPM) relied on Johnson & Ettinger (J&E) modeling from groundwater and soil data to predict the potential for vapor intrusion in the area. However, it appears the Human Health Risk Assessment failed to consider EPA's sub-slab soil gas and indoor air data collected to date. This data demonstrates that the Army's modeling and health risk assessment results are not necessarily predictive of the potential for vapor intrusion above EPA's levels of concern that would be found indoors. EPA data has shown that several housing units had indoor air concentrations at levels of concern for long-term exposure (exceeding EPA's interim action level of $1 \mu\text{g}/\text{m}^3$ of TCE in air). EPA does not agree with use of the model without comparison to all of the actual data and EPA Region 9's TCE interim action levels. Therefore, EPA disagrees with the conclusions of the Human Health Risk Assessment.

5. Potential On-site Source Areas of Contamination

The EA Report concludes that there are no on-site sources of VOCs and that all the groundwater contamination found on the Orion Park Housing Area originates from upgradient, off-site sources. EPA disagrees with this conclusion, and EPA has found that there are indications to the contrary. The data presented in the Navy's 2006 Draft Groundwater Monitoring Well Installation and Sampling Report support the likelihood of on-site source areas, thus further investigation potential source areas on the Army's project site area is necessary.

Investigations conducted to date indicate that there is sufficient information indicating that there are potential on-site source areas. Additionally, there is insufficient information to determine whether TCE "hot spot" areas within Orion Park and nearby on Moffett Field are a result of on-site sources, off-site sources, or a co-mingling of both. "Hot spot" areas are locations with relatively higher TCE concentrations than adjacent areas.

EPA does acknowledge that there is compelling information indicating off-site VOC groundwater contamination (specifically TCE and cis-1,2-dichloroethene [cis-1,2-DCE]) is impacting the Orion Park Housing property; however the extent to which the off-site source contamination impacts the Orion Park property is still unknown.

Additional VOC data, groundwater flow direction data, and field investigation work are needed to determine whether there are isolated on-site sources or co-mingled groundwater contamination with on-site and off-site sources. Specific investigation is warranted in the following areas on the project site in the vicinity of Navy monitoring well/sampling locations MCH-9UA/FW35A; and in the vicinity of MCH-11UA, MCH10LA and Former Farmhouse area, including the septic tank system and discharge lines.

6. Missing Link Between Off-site and On-site Contamination.

Data collected to date does not support the conclusions drawn by either the Army or the Navy that the contamination at Orion Park is solely from upgradient, off-site sources. In addition, as explained in more detail in General Comment 2 above, no data has been provided to link contamination from the MEW Site or the regional VOC groundwater contamination to the contamination found on Orion Park.

Without sufficient data to link groundwater contamination in the A1 and A2 Aquifer zones in the southern portion of the Orion Park Area to the central and northern portions of Orion Park, the current data set supports separate on-site source areas. While EPA agrees that some of the contamination found in the southern portion of the Orion Park Housing Area is likely from off-site, upgradient contamination, additional data is necessary to link on-site contamination to off-site contamination.

7. Field Sampling Investigation

Prior to construction of new buildings on the project site, field sampling must be conducted to include:

- Investigation of agricultural wells 06S02W15G001 and 06S02W15G004 in the vicinity of the former farmhouse buildings and any other historic wells encountered during demolition; and
- Investigation of septic tank system and discharge lines and properly decommission, as appropriate.

The EPA and the Regional Water Quality Control Board (Water Board) must be notified of any encountered contamination and all findings from the investigations must be reported to both Agencies.

8. Protection of Monitoring Wells and Impact of Development on Future Cleanup Actions

There are 11 monitoring wells within the Orion Park Housing Area. Plans must be in place to protect these wells during demolition and construction activities. In addition, reasonable access to the project site must be provided to EPA and all parties conducting investigation and cleanup activities at the project site. Construction, development, and operational activities at the project site must not interfere with any future cleanup activities.

9. Missing Groundwater and Air Sampling Information

Water level and VOC data collected by the Navy (August 2005, December 2005, March 2006, June 2006), and air and sub-slab soil gas data collected by EPA (April and May 2005)

is not used or referenced in the EA Report. The EA Report should include this more current groundwater and air data.

EPA Specific Comments

- 1. Executive Summary, Background, page ES-1.** For clarification, the text should be revised to indicate that the Army prepared an EA to analyze the impact of the RCI program at the Wescoat Housing area. The text states that the Wescoat area is approximately a mile south of the project site. However, page 4-14, Section 4.5.1.4 indicates the nearest sensitive receptor at Wescoat housing is approximately 1,350 feet to the southeast of the project site. The text should be revised to correct this discrepancy.
- 2. Figure 2-2, Site Location.** For clarification, a figure should be provided showing areas discussed in the text or in reference documents (i.e., Orion Park Housing Area, Wescoat Housing Area, NAS Moffett Field Superfund Site, NASA Ames Research Park, Ames Research Center, and the MEW Study Area).
- 3. Page 2-5, Construction.** EPA commends the Army for committing to construct the proposed action to achieve the SILVER level of LEED NC (New Construction) of the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED®) rating system.
- 4. Page 2-6, Section 2.2.4.2 Dust Control.** The text should definitively state that dust control practices will be applied, as necessary. The text on page 4-8 should indicate that measures to reduce fugitive dust will be included as a requirement of development plans. The text should reference Section 2.4.2.2, not 2.2.4.3.
- 5. Pages 4-10, last paragraph and Page 4-11, first paragraph.** EPA does not agree with the U.S. Army Center for Health Promotion and Preventative Medicine's (USACHPPM) findings that no mitigation measures are needed or recommended for future use of the project site. The text should be revised to indicate that select indoor and outdoor air levels exceeded EPA Region 9's TCE interim action level for indoor air and EPA Region 9's Preliminary Remediation Goal (PRG) for TCE in air. USACHPPM's health risk assessment did not include EPA's 2004 and 2005 indoor air and sub-slab soil gas data and a comparison to EPA's TCE interim action levels.
- 6. Page 4-14, Section 4.5.1.4 Sensitive Receptors.** The EA Report should also discuss the potential impact of the proposed action on sensitive receptors, including the NASA daycare center immediately east of the project site.
- 7. Page 4-21, Soils, first paragraph.** The text states that "new facilities would be equipped with vapor barrier systems approved for use in areas subject to seismic activity. The Army would also implement any additional measures that may be required by the EPA." In sections 4.13.2.1 and 5.2, the text indicates that vapor barriers or sub-slab systems will be installed. The EA Report should be revised to provide additional information on what vapor mitigation measures will be implemented. Monitoring and confirmation of the effectiveness and protectiveness of any vapor mitigation measures should also be provided. A long-term monitoring and management plan will need to be developed to ensure that the building occupants are protected from the potential vapor intrusion pathway at or above levels of concern.

- 8. Page 4-23, Groundwater Quality and Use.** The EA Report misattributes the source of the groundwater contamination beneath the project site to the MEW Site. There is no evidence that groundwater contamination from the MEW Site impacts the Army's project site. In fact, Navy and MEW groundwater data show that the groundwater contamination from the regional VOC groundwater plume is not co-mingled with groundwater contamination at Orion Park. The EA Report should be revised to delete all statements suggesting otherwise.
- 9. Page 4-47, Section 4.12.1.1 Potable Water Supply, last sentence.** While groundwater is not currently extracted at the project site, it is possible that groundwater extraction could occur in the future as part of cleanup activities. The EA Report should indicate what land use restrictions are in place or are needed to prohibit groundwater extraction for potable water use.
- 10. Section 4.13.1.2 Site Contamination and Cleanup.**

- (a) Pages 4-52 and 4-53, Background.** As discussed above, Orion Park does not lie within the MEW Superfund Study Area, thus discussion of the cleanup remedy conducted for groundwater and soil at the MEW Site has no relevance to this document. However, Orion Park is located within the NAS Moffett Field Superfund Site, listed on the NPL on July 22, 1987. Other portions of former NAS Moffett Field, including the eastern portion of Wescoat Housing Area, are part of the MEW Superfund Study Area.

