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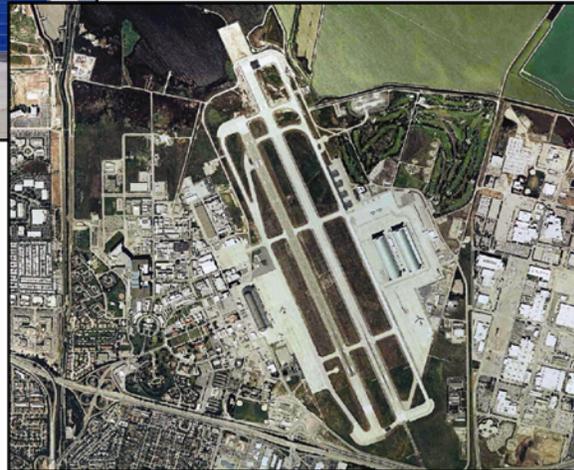
ENVIRONMENTAL ASSESSMENT



PROPOSED LONG-TERM LEASE AND
INSTALLATION DEVELOPMENT PLAN
FOR THE 129TH RESCUE WING



CALIFORNIA AIR
NATIONAL GUARD
MOFFETT FIELD,
CALIFORNIA



DECEMBER 2009

Acronyms and Abbreviations

°F	degree Fahrenheit	mg/L	milligram per liter
µg/m ³	micrograms per cubic meter	mg/m ³	milligrams per cubic meter
129 RQW	129 th Rescue Wing	mph	miles per hour
ACHP	Advisory Council on Historic Preservation	MSA	Munitions Storage Area
ACM	asbestos-containing material	MSC	Munitions Storage Complex
AFI	Air Force Instruction	MEW	Middlefield-Ellis-Whisman
AIRFA	American Indian Religious Freedom Act	NAS	Naval Air Station
ANG	Air National Guard	NASA	National Aeronautics and Space Administration
ARC	Ames Research Center	NAAQS	National Ambient Air Quality Standards
ASE	Aerospace Support Equipment	NAGPRA	Native American Graves Protection and Repatriation Act
AST	aboveground storage tank	NEPA	National Environmental Policy Act
AT/FP	Anti-Terrorism/Force Protection	NGB	National Guard Bureau
BAAQMD	Bay Area Air Quality Management District	NHPA	National Historic Preservation Act
BASH	Bird/Wildlife Aircraft Strike Hazard	NO ₂	nitrogen dioxide
BGS	below ground surface	NO _x	nitrogen oxides
BMP	Best Management Practice	NPDES	National Pollutant Discharge Elimination System
CAA	Clean Air Act	NRCS	Natural Resources Conservation Service
CAANG	California Air National Guard	NRHP	National Register of Historic Places
CAAQS	California Ambient Air Quality Standards	O ₃	ozone
CARB	California Air Resources Board	O&T	Operations and Training
CATM	Combat Arms Training Maintenance	OVS	oil/water separator
CATS	Combat Arms Training Simulator	Pb	lead
CDFG	California Department of Fish and Game	P.L.	Public Law
CEQ	Council on Environmental Quality	PM _{2.5}	particulate matter ≤ 2.5 microns in diameter
CEQA	California Environmental Quality Act	PM ₁₀	particulate matter ≤ 10 microns in diameter
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	POL	petroleum, oils, and lubricants
CERFA	Community Environmental Response Facilitation Act	POTW	Publicly Owned Treatment Works
CFR	Code of Federal Regulations	ppm	parts per million
CO	carbon monoxide	QD	quantity-distance
CRWQCB	California Regional Water Quality Control Board	RCRA	Resource Conservation and Recovery Act
CSAR	Combat Search and Rescue	ROD	Record of Decision
CWA	Clean Water Act	ROI	region of influence
dBA	A-weighted decibel	RWQCB	Regional Water Quality Control Board
DESC	Defense Energy Support Center	SARA	Superfund Amendments and Reauthorization Act
DoD	Department of Defense	SF	square feet
EA	Environmental Assessment	SIP	State Implementation Plan
EIAP	Environmental Impact Analysis Process	SHPO	State Historic Preservation Office(r)
EIS	Environmental Impact Statement	SJC	San Jose International Airport
EO	Executive Order	SO ₂	sulfur dioxide
EPCRA	Emergency Planning and Community Right-to-Know Act	SWDA	Solid Waste Disposal Act
ESA	Endangered Species Act	SWPPP	Stormwater Pollution Prevention Plan
FEMA	Federal Emergency Management Agency	TPHd	Total Petroleum Hydrocarbons Diesel
FFCA	Federal Facility Compliance Act	U.S.	United States
HAP	Hazardous Air Pollutants	UFC	Unified Facilities Criteria
HVAC	Heating, Ventilation, and Air Conditioning	US-101	United States Highway 101
IAP	Initial Accumulation Point	USACE	United States Army Corps of Engineers
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning	USAF	United States Department of the Air Force
IRP	Installation Restoration Program	USC	United States Code
LBP	lead-based paint	USCB	United States Census Bureau
LEED	Leadership in Energy and Environmental Design	USDA	United States Department of Agriculture
LOS	Level of Service	USEPA	U.S. Environmental Protection Agency
LQG	large quantity generator	USFWS	U.S. Fish and Wildlife Service
LUST	leaking underground storage tank	USGS	United States Geological Survey
M&I	Maintenance and Inspection	UST	underground storage tank
		UTA	Unit Training Assembly
		VOC	volatile organic compound

**FINDING OF NO SIGNIFICANT IMPACT
FOR
PROPOSED LONG-TERM PERMIT AND INSTALLATION DEVELOPMENT PLAN
FOR THE 129TH RESCUE WING
CALIFORNIA AIR NATIONAL GUARD
MOFFETT FIELD, CALIFORNIA**

PURPOSE: The Purpose of the Proposed Action is to consolidate the 129th Rescue Wing (129 RQW) facilities to the extent possible, while providing the necessary functional areas required for the 129 RQW mission. The Proposed Action is necessary to reconfigure facilities and property to accommodate the mission of the 129 RQW and to implement Anti-Terrorism/Force Protection (AT/FP) requirements. Furthermore, this action is necessary because the National Aeronautics and Space Administration (NASA) has stated in the NASA Ames Development Plan and associated Programmatic Environmental Impact Statement (EIS) and Record of Decision (ROD) (2002) that it may eventually open up the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public. The Proposed Action will provide the 129 RQW with properly sized and configured facilities, as described in Air National Guard (ANG) Handbook 32-1084, *Facility Requirements*, which are required to effectively accomplish their mission. The new facilities will enhance the 129 RQW's ability to maintain a level of wartime readiness necessary to support the mission.

ALTERNATIVE #1 (Preferred Alternative): The 129 RQW currently occupies 7 parcels, 88 facilities and 51 buildings at Moffett Field; the remainder of Moffett Field is in use by NASA and their other tenants. NASA has plans to eventually open the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public, consistent with the NASA Ames Development Plan and associated Programmatic EIS and ROD (2002). This would create an unsecured installation for the 129 RQW, which is not compliant with AT/FP requirements. As a result, the 129 RQW will consolidate their facilities to the extent practicable. In so doing, the 129 RQW will enter into a long-term permit with NASA for the property they currently occupy and an additional parcel they propose to acquire for the construction of a new Munitions Storage Complex (MSC). In addition, the 129 RQW will remedy some of their functional space shortfalls by vacating certain facilities and constructing some new facilities that will meet the authorized square footage requirements per ANG Handbook 32-1084, *Facility Requirements*, as necessary. California Air National Guard (CAANG) operations in areas to be described as shared use in the proposed permit (e.g., the taxiway near Runway 32R and temporary use areas) would be within the scope of the existing National Environmental Policy Act (NEPA) documentation. These collective actions will allow NASA Ames Research Center (ARC) (as property holder) to promote economical and efficient use of facilities and allow the 129 RQW to carry out their mission more effectively.

The Proposed Action is not inconsistent with the goals of other federal agencies. It is consistent with approved state and local plans. The Proposed Action consolidates and reconfigures facilities and operations within the existing footprint without substantially increasing the level of operations as described in the 2002 NASA Ames Development Plan Programmatic EIS and ROD.

ALTERNATIVE #2: Under Alternative #2, all construction and demolition projects proposed for Alternative #1 would be implemented; however, the additional parcel that would be acquired for the new MSC would be sited in a different location on the installation. This alternative would consolidate the CAANG facilities into two non-contiguous parcels.

Alternative #2 is not inconsistent with the goals of other federal agencies. It is consistent with approved state and local plans. Alternative #2 consolidates and reconfigures facilities and operations within the existing footprint without substantially increasing the level of operations as described in the 2002 NASA Ames Development Plan Programmatic EIS and ROD.

ALTERNATIVE #3: Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support Unit Training Assembly (UTA) on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 square feet [SF] of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension.

Alternative #3 is not inconsistent with the goals of other federal agencies. It is consistent with approved state and local plans. Alternative #3 consolidates and reconfigures facilities and operations within the existing footprint without substantially increasing the level of operations as described in the 2002 NASA Ames Development Plan Programmatic EIS and ROD.

ALTERNATIVE #4: Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street

and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension.

Alternative #4 is not inconsistent with the goals of other federal agencies. It is consistent with approved state and local plans. Alternative #4 consolidates and reconfigures facilities and operations within the existing footprint without substantially increasing the level of operations as described in the 2002 NASA Ames Development Plan Programmatic EIS and ROD.

NO ACTION ALTERNATIVE: Under the No Action Alternative, AT/FP requirements would not be met once NASA opens the NASA Research Park and the eastern portion of Moffett Field to the public, leaving the installation vulnerable to close attack by potential terrorist activity, and resulting in potential threats to mission-critical resources and potentially impairing the 129 RQW's ability to conduct their mission successfully. Deficiencies could impair the 129 RQW's ability to successfully conduct their mission and to maintain wartime readiness and training.

The No Action Alternative is not consistent with federal goals in that it does not meet AT/FP standards as identified in Unified Facilities Criteria (UFC) 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points* (2005) and UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings* (2007). The No Action Alternative is consistent with approved state and local plans.

SUMMARY OF FINDINGS

Potential impacts associated with the Proposed Action, in particular, the Preferred Alternative (Alternative #1), have been assessed with regard to the following environmental resource areas:

Earth Resources. Impacts to earth resources from construction, demolition, operations, and maintenance activities are expected to be minor under the Proposed Action. Approximately 9.5 acres of increased impervious surface will result from implementation of Alternative #1. It is expected that implementation of construction Best Management Practices (BMPs) would limit or eliminate soil movement, stabilize runoff, and control sedimentation during surface disturbing activities. These BMPs may include the use of: well-maintained silt fences; minimizing surficial area disturbed; stabilization of cut/fill slopes; minimization of earth-moving activities during wet weather; and use of temporary detention/retention ponds. Following construction, disturbed areas not covered with impervious surfaces will be reestablished with appropriate vegetation and managed to minimize future erosion potential. Given the employment of engineering practices that will minimize potential erosion, impacts to earth resources as a result of the Proposed Action are expected to be minor.

In addition to the increased impervious surface that will result from implementation of the Proposed Action, additional surface area could be disturbed at Moffett Field and in the vicinity over the next several years as a result of the additional projects planned for Moffett Field and the surrounding area. However, given the employment of engineering practices that will minimize potential erosion, cumulative impacts to earth resources are expected to be minor.

Water Resources. Impacts to water resources from construction, demolition, operations, and maintenance activities are expected to be minor under the Proposed Action. Approximately 9.5 acres of increased impervious surface will result from implementation of Alternative #1. Construction activities will adhere to National Pollutant Discharge Elimination System (NPDES) requirements including implementation of BMPs. As such, impacts to water resources under the Proposed Action are expected to be minor.

In addition to the increased impervious surface that will result from implementation of the Proposed Action, additional land surface could be disturbed and converted to impervious surface over the next several years as a result of the additional projects planned for Moffett Field and the surrounding area. It is expected that any construction activities will adhere to NPDES requirements including implementation of BMPs. As such, cumulative impacts to water resources are expected to be minor.

Biological Resources. Impacts to biological resources from construction, demolition, operations, and maintenance activities are expected to be minor. In general, construction activities at Moffett Field will primarily occur on sites that are already highly altered by man. These impacts will include the removal of some vegetation and associated wildlife habitat. However, wildlife that uses these areas is generally typical of urban and suburban areas. In addition, following construction, the disturbed areas will be reestablished with native plants to the extent possible. Operations and maintenance of the new facilities is expected to have minor effects on biological resources, as they will be similar to existing operations and maintenance activities. There are no known active Burrowing Owl nests within the footprint of proposed projects under Alternative #1; and measures described in the 2002 NASA Ames Development Plan Final Programmatic EIS and Burrowing Owl Habitat Management Plan will be followed during construction of the proposed projects. Therefore, impacts to owls are not expected. Impacts to threatened, endangered, rare, sensitive, and other protected species as a result of the Proposed Action will be minor.

In addition to the implementation of the Proposed Action, additional land surface could be disturbed as a result of the additional projects planned for Moffett Field and the surrounding area. However, it is expected that cumulative impacts to biological resources are expected to be minor.

Air Quality. Impacts to air quality from construction, demolition, operations, and maintenance activities are expected to be minor. In general, combustive and fugitive dust emissions from construction and demolition activities associated with the Proposed Action will contribute localized, short-term elevated air pollutant concentrations, but will not result in any long-term impacts on the air quality of the San Francisco Bay Area Air Basin, nor have any significant adverse impacts on the California State Implementation Plan (SIP). It is expected that impacts to air quality to the Air Basin from the emission increases from proposed activities will be minor.

The proposed activities described in the Environmental Assessment (EA), combined with additional projects planned for Moffett Field and the surrounding area, will contribute localized, short-term, elevated air pollutant concentrations, but will not result in any long-term impacts to the air quality of San Francisco Bay Area Air Basin, nor have any significant adverse impacts on the California SIP.

Land Use/Visual Resources. Impacts to land use and visual resources from construction, demolition, operations, and maintenance activities are expected to be minor. In general, land uses at Moffett Field will not be adversely affected by implementation of the Proposed Action. The location and function of the proposed structures are generally compatible with the surrounding area and will work to consolidate like functions, consolidate CAANG activities into fewer locations, and improve overall utility. Described activities will not adversely affect the viewshed at or near Moffett Field. While the proposed construction activities include some relatively large structures, the size and type of buildings will be similar to other buildings at Moffett Field, as described in the NASA Ames Development Plan Programmatic EIS (2002) and the City of Sunnyvale's Moffett Park Environmental Impact Review. As the proposed structures will not be incongruent with the surrounding buildings or land uses, impacts to land use and visual resources will be minor as a result of the Proposed Action. In addition, as the proposed structures will not be incongruent with the surrounding buildings or land uses, cumulative impacts to land use and visual resources is expected to be negligible.

Socioeconomics and Environmental Justice. Impacts to socioeconomics and environmental justice from construction, demolition, operations, and maintenance activities are expected to be minor. Expenditures from the activities at the 129 RQW installation as a result of the Proposed Action will generally result in minor beneficial economic impacts to the region by generating ongoing construction-related employment and income in the region of influence (ROI). Impacts will be temporary in nature; however, only accruing economic benefits to the region for the duration of construction activities. No permanent or long-lasting socioeconomic impacts are anticipated as a result of implementation of these activities. Disadvantaged groups within the ROI, including minority and low-income populations, do not represent a disproportionately high segment of the ROI population. Additionally, because no significant direct, indirect, or cumulative adverse impacts are anticipated, impacts to these populations will be minor. There

are no known environmental health or safety risks associated with these activities that could disproportionately affect children.

No permanent or long-lasting cumulative socioeconomic impacts are anticipated as a result of implementation of these activities. Because no significant adverse impacts are anticipated, there will be no adverse cumulative impact to minority or low-income populations. There are no known cumulative environmental health or safety risks associated with these activities that may disproportionately affect children.

Cultural Resources. In the event of unanticipated discoveries of cultural resources during construction, demolition, operations, and maintenance, work will halt at that location and the resources will be managed in compliance with federal law and Department of Defense (DoD) regulations. Direct, indirect, or cumulative effects on historic facilities, including the Shenandoah Plaza Historic District that also includes Hangars 2 and 3, or on archaeological resources from the Proposed Action are expected to be minor. Resources will be identified and impacts will be avoided or mitigated following the NASA Ames Development Plan Programmatic Agreement (2002) for redevelopment of the former Naval Air Station (NAS) Moffett Field. In addition, cumulative impacts to cultural resources are not expected as a result of all planned activities at Moffett Field. Compliance with Section 106 of the National Historic Preservation Act (NHPA), including State Historic Preservation Office (SHPO) and Native American consultation to identify any known archaeological resources will be accomplished prior to implementation of any of the actions described under the Proposed Action.

Solid and Hazardous Materials and Waste. Impacts to solid and hazardous materials and waste from construction, demolition, operations, and maintenance activities are expected to be minor. Where feasible, the 129 RQW will divert non-hazardous solid waste from landfills and incinerators through reuse, recycling, or donating, as appropriate. Products containing hazardous materials and petroleum products will be procured and used during the construction, demolition, operations, and maintenance activities associated with the Proposed Action. It is anticipated that the quantity of products containing hazardous materials used during the construction of these facilities will be minimal and their use will be of limited duration. Contractors will be responsible for the management of hazardous materials, which will be handled in accordance with federal, state, and local laws and regulations. Direct, indirect, and cumulative impacts as a result of the Proposed Action are expected to be minor.

Safety. Risk of catastrophic events occurring during construction, demolition, operations, and maintenance activities described under the Proposed Action is considered to be low, and strict adherence to all applicable occupational safety requirements will further minimize the relatively low risk associated with described construction activities. Additionally, facilities will be sited in relation to the proposed Munitions Storage Complex (MSC) in accordance with United States

Air Force (USAF) Manual 91-201. Direct, indirect, and cumulative impacts to safety are expected to be minor.