The Federal Facility Agreement (FFA) referred to in this section requires the Navy to conduct investigation and remediation at the NAS Moffett Field site. NASA is not a party to the FFA. EPA and the Water Board are the regulatory agencies overseeing the investigation and cleanup activities at the NAS Moffett Field Superfund Site. Currently there is no cleanup remedy addressing the groundwater contamination at the Orion Park Housing Area. The EA Report should be revised to address these points.

- (b) Page 4-53, Groundwater.**

First paragraph. The Navy conducted the 2002 groundwater investigation because of groundwater contamination found on NASA's downgradient property. The reference to the MEW plume should be removed from this section as it is misleading and not relevant.

Second paragraph. Data in this section should be updated to also include the Navy's 2005-2006 groundwater sampling data.

Third paragraph. The EA Report should explain what multiple TCE sources are impacting the project site. EPA does not agree that it has been established that there are no on-site sources of VOCs. In fact, there are indications to the contrary, as discussed above in General Comment 5.

- 11. Page 4-54, Figure 4.13-1.** Figure 4.13-1 is based on Navy groundwater data from 2002. More recent 2005-2006 groundwater data should be used and depicted on a figure. TCE isoconcentration maps for both the A1 and A2 aquifer zones should be included in the EA Report using the more recent groundwater monitoring well data.

12. Page 4-56. Vapor Intrusion. The text should be revised to focus on the vapor intrusion investigations conducted at the project site itself, not the nearby sites. Based on indoor air and sub-slab-soil gas sampling conducted in existing residential buildings at the Army's project site (and other locations at Orion Park), there is the potential for subsurface vapor intrusion into structures overlying the shallow groundwater TCE plume.

This section states that the property will not be used for residential uses. The EA Report needs to explain how residential use will be prevented in the future.

This section summarizes data from the Navy's 2005 Air Sampling Report for Orion Park Housing Area. EPA disagrees with several of the Navy's conclusions (see EPA's comment letter, dated January 10, 2005). In addition, EPA's 2005 data is notably missing from the EA Report and should be discussed in the Final EA Report.

13. Pages 4-57 and 4-58. Human Health Risk Assessment.

(a) First paragraph. Clarify what data the Agency for Toxic Substances and Disease Registry (ATSDR) findings were based on. Clarify if the subsurface vapor intrusion pathway was evaluated in ATSDR's assessment.

(b) Second paragraph and bullets. The information summarized in the EA Report appears to be directly from the Navy's 2003 Baseline Human Health Risk Assessment for the Orion Park and Wescoat Housing Areas. However, the findings and conclusions drawn in that Risk Assessment are unsubstantiated, misleading, and inaccurate. Additionally, the EA Report does not appear to reference any of the EPA's more recent 2005 data. To accurately assess the site conditions, the EA should include all the indoor air, outdoor air, and subslab soil gas data collected at the Orion Park Housing Area. The data collected to date clearly indicate subsurface vapor intrusion into select housing units at levels exceeding EPA Region 9's health protective risk range and EPA's interim action level for TCE in air. There is no evidence that elevated TCE indoor levels are from indoor sources or outdoor air sources.

First bullet: The text states that no volatile constituents were detected in the shallow soil gas. However, the VOC detection limits for this soil gas sampling were too high to adequately assess the potential for vapor intrusion from the subsurface. EPA's 2005 sub-slab soil gas sample results clearly show that TCE is present in the subsurface beneath the existing buildings.

Third and fourth bullets: TCE concentrations in a few vacant residences sampled did exceed EPA's interim action level for TCE in air and there is no indication that the elevated levels were from indoor or outdoor sources. Additional indoor air and sub-slab soil gas samples collected in several buildings on the project site show elevated TCE concentrations in both the indoor air and in the soil gas, but not in outdoor air samples. These building locations overlie the shallow contaminated groundwater plume. Thus, contaminated groundwater is the source of indoor air contamination. If the buildings were to be occupied, action would be required to reduce indoor air concentrations. Therefore, these bullets should be deleted or the text revised.

(c) **Third paragraph.** For clarification, the text should indicate that the TCE concentrations referenced are in groundwater. The text indicates that a letter from the Federal Occupational Health (FOH) component of the U.S. Public Health Service Department of Health and Human Services indicated that “at these relatively low levels the effects are expected to be chronic and not acute, even if there were direct contact and ingestion of the groundwater.” EPA is concerned about the potential chronic health risks of TCE in the groundwater. As you are aware, the contaminated groundwater beneath the project site should not be used for drinking, but that the State of California has designated the aquifer as a potential source of drinking water. Accordingly, cleanup of the groundwater at the project site is necessary.

The EA Report should discuss the likelihood that groundwater would be ingested at the project site and what controls are needed to ensure that the groundwater is not used for drinking until the groundwater is cleaned up to meet drinking water standards.

- 14. Pages 4-57 and 4-58, last paragraph.** The text should be revised to indicate that some indoor air results exceeded EPA Region 9’s interim action level and PRG for TCE in air. Also, the Army has not demonstrated that no mitigation measures are necessary for future construction and use of the site.
- 15. Page 4-61, Site Contamination and Cleanup.** Confirmation air sampling is needed to ensure that the vapor intrusion mitigation measures implemented are effective and protective. A long-term monitoring and management plan also needs to be developed and implemented. The Army should consider using the design considerations and risk management measures outlined in NASA’s Final Environmental Issues Management Plan, dated March 2005, to reduce potential exposure to VOCs in indoor air and to implement risk management measures during construction and post-construction.
- 16. Page 4-68, Hazardous and Toxic Substances.** Existing monitoring wells must be protected during demolition and construction activities. Construction, operation, and development activities should not interfere with future investigations and cleanup activities at the project site.
- 17. Page 5-1, Section 5.2 Proposed Mitigation Measures - Vapor Intrusion Control.** This section explains that the new structures may be equipped with passive venting systems that can be made active if necessary. It is not clear how and when it will be determined whether the systems should be made active. For instance, indoor air sampling could be used to confirm that use of a passive system is sufficient to prevent levels of concern from entering the buildings. In all cases, monitoring should be conducted to ensure that the systems continue to work.
- 18. Section 7.0 Distribution List.** Please remove David Farrell, EPA, from the distribution list and replace with Karen Vitulano. The final EA Report should be provided to Ms. Vitulano at the following mailing and e-mail addresses:

U.S. Environmental Protection Agency, Region 9
Environmental Review Office
75 Hawthorne Street CED-2
San Francisco, CA 94105-3901
E-mail: Vitulano.Karen@epa.gov

Also, please remove Mr. James McClure from the distribution list and replace with Ms. Maile Smith.

Northgate Environmental
300 Frank H. Ogawa Plaza, Suite 510
Oakland, California 94612
E-mail: Maile.Smith@ngem.com

19. Section 8.0 References.

Throughout the document, the EA Report should reference and use data from the Navy's Draft Groundwater Monitoring Well Installation and Sampling Report for Orion Park Housing Area, dated August 4, 2006.

The Navy's Draft Final Site Characterization and Baseline Human Health Risk Assessment Report for Orion Park and Wescoat Housing Areas, dated October 2003 should be referenced instead of the draft January 2003 document.

20. Appendix B – Table B-1 Special Status Species Potentially Present in the ROI. Define "CH", "FP", and "P" under the "Status" and "Likelihood of Occurrence" columns in the Notes section.

Thank you for the opportunity to review and provide comments on the EA Report. Please contact me at (415) 972-3141 or Lee.Alana@epa.gov if you have any questions regarding these comments.

Sincerely,



Alana Lee
Project Manager
Superfund Division

cc (via-e-mail only):

John Love, Army
Diane McCartin, Army Reserve Support Team
Mike Falcone, Army Corps of Engineers
Liz Clark, Army Combat Support Training Center
Darren Newton, Navy
Wilson Doctor, Navy
Liz Barr, Navy
Elizabeth Wells, Regional Water Quality Control Board
George Cook, Santa Clara Valley Water District
Don Chuck, NASA
Ann Clarke, NASA
Sandy Olliges, NASA
Kevin Woodhouse, City of Mountain View
Bob Moss, NAS Moffett Field Restoration Advisory Board (RAB) Co-Chair
Lenny Siegel, Center for Public Environmental Oversight
Maile Smith, Northgate Environmental

DESIGN AND DOCUMENT REVIEW COMMENTS

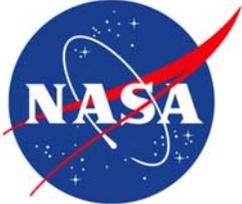
			FILE NAME
			Army EA Review Comments 08102007.doc
COMMENTS BY	CODE	PHONE	DATE
NASA Ames Research Center	QE	650-604-2350	8/7/2007
PROJECT TITLE AND LOCATION			
Army Orion Park Environmental Assessment, Revised Comments, August 10, 2007			

Table ES-1 (and Table 5-1)

Biological Resources—Include in the table the other types of mitigation listed in Section 4.8.3.1: revegetating with native species, using fencing or other barriers during construction and demolition, replacing trees as part of the landscaping to minimize habitat loss.

Table ES-1, p. ES-8 (and Table 5-1) Utilities—Potable Water Supply, and Section 4.12.2.1—Potable Water Supply

Insert: “To assure protection of NASA’s potable water distribution system, the project shall install and annually inspect and maintain a Sate-approved back flow device at the tie-in.”

Table ES-1, p. ES-4, Air Quality, and Table 5-1, Air Quality, p. 5-3

The only Environmental Protection Measure listed is dust suppression. This implies that dust is the only significant air quality concern. However, according to the table entitled TYPICAL DEMOLITION DAY EMISSIONS for 2007 [Appendix C-5], the maximum NOx emissions per day are listed as 112 lbs/day. Ames recommends the Army specifies (in a new Section 2.2.4.3) and implements measures to minimize NOx emissions from construction equipment. Please see the attached examples of measures that can reduce NOx emissions during construction and demolition activities.

The following are recommendations of measures to reduce NOx emissions from construction equipment (from the NASA Ames Development Plan (NADP) Programmatic Environmental Impact Statement (PEIS) Mitigation Implementation Management Plan (MIMP) (2002):

1. Require that all equipment is properly maintained at all times. All construction equipment operating on site would be required to include maintenance records indicating that all equipment is tuned to engine manufacturer’s specification in accordance with the time frame recommended by the manufacturer.
2. All construction equipment would be prohibited from idling more than 5 minutes.
3. Tampering with equipment to increase horsepower would be strictly prohibited.

4. Include particulate traps, oxidation catalysts and other suitable control devices on all construction equipment used at this site.
5. Equipment that visibly produces substantially higher emissions than other typical equipment of similar size is prohibited.
6. The staging of three or more pieces of construction equipment near or just upwind from sensitive receptors such as residences or daycare uses would be prohibited.

Table ES-1, p. ES-9, Hazardous and Toxic Substances - Petroleum, Oils, and Lubricants, and Table 5-1, Hazardous and Toxic Substances, p. 5-8

Add an Environmental Protection Measure to minimize environmental contamination from spills and leaking equipment.

Table ES-1 and ES-5, Lead and Asbestos

Insert missing words.

Tables ES-1 and ES-5 Environmental Justice and Children

Summarize impacts and their mitigation on mobile home park and NASA day care center.

Table 2-1

Include demolition of building E-52.

Section 2.1, Introduction, para. 4, last sentence, p. 2-1

“Moffett Federal Airfield” should be changed to the “former Naval Air Station Moffett Field at NASA Ames Research Center.” Moffett Federal Airfield is no longer used.

Section 2.2 Proposed Action

Discuss activities that may occur on the southern part of the larger 76.6 acre site in carrying out project demolition and construction in the northern part, e.g., installation or upgrade of utilities, location of temporary staging areas. Address mitigation measures that will be taken in light of existing site contamination.

Section 2.2.1 Proposed Action, Demolition, p 2-4

This section acknowledges lead-based paint and specifies a total of 346,876 ft² to be demolished. State what measures will be in place to ensure lead levels are not exceeded during demolition activities.

Section 2.2.1 Proposed Action, Demolition, p 2-4, and Section 4.13 Hazardous and Toxic Materials

Recommend sampling for heavy metals, such as chromium, including chromium VI, to determine whether and what kind of mitigation measures may be needed during demolition to protect workers and the public at the project site and at Ames and nearby locations.

Sections 2.2.2 Proposed Action, Construction, 2.2.4.4 Pollution Prevention, 4.12.1.3 Storm Water Collection, and 4.12.2.1 Proposed Action-Storm Water Collection

Describe approximate location and size of retention pond.

Section 2.2.3 Proposed Action, Operations, and 4.3.2.1 Environmental Consequences-Proposed Action

Clarify whether operations will be 24/7 or during normal business hours to facilitate evaluation in Section 4.3.2.1 of the impact of operations at different times of the day on noise, light, and traffic impacts. Provide more specifics in 4.3.2.1 on nighttime light and glare.

Section 2.2.4.7 Proposed Action, Environmental Protection Measures, Outdoor Noise

Discuss impacts of project noise sources on off-site receptors.
(See related comments on Sections 4.5 and 4.10)

Section 2.2.4.8 Proposed Action, Environmental Protection Measures Trees (and Tables E.S.-1 and 5-1 Aesthetic and Visual Resources, Biological Resources)

Provide estimate of the number of mature trees (including heritage trees) currently on site and planned for removal. Discuss mitigation measures, including use of native plants.

Section 4.2.1.3 Land Use, Surrounding Land Uses—East

Disclose that within NASA Ames Research Center is a day care center located across R.T. Jones Rd. from the project site.

Section 4.3.1 Aesthetics and Visual Resources, Affected Environment, para. 2, last sentence

Discuss impacts to views from R.T. Jones Road (by drivers traversing area) and Ames's Visitor Center that are not screened from the site.

Section 4.4 Air Quality

Discuss in greater detail the air quality impacts from projected increases in traffic during demolition, construction, and operations, and mitigation measures such as phasing demolition.

Tables 4-5 and 4-6

Data in tables 4-5 and 4-6 seem to be out dated.

Sections 2.2.4.7 Outdoor Noise, 4.5.1.1 Noise, Affected Environment, Noise Overview, 4.5.1.3 Noise, Affected Environment, Existing On-site and Off-site Noise Conditions, and 4.5.2 Noise, Environmental Consequences

Disclose planned on-site noise sources in 2.2.4.7 and then disclose in 4.5.1.3 and 4.5.2 the impacts of those on-site noise sources on off-site noise receptors.

Disclose more detailed information about noise sources projected to be located on the project site during demolition, construction, and operations (e.g., back-up generators, construction equipment). The noise contour map in Figure 4.5-1 depicts noise contours associated with NASA sources only. Discuss whether noise would be continuous or intermittent, and whether it would be temporary or on-going, and provide examples of mitigation measures that will be taken.

Disclose whether weapons simulator (identified in Section 2.2.2, line 6) will be housed within a sound controlled building and if not, how off-site noise impacts will be mitigated.

Section 4.5.1.2 Noise, Affected Environment, Army Noise Guidelines

Define in Section 4.5.1.3 reasonably foreseeable day and night activities associated with implementing the project that may affect noise levels. (Army standard is stated as a day/night average.)