Infrastructure. Impacts to infrastructure from construction, demolition, operations, and maintenance activities are expected to be minor. Construction activities will likely result in some temporary interruption of utility services during construction activities; however, these impacts will be minor and temporary. Energy consumption is expected to remain consistent or possibly decrease slightly compared to energy consumption associated with the current facilities due to incorporation of Leadership in Energy and Environmental Design (LEED) and sustainable development concepts in the new construction. Under the Proposed Action, construction and demolition activities associated with repairs to roadways, as well as parking and driveways, will likely result in moderate short-term adverse impacts to transportation and parking on the 129 RQW installation; however, because of improvements to the installation's transportation and parking system, the resulting long-term impact will be positive. New facilities and circulation systems under the Proposed Action will further enhance the existing installation transportation networks. In general, direct, indirect, and cumulative impacts to installation infrastructure as a result of the Proposed Action are expected to be positive over the long-term.

PUBLIC INVOLVEMENT: The National Environmental Policy Act (NEPA), 40 Code of Federal Regulations (CFR) 1500-1508, and 32 CFR 989 require public review of the Environmental Assessment (EA) before approval of the Finding of No Significant Impact (FONSI) and implementation of the Proposed Action. A notice of availability for public review was published in the San Jose Mercury News on August 10, 2009. Comments received from agencies and the public have been addressed and incorporated, as appropriate, into the Final EA.

FINDING OF NO SIGNIFICANT IMPACT (FONSI): Based on my review of the facts and analysis in this EA, I conclude that Alternative #1 will not have a significant impact on the quality of the human or natural environment or generate significant controversy either by itself or considering cumulative impacts. Accordingly, the requirements of NEPA, the Council on Environmental Quality (CEQ), and 32 Code of Federal Regulations (CFR) 989, *et seq.* have been fulfilled, and an EIS is not necessary and will not be prepared. This proposed federal action is between two federal agencies and will occur on federal property only. As such, the federal action is exempt from the California Environmental Quality Act (CEQA). Therefore, CEQA analysis is not required or addressed in the EA or this FONSI.

David Beck COL USAF
Executive Secretary
Environmental, Safety, and Occupational Health Council

Date

**ENVIRONMENTAL ASSESSMENT FOR THE 129 RQW PROPOSED LONG-TERM
PERMIT AND INSTALLATION DEVELOPMENT PLAN**

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CHAPTER 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The 129th Rescue Wing (129 RQW) of the California Air National Guard (CAANG) is located at Moffett Field in California. The 129 RQW currently provides highly trained and equipped rescue support for federal, state, and community interests; protecting life and property; and preserving peace, order, and public safety. The National Aeronautics and Space Administration (NASA), as the federal agency that would grant a long-term permit to the United States Air Force (USAF) on behalf of the CAANG, is a Cooperating Agency in the preparation of this Environmental Assessment (EA). NASA conducts aeronautical, aerospace, and scientific research and development at NASA Ames.

Moffett Field is a secure federal facility with a secure perimeter and six controlled access points (gates) controlled by NASA and the Army; however, only two of these access points are used on a continuous basis for normal access control (Main Gate and Ellis Gate). NASA has plans to eventually open the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public, consistent with the NASA Ames Development Plan Final Programmatic Environmental Impact Statement (EIS) and Record of Decision (ROD) (2002). However, current NASA security requirements still require that the NASA Ames Research Center (ARC) be fenced with access control. Similarly, the Army is redeveloping Orion Park, where the CAANG medical facility is located. As a result of redevelopment activities described above, as well as the urgent need for the 129 RQW to be compliant with anti-terrorism/force protection (AT/FP) requirements, the 129 RQW proposes to implement several construction and demolition projects, as well as implement real estate transactions, including a long-term permit, in order to provide secure access and consolidate the 129 RQW facilities. In addition, several of the 129 RQW facilities do not meet the authorized square footage requirements per the Air National Guard (ANG) Handbook 32-1084, *Facility Requirements*. To satisfy space requirements, the following projects are planned:

- Construction of a new main gate and secondary gate
- Addition to Building 653 for a Combat Arms Training Simulator (CATS)/Combat Arms Training Maintenance (CATM) facility
- Construction of a Pararescue Facility
- Relocation of a Communications Tower

- Construction of a Vehicle Maintenance Shop and Aerial Port
- Construction of a Jet Engine Inspection and Maintenance Shop
- Construction of an Aerospace Support Equipment (ASE) Complex
- Construction of a new Munitions Storage Complex (MSC)
- Construction of a Squadron Operations Facility
- Construction of several multi-purpose facilities to house functions such as Reserve Forces Training, Physical Fitness, Dining Hall, Storage, etc.
- Construction of a Fuel Cell Maintenance Hangar
- Construction of photovoltaic generation system
- Construction of additional parking
- Security fencing around main cantonment area
- Facility demolitions
- Implementation of a long-term permit in addition to acquisition of an additional parcel for the location of a new MSC

There are no proposed changes in operations conducted by the 129 RQW as a result of proposed construction and permit implementation. Operational activity conducted by the 129 RQW would remain consistent with current operations.

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989, *et seq.*, *Environmental Impact Analysis Process* (EIAP), the National Guard Bureau (NGB) has prepared this Environmental Assessment (EA) that evaluates the potential consequences to the human and natural environment that may result from implementation of these projects.

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to consolidate the 129 RQW facilities, while providing the necessary functional areas required for the 129 RQW mission. This action is necessary for many reasons, not the least of which is the fact that Department of Defense (DoD) installations must adhere, to the extent practicable, to current Anti-Terrorism/Force Protection (AT/FP)

standards as identified in Unified Facilities Criteria (UFC) 4-022-01, *Security Engineering: Entry Control Facilities/Access Control Points* (2005) and UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings* (2007). The intent of these standards is to “minimize the possibility of mass casualties in buildings or portions of buildings owned, leased, privatized, or otherwise occupied, managed, or controlled by or for DoD. These standards provide appropriate, implementable, and enforceable measures to establish a level of protection against terrorist attacks for all inhabited DoD buildings where no known threat of terrorist activity currently exists” (DoD 2007). Numerous 129 RQW facilities are currently non-compliant with AT/FP requirements and the Proposed Action would bring them into compliance, where applicable.

Furthermore, this action is necessary because NASA has stated in the NASA Ames Development Plan and associated Programmatic EIS and ROD (2002) that it may eventually open up the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public. Due to the long lead time required for military construction funding, the ANG has taken this contingency into account in developing the Proposed Action and other action alternatives.

In addition to requiring a secure facility, many of the 129 RQW facilities are undersized for their current mission needs, and further do not meet guidelines identified in the ANG Handbook 32-1084, *Facility Requirements*. Construction of the proposed facilities in conjunction with the necessary demolitions and property transactions would improve overall efficiency of operations at the installation in support of the 129 RQW, while supporting compliance with AT/FP requirements.

1.3 LOCATION AND DESCRIPTION OF THE 129TH RESCUE WING

Moffett Field is located at the southern end of San Francisco Bay, 32 miles south of San Francisco and 10 miles north of San Jose (Figure 1.3-1). The approximately 2,000-acre facility, located in Santa Clara County, abuts the City of Sunnyvale to the south and southeast and the City of Mountain View to the west and southwest. The 129 RQW currently occupies seven parcels at Moffett Field, with most operations occurring on five parcels comprising 126 acres on the east side of the installation and two on the west side of the installation (Figure 1.3-2).

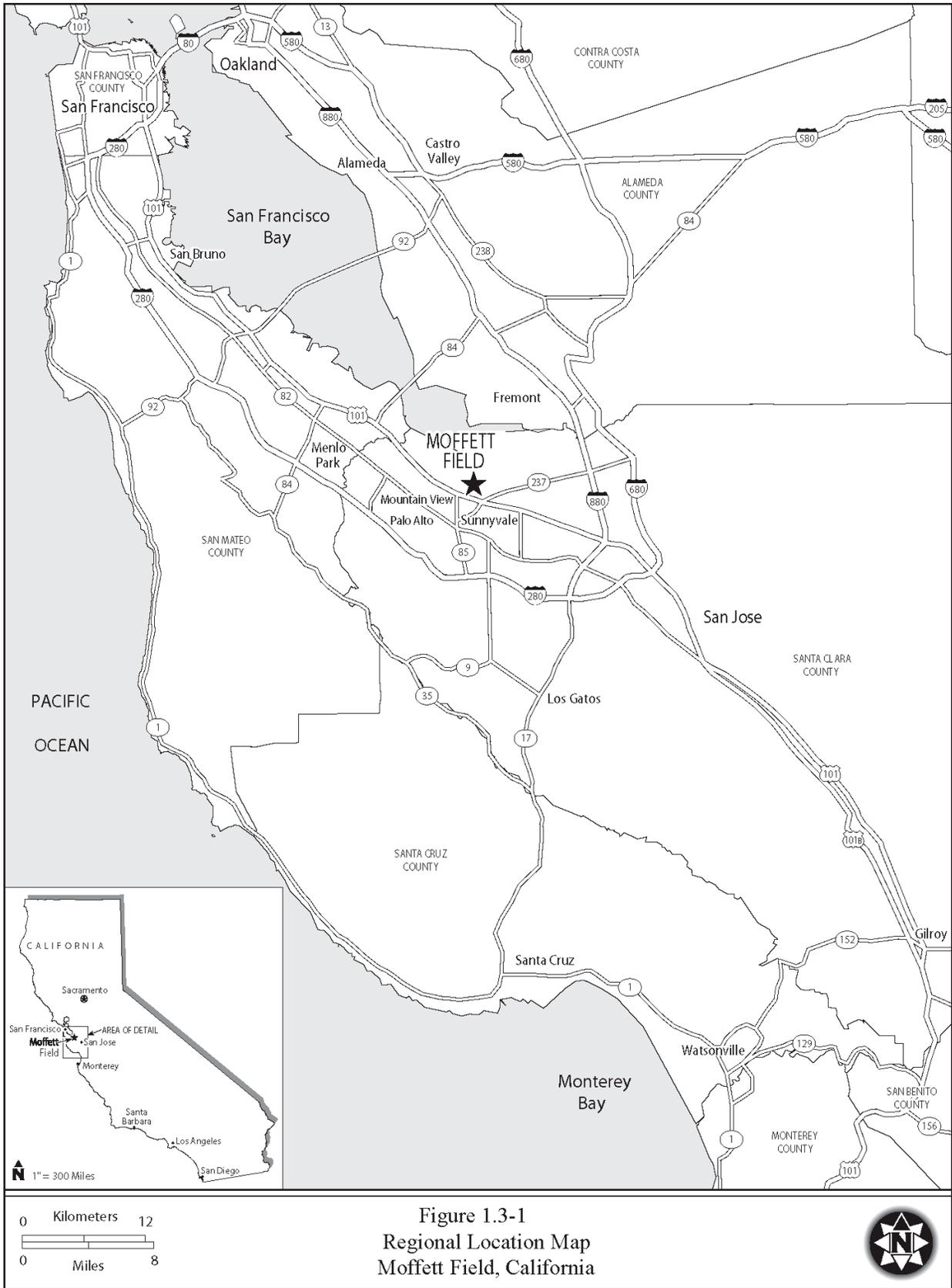
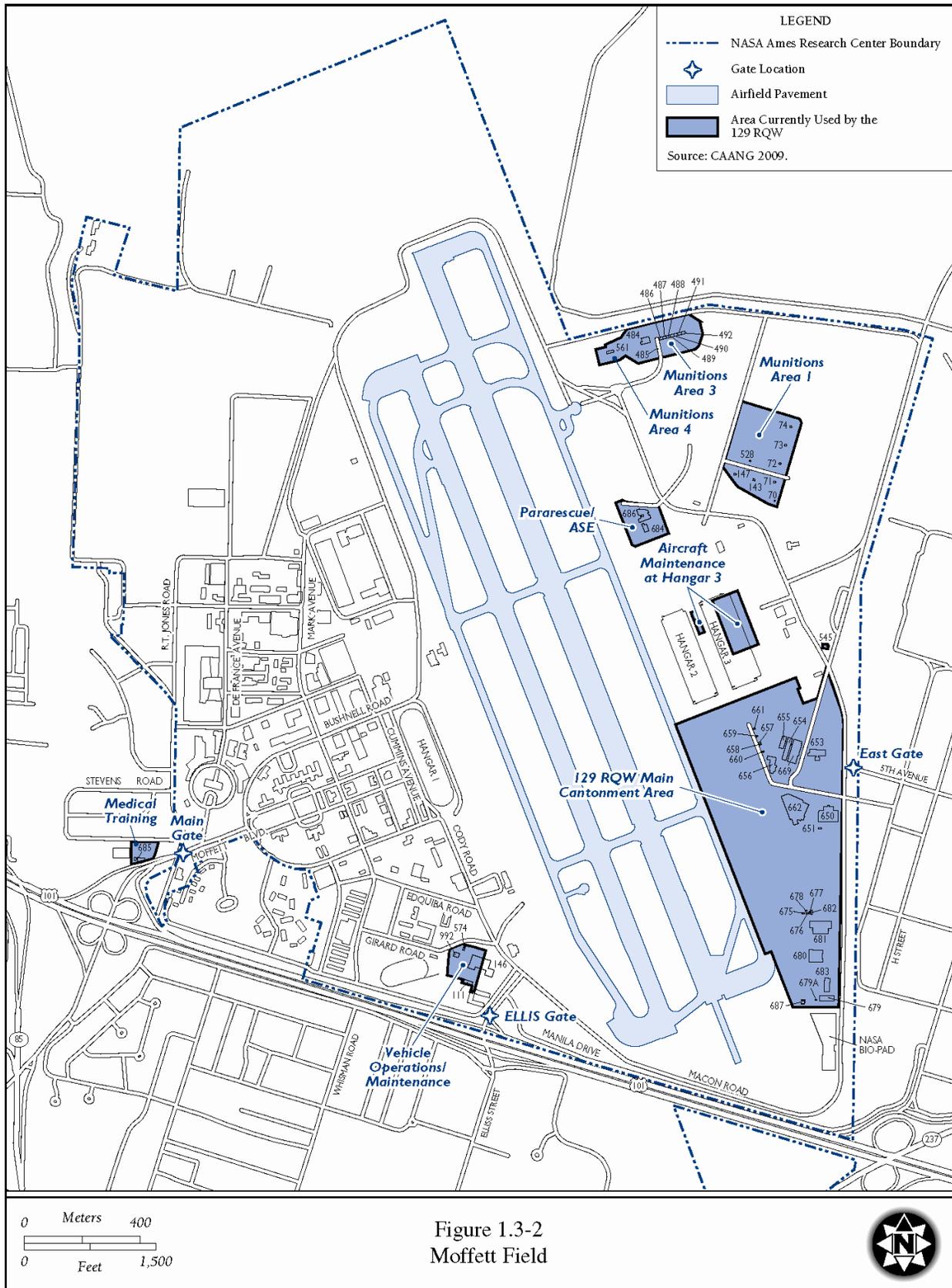


Figure 1.3-1
Regional Location Map
Moffett Field, California



In April 1955, the 129th Air Resupply Group was activated at Hayward Airport, California. Although the mission remained the same, the unit underwent three name changes and several aircraft conversions between its initial activation and April 1975. In April 1975, the 129th Air Resupply Group received a new mission, designation, and Air Force Command. Shortly afterward, the 129th Air Resupply Group also changed aircraft and its operating base. The 129th Air Resupply Group became the 129th Aerospace Rescue and Recovery Group and in 1984 completed its programmed move to Naval Air Station (NAS) Moffett Field, California, and became a permitted tenant of the Navy. In October 1989, the 129th Aerospace Rescue and Recovery Group was designated as the 129th Air Rescue Group and began converting from the HH-3E “Jolly Green Giant” helicopter to the HH-60G “Pave Hawk” helicopter; the conversion was complete in 1991. In March 1992, the name was shortened to the 129th Rescue Group, and in June 1992 it became the 129 RQW. In 1991, the Base Realignment and Closure Act selected NAS Moffett Field to realign/close. In July 1994, the NAS at Moffett Field was disestablished and the majority of the property was officially transferred to NASA, with NASA ARC being the host organization. Three housing areas were transferred to the USAF, which were later transferred to the Army. Today, the 129 RQW continues to conduct combat search and rescue (CSAR) operations on a global scale.

The overall mission of the 129 RQW is to provide a trained and equipped rescue force able to respond to and sustain their state and federal missions. The 129 RQW’s federal mission is to provide personnel, material, and equipment resources to conduct CSAR operations on a worldwide basis; and to provide manpower, material, and equipment to conduct and complete peacetime search and rescue operations. Their state mission is to furnish trained personnel to respond to state emergencies, such as natural disasters, and to assist civil authorities in the enforcement of the law, and state fire fighting air operations.

1.4 SUMMARY OF KEY ENVIRONMENTAL REQUIREMENTS

1.4.1 National Environmental Policy Act

In accordance with NEPA of 1969 (42 USC 4321-4347), CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR §§ 1500-1508), and the USAF implementing regulation 32 CFR § 989, *et seq.*, *Environmental Impact Analysis Process*, the NGB has prepared this EA that evaluates the potential consequences to the human and natural environment that may result from implementation of these activities.

NEPA requires federal agencies to take into consideration the potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. The

CEQ subsequently issued the Regulations for Implementing the Procedural Provisions of NEPA (40 CFR §§ 1500–1508) (CEQ 1978).

The activities addressed within this document constitute a federal action and therefore must be assessed in accordance with NEPA. To comply with NEPA, as well as other pertinent environmental requirements, the decision-making process for the Proposed Action includes the development of this EA to address the environmental issues related to the proposed activities.

1.4.2 Water Resources Regulatory Requirements

The Clean Water Act (CWA) of 1977 (33 USC § 1251 *et seq.*) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and Executive Order (EO) 11990, *Protection of Wetlands*, regulate development activities in or near streams or wetlands. Section 404 also regulates development in streams and wetlands and requires a permit from the United States Army Corps of Engineers (USACE) for dredging and filling in wetlands. EO 11988, *Floodplain Management*, requires federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains.

1.4.3 Cultural Resources Regulatory Requirements

The National Historic Preservation Act (NHPA) of 1966 (16 USC § 470) established the National Register of Historic Places (NRHP) and the Advisory Council on Historic Preservation (ACHP) outlining procedures for the management of cultural resources on federal property. Cultural resources can include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. NHPA requires federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. Section 106 of NHPA requires federal agencies to consult with State Historic Preservation Officers (SHPOs) if their undertakings might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR § 800 [1986]) provided an explicit set of procedures for federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with SHPO.

The American Indian Religious Freedom Act (AIRFA) (42 USC § 1996) established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (NAGPRA) (25 USC §§ 3001–3013) requires

consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance.

The Archaeological Resources Protection Act of 1979 (16 USC §§ 470aa-mm) was created to protect archaeological resources and sites on public and Native American lands in addition to encouraging cooperation and exchange of information between governmental authorities, professionals, and private individuals. The act establishes civil and criminal penalties for destruction and alteration of cultural resources.

1.4.4 Clean Air Act

The Clean Air Act (CAA) (42 USC §§ 7401–7671q, as amended) provided the authority for the United States Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), both coarse and fine inhalable particulate matter (less than or equal to 10 microns in diameter [PM₁₀], and particulate matter less than or equal to 2.5 microns in diameter [PM_{2.5}]), and lead (Pb). The Act also requires that each state prepare a State Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. In nonattainment and maintenance areas, the CAA requires federal agencies to determine whether their proposed actions conform with the applicable SIP and demonstrate that their actions will not (1) cause or contribute to a new violation of the NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The CAA (Section 112g) also specifies provisions for controlling the release of Hazardous Air Pollutants (HAPs) from industrial activities. In addition, under the Proposed Action CAANG would obtain appropriate permits for other emitters such as emergency generators, boilers, paint-booths, etc.

1.4.5 Endangered Species Act

The Endangered Species Act (ESA) of 1973 (16 USC §§ 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened and endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological Assessment and can require formal consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Act.

1.4.6 Other Environmental Requirements

Other environmental requirements that potentially apply to the implementation of this proposal include guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that disproportionately high and adverse human health or environmental effects on citizens in these categories are identified and addressed, as appropriate. Additionally, potential health and safety impacts that could disproportionately affect children are considered under the guidelines established by EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*.

1.4.7 Environmental Coordination Requirements

EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental notifications prior to making any detailed statement of environmental impacts. Through the process of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the proponent must notify concerned federal, state, and local agencies and allow them sufficient time to evaluate potential environmental impacts of a proposed action. Comments from these agencies are subsequently incorporated into the EIAP. An IICEP list of relevant federal, state, and local agencies is provided in Appendix A.

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CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The 129 RQW currently occupies seven parcels, 88 facilities and 51 buildings at Moffett Field (see Figure 1.3-2); the remainder of Moffett Field, under the authority of NASA and the Army, are used by these agencies and their tenants. The 129 RQW proposes to reconfigure and consolidate its facilities to the extent possible and to implement AT/FP requirements, while providing the necessary functional areas required for the 129 RQW mission. The 129 RQW would enter into a long-term permit with NASA for the property they currently occupy, as well as an additional parcel they propose to acquire. There are no proposed changes in operations conducted by the 129 RQW as a result of proposed construction and permit implementation. Operational activity conducted by the 129 RQW would remain consistent with current operations. The Army is redeveloping Orion Park where the existing CAANG medical facility is located. The CAANG would relocate the medical facility to their main cantonment area, vacating Building 685, and return the property to the Army. NASA also has plans to eventually open the NASA Research Park (on the west side of the runway) and the portion of the Eastside/Airfield east of the runway to the public. This would create an unsecure installation for the 129 RQW that is not compliant with AT/FP requirements. However, current NASA security requirements still require that the NASA Ames Campus be fenced and access controlled. The 129 RQW also proposes to remedy some of their functional space shortfalls by constructing some new facilities that would meet the authorized square footage requirements per ANG Handbook 32-1084, *Facility Requirements*, as necessary. These collective actions would allow NASA ARC as property holder to promote economical and efficient use of facilities and allow the 129 RQW to carry out their mission more effectively.

Construction projects would incorporate Leadership in Energy and Environmental Design (LEED) and sustainable development concepts, so as to achieve optimum resource efficiency, constructability, sustainability, and energy conservation, while minimizing adverse impacts to the built and natural environments through all phases of its life cycle. Incorporation of sustainability practices may result in primary facility costs exceeding DoD costing standards, but the initial investment in higher acquisition cost would be rewarded with lower life cycle costs. These efforts are consistent with the requirements of the Energy Policy Act of 2005 and EO 13423 *Strengthening Federal Environmental, Energy, and Transportation Management*. Since the proposed construction, demolition, operations, and maintenance activities would occur over time as new federal requirements for sustainability are developed, projects and activities would incorporate these requirements consistent with USAF policy.

There are four action alternatives for accomplishing this action presented in the following sections, as well as the No Action alternative.

2.2 ALTERNATIVE #1 (PREFERRED ALTERNATIVE)

Under Alternative #1, the 129 RQW would implement the construction and demolition projects, including the associated operation and maintenance of the facilities and functions, as described in Table 2.2-1, Sections 2.2.2 - 2.2.4, and shown in Figure 2.2-1. In addition, the 129 RQW would acquire, by permit, an additional parcel of land from NASA as shown in Figure 2.2-1 and described in Section 2.2.1, while releasing several other parcels back to NASA and the Army. Upon approval, the 129 RQW would enter into a long-term permit with NASA for the property they propose to occupy.

2.2.1 Real Property Action

To consolidate the main cantonment area into one contiguous parcel and provide an area for the construction of a new MSC (Project 8 described in Section 2.2.2), the 129 RQW is seeking to establish a long-term permit with NASA for the property they currently occupy within the main cantonment area, in addition to acquiring an additional parcel south of the current cantonment area (Figure 2.2-2). CAANG operations in areas to be described as shared use in the proposed permit (e.g., the taxiway near Runway 32R and temporary use areas) would not change under the Proposed Action, and would be within the scope of the existing NEPA documentation. Due to safety buffer requirements (known as quantity-distance [QD] arcs), the proposed MSC and its safety buffer would not fit within the confines of the current cantonment area. The parcel proposed for acquisition by permit is approximately 13.5 acres and consists of an open field that has been previously disturbed. In addition, there would be a 26.3-acre restricted easement (or some other similar real property instrument) surrounding this 13.5-acre parcel consisting of the QD arcs plus an additional 100-foot buffer around the QD arcs.



Proposed MSC Location

In addition, Building 685 (Medical Squadron facility) would be transferred to the Army, and Buildings 146 (Vehicle Operations/Maintenance), 574 (Equipment Storage), 992 (Equipment Storage), 684 (ASE), 686 (Pararescue facility), Munitions Storage Areas (MSAs) 1, 3, 4, and Hangar 3 would be returned to NASA (Figure 2.2-2 and Table 2.2-2).

2.2.2 Construction Associated with Consolidation of Main Cantonment Area

The following construction projects would be implemented for the purpose of consolidating all of the CAANG facilities into one main cantonment area.

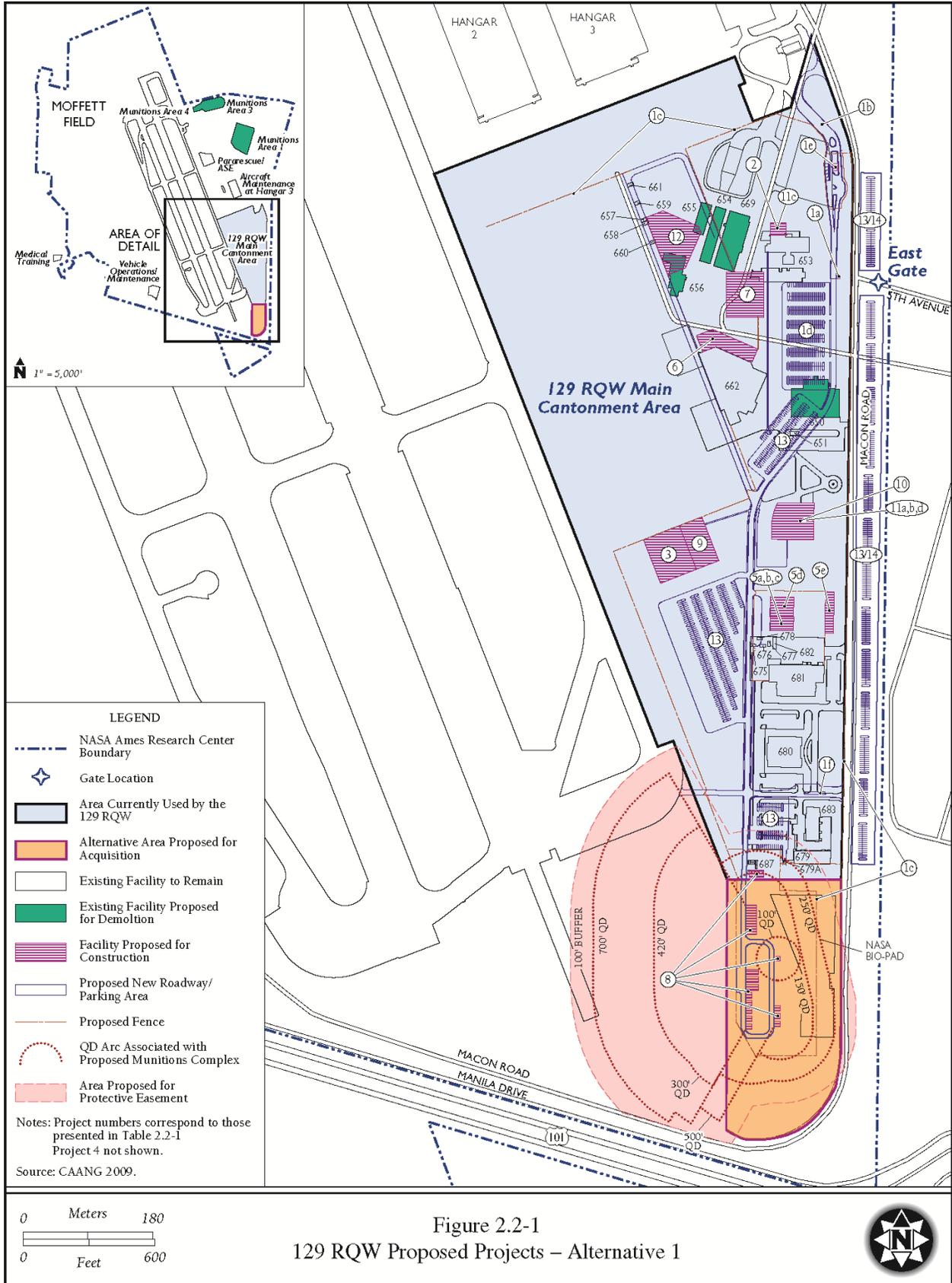
**Table 2.2-1. Proposed Projects
(Page 1 of 2)**

<i>Project Title¹</i>	<i>Total Construction Footprint (SF)</i>	<i>Total Demolition¹ (SF)</i>	<i>New Impervious Surface (SF)</i>	<i>Estimated Year of Implementation</i>
CONSTRUCTION ASSOCIATED WITH CONSOLIDATION OF MAIN CANTONMENT AREA				
Project #1 – QMSN 099051				
a) Overwatch	100		100	2010
b) Main Roadway	168,822		84,411	2010
c) Security Fence	10,673 linear feet		0	2010
d) Parking Lot	104,300		104,300	2010
e) Guard House and Vehicle Inspection Area	300		300	2010
f) Alternate Guard House	100		100	2010
Project #2 – QMSN 092802				
CATS/CATM Addition	1,293		1,293	2010
Renovation of Building 653				2010
Project #3 – QMSN 019029				
a) Aerospace Pararescue and Recovery	38,200		38,200	2011
b) Survival Equipment Shop	9,450		9,450	2011
c) Life Support	7,130		7,130	2011
Project #4 – QMSN 092803				
Communications Tower Relocation	3,500			2011
Project #5 – QMSN 099104				
a) Vehicle Maintenance Shop	5,600		5,600	2012
b) Refueler Maintenance Shop	1,500		1,500	2012
c) Vehicle Administration	1,300		1,300	2012
d) Aerial Port	19,700		19,700	2012
e) Vehicle Maintenance and Base Hazardous Storage Shed	7,800		7,800	2012
Project #6 – QMSN 099105				
Jet Engine Inspection and Maintenance Shop	7,000		0	2012
Project #7 – QMSN 099106				
ASE Complex	14,600		7,300	2013
Project #8 – QMSN 099107				
New MSC	5,500		5,500	2013
Demolition of MSA 1 (Buildings 70-74, 143, 147, and 528)		3,392		
Demolition of MSA 3 (Buildings 484-492)		11,449		
Demolition of MSA 4 (Building 561)		2,180		
OTHER CONSTRUCTION				
Project #9 – QMSN 099108				
a) Squadron Operations	36,700		36,700	2014
b) Administration for Weather Flight	950		950	2014
c) Demolition of Building 654		13,067		2014
d) Demolition of Building 669		26,304		2014
Project #10 – QMSN 099109				
a) Reserve Forces Ops Training	21,400		21,400	2014
b) Band	7,000		7,000	2014
c) Audio Visual Center	2,550		2,550	2014

**Table 2.2-1. Proposed Projects
(Page 2 of 2)**

<i>Project Title¹</i>	<i>Total Construction Footprint (SF)</i>	<i>Total Demolition¹ (SF)</i>	<i>New Impervious Surface (SF)</i>	<i>Estimated Year of Implementation</i>
Project #11 - QMSN 099110 and 092804				
a) Reserve Forces General Training	9,100			
b) Deployment Processing Center	8,000			
c) Physical Fitness Center	2,780			
d) Dining Hall	8,500			
Project #12 - QMSN 099111				
a) Corrosion Control Facility	3,100		9,100	2015
b) Fuel Cell Maintenance Hangar (Fixed Wing Bay)	29,700		8,000	2015
c) Fuel Cell Maintenance Hangar (Helicopter Bay)	8,400		2,780	2015
d) Demolition of Building 655		7,074	8,500	2015
e) Demolition of Building 656		13,064	0	2016
Project #13 – QMSN 099112 and QMSN 099115				
Additional Parking ²	607,200		173,325	2015-2017
Demolition of Building 650		34,092		2015-2017
Project #14				
Photovoltaic generation system (solar panels)	NA		NA	2015-2017
TOTAL SF³	989,678	107,401	412,392	

- Notes: 1. Buildings may be demolished for multiple purposes and projects, including providing space for new construction and/or because the building is being vacated and is no longer needed. However, in the above table each building is listed only once under the project for which it is primarily being demolished. Demolition of existing facilities would typically be included in the identified MILCON projects only if the existing facility is in the way of construction. Other demolition efforts would be subject to specific identification of demolition funding/appropriation.
2. A large portion of the parking would be constructed on existing impervious surface. However, the parking lot located outside the installation, approximately 325,400 SF, would be constructed using a pervious surface such as gravel or pavers.
3. Totals do not include renovation square footage.
- SF = square feet