Section 4.5.1.2 Noise, Affected Environment, Army Noise Guidelines

Describe in Section 4.5.1.3 any noise “hotspots,” that is, sites of activities which may have very high noise levels that may not be reflected in the day/night average.

Section 4.5.1.4 Noise, Affected Environment, Sensitive Receptors

Disclose in this section that the NASA Ames day care center is located across R.T. Jones Rd. from the project site and an open parade ground is located nearby where outdoor ceremonies (outdoor speeches) are held.

Section 4.5.2.1 Noise, Environmental Consequences, Proposed Action, para. 1, line 7

Clarify whether daytime hours would be equivalent to regular business hours.

Section 4.5.2.1 Noise, Environmental Consequences, Proposed Action, para. 6

Clarify whether “surrounding sources” includes the wind tunnels at Ames and other sources of noise which may be high but intermittent. (Paragraph states that “[m]ilitary operations would not create noise greater than surrounding sources, and therefore, would not impact local sensitive receptors.” Define types of military operations, e.g., classroom training, weapons simulation.

Section 4.6.1.1 Geology and Soils, Geologic Setting, Physical Geography, para. 3, 1st sentence, p. 4-17

Stevens Creek is not former tidal slough. Stevens Creek originates in the Santa Cruz Mountains to the south of the site and flows north. A dam and reservoir upgradient of the Army site stores water and controls the flow. Once the creek reaches the tidal marshes, the course of the creek had been straightened to allow Stevens Creek to discharge to San Francisco Bay at Long Point. See Section 4.7.1.2, “Regional Hydrology and Drainage.”

Sections 4.6.2.1 Geology and Soils, Environmental Consequences, Proposed Action – Soils, para. 2, 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action – Storm Water Collection

Clarify whether retention ponds will be located on site, whether the pond(s) would be located in line with the storm water pipes discharging to Stevens Creek and how large the pond(s) would be.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water—Regional Hydrology and Drainage, para. 1, last line.

Delete “on the northwest side of the flight line of Moffett Federal Airfield.”

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water

Change subsection title to “Water Resources” or something similar that will include both surface and groundwater since this section also discusses groundwater. Or, create a new subsection 4.7.1.3 Groundwater.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water--Groundwater, 6th line, p. 4-22

Insert the following text after the sentence ending “5 to 65 feet below ground surface (bgs)”: The A aquifer had been divided into two zones: the A1 zone from 5 to 30 feet below ground surface, and the A2 zone from 30 to 65 feet bgs. Both zones are hydraulically connected.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water--Groundwater Quality and Use, 1st sentence, p. 4-23

Delete all text in this sentence after “solvent TCE.” It has not been shown that the TCE seen at the project site is migrating from the MEW plume. Replace the deleted text with the following: Studies indicate that the TCE migrates onto the project site from several possible upgradient sources. Additionally, there are indications of possible on-site sources for TCE. The TCE concentrations are generally one to two magnitudes higher in the A2 zone of the aquifer.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water--Groundwater Quality and Use

The contamination under the site has not been fully characterized or attributed to the MEW Companies. In fact, further investigation is required by the military regarding the source and containment of the contamination.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water--Groundwater Quality and Use

Request that Army coordinate with NASA and other Federal agencies in taking action to avoid exacerbating the effects of the advancing Orion Park plume on their respective properties.

Section 4.7.1.2 Water Resources, Affected Environment, Surface Water—Floodplains, para. 2, lines 4-5

Insert new sentence clarifying whether project will be above the 100-year flood level of 8.1 ft above mean seal level and above the 500-year flood level of 3 in above the 100-year flood level. (The section implies that the project would not be at risk from a 500-year flood since the 500-year flood level is only 3 inches above the 100-year flood level and none of the project site would be within the 100-year flood leve. The section then states that “None of the project area is within the elevation range that wuld be flooded by extreme high tides.”)

Section 4.7.2.1 Water Resources, Environmental Consequences, Proposed Action –Surface Water, para. 1, last sentence

Request that new storm drainage system and its components be sized to prevent flooding of Stevens Creek and NASA Ames.

Section 4.8.2.4 Biological Resources, Affected Environment, Special Status Species, Western Burrowing Owl

Contact NASA Ames Environmental Services Division for additional information on burrowing owl populations in the area.

Sections 2.2.4 Environmental Protection Measures, 4.8.2.4 Biological Resources, Affected Environment, Special Status Species, and Table B-1

Note that Western pond turtles, though rare, may occur in the Area of Potential Effect. NASA Ames is managing a Western pond turtle population discovered during the Navy's remediation of the Northern Channel.

Section 4.9.2 Cultural Resources, Affected Environment, Architectural Resources

Note that the following buildings within the Area of Potential Effect closest to the project site and which are considered to be eligible for listing on the National Register of Historic Places include not only structures within the Shenandoah Plaza Historic District, but also N-200, Administration Building, and N-221, 40 x80 Wind Tunnel. A current list of eligible, listed, and contributing structures at Ames is found at <http://historicproperties.arc.nasa.gov>.

Describe whether proposed action will adversely affect N-200 and if so, mitigation measures, such as those described in other subsections, that would be implemented to prevent adverse impacts from air emissions and noise. Contact NASA Ames Facilities Historic Preservation Officer.

Section 4.9.3.1 Cultural Resources, Environmental Consequences, Architectural Resources, para. 2, line 2

Clarify whether in fact demolition and construction would occur "within" NHRP-eligible or listed structures.

Section 4.10.1.5 Socioeconomics, Affected Environment, Quality of Life, Shops and Services

The commissary and exchange are not operated by NASA but by the military and although they are currently on NASA property there may be plans by DECA and the Armed Forces Exchange to relocate these facilities.

Section 4.10.1.5 Socioeconomics, Affected Environment, Quality of Life, Recreation, lines 1 and 3

Clarify that the Moffett Field Golf Course in line 1 is the same golf course as the golf course on adjacent NASA property described in line 3. Add that Shoreline Golf Course is located to the northeast in Mountain View. Clarify that the Don E. Edwards National Wildlife Refuge is located in the area with headquarters in Newark.

Section 4.10.2.1 Socioeconomics, Environmental Consequences, Proposed Action, Housing

Clarify this section. Although housing has been increasing in Santa Clara County, an imbalance still exists between jobs and housing and any increase in jobs will only make the gap more difficult to close. The overall impact from the project is likely to be minor but this paragraph misrepresents the current jobs/housing situation in the region.

Sections 4.10.1.6 Socioeconomics, Affected Environment, Environmental Justice, and 4.10.2.1 Socioeconomics, Environmental Consequences, Proposed Action, Environmental Justice

Provide additional explanatory information for concluding that the impacts (e.g., noise, air emissions) to the low-income housing community to the northwest of the project site (described in 4.2.1.3, Surrounding Land Uses – West) would not be disproportionately high during demolition, construction, or operations. For example, would noise emitted at the site be within the limits of the Santa Clara County noise ordinances? Would marginal noise increase at the Wescoat Housing be minimal when added to the noise of U.S. Highway 101? Would Stevens Creek buffer the increase in noise due to the project? Will air emissions be within permit limits?

Sections 4.10.1.7 Socioeconomics, Affected Environment, Protection of Children, and 4.10.2.1 Socioeconomics, Environmental Consequences, Proposed Action, Protection of Children

Provide foundation for concluding that the impacts to children (e.g., noise, air emissions) at the NASA Ames day care center, located across R.T. Jones Rd. and to the south of the immediate project site, should be considered. These paragraphs only consider limiting access to hazardous materials at the project site. The noise contour map in Figure 4.5-1 depicts noise from NASA Ames sources only.

Section 4.10.2.2 Socioeconomics, Environmental Consequences, No Action Alternative

Disclose whether hazardous materials are currently managed to prevent exposure by children at the NASA day care center located across R.T. Jones Rd. from the project site.