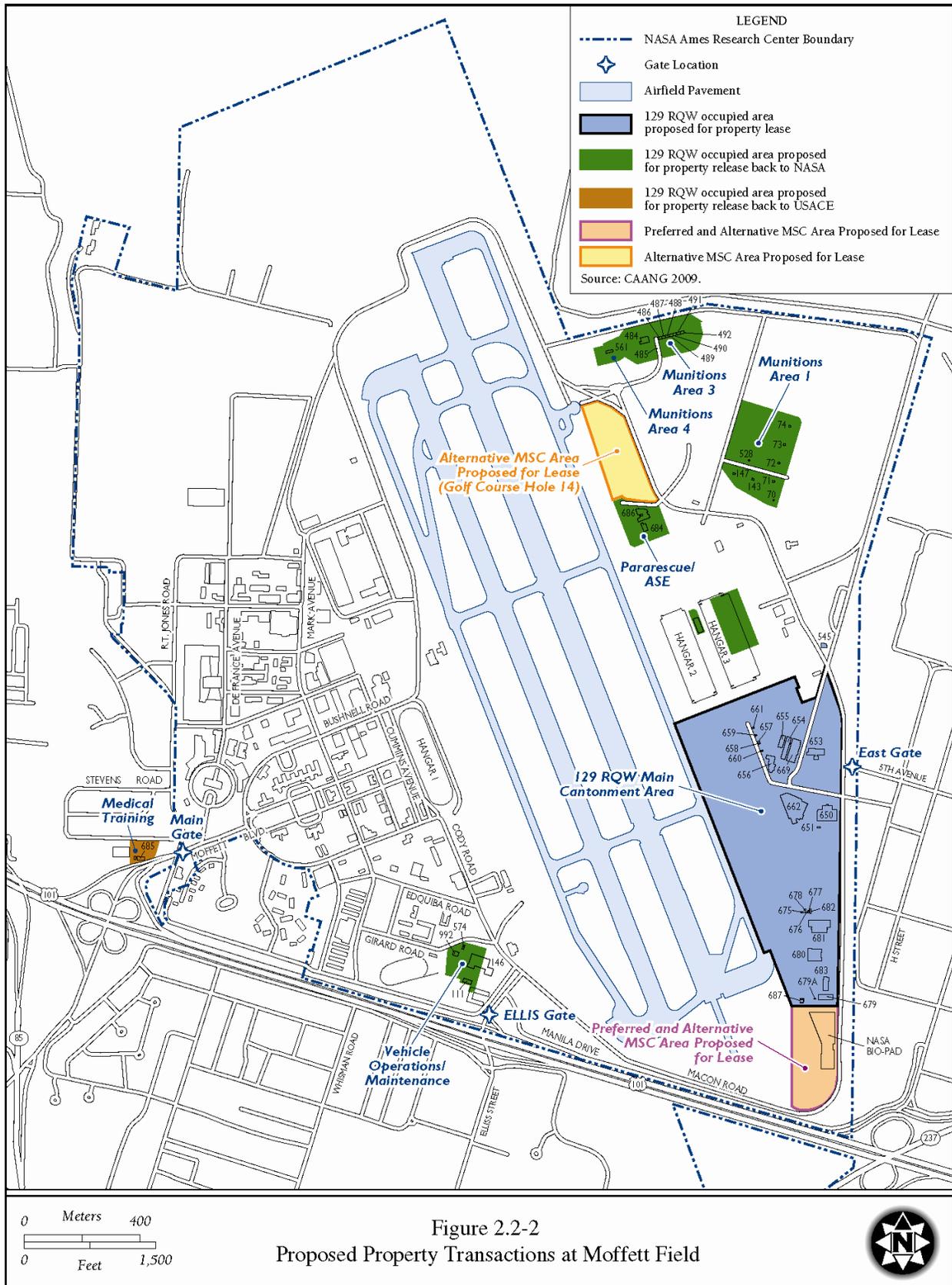


Table 2.2-2. Photographs of 129 RQW Properties to be Relinquished

MSA 3		
		
MSA 1	Building 146	Building 574
		
Building 684	Building 685	Building 686
		

Project 1: Force Protection Measures

The 129 RQW would require additional force protection measures to create a secure cantonment area separate from the NASA campus, given that in the NASA Ames Development Plan, NASA expressed its intent to create a shared use campus. In order to make the cantonment area compliant with AT/FP requirements, a chain-link security fence eight feet tall with barbed wire would need to be constructed to surround the entire cantonment area. Fences constructed near the east parallel runway (32R) would comply with Federal Aviation Regulation Part 77, *Obstructions to Navigation*, and established Obstacle Free Zones. In addition, a new entrance would be constructed at the northern end of the cantonment area, as shown in Figure 2.2-2. The new entrance would consist of a guard house, an overwatch, and a parking lot. The entrance would include drop-in or retractable bollards to slow traffic through a serpentine traffic flow. In addition, speed humps would be placed accordingly along the approach to the gate in order to slow traffic. An overwatch area would be located just inside the gate, which would act as final security for unauthorized personnel trying to enter the installation. This facility would have controls to activate an active vehicle barrier system (pop-up barrier), if needed. Construction of a new access road into and within the cantonment area would also be necessary. This road would be approximately 25 feet wide (including shoulders) and 1.5 miles long. Additional security AT/FP concerns are addressed in Project 8, MSC.

Project 2: CATS/CATM Addition

The 129 RQW requires adequate facilities for support of the CATS/CATM functions. The required facility would contain space for classroom instruction, administration, weapons maintenance, weapons cleaning and degreasing, weapons and ammunition storage, and a small arms simulator for handguns, rifles, shotguns, or submachine guns. This function is currently housed in Hangar 3 (Building 47), which is located west of the runway. In order to consolidate the 129 RQW facilities into one main cantonment area, a 4,073 square foot (SF) addition to Building 653 would be constructed to house the CATS/CATM functions. This addition would be collocated with the new fitness facility described under Project 11 below. The CATS/CATM function would occupy 1,293 SF of this facility. In addition, there would be approximately 507 SF of interior renovations to Building 653 to accommodate these new functions.

Project 3: Pararescue Facility, Life Support Maintenance Area, and Survival Equipment Shop

The 129 RQW requires facilities for support of units with an airborne pararescue mission. Pararescue personnel are on a continuous alert status and need the pararescue facility, life support maintenance area, and survival equipment shop in order to efficiently and quickly deploy rescue personnel using a variety of methods. Pararescue functions are currently scattered among

three locations in Buildings 656, 686, and Hangar 3. In order to consolidate this function into one facility within the main cantonment area, a new 54,780 SF building would be constructed near the south end of the ramp (refer to Figure 2.2-1). This facility would include areas for classrooms, administration, as well as a survival equipment shop that contains an area for parachute inspection and packing, a room for parachute washing and drying tower, sewing room for repair, and flotation room for inspection, inflation, and repacking of rubberized survival equipment. In addition, this facility would house space for life support systems maintenance, care, storage, and issue of flying clothing and equipment. This new building would be constructed southwest of Building 662 and would be adjacent or attached to the new Squadron Operations building described in Project 9 below.

Project 4: Relocation of Communications Towers

The construction of the new building for the pararescue facility (Project 3) would cause line of sight issues with the current communications towers, which are located adjacent to Building 688. As a result, the communications towers would need to be relocated to the west side of the airfield within NASA's antenna farm. Measures to deter raptors and other birds would be implemented on the communications tower. The existing concrete pad would remain; however, 3,500 linear feet of conduit would need to be installed from the current location to the antenna farm, running around the end of the airfield and along the right-of-way on Macon Road. The conduit would be buried approximately 3 to 4 feet deep.



Communications Towers

Project 5: Vehicle Maintenance shop, Vehicle Administration, and Aerial Port Training

The 129 RQW vehicle maintenance facilities are currently located west of the airfield, outside the CAANG main cantonment area (refer to Figure 1.3-2). Under this project, the 129 RQW would construct a new 28,100 SF facility north of Building 681 within the main cantonment area, in what is currently an open field. A separate 7,800 SF vehicle maintenance storage shed and base hazardous materials and hazardous waste storage facility would be constructed to the east, also within an open field. The larger of the two new facilities would contain space for general repair, painting, welding, testing, cleaning, and other general maintenance functions, as well as space for administrative functions. In addition, this facility would house classrooms for Aerial Port Training. Aerial Port personnel are trained in managing in-transit passenger and cargo movements. No formal facility is currently dedicated to Aerial Port Training; however, these functions are currently located in Building 681.

Project 6: Jet Engine Inspection and Maintenance Shop

The jet engine inspection and maintenance shop provides space for aircraft maintenance activities such as inspecting, maintaining, repairing, and servicing aircraft electrical and environmental related equipment. It also provides space for fabrication shops, an egress shop, aerospace systems shops, and reclamation operations on crash damage aircraft and equipment. The facility would have areas for administration, telecommunications, tool cribs, bench stocks, battery servicing, and storage and security of supplies and parts. The jet engine inspection and maintenance shop is currently located in Hangar 3. Under this project, the shop would be moved to a 7,000 SF addition to Building 662. CAANG use of Hangar 3 would cease upon construction of this facility.

Project 7: ASE Complex

An ASE Complex would provide space for maintaining, repairing, and servicing ASE. This includes an indoor wash rack, work benches, sealed lead acid battery servicing area, engine exhaust system used for training, tool crib, bench stock, and administrative space. These functions are currently housed in Buildings 684 and 499, and would be consolidated into a new 14,600 SF building, located north of Building 662. This area currently consists of paved areas and open fields.

Project 8: Munitions Storage Complex

MSAs 1, 3, and 4 are currently located north of the main cantonment area (Figure 1.3-2). This project would consolidate all the munitions storage into one new MSC facility within the main cantonment area, and reduce travel distance for munitions distribution within the installation. The preferred location for the new MSC is south of the existing main cantonment area, within the proposed parcel acquisition (described in Section 2.2.1) south of the NASA Bio Pad. This project would include one conventional munitions administration building, one building for Maintenance and Inspection (M&I), one building for storage of munitions, three earth covered storage igloos, and eight earth covered mini-igloos for storage of munitions. These facilities would total 5,500 SF and would be located in what is now an open field. Restrictions apply to areas immediately surrounding munitions storage facilities to provide separation between facilities and activities for safety purposes. The size of these areas, known as QD arcs, vary depending on the type and quantity of munitions stored. In addition, a buffer area must be maintained between the Cantonment Area fence and the MSC fenced area to allow for security



Proposed MSC Location

response outside of the MSC area. Security Force Vehicles must be able to be at a minimum of 25 meters away from the MSC security fence, while still within the Cantonment Area fence. MSAs 1, 3, and 4 would be vacated and returned to NASA, and would eventually be demolished. MSAs 3 and 4, which are in an existing NASA owl preserve would be managed for Burrowing Owl mitigation as intended in the NASA Area Development Plan EIS and ROD (2002).

2.2.3 Additional Construction

ANG Handbook 32-1084, *Facilities Handbook*, provides guidance on standards and requirements for facilities within the ANG. The goal of the facility requirements handbook is to promote economy and efficiency in the use and development of facilities. In addition to consolidating the CAANG facilities into one main cantonment area, the 129 RQW proposes to construct new facilities that would meet with the intentions of the handbook and better facilitate the mission.

Project 9: Squadron Operations Building

The 129 RQW requires facilities for squadron operation functions including administration, scheduling, training, briefing and personal equipment maintenance and storage for aircrews. Currently, squadron operation functions are located within four different buildings (654, 656, 669, and Hangar 3), which impairs efficient operations. The construction of the new Squadron Operations Building would consolidate all of the squadron operations into one building. In addition, this building would house administration functions for the 129 RQW Weather Flight. The new Squadron Operations Building would be a 2-story building, with a footprint of approximately 36,700 SF, located south of Building 662. This new building would be adjacent or attached to the new Pararescue Facility described above in Project 3. Alternative #1 includes vacating Hangar 3 and demolishing Buildings 654, 656, and 669.

Project 10: Reserve Forces O&T, Band, Audio-Visual

The 129 RQW requires facilities for Reserve Forces Operations and Training (O&T), as well as for the Band and audio-visual operations. O&T requires adequate training classrooms to conduct lectures with the aid of computers and “state of the art” audio-visual equipment. The 561st Air Force Band requires proper acoustical space for the operation and administration of the band for rehearsing and performing. The Reserve Forces O&T is currently located in Buildings 680 and 653, while the band is currently located in Building 669. These functions would be relocated to a newly constructed 2-story building, with approximately a 56,650 SF footprint, located in what is now an open field. Within this facility, 30,950 SF would be dedicated to this project. The remaining 25,700 SF would be dedicated to general training, deployment processing, and a new dining hall described in Project 11. Under Alternative #1, buildings 650 and 669 would be demolished and Building 680 would be vacated.

Project 11: Dining Hall, Deployment Processing, General Training

Project 11 would include new facilities for a new fitness center, dining hall, administrative offices for deployment processing, and classroom facilities for general training. The fitness center would be located within a 4,073 SF addition to Building 653 and would occupy 2,780 SF of the facility. The dining hall, deployment processing, and general training would comprise 25,700 SF within the new 56,650 SF building described in Project 10.

Project 12: Corrosion Control, Fuel Cell Maintenance Hangar

Currently the 129 RQW does not have a dedicated space for the Corrosion Control function. The purpose of a Corrosion Control facility is to provide for proper maintenance of aircraft and ground support equipment. The Corrosion control facility would include an environmentally controlled area to wash aircraft and equipment and provides hangar space for corrosion treating, repairing, paint-stripping, and repainting. In addition, a fuel cell maintenance hangar and is required in order to provide space for aircraft maintenance of fuel systems (external aircraft fuel tanks) with proper mechanical ventilation, fume sensing and alarm, fire extinguishing systems, and wash down drainage trenches. Under this project, the 129 RQW would build a 41,200 SF hangar for these functions north of Building 662, where existing parking and Buildings 655 and 656 are currently located. Buildings 655, 659, and associated parking would be demolished in order to provide space for this new construction.



**Proposed Corrosion Control Facility
Location**

Project 13: Additional Parking

Three additional parking areas would be required to support the new buildings that are being constructed, as well as to support the operations currently being housed within existing buildings. These three parking areas to be constructed under this project would total approximately 607,200 SF and would be located partially where Building 650 is currently located and partially within what is now an open field. Building 650 would be demolished in order to provide space for this new construction. Per AT/FP requirements (UFC 4-010-01), within a controlled perimeter, such as the 129 RQW requires, parking cannot occur any closer than 10 meters (25 feet) to any building. Therefore, it is practical to locate a consolidated parking area in one or two large areas rather than creating several smaller parking lots that are limited in size due to this requirement. Constructing fewer but larger parking areas may require

slightly more walking from the parking area than before, but consolidation of parking improves overall efficiency of the installation and complies with the guidance for AT/FP.

The 129 RQW requires additional parking to support Unit Training Assembly (UTA) on the weekends. This new parking area would be located over an existing City of Sunnyvale reclaimed water supply easement within Moffett Field boundaries, but outside the 129 RQW main cantonment area, to the east along Macon Road. It would be split into two main covered parking areas, totaling approximately 325,400 SF in size. This parking area would not be paved, but would be constructed using a permeable surface such as gravel or pavers.

Project 14: Photovoltaic Generation System (Solar Panels)

To pursue the intent of EO 13423 to incorporate renewable energy at federal facilities, the additional parking areas outside of the main cantonment area (described in Project 13) would also be primary candidates for the construction of photovoltaic generator systems (solar panels). Solar panels would be constructed on the roofs of the covered parking.

The 129 RQW of the CAANG requires electrical power in order to meet its assigned missions. All operational, administrative, logistical, medical, and support are in need of reliable and cost effective electrical energy to meet current and forecasted demand loads and energy consumption. The 129 RQW is required to meet DoD requirement for the implementation of the use of renewable energy sources wherever economically feasible. Implementation of this system would reduce demand and associated charges in the peak summer months, reduce impact on the power grids, and provide for usage of a renewable energy source. In addition, critical facilities would continue to have power in the event of rolling blackouts or unexpected power outage.

2.2.4 Demolition

As a result of the construction of new facilities for the 129 RQW, existing facilities would be demolished that are obsolete and/or in the footprint of the proposed facilities. All facilities that previously contained hazardous materials would be closed in accordance with County of Santa Clara requirements. Table 2.2-3 describes the buildings and facilities that would be demolished.

Table 2.2-3. Proposed Demolitions

<i>Building Number</i>	<i>Building Description/Purpose</i>	<i>Area (SF)</i>
650	Aircraft Maintenance and Medical	34,092
654	Squadron Operations	13,067
655	Base Warehouse Supply and Equipment	7,074
656	Squadron Operations	13,054
669	Multi-use (Storage, band, small fitness center, squadron operations)	26,304
70-74, 143, 147, and 528	MSA 1	3,392
484-492	MSA 3	11,449
561	MSA 4	2,180



Building 650 Aircraft Maintenance and Medical



Building 654 Squadron Operations



Building 655 Storage (dry/cold)



Building 656 Squadron Operations



Building 669 Multi-Use Building (storage, band, small fitness center, squadron operations)



MSA 1



Building 486-492 MSA 3



Building 484 MSA 4

2.3 ALTERNATIVE #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented, including the MSAs 1, 3, and 4 as authorized and appropriated by Congress. However, the location of Project 8, the MSC, would differ. Rather than being located in the single cantonment area described under Alternative #1, the new MSC would be located on the north side of the main cantonment area, where Hole 14 of the golf course is currently located (Figure 2.3-1). This



Alternative #2 MSC Location

parcel of land is approximately 11.6 acres in size and would be acquired by permit from NASA in addition to the parcel located south of the cantonment area described in Alternative #1. Additionally, there would be a 28-acre restricted easement (or some other similar real property instrument) surrounding this 11.6-acre parcel consisting of the QD arcs and a 100-foot buffer around the QD arcs that fall outside the parcel. This project would include construction of a 5,500 SF facility, including one conventional munitions building, one building for M&I, one building for storage of munitions, three earth covered storage igloos, and eight earth covered mini-igloos for storage of munitions 1. Security fencing would also be installed around this parcel of land and the MSC. The 13.5-acre parcel located south of the main cantonment area, described in Alternative #1, would still be acquired by permit for future development options.

This alternative would consolidate the CAANG facilities into two non-contiguous parcels, and would require a longer travel distance for munitions shipments than Alternative #1. This alternative would require the CAANG to reconfigure the golf course and reconstruct Hole 14 in an alternate location. Hole 14 would be relocated within one of the existing MSA areas, as approved and appropriated by Congress.

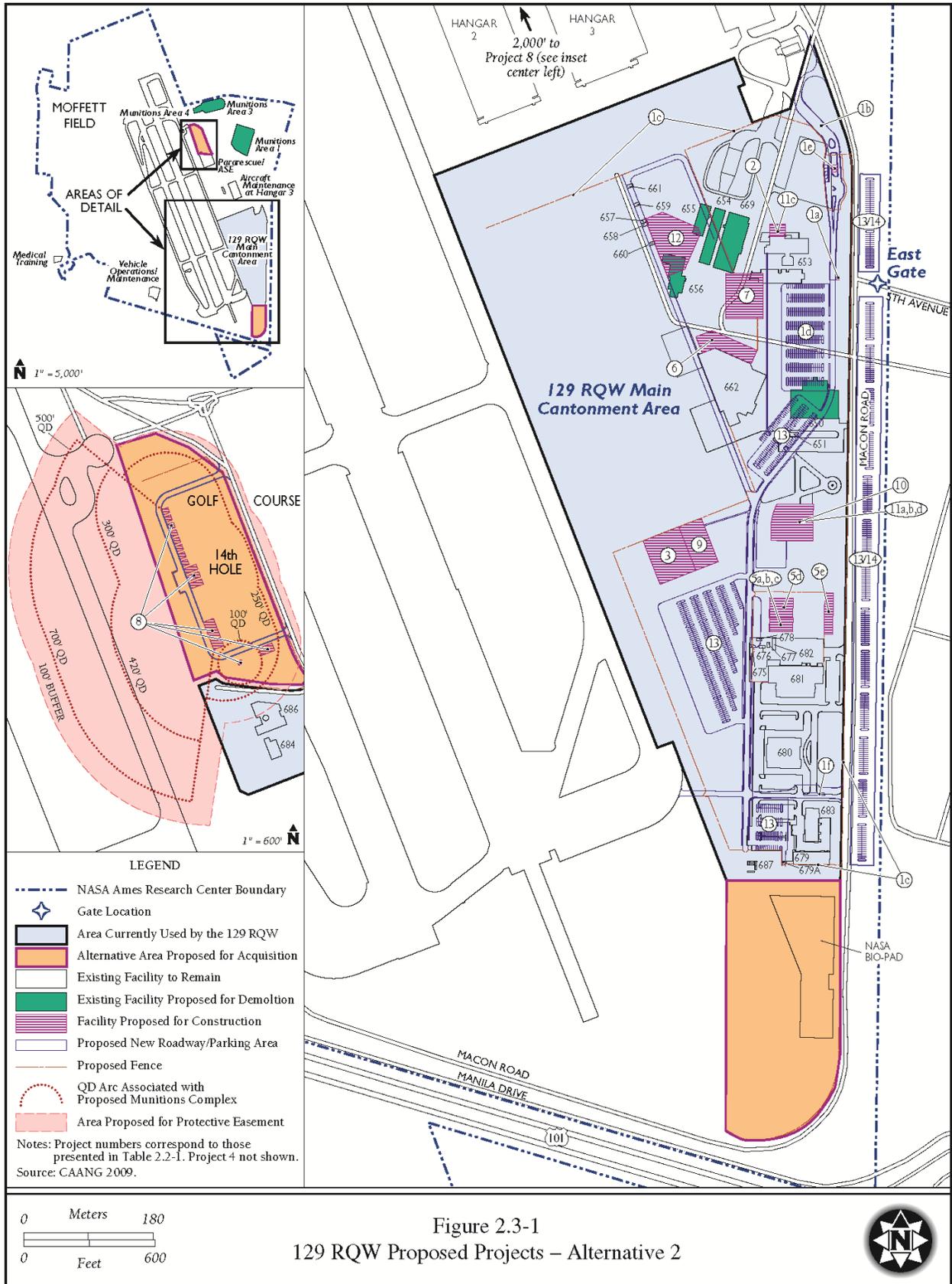


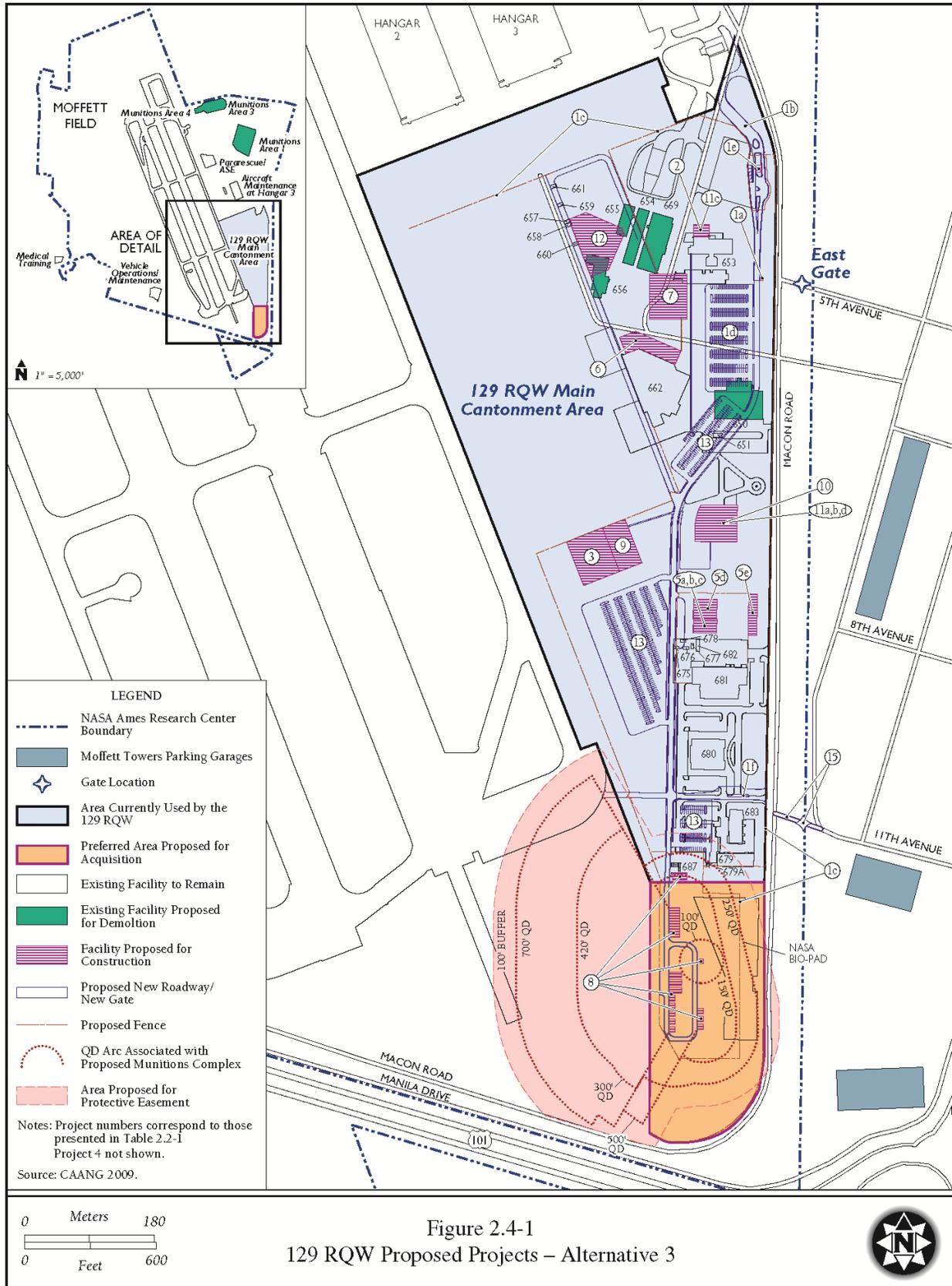
Figure 2.3-1
129 RQW Proposed Projects – Alternative 2

2.4 ALTERNATIVE #3

Under Alternative #3, all construction and demolition projects described under Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. Currently, approximately 250 CAANG personnel enter the facility on weekdays while approximately 900 people enter the facility during the once-per-month drill weekend. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. As described above, NASA has stated in the NASA Ames Development Plan and associated Programmatic EIS and ROD (2002) that it may eventually open up the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public. Until NASA decides to open up these areas, controlled access at this proposed gate would be required. As 129 RQW personnel frequently need to drop equipment from their POV's off at their workplace, this entrance would allow for convenient access to the main cantonment area from the Moffett Towers parking garages. A roadway extension connecting 11th Avenue to Macon Road would also be constructed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 square feet [SF] of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. This project is labeled as Project #15 on Figure 2.4-1.

2.5 ALTERNATIVE #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. Currently, approximately 250 CAANG personnel enter the facility on weekdays while approximately 900 people enter the facility during the once-per-month drill weekend. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. As indicated above, NASA has stated in the NASA Ames Development Plan and associated Programmatic EIS and ROD (2002) that it may eventually open up the NASA Research Park (on the west side of the runway) and the Eastside/Airfield (east of the runway) to the public. Until NASA decides to open up these areas, controlled access at this proposed gate would be required. As 129 RQW personnel frequently need to drop equipment from their POV's off at their workplace, this entrance would allow for convenient access to the main cantonment area from the Moffett Towers parking garages. A roadway extension connecting 11th Avenue to Macon Road would also be constructed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. This project is labeled as Project #15 on Figure 2.5-1.



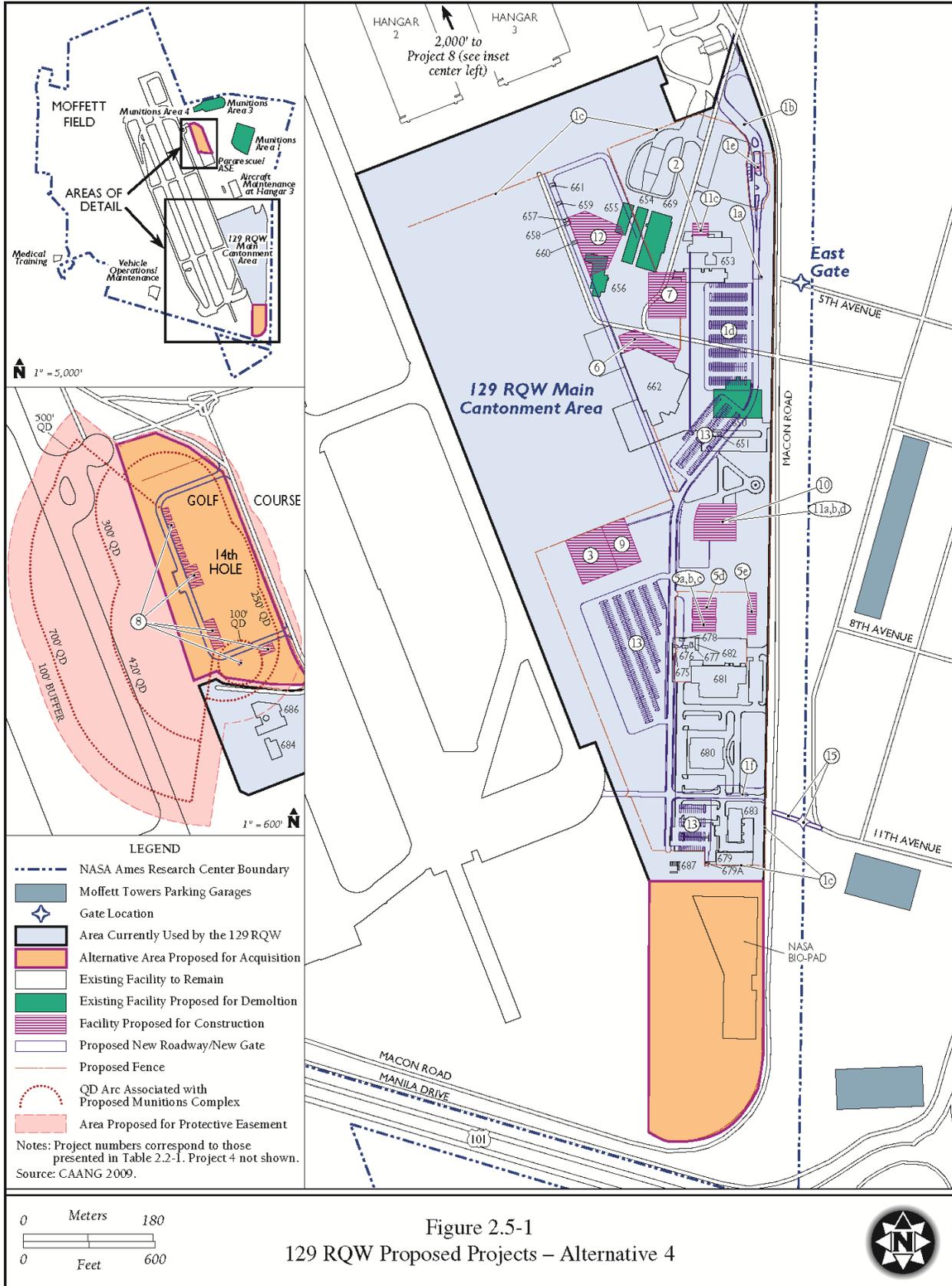


Figure 2.5-1
 129 RQW Proposed Projects – Alternative 4

2.6 NO ACTION ALTERNATIVE

The CEQ regulation 40 CFR § 1502.14(d) specifically requires analysis of the “No Action” alternative in all NEPA documents. Under the No Action Alternative, the 129 RQW would not implement the actions described above; the 129 RQW would maintain their existing facilities and would not build the new facilities proposed. CAANG would continue to operate without an agreement with NASA, which would not meet current Congressional intent or 1994 Navy direction to tenants to renegotiate use agreements with NASA within 6 months of the Navy transfer of the majority of the former NAS Moffett Field to NASA. Under the No Action Alternative, existing AT/FP deficiencies would remain, and would be exacerbated once NASA opened their campus to the public, leaving the installation vulnerable to close attack by potential terrorist activity, and resulting in potential threats to mission-critical resources and potentially impairing the 129 RQW’s ability to conduct their mission successfully. It is important to note that under the No Action alternative, activities described above would not be implemented; however, any activities that have already been analyzed under separate or even subsequent NEPA could be implemented, as appropriate per the associated decision documents.

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CHAPTER 3

AFFECTED ENVIRONMENT

This section describes relevant existing environmental conditions for resources potentially affected by the four action alternatives, as well as the No Action Alternative, presented in Chapter 2. In describing the affected environment, a framework for understanding the potential direct, indirect, and cumulative effects of the proposed action and alternatives is provided.

As directed by guidelines contained in NEPA, CEQ regulations, and 32 CFR § 989, *et seq.*, *The Environmental Impact Analysis Process*, the description of the affected environment focuses only on those resource areas potentially subject to impacts and should be commensurate with the anticipated level of environmental impact.

This EA analyzes potential environmental effects for the following resource areas: earth resources, water resources, biological resources, air quality, land use and visual resources, socioeconomics and environmental justice, cultural resources, solid and hazardous materials and wastes, safety, and infrastructure/transportation. The following subsections contain definitions of each resource, and existing conditions for each resource within the associated region of influence (ROI) for each alternative.

3.1 EARTH RESOURCES

3.1.1 Definition of the Resource

Earth resources include geology, soils, and topography. Geology is the study of the origin, history, and structure of the earth and the materials of which it is made; geological resources of an area typically consist of surface and subsurface materials and their inherent properties. Soil refers to the unconsolidated earthen organic or mineral materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the suitability of the ground to support man-made structures and facilities. Relative to development, soils typically are described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use. Topography incorporates the physiographic or surface features of an area and is usually described with respect to elevation, slope, aspect, and landforms. Long-term geological, erosional, and depositional processes typically influence the topographic relief of an area.

The ROI for earth resources considered in this EA includes the 129 RQW installation. The geologic description for the project site is general to the Moffett Field including the 129 RQW, while the soils and topographic discussions are site specific, where applicable.

3.1.2 Existing Conditions

3.1.2.1 Geology

Moffett Field is located in the Santa Clara Valley within a physiographic area known as the Central California Coastal Valleys, an area consisting of gently sloping valley floors surrounded by high terraces, alluvial fans, and steep uplands. The coastal valleys in this area are considered structural basins and are filled primarily with marine sedimentary rocks. The coarser, more permeable sand and gravel deposits within these basins store relatively large volumes of fresh groundwater, often susceptible to saltwater intrusion and overdraft. The uplands, foothills, and hills in this area are also susceptible to landslides in steep areas where bedrock is weakened by fault movement and/or lack of cementation. The northeast-southeast orientation of the valleys is controlled by lateral movement along a regional set of faults including the Northern San Andreas, Rodgers Creek, Hayward, and Calaveras Fault Zones (United States Department of Agriculture [USDA] 2006).

Moffett Field is located within one of the most seismically active areas in the United States (U.S.). Although no known active faults exist at Moffett Field, the installation is proximate to three active faults: the Hayward-Rodgers Creek Fault located nine miles to the northeast, the Calaveras Fault located 13 miles to the southeast, and the Northern San Andreas Fault located nine miles to the west (NASA 2002). The probability of a large magnitude earthquake within the next 30 years is considered to be particularly high along the Hayward-Rodgers Creek Fault Zones, and has been historically high along the San Andreas Fault Zone (United States Geological Survey [USGS] 2008). Impacts from seismic hazards at this location could include ground shaking, liquefaction, differential settlement, and cracking impacting the structural design, siting, and construction of buildings at the 129 RQW (NASA 2002; State of California 1996).

3.1.2.2 Soils

According to the Natural Resources Conservation Service (NRCS) and the USDA, the dominant soil orders within the Central California Coastal Valleys physiographic area include Alfisols, Entisols, Mollisols, and Vertisols. Soils in this area tend to be very deep, excessively drained to poorly drained, and loamy and clayey (USDA 2006).

A soil mapping unit represents an area that is dominated by one major kind of soil, or an area dominated by several types of soils (a complex). Moffett Field has three distinct soil mapping units:

Sunnyvale silty clay: The majority of the Moffett Field consists of Sunnyvale silty clay to a depth between 11 and 18 inches. The Sunnyvale silty clay is characterized by a black clay to

clay loam, fine texture, poor drainage, high fertility, moderate alkalinity, and a strongly calcareous subsoil (NASA 2002; NRCS 1975).

Alviso clay: The northern end of the Eastside/Airfield area consists of Alviso clay to a depth between 6 to 10 inches. Alviso clay soils are typically saline (due to proximity to tidal marsh) and dark gray with calcareous subsoil. These soils typically exhibit low fertility, very poor drainage, very slow runoff, and slow permeability. As the water table in this area is only one to three feet below the surface, this soil type is usually damp (NASA 2002; NRCS 2001).

Kitchen middens: Soils located in the middle of the Eastside/Airfield area are classified as Kitchen middens. This soil is characteristically dark gray, calcareous, or clay loam with materials such as ashes, stones, bones, or mixed-in shell fragments (NASA 2002).

The soil types above exhibit characteristics typical of soils high in clay content that can create structural hazards with regard to the construction of man-made structures and facilities including: (1) malleable and compressible surfaces which lead to soil compression and differential settlement around buildings; (2) high shrink-swell potential with seasonal fluctuations in the water table level that cause stress to concrete slabs and pavement resulting in cracking and heaving; and (3) low permeability of soils causing localized flooding conditions during heavy rains with the potential to corrode untreated pipes (NASA 2002; NRCS 1975, 2001).