Disclose impacts of No Action Alternative to other socioeconomic aspects, such as housing, quality of life, and environmental justice.

Section 4.11.1.1 Transportation, Affected Environment, On-Site Roadways and Parking Spaces

List Moffett Boulevard as an affected roadway.

Section 4.11.1.1 Transportation, Affected Environment, On-Site Roadways and Parking Spaces

State how many parking spaces will be available in each parking lot and where weekend drill soldiers will park. (In Section 2.2.2 Construction, the EA states that the Army is constructing two parking lots. In Sections 2.2.3 and 4.11.2.1 (p. 4-44), the EA states that the site will have 413 full-time employees, and on weekends up to 735 soldiers on peak training weekends. The Army needs to accommodate 413 cars per day during the week and 1,000 cars per day on drill weekends. Later in the document, in Appendix C-4, the EA states that the parking lots will have 445 spaces.)

Section 4.11.1.2, Transportation, Affected Environment, Off-Site Roadways

Describe in greater detail the effect of 413 full time employees commuting each day and 735 commuting reservists.

Section 4.11.1.2 Transportation, Affected Environment, Off-Site Roadways

Include the N-S arterial Shoreline and Central Expressway, a road parallel to Highway 101 under affected off-site roadways.

Sections 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, and 2.2.4.9 Proposed Action, Environmental Protection Measures, Traffic

TDM programs are mentioned as a way to reduce traffic by 19% (Section 4.11.2.1 and 2.2.4.9) but no actions are suggested as a part of that program. Does it consist of more than staggering work hours of the employees, who manages it, how is it enforced or evaluated?

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, p. 4-43

Change subtitle to “R.T. Jones Road.”

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, pp. 4-43 to 4-46

Include allowance for the planned increase of traffic along R.T. Jones Rd. due to the development in the north area of the Ames Site (Bay View) as outlined in the NASA Ames Development Plan (NADP) Final Programmatic Environmental Impact Statement (PEIS), November 2002. (No allowance is currently shown in the EA for the anticipated traffic increase disclosed in the NADP PEIS.)

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, p. 4-43, para. 2, lines 1-2

Clarify where demolition and construction workers will park and whether workers could be shuttled to site to minimize noise and air emissions.

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, p. 4-43, para. 2, lines 1-2

Insert statement that Army will coordinate with NASA to mitigate noise, air, and traffic impacts due to construction occurring concurrently at the project site and in the Bayview and core campus areas of Ames.

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, p. 4-44, para. 1, lines 3-4

Clarify whether a left turn lane is planned as a part of this project. (On page 4-44, the EA states that “...the LOS could drop to D during the morning peak hour, assuming that a left-turn lane is not provided to access the project.”)

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, R.T. Jones. Roadway, p. 4-44, para. 1, line 3

Show full impact of change in LOS when background traffic on R.T. Jones Rd. is taken into account. (The evaluation of the roadway shows that it goes to a LOS D on weekends without taking into account any amount of background traffic on RT Jones Rd. This means that the impact would be greater than D when the background traffic is taken into account.)

Section 4.11.2.1 Transportation, Environmental Consequences, Proposed Action, Roadway Impacts, Intersection Impacts, Moffett Blvd. and RT Jones Rd., p. 4-44

Clarify how the LOS F performances shown in the EA for this project become less than significant. (A decrease in performance from A to D or F and from B to F is a significant impact unless aggressive mitigation measures are implemented.)

Sections 4.12.1.1 Utilities, Environmental Conditions, Potable Water Supply, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Potable Water Supply

Add discussion of plans, if reasonably foreseeable, to use reclaimed water now or in the future, e.g., by installing separate water lines.

Section 4.12.1.1 Utilities, Environmental Conditions, Potable Water Supply, para. 1, line 1, second sentence

After “. NASA” insert “is a State permitted water system that...”

Section 4.12.1.1 Utilities, Environmental Conditions, Potable Water Supply, para. 2, line 3

Add new last line: “To assure protection of NASA’s distribution system, a State approved backflow device shall be installed and maintained at the system tie-in point.

Section 4.12.1.3 Utilities, Environmental Conditions, Wastewater Collection—the capacity is stated as being sufficient and yet in the previous subsection under **Sanitary Wastewater (4.12.1.2)** it states that the wet weather flow exceeds the capacity of the lift station 2 to 3 times a year. Clarify.

Section 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection

Statement is inconsistent with Section 4.7.1.2. Insert statement that a portion of the storm water flows onto NASA.

Sections 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Storm Water Collection

Clarify whether storm water from project will continue to drain into the NASA Ames storm water system.

Sections 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Storm Water Collection

Request that Army grade as small an area of land as possible to R.T. Jones Rd., based on final realignment of R.T. Jones Rd., to minimize flow of storm water into the NASA Ames storm water system.

Sections 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Storm Water Collection

Provide more specific details about how increase in storm water would be accommodated.

Sections 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Storm Water Collection

Discuss whether flapper valves will be installed and maintained on pipes leading to Stevens Creek. The flapper valves would close when water in Stevens Creek rises to the top of the valves. During a major rain or flood event, this action would cause storm water from the project site to drain onto the Army property before draining onto NASA.

Sections 4.12.1.3 Utilities, Environmental Conditions, Storm Water Collection, and 4.12.2.1 Utilities, Environmental Consequences, Proposed Action, Storm Water Collection

Ensure that all impervious areas drain into the internal Orion Park storm water system.

Section 4.13.1 Hazardous and Toxic Materials

See comment under Section 2.2.1 – Demolition.

Section 4.13.1.1 Hazardous and Toxic Substances, Affected Environment, Petroleum, Oils, and Lubricants, last sentence, p. 4-51

The sentence should be rewritten to read: “There are no *known* existing petroleum, oils, and lubricants (POL) concerns within the project area.” There has not been a thorough investigation as to POLs. The farm located within Orion Park very likely had gasoline or diesel storage in addition to lubricants for farm equipment. A septic tank is probably still in existence which also could be a source of POLs.

Section 4.13.1.2 Hazardous and Toxic Substances, Affected Environment, Site Contamination and Cleanup, Background, p. 4-52 to 4-53

Delete the entire “Background” portion. The project site does not lie within the MEW study area.

Section 4.13.1.2 Hazardous and Toxic Substances, Affected Environment, Site Contamination and Cleanup, Groundwater, para. 1, 1st sentence, p. 4-53

Change *MEW* plume to *Orion Park* plume. There is no evidence linking the MEW plume to the Orion Park plume. Additionally, the Navy began its investigation after NASA Ames demonstrated through several investigations that a TCE plume was migrating from the housing area.

Section 4.13.1.2 Hazardous and Toxic Substances, Affected Environment, Site Contamination and Cleanup, Groundwater, para. 3, 2nd sentence, p. 4-53

Change *upper and lower A aquifers* to the *A1 and A2 zones*. The A aquifer is one aquifer, not two. The A aquifer is divided into two zones within the aquifer: the A1 and A2 zones.

Section 4.13.1.2 Hazardous and Toxic Substances, Affected Environment, Site Contamination and Cleanup, Groundwater, para. 3, last sentence, p. 4-53

Delete the entire sentence. Several investigations done at the Orion Park site have indicated the presence of areas of concentration elevated above the surrounding concentrations. These “hot spots” may indicate that there are possible on-site sources of TCE. Once such possible source is the abandoned septic tank within the Macon Terrace III portion of Orion Park (in the vicinity of

Buildings 858 and 868 where Stevens Way bends to the east before intersecting with R.T. Jones Rd.) (see Figure 2-2). Several studies have shown that septic tanks have been sources for TCE.