3.1.2.3 Topography

Moffett Field is located in the Santa Clara Valley, a relatively flat alluvial plain at the southwestern edge of San Francisco Bay between the Northern San Andreas and Hayward-Rodgers Creek faults. The valley is bordered to the west by the Santa Cruz Mountains and to the east by the Diablo Range (USDA 2006). The site slopes from north to south at a rate of about one percent and changes from an elevation of approximately 40 feet above sea level in the southern portion and at or below sea level in the northern area of the airfield. Subsidence of the valley occurred due to agricultural pumping which ceased in the 1930s. The major topographic features are a series of flood control levees north of Moffett Field that provide marginal protection from tidal flooding of the San Francisco Bay (CAANG 1998a). The USACE is currently conducting a South San Francisco Bay Shoreline Study to evaluate the need for levee improvements (USACE 2009).

3.2 WATER RESOURCES

3.2.1 Definition of the Resource

Water resources analyzed in this EA include both surface and groundwater quantity and quality, and floodplains. Wetlands are discussed in Section 3.3, *Biological Resources*. Drinking water

wells and distribution systems, reclaimed water systems, wastewater facilities, and stormwater infrastructure are discussed in Section 3.11, *Infrastructure*.

Surface water includes all lakes, ponds, rivers, and streams and is important for a variety of reasons including irrigation, power generation, recreation, flood control, and human health. The nation's waters are protected under the statutes of the CWA; the goal of which is to restore and maintain the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." Under the CWA Section 402, it is illegal to discharge any point and/or nonpoint pollution sources into any surface water without a National Pollutant Discharge Elimination System (NPDES) permit. The USEPA is charged with administering the NPDES permit program; however, the state of California has legal authority to implement and enforce the provisions of the CWA, while the USEPA retains oversight responsibilities. Pollutants regulated under the CWA include "priority" pollutants, including various toxic pollutants; "conventional" pollutants, such as biochemical oxygen demand measures (determining the rate of uptake of dissolved oxygen by biological organisms), total suspended solids, fecal coliform, oil and grease, and alkaline or acidic pH levels; and "non-conventional" pollutants, including any pollutant not identified as either conventional or priority. CWA Section 404 regulates the discharge of dredged and fill materials into waters of the U.S., including wetlands. Responsibility for administering and enforcing Section 404 is shared by the USACE and USEPA. The USEPA and USACE regard the use of mechanized earth-moving equipment to conduct activities in waters of the U.S. (e.g., land clearing, ditching, channelization, and in-stream mining) as regulated discharge of dredged or fill material under Section 404, unless project-specific evidence shows otherwise. Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must obtain certification from the state in which the discharge would originate, or if appropriate, from the interstate water pollution control agency with jurisdiction over affected water at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval [such as the issuance of a state 404 permit]) must also comply with the CWA Section 401.

The Coastal Zone Management Act of 1972 (16 USC Section 1451 *et seq.*), with the California State Coastal Conservancy as the regulatory body, encourages coastal states to develop comprehensive programs to manage coastal resources. It requires federal agency activities to be consistent with the state's federally approved coastal management program.

Groundwater includes the subsurface hydrologic resources of the physical environment and can be a safe and reliable source of fresh water for the general population, especially those in areas of limited precipitation and is commonly used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater is the part of precipitation that seeps down

through the soil until it reaches rock material that is saturated with water. Water in the ground is stored in the spaces between rock particles. Groundwater also plays an important part in the overall hydrologic cycle. Its properties are described in terms of depth to aquifer or potentiometric surface, water quality, and surrounding geologic composition. An aquifer is a formation, group of formations, or part of a formation that contains sufficient saturated, permeable material to yield significant quantities of water to wells and springs. Groundwater in California is regulated under the Federal Safe Drinking Water Act, the California Safe Drinking Water and Toxic Enforcement Act of 1986, and the State Porter-Cologne Act implemented by the State Water Resources Control Board, the State Department of Public Health Division of Drinking Water and Environmental Management, and the San Francisco Bay Regional Water Quality Control Boards (RWQCB). In addition, the Santa Clara Valley Water District Ordinance 90-1 regulates wells and other deep excavations that may affect groundwater resources.

Floodplains are defined by EO 11988, *Floodplain Management*, as “the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, the area subject to a one percent or greater chance of flooding in any given year” (that area inundated by a 100-year flood). Floodplains and riparian habitat are biologically unique and highly diverse ecosystems providing a rich diversity of aquatic and terrestrial species, as well as promoting stream bank stability and regulating water temperatures. EO 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development whenever there is a practicable alternative.

In 1969, the California Legislature enacted the Porter-Cologne Water Quality Control Act to preserve, enhance, and restore the quality of California’s water resources. The Act established the State Water Resources Control Board and nine RWQCBs as the principal state agencies with the responsibility for controlling water quality in California. Under the Act, water quality policy is established, water quality standards are enforced for both surface and ground water, and the discharges of pollutants from point and non-point sources are regulated. In California, the NPDES program is administered by the State Water Resources Control Board and the RWQCBs who issue NPDES permits and enforce regulations within their respective region.

The ROI for water resources in this EA is Moffett Field, and nearby surface waters that receive runoff generated within the project area.

3.2.2 Existing Conditions

3.2.2.1 Surface Water

The 129 RQW installation lies within the Santa Clara Basin. This large regional watershed encompasses 840 square miles and drains to the South Bay portion of the San Francisco Bay (Santa Clara Valley Water District 2003). The major hydrologic features surrounding the 129 RQW cantonment area include the San Francisco Bay (and associated saltwater evaporation ponds, stormwater retention ponds, and wetlands) abutting the airfield to the north; Coyote Creek and Guadalupe Slough to the east; and Stevens Creek to the west.

Surface water runoff on the installation is dominated by a series of manmade ditches, storm drains, and drainage swales. No natural surface water features are located within the 129 RQW property; however, stormwater drainage ditches, several small ponds, seasonal marshes, and stormwater retention ponds can be found within Moffett Field (NASA 2009a). In general, there are two separate drainage areas for Moffett Field: the western drainage system encompassing 680 acres and the eastern drainage system encompassing 1,010 acres. Stormwater from the eastern drainage system, including from the 129 RQW cantonment area, airfield runways, and all lands east of the runways, flows north through several storm drain lines and overland flow to the Northern Channel. This water is discharged downstream to the easternmost Lockheed pond through a culvert. This water is then pumped into the Moffett Channel where it is ultimately discharged into the Guadalupe Slough and then to the San Francisco Bay. Stormwater from the western drainage system of Moffett Field, including most of the area west of the runways, discharges through the Settling Basin and Eastern Diked Marsh to the Stormwater Retention Pond (NASA 2002, 2009a).

NASA and its tenants (including the 129 RQW) operate under NPDES permits (including General Permit *No. CAS000004* for stormwater discharges from small municipal separate storm sewer systems and *No. CAS000001* for industrial activities excluding construction activities) for stormwater runoff at Moffett Field (NASA 2009a).

3.2.2.2 Floodplains

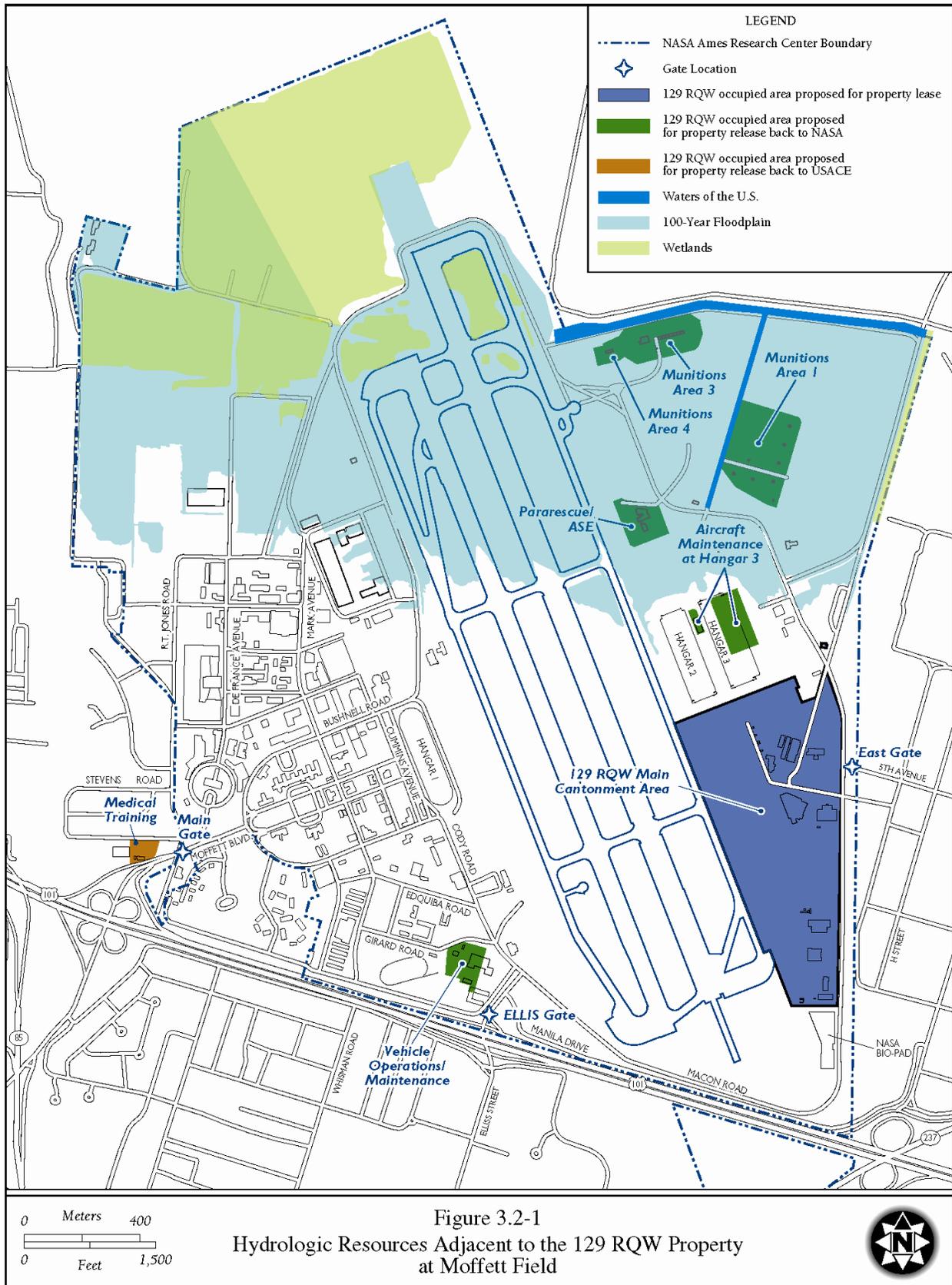
Per Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel No. 0603370045E, Moffett Field is located within an area designated as Zone D, indicating areas of undetermined, but possible, flood hazards (FEMA 1988). Per a NASA floodplain study (NASA 2002, n.d.), the majority of the northern portion of the Moffett Field is located within a 100-year floodplain. While the majority of 129 RQW facilities are located outside of the identified 100-year floodplain, the Pararescue/ASE facility and MSAs 1, 3, and 4 are located within

the 100-year floodplain (Figure 3.2-1). Moffett Field is protected from bay flooding by dikes and levees built to control flooding of salt ponds in South San Francisco Bay. Currently, the USACE is conducting a study to determine whether and how to improve the levee system.

3.2.2.3 Groundwater

Moffett Field is located within the Santa Clara Valley groundwater basin, a large, northwest-trending structural trough covering 153,600 acres (240 square miles) which is bordered by the Santa Cruz Mountains on the west and the Diablo Range on the east (Department of Health and Human Services 2009; Santa Clara Valley Water District 2004). Groundwater below Moffett Field is divided into four aquifers, listed in approximate distance from the surface: The A aquifer, which is divided into the Upper A aquifer (0 to 35 feet below ground surface [BGS]) and the lower A aquifer (35 to 55 feet BGS); the B aquifer (55 to 160 feet BGS); the C aquifer (160 to 250 feet BGS); and the Deep aquifer (> 240 BGS) (U.S. Department of the Navy 2009a). Groundwater elevations vary seasonally and with location throughout the 129 RQW cantonment area, but generally range between five and nine feet BGS (CAANG 1998a).

A regional groundwater contamination plume, located within the A and B aquifers, flows beneath Moffett Field towards the San Francisco Bay. There is no contamination in the C aquifer below Moffett Field or Deep aquifers. However, there is contamination in the C aquifer outside of Moffett Field. The regional plume stems from two main sources: 1) migration of groundwater contaminated with chlorinated volatile organic compounds (VOCs) from the USEPA-designated Superfund Site outside Moffett Field across U.S. Highway 101 at sites owned by the Middlefield-Ellis-Whisman (MEW) companies and 2) contamination from solvents, petroleum hydrocarbons, and fuel-related constituents (including benzene, toluene, ethylbenzene, and xylene) stemming from past military operations during the Navy's administration of the Base. The Navy, NASA, and the MEW companies are jointly conducting remediation and have installed and are operating groundwater remediation systems under USEPA and California RWQCB oversight. The groundwater remediation treatment systems operated by the Navy, NASA, and the MEW companies consists of a total of 18 groundwater extraction wells that pump groundwater to three nearby treatment plants, each individually operated by the Navy, NASA, and the MEW companies (NASA 2005; U.S. Department of the Navy 2009a). The estimated extent of the groundwater plumes beneath Moffett Field is illustrated in Figure 3.8-1. Also depicted in Figure 3.8-1 are the locations of Installation Restoration Program (IRP) sites, all of which is discussed in further detail in Section 3.8, *Hazardous Materials and Waste*.



Moffett Field is currently covered under a NPDES General Permit (*No. CAG912003*) to regulate discharge or reuse of extracted and treated groundwater resulting from the cleanup of groundwater polluted by VOCs (NASA 2009a).

3.3 BIOLOGICAL RESOURCES

3.3.1 Definition of the Resource

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall *et al.* 1997). Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. This analysis focuses on species or vegetation types that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute. For purposes of this EA, these resources are divided into four major categories: vegetation; wetlands; wildlife; and special status species.

Vegetation types include all existing terrestrial plant communities as well as their individual component species. The affected environment for vegetation includes only those areas potentially subject to ground disturbance.

Wetlands are considered sensitive habitats and are subject to federal regulatory authority under Section 404 of the CWA and EO 11990, *Protection of Wetlands*. Jurisdictional wetlands are defined by the USACE as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (U.S. Department of the Army 1987). Areas meeting the federal wetland definition are under the jurisdiction of the USACE. Wetlands generally include swamps, marshes, bogs, and similar areas. Like vegetation, the affected environment for wetlands includes only those areas potentially subject to ground disturbance.

Wildlife includes all fish, amphibian, reptile, bird, and mammal species with the exception of those identified as special status species. Wildlife also includes those bird species protected under the federal Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, and other species-specific conservation legal authorities. Assessment of a project's effect on migratory birds places an emphasis on "species of concern" as defined by EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. Additional assessment of potential impacts on migratory birds that are regionally rare occurs under the special status species category.

Special status species are defined as those plant and animal species listed as endangered, threatened, and species proposed for listing by the USFWS or California Department of Fish and Game (CDFG). The federal ESA protects federally listed endangered and threatened plant and animal species. Federally identified candidate species (species proposed for listing) are not protected under law; however, these species could become listed and, therefore, protected at any time. Their consideration early in the planning process may avoid future conflicts that could otherwise occur. Additionally, the CDFG protects state-listed plant and animal species through the California ESA and state fish and wildlife and administrative codes.

3.3.2 Existing Conditions

3.3.2.1 Vegetation

Most of the areas associated with CAANG facilities at Moffett Field are actively landscaped or paved, with little natural vegetation or habitat remaining. Due to land practices involved with airfield construction and maintenance, much of the airfield's native vegetation has been removed and is actively maintained (i.e., mowed or landscaped) to minimize bird/wildlife aircraft strike hazard (BASH) potential. Areas associated with CAANG buildings and facilities consist of landscaped vegetation comprised of ornamental trees, shrubs, and mowed lawns. The only quality natural vegetative communities and wildlife habitat within Moffett Field are located outside the proposed project area, within the Bay View area. This area includes seasonal salt marsh and dense stands of coyote brush (*Baccharis pilularis*) scrub.

3.3.2.2 Wildlife

Moffett Field is bordered to the south, east, and west by a substantial amount of urban development. Tidal marshes exist to the north and contain the majority of habitat supportive of wildlife. Wildlife species typically found in the vicinity of the CAANG facilities include those that tolerate human activity and development. Common species observed at the installation include pacific tree frog (*Hyla regilla*), American Coot (*Fulica americana*), House Finch (*Carpodacus mexicanus*), Mallard (*Anas platyrhynchos*), Mourning Dove (*Zenaida macroura*), Northern Mockingbird (*Mimus polyglottos*), Botta's pocket gopher (*Thomomys bottae*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), California ground squirrel (*Spermophilus beecheyi*), house mouse (*Mus musculus*), and western harvest mouse (*Reithrodontomys megalotus*). Due to its proximity to wetlands and open water habitats, the Bay View area supports a variety of migratory waterfowl including the Western Gull (*Larus occidentalis*), American Coot (*Fulica americana*), Canada Goose (*Branta canadensis*), Northern Shoveler (*Anas clypeata*), Mallard (*Anas platyrhynchos*), Green-backed Heron (*Butorides striatus*) and Pied-billed Grebe (*Podilymbus podiceps*) (NASA 2002).

The Don Edwards San Francisco Bay National Wildlife Refuge is approximately one mile northwest of Moffett Field. The refuge hosts over 280 species of shorebirds and waterfowl each year, millions of which stop over during spring and fall migration (USFWS 2009a).

3.3.2.3 Threatened and Endangered and Special Status Species

Four federally listed animals occur within the boundaries of Moffett Field; however, none occur within the project area. In addition, ten species of special concern and/or state listed species have been observed within Moffett Field (Table 3.3-1). The Western Burrowing Owl (*Athene cunicularia hypugea*), which is listed as a California Species of Concern, has been observed east of the airfield within the CAANG main cantonment area, but none have been observed within the proposed construction footprints. The Burrowing Owl is the only owl that nests underground, using burrows abandoned by other animals, primarily ground squirrels in northern California. Burrowing Owl habitat is typically open, dry, and sparsely vegetated. According to the *NASA Ames Development Plan Final Programmatic EIS* (NASA 2002), the South San Francisco Bay region supported a population of approximately 94 breeding pairs in 2004 (NASA 2009b). However, according to the CDFG, as of 2008 there are currently 50 breeding pairs (CDFG 2009). Past surveys have observed as many as 61 adults and 25 breeding pairs at Moffett Field (NASA 2002, 2009). However, recent surveys from spring of 2009 found 33 active burrows, 15 of which were active nests, 12 of the 15 nests had chicks, two were failed nests, and one was a nest of indeterminate success (Figure 3.3-1). During the 2009 survey, 74-75 total Burrowing Owls were observed (33-34 adults and 41 chicks). This is an increase of 37 percent from the 2008 survey, which identified 31 adults and 23 chicks (NASA 2009b). In addition, approximately 440 acres of grasslands and 330 acres of wetland areas are used for foraging. In 2002, NASA prepared a Burrowing Owl Habitat Management plan that presents techniques for protecting the owls and their habitat, and establishes several Burrowing Owl nesting habitat preserves comprising 81 acres (NASA 2002) (Figure 3.3-1). Additional areas are considered potential habitat for burrows, however are not considered part of the preserves (Figure 3.3-1). Mitigation measures were developed by NASA to avoid impacts to owls during normal operations and construction (NASA 2002).

3.3.2.4 Wetlands

Wetland delineations have been completed for portions of the Moffett Field, including the Bay View area, the Eastside Airfield area (excluding the golf course), and the area immediately north of the Bay View area (NASA 2002). Approximately 42.4 acres of seasonal jurisdictional wetlands were identified on Moffett Field. Approximately 5.3 acres of wetlands are located in the northwest portion within the Bay View area, while 16.8 acres are located north of the Bay View area. An additional 20.3 acres of wetlands occur on the east side of the airfield (Figure 3.2-1) (NASA 2002). However, no wetlands occur within the project area for proposed construction and demolition at the 129 RQW installation.

**Table 3.3-1. Endangered, Threatened, and Special Status Species Present at Moffett Field
(Page 1 of 2)**

<i>Common Name</i>	<i>Scientific Name</i>	<i>Federal Status</i>	<i>State Status</i>	<i>Description and Location within Moffett Field</i>
Salt Marsh Common Yellowthroat	<i>Geothypis trichas sinuosa</i>	-	SSC	Rare migrant during breeding season (March – July) in freshwater and brackish marshes and adjacent habitat within and north of Bay View area; not present within the project area.
Loggerhead Shrike	<i>Larius ludovicianus</i>	SSC	SSC	Resident and winter visitor in lowland and foothills – observed in Bay View area in upland habitats adjacent to freshwater and brackish marshes; not present within the project area.
White-tailed Kite	<i>Elanus leucurus</i>	-	FP	Year-round resident of low rolling foothills, valley margins, and forages in open grasslands and marsh habitats. Common at Moffett Field, and have been found nesting north of Bay View area; not present within the project area.
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	FFNCC	SSC	Habitat is typically open, dry, and sparsely vegetated. Recent surveys from spring of 2009 have found 33 active burrows. 74-75 total Burrowing Owls were observed (33-34 adults and 41 chicks). Some projects are located within habitat preserves, some active nests are located near or within a project area, but not within the footprint.
Northern Harrier	<i>Circus cyaneus</i>	-	FP	Found in coastal salt and freshwater marshes and are common in the Bay View area; not present within the project area.
Golden Eagle	<i>Aquila chrysaetos</i>	-	SSC, MBTA, BGEPA	Observed in the Bay View area with foraging habitat available in the non-native grasslands and weed-dominated habitats; not present within the project area.
Horned Lark	<i>Eremophila alpestris aetia</i>	-	SSC	Occur in open habitats with little tree coverage and has been observed in the Bay View area; not present within the project area.
American Peregrine Falcon	<i>Falco peregrines anatum</i>	-	E	Foraging habitat present within annual grasslands and weed-dominated area. Uncommon at Moffett Field.

**Table 3.3-1. Endangered, Threatened, and Special Status Species Present at Moffett Field
(Page 2 of 2)**

<i>Common Name</i>	<i>Scientific Name</i>	<i>Federal Status</i>	<i>State Status</i>	<i>Description and Location within Moffett Field</i>
Western pond turtle	<i>Clemmys marmorata</i>	-	SSC	Found in ponds, streams, marshes, and reservoirs; requires upland habitat for breeding. One has been observed in the Marriage Road Ditch in the eastside/airfield area, and several in the Northern channel, north of the eastside/airfield area; has not been observed within the main cantonment area or within the footprints of the proposed project area.
Salt marsh harvest mouse	<i>Reithrodontomys raviventris raviventris</i>	E	E	Found within coastal salt marsh habitat. Present north of Bay View area; not present within the project area.
California Brown Pelican	<i>Pelecanus occidentalis</i>	FDP	SCD	Found within coastal salt marsh habitat. Present north of Bay View area, not observed breeding; not present within the project area.
California Clapper Rail	<i>Rallus longirostris obsoletus</i>	E	E	Found within coastal salt marsh habitat. Present north of Bay View area; not present within the project area.
California Least Tern	<i>Sterna antillarum browni</i>	E	E	Found within coastal salt marsh habitat. Present north of Bay View area, not observed breeding; not present within the project area.
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T	-	Found within coastal salt marsh habitat. Present north of Bay View area, not observed breeding; not present within the project area.

E= Endangered

T= Threatened

FP = Fully protected under Section 3511 of the CDFG code.

FSNCC = Federal species of national conservation concern.

FDP = Federally proposed for delisting

SCD = State proposed for delisting

MBTA = Protected under the Migratory Bird Treaty Act

BGEPA = Protected under the Bald and Golden Eagle Protection Act

SSC = California Species of Special Concern

Source: NASA 2002

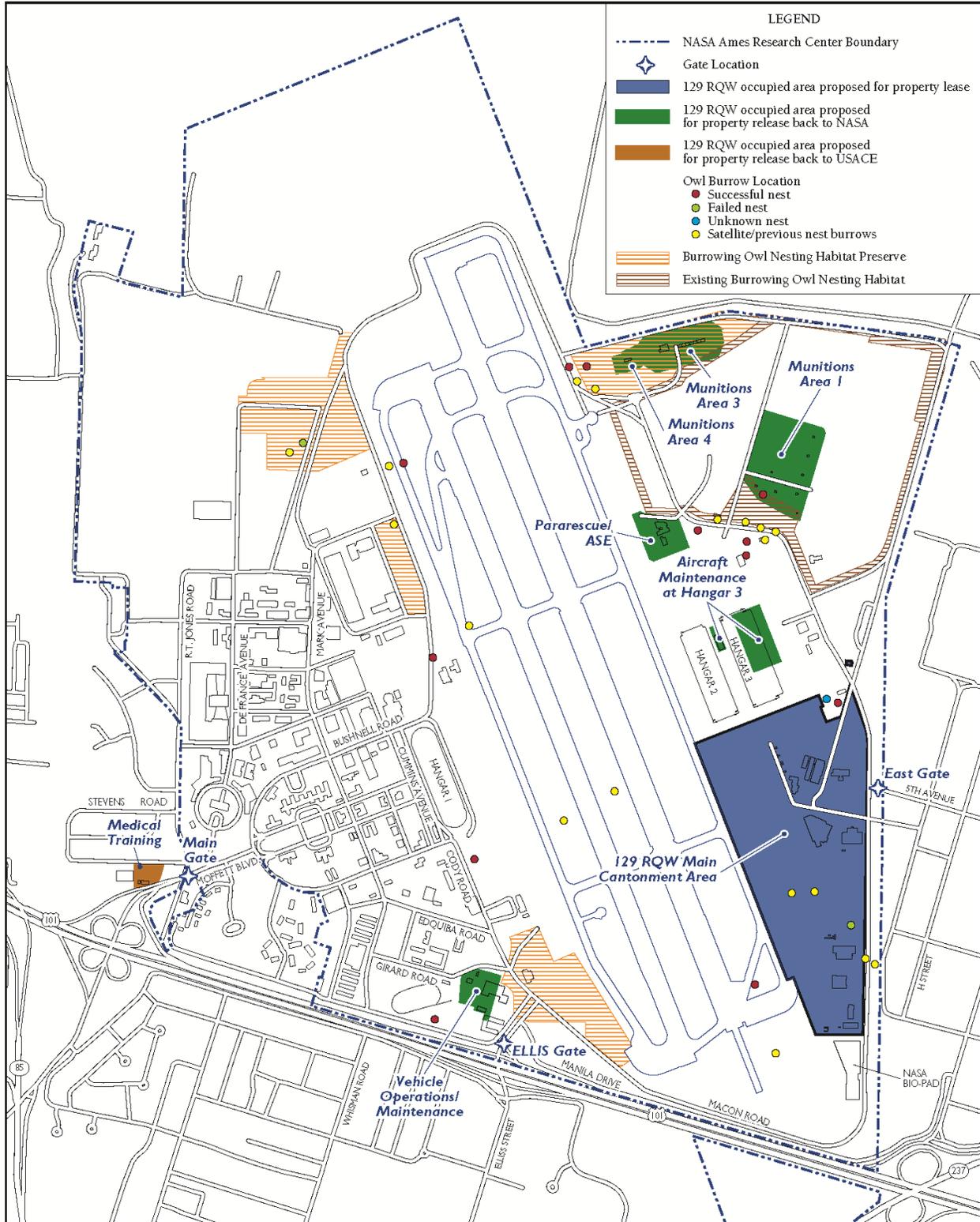


Figure 3.3-1
Burrowing Owl Burrow Locations and Habitat Areas
at Moffett Field



3.4 AIR QUALITY

3.4.1 Definition of the Resource

Air quality is defined as the ambient air concentrations of specific pollutants determined by the USEPA to be of concern to the health and welfare of the general public. There are six of these pollutants, also known as “criteria pollutants,” which include O₃, CO, NO₂, SO₂, PM_{2.5}, PM₁₀, and Pb. USEPA’s overall automotive emission control program has gradually reduced the Pb content of gasoline. This program has essentially eliminated violations of the Pb standard in urban areas except those areas with Pb point sources. There are no existing or proposed Pb point sources within the project footprint; therefore, Pb is not carried forward for detailed air quality analysis.

The national standards, established by the USEPA, are termed the NAAQS. The NAAQS represent maximum acceptable concentrations for pollutants of concern. State standards, established by the California Air Resources Board (CARB), are termed the California Ambient Air Quality Standards (CAAQS). The CAAQS are equal to or more stringent than the NAAQS and include pollutants for which national standards do not exist. Table 3.4-1 presents the applicable NAAQS and CAAQS for the project area.

3.4.1.1 Criteria Pollutants

Ozone: The majority of ground-level O₃ (more commonly known as “smog”) is formed as a result of complex photochemical reactions in the atmosphere between VOCs, nitrogen oxides (NO_x), and oxygen. VOCs and NO_x are considered precursors to the formation of O₃, a highly reactive gas that can damage lung tissue and affect respiratory function. While O₃ in the lower atmosphere is considered a damaging air pollutant, O₃ in the upper atmosphere is beneficial, as it protects the earth from harmful ultraviolet radiation. However, atmospheric processes preclude ground-level O₃ from reaching the upper atmosphere (USEPA 2009b).

Carbon Monoxide: CO is a colorless, odorless, poisonous gas produced by the incomplete combustion of fossil fuels. Elevated levels of CO can result in harmful health effects, especially for the young and elderly, and can also contribute to global climate change (USEPA 2009b).

Nitrogen Dioxide: NO₂ is a brownish, highly reactive gas produced primarily as a result of the burning of fossil fuels. NO₂ can also lead to the formation of O₃ in the lower atmosphere. NO₂ can cause respiratory ailments, especially in the young and elderly, and can lead to degradations in the health of aquatic and terrestrial ecosystems (USEPA 2009b).

Table 3.4-1. California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹	NATIONAL STANDARDS ²	
			Primary	Secondary
Ozone (O ₃)	8 Hour	0.070 ppm (137 µg/m ³)	0.075 ppm (147 µg/m ³)	Same as Primary Standards
	1 Hour	0.09 ppm (180 µg/m ³)	•	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	•
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1 Hour	0.18 ppm (339 µg/m ³)	•	
Sulfur dioxide (SO ₂)	Annual Arithmetic Mean	•	0.030 ppm (80 µg/m ³)	•
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	•
	3 Hour	•	•	0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	•	•
Respirable Particulate Matter ≤ 10 Microns in Diameter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	•	Same as Primary Standards
	24 Hour	50 µg/m ³	150 µg/m ³	
Respirable Particulate Matter ≤ 2.5 Microns in Diameter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	15.0 µg/m ³	Same as Primary Standards
	24 Hour	No Separate Standard	35 µg/m ³	
Sulfates	24 Hour	25 µg/m ³	•	•
Lead (Pb)	30 Day Average	1.5 µg/m ³	•	•
	Calendar Quarter	•	1.5 µg/m ³	Same as Primary Standard
	Rolling 3-Month Average	•	0.15 µg/m ³	
Hydrogen Sulfide (H ₂ S)	1 Hour	0.03 ppm (42 µg/m ³)	•	•
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m ³)	•	•
Visibility Reducing Particles	8 Hour (10 a.m. to 6 p.m.)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent. Measurement in accordance with CARB Method V.	•	•

Notes: 1. CO, SO₂ (1- and 24-hour), NO₂, O₃, PM₁₀, and visibility reducing particles standards are not to be exceeded.

2. No to be exceeded more than once a year except for annual standards.

ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter; • = no standard established

Sources: CARB 2009a; USEPA 2009a

Sulfur Dioxide: SO₂ is emitted primarily from the combustion of coal and oil by steel mills, pulp and paper mills, and from non-ferrous smelters. High concentrations of SO₂ can aggravate existing respiratory and cardiovascular diseases in asthmatics and others who suffer from emphysema or bronchitis. SO₂ also contributes to acid rain, which can in turn lead to the acidification of lakes and streams (USEPA 2009b).

Particulate Matter: PM_{2.5} is referred to as fine particulates, which are believed to pose significant health risks as they can lodge deeply into the lungs. Studies have linked increased exposure to PM_{2.5} to respiratory and cardiovascular disease as well as premature death (USEPA 2009b). PM₁₀ is typically comprised of dust, ash, soot, smoke, or liquid droplets emitted into the air. Fires, unpaved roads, construction activities, and natural sources (wind and volcanic eruptions) can contribute to increased PM₁₀ concentrations. PM₁₀ particles can be inhaled into the respiratory system, leading to the possible aggravation of lung diseases. Sources of PM_{2.5} and PM₁₀ include crushing or grinding operations and dust from paved or unpaved roads (USEPA 2009b).

Lead. Sources of Pb include pipes, fuel, and paint, although the use of Pb in these materials has declined dramatically in recent years. Pb can be inhaled directly or ingested indirectly by consuming Pb-contaminated food, water, or dust. Fetuses and children are most susceptible to Pb poisoning, which can result in heart disease and nervous system damage (USEPA 2009b).

3.4.2 Existing Conditions

3.4.2.1 Regulatory Setting

Under the federal CAA, as amended, states are responsible for enforcing the established air quality regulations. The CARB enforces air pollution regulations and sets guidelines, as contained in the California SIP, to attain and maintain the NAAQS and CAAQS within the state of California. The CAA Amendments of 1990 established new federal nonattainment classifications, new emission control requirements, and new compliance dates for nonattainment areas. The severity of the nonattainment classification drives the associated requirements and compliance dates. The following section provides a summary of the federal, state, and local air quality rules and regulations that apply to the Proposed Action.

Federal Requirements

Section 176(c) of the 1990 CAA Amendments contains the General Conformity Rule (40 CFR 51.850-860 and 40 CFR 93.150-160). The General Conformity Rule requires any federal agency responsible for an action in a nonattainment or maintenance area to determine that the action conforms to the applicable SIP. This means that federally supported or funded activities will not

(1) cause or contribute to any new air quality standard violation, (2) increase the frequency or severity of any existing standard violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone. The rule allows for approximately 30 exemptions, assuming that they conform to an applicable SIP. Emissions of attainment pollutants are exempt from conformity analyses. Actions would conform to a SIP if their annual direct and indirect emissions remain less than the applicable *de minimis* thresholds. Formal conformity determinations are required for any actions that exceed these thresholds. However, if the total emissions of a pollutant from a federal action exceed 10 percent of a nonattainment area's emissions inventory of that pollutant, the action is considered to be a regionally significant action and it would require a conformity determination. Based on the present attainment status of the San Francisco Bay Area Air Basin (see Section 3.5.3.3), the action alternatives would conform to the most recent USEPA-approved SIP if annual construction emissions do not exceed 100 tons of NO_x or VOCs.

State Requirements

The California CAA of 1988, as amended in 1992, outlines a program to attain the CAAQS for O₃, NO₂, SO₂, particulate matter, and CO by the earliest practical date. As shown in Figure 3.4-1, the CAAQS are more stringent than the NAAQS. CARB delegates the authority to regulate stationary source emissions to local air quality management districts. The CARB requires these agencies to develop their own strategies for achieving compliance with the NAAQS and CAAQS, but maintains regulatory authority over these strategies, as well as all mobile source emissions throughout the state.

Local Requirements

The Bay Area Air Quality Management District (BAAQMD) is responsible for regulating stationary sources of air emissions in the San Francisco Bay Area Air Basin. The BAAQMD Rules and Regulations (BAAQMD 2009) establish emission limitations and control requirements for stationary sources, based on their source type and magnitude.