Sections 4.8.2.3 Biological Resources, Affected Environment, Wildlife, and 4.13.2.1 Hazardous and Toxic Substances, Environmental Consequences, Proposed Action, Pesticides, p. 4-63

Recommend survey of California ground squirrels and several species of tree squirrels and development of management plan or coordination with Ames which is developing an integrated squirrel (gopher, rats, feral cats, and skunk) management plan at Ames to minimize damage to substations, the airfield, landscaped areas, trails, sidewalks, roadways, and parking lots, harm to endangered species, and risks to public health.

Sections 4.8.2.3 Biological Resources, Affected Environment, Wildlife and 4.13.2.1 Hazardous and Toxic Substances, Environmental Consequences, Proposed Action, Pesticides, p. 4-63

Recommend implementation of an integrated pest management plan consistent with industry and Agency standards and guidelines.

Figure 4.13-1

NASA has reviewed Navy documents presenting data points and contours to depict the TCE plume, as shown in Figure 4.13-1, and provided comments to the U.S. Environmental Protection Service, CalEPA Department of Toxic Substances Control, and the Regional Water Quality Control Board as part of the interagency review process, noting that the plume contours that do not reflect the data points.

Figure 4.13-1

Figure 4.13-1 only represents the A1 zone. A figure of the A2 zone should be provided to complete the picture.

Section 4.13.2.1 Hazardous and Toxic Substances, Environmental Consequences, Proposed Action, Asbestos, p. 4-62

Recommend adding reference to BAAQMD Regulation 11, Rule 14, which applies to certain Construction, Grading, Quarrying and Surface Mining Operations.

Section 4.14.2.2 Cumulative Effects, Cumulative Actions, NASA Ames Research Center

The NASA Ames Development Plan EIS Alternative 5 indicates that 3.6 million square feet (sf) of new space will be constructed overall in 4 planning areas (1 million sf in Bayview). Further, 960,000 sf would be demolished. Thus, net overall gain in square footage was anticipated to be approximately 2.6 million sf, not 3.6 million sf.

Section 4.14.2.2 Cumulative Effects, Cumulative Actions, NASA Ames Research Center, para. 1, lines 5-7, pp. 4-64- to 4-65

Correct numbers listed for new employees, residents, and housing units. Ames selected Mitigated Alternative 5, which is anticipated to result in 7,088 new employees and 3,000 students. Approximately, 4,909 residents would occupy 1,930 housing units.

Section 4.14.2.3 Cumulative Effects, Cumulative Actions, Moffett Federal Airfield

Change subtitle to the “Former Naval Air Station Moffett Field at NASA Ames Research Center.
“ In the text, change to “the Airfield at NASA Ames.”

Section 4.14.2.3 Cumulative Effects, Cumulative Actions, Moffett Federal Airfield

The USAR Complex is first mentioned in the Executive Summary Background. Suggest rephrasing sentence referencing the USAR Complex in subsection 4.14.2.3 to: “A master plan for the 76.6 acre parcel of the USAR Complex where the project site is located includes a conceptual design for a commissary and multiservice exchange complex. If this concept is implemented at the USAR, such facilities now located at Ames would be transferred back to NASA Ames.”

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California Regional Water Quality Control Board

San Francisco Bay Region



Linda S. Adams
Secretary for
Environmental Protection

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Arnold Schwarzenegger
Governor

Date: August 10, 2007
File: 2189.8009 (EKW)

Mr. Gary Houston
Fort Hunter Liggett
Attn: IMSW-CST-PWE
Building 238
Fort Hunter Liggett, CA 93928-7000
Via E-mail: public.comment@liggett-emh1.army.mil

Subject: Comments on Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex
Moffett Field, California

Dear Mr. Houston:

Thank you for the opportunity to review the June 2007 *Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex* (EA). My comments are below.

General Comments

1. We concur with the Army's proposal to incorporate mitigation measures for vapor intrusion into the proposed construction. However, groundwater impact remains and vapor intrusion mitigation measures do not remove chemicals present in groundwater at the site. Therefore, we expect the Army to work with the Navy, Air Force, and regulatory agencies to address impacted groundwater at the site.
2. Revise the EA to reflect that the TCE groundwater plume¹ from the Middlefield-Whisman-Ellis (MEW) facilities has migrated under the NAS Moffett Field site but not under the Army's project site. Based on the 2006 Annual Progress Report for the MEW Study Area², the MEW TCE groundwater plume extends beneath NAS Moffett Field but is 1000 feet or more east of the Army's project site. Further, groundwater remediation activities being conducted by the MEW companies and the Navy for the regional TCE plume are not applicable to the Army's project site.
3. Revise the EA (Section 4.13.1.2) to reflect that identification of TCE source(s) in groundwater at the Army's project site is on going. Delete the sentence in Section 4.13.1.2 that states "There are no on-site sources on the project site; all sources originate off-site

¹ The plume is defined as concentrations of trichloroethene (TCE) greater than 5 micrograms per liter ($\mu\text{g/L}$).

² Weiss Associates, 2007, 2006 Annual Progress Report for Middlefield-Ellis-Whisman Study Area, Regional Groundwater Remediation Program, Mountain View, California, June 29.

– 2 –

[sic] and upgradient.” Although data collected to date indicate TCE and associated daughter products have migrated from upgradient onto the project site, insufficient data has been collected to rule out on-site solvent sources³.

4. Incorporate data from the Navy’s 2005 groundwater investigation into the description of site conditions (Section 4.13 and Figure 4.13-1).
5. The Army should consult with the Water Board when soil and/or groundwater contamination issues are encountered at the site. The Water Board is the State oversight agency and the EPA is the Federal oversight agency for NAS Moffett Field, which includes Orion Park (of which the Army’s project site is a part).

Specific Comments

1. Sections 2.2.4.9 and 4.11.2.1: Include the additional traffic associated with demolition and construction activities during implementation of the project. No mention of truck traffic to transport demolition debris off site or construction materials on site is included in the project description.
2. Section 4.7.1.2: Clarify what is meant by “project area” and if the description and depths given for the A, B, and C aquifers apply to the Army’s proposed project site or to the larger area encompassed by NAS Moffett Field and the NASA Ames Research Center. If the information presented is for the larger area, revise the EA to include site-specific descriptions and depths of the aquifers at the Army’s project site.
3. Section 4.7.2.2: Complete the sentence.
4. Section 4.13.1.2: Clarify what are the “multiple” sources of TCE “affecting the groundwater.”
5. Section 4.13.1.6: Revise the text to state whether soil and/or groundwater samples were collected for analysis for pesticides, herbicides, and associated chemicals (e.g., arsenic). Because the site historically was used for agriculture, pesticides and herbicides potentially could have been applied to soil and crops at the site. Clarify what evidence is used to state that there is no indication of “pesticide-specific contamination or uses of pesticides greater than household quantities.” Revise the concluding statement to clarify a) what is meant by “elevated” concentrations, 2) whether any pesticide and/or herbicide analyses have been conducted, and 3) the results of the analyses.
6. Figure 4.13-1: Add the reference for the TCE plume to the figure.
7. Section 5.3: Revise the first sentence to clarify its meaning.

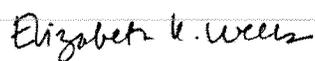
³ U.S. Environmental Protection Agency, 2007, Letter to Navy transmitting EPA Comments on the Navy Draft Groundwater Monitoring Well Installation and Sampling Report for Orion Park Housing Area, Moffett Community Housing, March 21.

– 3 –

8. Section 7.0: Change the contact person for the California Regional Water Quality Control Board (Water Board) to Elizabeth Wells.

If you have any questions, you can contact me via phone at (510) 622-2440 or email at ewells@waterboards.ca.gov.

Sincerely,



Elizabeth K. Wells, P.E.
Project Manager

– 4 –

cc (via E-mail):

Ms. Alana Lee
U.S. EPA Region IX
lee.alana@epa.gov

Mr. George Cook
Santa Clara Valley Water District
gcook@valleywater.org

Mr. Darren Newton
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BRAC PMO West
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Mr. Stuart McGee
City of Sunnyvale
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Mr. Don Chuck
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August 10, 2007

VIA E-MAIL AND U.S. MAIL

MR GARY HOUSTON
FORT HUNTER LIGGETT
IMSW-CST-PWE BUILDING 238
FORT HUNTER LIGGETT CA 93928-7000

CITY OF MOUNTAIN VIEW COMMENTS ON THE ENVIRONMENTAL
ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF AN ARMED
FORCES RESERVE CENTER COMPLEX AT MOFFETT FIELD, CALIFORNIA

Dear Mr. Houston:

This letter has been prepared by the City of Mountain View to comment on the June 2007 Draft Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex at Moffett Field, California. The proposed project is a significant demolition and construction project directly neighboring the City of Mountain View and is therefore of vital importance to the City. It is commendable that the Army will be pursuing a Silver LEED rating for this facility. The City of Mountain View's recycled water project will make recycled water available in 2009 to the terminus of La Avenida across Stevens Creek from the project. Connecting to this system to use recycled water for irrigation or other uses could assist the Army in achieving LEED requirements.

A City staff-level review of the Environmental Assessment (EA) suggests several concerns about the accuracy and thoroughness of the EA related to traffic, utilities and toxics. The City's specific comments are as follows:

1. Section 4.11 Transportation

The Transportation section of the Environmental Assessment (EA) for the proposed project is not adequate. As noted in the EA, 4.11.1.3 Traffic, "The project site falls within the limits of the Santa Clara Valley Transportation Authority (SCVTA), which implements the Congestion Management Program (CMP) (NASA 2002)." According to the CMP guidelines, any project which generates 100 or more a.m. or p.m. weekday peak-hour trips requires a Transportation Impact Analysis (TIA) in accordance with the SCVTA's TIA guidelines. Intersections to be included in the TIA are those that the project is expected to add 10 or more peak-hour

vehicles per lane to any intersection movement (i.e., Moffett Boulevard/northbound Highway 101 off-ramp, Moffett Boulevard/southbound Highway 101 off-ramp, Moffett Boulevard/Leong Drive, Moffett Boulevard/northbound Highway 85 off-ramp and possibly others). In addition, any freeway segment to which the project adds trips equal to or greater than one percent (1%) of the freeway segment's capacity must be evaluated. Please prepare and submit a TIA in accordance with the guidelines. If you would like to discuss this further or have any questions, please contact Mike Vroman, Traffic Engineer, at (650) 903-6591.

2. Section 4.12 Utilities

The sewer flow from this project will be treated at the Palo Alto Regional Water Quality Control Plant using the City of Mountain View's permitted capacity. However, the EA does not provide estimates of water demand or sewer discharge flows. This information is necessary to assess sewer collection system capacity and treatment plant capacity needs from this project. Even without this project, the estimated sewer flow from the 2002 NASA Ames Development Plan Environmental Impact Statement will exceed contract limitations with the City of Mountain View. The Army needs to specifically address this sewer capacity issue with both NASA and the City and clarify how the project relates to the expired (since 1991) Negotiated Utility Service Contract for capacity in the City of Mountain View sanitary sewer conveyance system and capacity in the City's portion of the regional plant.

3. Section 4.13.1.2 Site Contamination and Cleanup

Two statements in this section are not verifiable with existing data and are inconsistent with Environmental Protection Agency and NASA Ames analyses. First, it has not been shown that the MEW Study Area groundwater contamination plume currently underlies portions of the Army Reserve property. Second, it has not been shown that there are no TCE sources on the project site and that all sources originate off-site and upgradient of the project site. These two misleading statements should be removed from the EA and replaced with information about how the potential sources of the groundwater contamination beneath the site are still under investigation.

4. Section 4.13.2.1 Proposed Action

It is commendable that the Army plans to mitigate potential VOC vapor intrusion effects with construction measures such as vapor barriers or air venting systems. However, because future groundwater remediation at the site may be necessary, even though the Army may not be responsible for this remediation, new

construction and final facility locations should not interfere with groundwater remediation. The EA should include information about specific steps the Army will take to coordinate with appropriate potentially responsible parties and regulatory agencies during design and construction of the site so that potential future remediation systems are not impeded.

Due to the very shallow VOC contaminated groundwater levels and the risk this may pose to construction workers, the EA should include more detail about the on-site continuous VOC monitoring and analysis methodology and disposition of contaminated soils and groundwater.

5. Mitigation Monitoring

A monitoring plan, with contingency mitigation measures, should be developed to monitor and adjust as necessary to traffic impacts and toxics issues. For example, vapor intrusion mitigation measures should have a long-term management plan that includes periodic indoor air monitoring and specific requirements to monitor after earthquakes. Additionally, traffic mitigation measures should identify contingency plans in the event traffic impacts are worse than expected.

Thank you for the opportunity to review and comment on the EA. The City looks forward to hearing the responses to the above comments and to continuing to be updated concerning the process for this significant project. Please feel free to contact me at (650) 903-6301 should you have questions regarding any of these comments. Also, City staff is available to meet to discuss any of these comments in more detail as may be necessary.

Sincerely,



Kevin S. Woodhouse
Assistant to the City Manager

KSW/DPD/9/PWK
930-08-10-07L-E^

cc: City Council

CM, ACM, PWD, CDD, TPM, RPPA, TE, BISM, USM



CENTER FOR PUBLIC ENVIRONMENTAL OVERSIGHT

A project of the Pacific Studies Center

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August 10, 2007

Col. Kevin Riedler
U.S. Army Combat Support Training Center
Fort Hunter Liggett
Attn: IMSW-CST-PWE Building 238
Fort Hunter Liggett, CA 93928-7000

Dear Sir:

Thank you for the opportunity to comment on the Army's July 13, 2007 Draft Environmental Assessment [EA] for the Construction and Operation of an Armed Forces Reserve Center (AFRC) Complex at Moffett Field, California, as well as the Mitigated Finding of No Significant Impact. Unfortunately, though I have no objection in principle to the proposed action, I find the document seriously deficient. It does not comply with the National Environmental Policy Act (NEPA) and its implementing regulations.

Insufficiency of the Draft EA

First, the Draft EA does not propose alternatives other than the Proposed Action and the No Action Alternative. One would expect that the Army had learned from recent litigation in Hawaii, where a judge rejected an Environmental Impact Statement for precisely this reason. While the approved recommendations of the 2005 Base Realignment and Closure (BRAC) Commission do call for the construction of an AFRC Complex at Moffett Field, they do not stipulate that such construction be located on or confined to the 30-acre proposed project site. A proper evaluation of alternatives would thus consider alternatives locating the AFRC Complex or support structures on the Macon Terrace parcels. In addition, the Draft EA does not consider setting aside any portion of the project area for habitat restoration and enhancement, even though it is adjacent to Stevens Creek, and in close proximity to the Western Diked Marsh and the Storm Water Retention Pond. Habitat enhancement extending into the area under study would greatly improve the natural environment. Failure to consider and evaluate such alternatives places the Draft EA out of compliance with NEPA.

Second, the Draft EA does not consider the cumulative impact of planned or anticipated development on nearby property, particularly the NASA Ames Research Park, the Bayview parcel to be developed by Google on NASA land, and the likely redevelopment of the Macon

Terrace parcels. Understanding this cumulative impact is integral for developing the means to mitigate the housing and transportation consequences of the Proposed Action.

Third, understanding the housing and transportation impacts of the Proposed Action, as well as the superimposition of this development on a portion of the National Priorities List (“Superfund”) site, requires much more analysis than presented in the Draft EA. Conceivably such evaluation could be included in a more robust Environmental Assessment, but in that case the Army must demonstrate more conclusively why a full environmental impact statement is not required.

Fourth, the Draft EA does not evaluate the impact of a rise in sea level that is likely to result from global warming, over the life of the project, even though the entire property is near sea level.

Specific Impacts

The failure of the Army to comply with NEPA would not be a significant concern, were it not for the environmental impacts that appear likely from the Proposed Action, particularly when combined with other planned and likely developments in the area.

Traffic

The Draft EA does not adequately evaluate the traffic impacts of the proposed action. Yet the completion of NASA's Ames Development Plan will already create significant traffic impacts on the roadways leading to Moffett Field, and Google's likely project will add traffic to the primary access road serving the proposed complex. The Army makes no showing that a Transportation Demand Management program will prevent the aggravation of what will already be a difficult traffic situation. While week-end traffic will not generally be a problem, there is a potential for increased congestion on days when there are concerts at Shoreline Amphitheater.

Therefore, the Army should work with the city of Mountain View, NASA, and Google to evaluate a second access road, such as a bridge across Stevens Creek. Furthermore, it should coordinate the timing of its week-end training activities to avoid exacerbating back-ups from Shoreline Amphitheater events.

Housing

The Draft EA provides some data on potential housing construction on Army-owned land at Shenandoah Square, and it reports on completed construction within the Wescoat Housing Area, but it does not evaluate whether the net impact of projects on Army property—including the Macon Terrace parcels—will ease or exacerbate the area's jobs-housing imbalance.

The Army should consider constructing additional housing in the Macon Terrace area just south of the proposed project. This could overcome any negative jobs-housing impacts of the proposed action, and furthermore, by providing a place for Army (or NASA-site) employees to live adjacent to their workplaces, appreciably mitigate *traffic* congestion. Furthermore, the Army should clarify whether there will be a preference, at housing to be built at Shenandoah Square,

for Reserve Complex employees.

Toxics

The Army's analysis of potential vapor intrusion for new structures has some inconsequential (for the purpose of this project) shortcomings. It seems to refer to Orion Park as part of the MEW Study Area. It is not. It asserts, without proof, that there is no on-site source for the contamination. There is evidence to the contrary. And it repeats reports downplaying exposures likely to cause chronic health problems. In particular, it suggests, "There is no apparent correlation between air sampling results and the presence (or absence) of groundwater contamination at 23 of 27 housing units." This analysis fails to understand that indoor air contamination is a function of two, independent variables: the potential for vapor intrusion and the presence of pathways. Its presence of this document reflects Tetra Tech's conflict of interest, because the EA cites another, problematic Tetra Tech study prepared for the Navy.

In addition, the Draft EA makes no mention of the need for cleanup of the groundwater contamination on the site. Though NASA is building a treatment system to remediate volatile organic compounds migrating from Orion Park onto its property, no party (not even the Navy) has accepted responsibility for cleanup on site. Large buildings above the plume could make it difficult to install or operate monitoring wells, extraction wells, or injection points.

For the Reserve Complex itself and possible housing construction at the Macon Terrace parcels, as well as to comply with state and federal hazardous waste laws, it is essential that action be taken soon to remediate groundwater contamination over the entire Orion Park-Macon Terrace Army property. Though the Army is not the Responsible Party for the cleanup, it should be engaged in activity—such as elevating the question of Navy responsibility within the Defense Department—to move investigation and remediation forward.

Even if the Navy or another party takes responsibility for remediation, the Army should take at least five steps to address the potential for toxic exposures at this site:

1. The Army should explain how it will prevent the new facilities from interfering with anticipated remediation.
2. The Army should develop a footprint for new buildings that minimizes occupancy directly above plume hotspots.
3. New construction that could act as horizontal pathways, such as utility tunnels, should be designed to resist vapor migration. I recommend that the Army conform to NASA requirements to ensure that any new and retrofitted utility lines do not act as preferential pathways (See "Environmental Management Issues," NASA Research Park, March 2005, prepared by Erler and Kalinowski, Inc.)
4. Mitigation activities should include a long-term management plan that includes A) the periodic monitoring of indoor air; B) performance monitoring of active systems; C) procedures for preventing the perforation of vapor membranes; D) inspection protocols to

determine whether mitigation systems are intact, particularly after earthshaking events; and E) contingency plans should mitigation fail.

5. At Moffett, groundwater levels are approximately 5 to 12 feet below ground surface. There is some tidal influence in these levels. As sea level inevitably increases due to climate change, it is likely that groundwater levels will also increase. This could result in increased risks from vapor intrusion. The Draft EA should discuss this possibility.

Global Warming

The EA should describe the elevation of the property and analyze the other impacts of a five-foot rise in sea level, the State of California's conservative projection for the next 100 years. Even if this area is above five feet mean sea level, increased tidal surges may result in frequent flooding. Such an analysis could lead to changes in building location or design.

Sincerely,

(submitted electronically)

Lenny Siegel
Executive Director

on the jobs–housing imbalance of at least 500 units. This is significant, and must be mitigated. In 4.14.2 it is noted that Westcote will add 85 housing units and transfer of Shenandoah Square to a housing developer can add 200 more units. This should be noted in 4.10.2 as a partial mitigation of the jobs–housing imbalance. Any other actions to fully mitigate the increased demand for housing also should be identified.

4.11 Traffic & Transportation it is noted that the intersection of Moffett and R. T., Jones Rd. will be Level F during PM peek hours all week. When an

intersection operates at Level F it is normal to require mitigations. A full discussion of possible and feasible mitigations for this congestion must be provided. It is unclear that the mitigations suggested in 2.2.4.9 will be adequate based on the information given. Clarifications of their effectiveness are needed.

4.13 extensively discussed the known groundwater contamination and existing plume of contaminated groundwater, and then incredibly suggests no mitigations. This is absurd! The plume must be actively and aggressively mitigated both by continued treatment and monitoring. NASA has been complaining for years that migration of contaminated groundwater from Orion Park onto the Ames site is spreading contamination onto their property. Eventually NASA installed an active barrier to prevent future migration of the plume. Although it is reasonable to claim that much of the contaminated

groundwater originated in the MEW or other sites across highway 101, it is not certain that none of the contamination was caused by activities at the Orion Park or Macon Terrace. In any event, the law in regard to toxic contamination of soils and groundwater is very clear. Even if the source of contamination is off–site, the owner of the property has a responsibility to

clean it, and to prevent migration of pollution from his property to others.

So when the Army takes over the site, it takes over all of the site, including the groundwater pollution and the burden of managing it. That also

includes designing future buildings on site to avoid damage to existing monitoring and extraction wells, in co–operation with the Navy, EPA, and NASA.

There are significant actual and potential impacts from the proposed development as noted above. It seems prudent to prepare an EIR . Issuing the FNSI does not seem to be justified.

Yours sincerely,

Bob Moss

Community Co-Chair

Moffett Field RAB

----- Original Message -----

From: "Elizabeth Wells" <EWells@waterboards.ca.gov>

To: <public.comment@liggett-emh1.army.mil>

Cc: <smcgee@ci.sunnyvale.ca.us>; <bobgmoss@comcast.net>;
<jim.blamey@deh.sccgov.org>; <lee.alana@epa.gov>; <donald.m.chuck@nasa.gov>;

<darren.newton@navy.mil>; <GCook@valleywater.org>

Sent: Friday, August 10, 2007 4:13 PM

Subject: Comment – Environmental Assessment for Construction and Operation of

AFRC Complex

Sent via E-mail only

Attached are Water Board comments on the Army's June 2007 Environmental Assessment for the Construction and Operation of an Armed Forces Reserve Center Complex.

Elizabeth

Elizabeth K. Wells, PE
Water Resource Control Engineer
Regional Water Quality Control Board
San Francisco Bay Region
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Oakland, CA 94612
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Response to Comments Table to be Inserted When Approved