The BAAQMD is responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the San Francisco Bay Area Air Basin. The Air District is in the process of preparing the 2009 Bay Area Clean Air Plan, which will include the following:

- update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California CAA to implement “all feasible measures” to reduce O₃;
- consider the impacts of O₃ control measures on particulate matter, air toxics, and greenhouse gases in a single, integrated plan; and

- review progress in improving air quality in recent years; establish emission control measures to be adopted or implemented in the 2009-2012 timeframe.

3.4.2.2 Climate and Meteorology

At an elevation just above sea level and adjacent to the moderating influence of San Francisco Bay and the nearby Pacific Ocean, the climate of Moffett Field is characterized by warm dry summers and cool, moist winters. During the warmer months of the year (normally May through October) the airfield is subject to morning and evening low clouds and fog with primarily sunny conditions occurring during the day. The majority of the annual average of 13.5 inches of rainfall occurs between November and April. The annual average high and low temperatures at Moffett Field are 68 degrees Fahrenheit (°F) and 50°F, respectively. Prevailing winds blow from the north-northwest in the region during daytime hours. Nocturnal winds and land breezes during the colder months of the year blow from the south.

3.4.2.3 Regional and Local Air Pollutant Sources

Moffett Field is located in the San Francisco Bay Area Air Basin, which includes the counties of San Francisco, Santa Clara, San Mateo, Marin, Napa, Contra Costa, and Alameda, along with the southeastern portion of Sonoma County and the southwestern portion of Solano County. As discussed above, the local air quality regulatory agency responsible for the basin is the BAAQMD.

An emission rate represents the mass of a pollutant released into the atmosphere by a given source over a specified period. The BAAQMD periodically updates emissions for the entire San Francisco Bay Area Air Basin for purposes of forecasting future emissions, analyzing emission control measures, and for use in regional air quality modeling. The largest regional sources of air emissions are on-road vehicles. The 2008 Santa Clara County inventory determined that on an average daily basis, on-road vehicles emitted 30 percent of VOCs, 50 percent of NO_x, and 62 percent of CO emissions within Santa Clara County (CARB 2009b). Combustion sources produce both primary fine particulate matter and fine particulate precursor pollutants, such as NO_x, which react in the atmosphere to produce secondary fine particulates. Coarser particles (PM₁₀ and PM_{2.5}) mainly occur from soil-disturbing activities, such as construction, mining, agriculture, wildfires, and vehicular road dust.

While the Bay Area is generally considered one of the cleanest major metropolitan areas in the country with respect to air quality, the San Francisco Bay Area Air Basin is in “marginal” nonattainment of the federal and state eight-hour ozone standards, and the state PM₁₀ and PM_{2.5} standards (USEPA 2009c; CARB 2009c). The San Francisco Bay Area Air Basin (including Santa Clara County) is also considered a “moderate” maintenance area for the federal CO

standards and is in compliance with all other federal and state air quality standards (USEPA 2009c; CARB 2009c).

3.4.2.4 Baseline Air Quality

The USEPA designates all areas of the U.S. as having air quality better than, equal to (attainment), or worse than (nonattainment) the NAAQS. The criteria for nonattainment designation vary by pollutant. An area is in nonattainment for O₃ if O₃ concentrations exceed the NAAQS more than three discontinuous times in three years and an area is generally in nonattainment for the other criteria pollutants if concentrations exceed the NAAQS more than once per year. The USEPA designates former nonattainment areas that have attained the NAAQS as maintenance areas. As discussed above, the San Francisco Bay Area Air Basin (including Santa Clara County) is in nonattainment of the federal O₃ standard and is a maintenance area for the CO standard (USEPA 2009c). The San Francisco Bay Area Air Basin is in nonattainment of the state O₃, PM₁₀, and PM_{2.5} standards (CARB 2009c). Table 3.4-2 presents representative air quality data for Moffett Field through monitoring data compiled by CARB from nearby monitoring stations between 2006 and 2008.

3.4.2.5 129 RQW Emissions

Emission sources associated with 129 RQW operations include civilian and military personal vehicles, commercial and military vehicles, aircraft engines, tactical support equipment, and small stationary sources. The 2007 *Air Emissions Inventory Report* for the 129 RQW summarizes estimated emissions from mobile and stationary sources and is the most recent documentation for 129 RQW emissions data (Table 3.4-3).

**Table 3.4-2. Representative Air Quality Data for
Moffett Field (2006-2008)**

<i>Air Quality Indicator</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<i>Ozone (O₃)⁽¹⁾</i>			
Peak 8-hour value (ppm)	0.079	0.069	0.076
Days above federal standard (0.075 ppm) ^(2,7)	1 ⁷	0	1
Days above state standard (0.070 ppm) ⁽³⁾	1	0	2
<i>Carbon monoxide (CO)⁽⁴⁾</i>			
Peak 8-hour value (ppm)	2.92	2.71	2.48
Days above federal standard (9.0 ppm)	0	0	0
Days above state standard (9.0 ppm)	0	0	0
<i>Particulate matter less than or equal to 10 microns in diameter (PM₁₀)⁽⁴⁾</i>			
Peak 24-hour value (µg/m ³)	73.2	69.1	57.3
Days above federal standard (150 µg/m ³)	0	0	0
Days above state standard (50 µg/m ³) ⁽³⁾	2	3	1
<i>Particulate matter less than or equal to 2.5 microns in diameter (PM_{2.5})⁽⁴⁾</i>			
Peak 24-hour value (µg/m ³)	64.4	57.5	41.9
Days above federal/state standard (35 µg/m ³) ^(3,5)	7	9	5
<i>Sulfur Dioxide (SO₂)⁽⁶⁾</i>			
Peak 24-hour value (ppm)	0.007	0.006	0.004
Days above federal standard (0.14 ppm)	0	0	0
Days above state standard (0.04 ppm)	0	0	0
<i>Nitrogen Dioxide (NO₂)⁽⁴⁾</i>			
Peak 1-hour value (ppm)	0.074	0.065	0.080
Days above state standard (0.18 ppm)	0	0	0

- Notes: 1. Data from the Sunnyvale-910 Ticonderoga Monitoring Station.
 2. The federal O₃ standard was revised downward in 2008 from 0.08 to 0.075 ppm.
 3. San Francisco Bay Area Air Basin is in nonattainment for the state PM₁₀, PM_{2.5}, and O₃ standards.
 4. Data from the San Jose-Jackson Street Monitoring Station.
 5. The federal PM_{2.5} standard was revised downward in 2007 from 65 to 35 µg/m³.
 6. Data from the San Francisco-Arkansas Street Monitoring Station.
 7. The federal eight-hour ozone standard was previously defined as 0.08 ppm (1 significant digit). Measurements are rounded up or down to determine compliance with the standard; therefore a measurement of 0.084 ppm is rounded to 0.08 ppm. The 8-hour ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to the standard.

ppm = parts per million; µg/m³ = micrograms per cubic meter
 Source: CARB 2009d

Table 3.4-3. Estimated Annual 129 RQW Emissions at Moffett Field (tons/year)

<i>Emissions</i>	<i>CO</i>	<i>NO_x</i>	<i>SO_x</i>	<i>VOCs</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
Stationary Sources	0.14	0.33	0.01	0.73	0.04	0.04
Mobile Sources	14.8	10.7	1.1	2.4	2.6	2.6
Total	19.9	11.0	1.1	3.1	2.7	2.7

Source: CAANG 2007

3.5 LAND USE AND VISUAL RESOURCES

3.5.1 Definition of the Resource

Land use comprises the natural conditions and/or human-modified activities occurring at a particular location. Human-modified land use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans and zoning regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally sensitive areas and sensitive noise receptors.

Several siting criteria have been established specific to land development and use at commercial and military airfields. For example, Runway Protection Zones, which address height restrictions, development density, and land use in and around civilian airports, are enforced to reduce the potential for aircraft-related hazards.

Visual resources are defined as the natural and manufactured features that comprise the aesthetic qualities of an area. These features form the overall impressions that an observer receives of an area or its landscape character. Landforms, water surfaces, vegetation, and manufactured features are considered characteristic of an area if they are inherent to the structure and function of a landscape.

3.5.2 Existing Conditions

3.5.2.1 Land Use

Moffett Field is located in an unincorporated portion of Santa Clara County. The airfield is surrounded by the City of Mountain View to the south and west and the City of Sunnyvale to the southeast, east, and north (see Figure 1.3-1). Land uses surrounding Moffett Field include industrial, agricultural, residential, commercial, and public recreation. Land to the north, northeast, and northwest of Moffett Field is mostly open space (primarily wetlands) or recreational. Land to the east, west, and south is generally industrial, with small pockets used for residential or open space/recreational purposes (CAANG 2004). Directly east of Moffett Field is Moffett Park, a business park dominated by high tech industrial, light industrial, light manufacturing, and interspersed commercial uses. An additional 8.7 million SF of this Park is

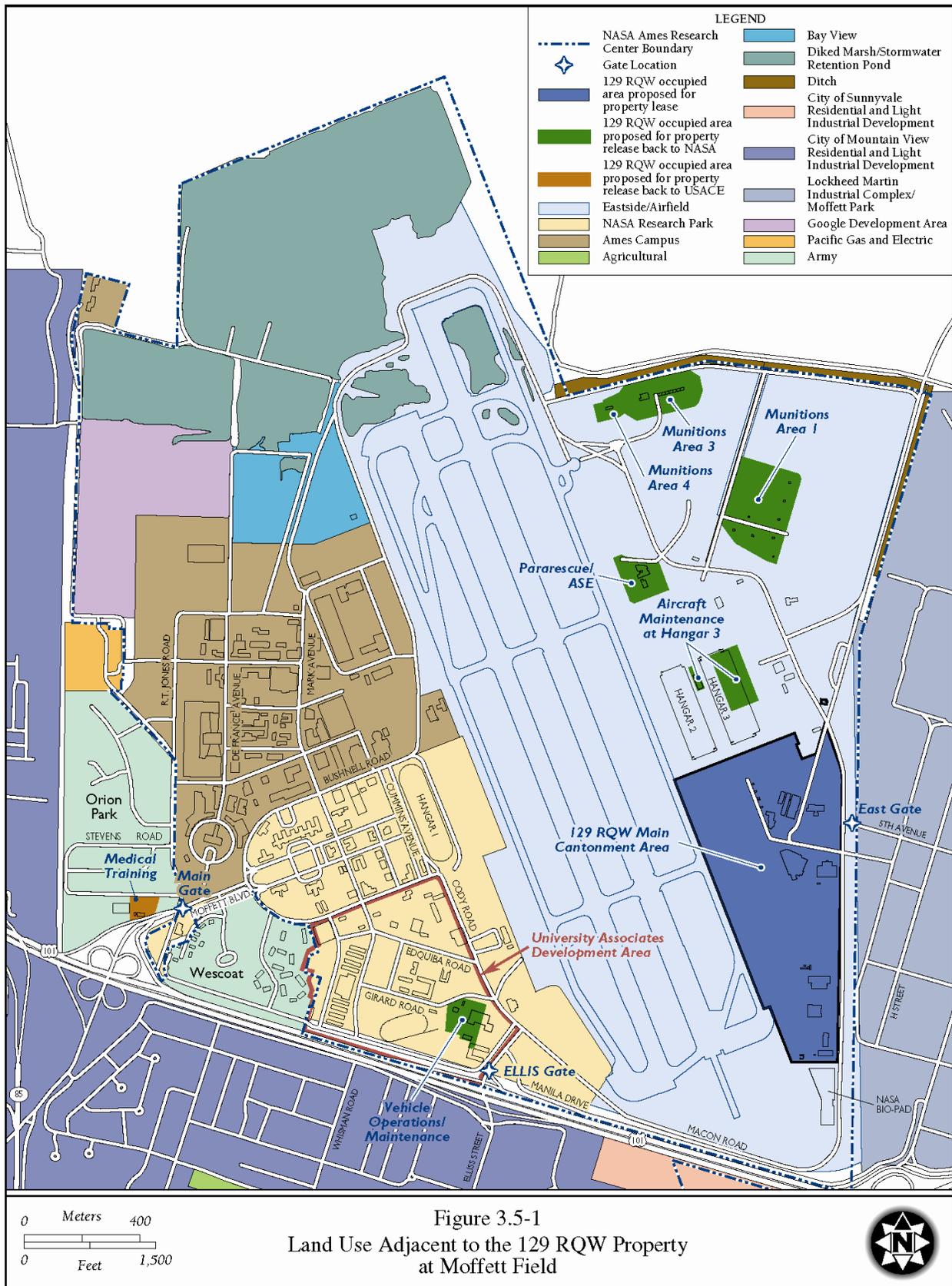
still awaiting development (City of Sunnyvale 2002). Bordering the western boundary are two Army housing areas (Orion Park and Wescoat), and an electrical substation area owned by Pacific Gas and Electric. In 2007, an EA was prepared to address the construction of 270,000 SF of facilities for the Army, including an Armed Forces Reserve Center, and demolition of 346,876 SF of housing and facilities. The project site is located on approximately 30 acres west of the Ames Campus area (U.S. Department of the Army 2007).

The non-industrial areas surrounding Moffett Field include Stevens Creek, Bay trail, a 358-unit mobile home park to the west, and military residential areas at the southwestern corner of Moffett Field (CAANG 1998a; NASA 2002). The Don Edwards San Francisco Bay National Wildlife Refuge is approximately one mile northwest of Moffett Field. The majority of the ground-based noise generated at Moffett Field is confined to the area within which the noise source occurs (i.e., vehicular traffic). With respect to aircraft noise, the 65 A-weighted decibel (dBA) noise contour remains within the boundaries of Moffett Field, thereby minimizing surrounding land use conflicts related to noise (NASA 2002).

Moffett Field encompasses approximately 2,000 acres of land and land uses associated with it include airfield operations and support, administration and training, housing, recreation, medical support, and research and development facilities (CAANG 1998a). This includes portions of the Sunnyvale Municipal Golf course that is located on the southeast portion of Moffett Field. Several public policies, such as California Airport Noise Standards, federal noise standards, and San Francisco Bay Conservation and Development Commission regulations, constrain growth of operations at Moffett Field (NASA 2002).

Moffett Field is divided into several regions. These areas include the CAANG facilities, the Eastside/Airfield area, the NASA Research Park, Ames Campus, the Bay View planning area, and a diked marsh and a stormwater retention pond (Figure 3.5-1). With the exception of the CAANG facilities, the remainder of Moffett Field is in use by NASA and the Army. A description of each area follows.

CAANG Facilities. The majority of the land (120 acres) occupied by the CAANG is located in the eastern section of Moffett Field and consists of three munitions storage areas, an aircraft maintenance apron, and the triangular-shaped area at the southeastern portion of Moffett Field, known as the main cantonment area (Figure 3.5-1). The CAANG main cantonment area is used for installation support and administrative purposes. Open land in this area is either marked as airfield safety zones (the runway is to the west), identified as a Burrowing Owl habitat (see Section 3.3, *Biological Resources*), used for recreational purposes, or restricted for security purposes. A portion of the open space has been set aside for future development and has been left in its natural form (NASA 2002). The CAANG vehicle operations and maintenance area is located in the southern portion of Moffett Field, and the medical training facility is located in the Army Orion Park Housing Area.



Bay View. With a few exceptions, this 95-acre site is currently mostly undeveloped grassland. The Bay View area contains a small number of research facilities. In 2008, NASA entered into a 40 year agreement with Google Inc. that will allow Google to lease 42.2 acres of this land and construct up to one-half million SF of offices and research and development facilities in a campus-style setting. Construction will occur in three phases beginning in 2013 and continue through 2022 (Google 2008).

Eastside/Airfield. The airfield and the lands to the east of it comprise this 952-acre site. This site includes a golf course, Hangars 2 and 3, airfield operations and fueling facilities, and the CAANG munitions storage facilities. Approximately 861,113 SF of the Eastside/Airfield area are occupied by buildings.

NASA Research Park. This 213-acre area is located between the airfield and U.S. Highway 101. Offices, retail and business services, airfield operations, vehicle maintenance, research facilities, and storage are some the land uses associated with NASA Research Park. Some storage space and research facilities at the research park area are used by the Army Reserve, the DoD Commissary, and the CAANG. In addition, this area includes the University Associates development area that will be constructed to include educational space to be shared by a number of universities and educational organizations located where the current vehicle maintenance facility is located.

The Navy Exchange previously used several facilities and is in the process of completing a closure plan for Building 503, the fuel station, on the west side of the airfield. Further, USAF Onizuka Air Force Station located near NASA Ames was the most recent sponsor of the Navy Exchange through an agreement with NASA Ames and itself, however it has been substantially downsized and its functions realigned under a recent Base Realignment and Closure. Approximately 1,614,600 SF of the NASA Research Park area is occupied by buildings. Toward the southeastern section of the research park, the 129 RQW occupies one parcel of land which is used for vehicle operations and maintenance; the 129 RQW medical training facility is located west of this area in Orion Park.

Ames Campus. The Ames Campus occupies 234 acres in the western portion of Moffett Field. Land uses include office, research and development, and storage. Existing buildings in this area occupy approximately 2,884,700 SF (NASA 2002).

3.5.2.2 Visual Resources

Moffett Field is located south of San Francisco Bay. Public facilities, open space and recreational areas, residential areas, and industrial areas surround the area. The most dominant visual features include the dirigible hangar, Hangar 1 on the western edge of the airfield, and two

blimp hangars, Hangars 2 and 3, east of the airfield, north of the CAANG's cantonment area and aircraft maintenance apron. A Composite Maintenance Hangar in the CAANG cantonment area is also a visual component of the area.

The majority of the CAANG facilities are located in a triangular area at the southeastern portion of Moffett Field, in the vicinity of Hangars 2 and 3. The majority of the area surrounding the hangars is paved, while the CAANG area consists both of landscaped areas and land in its natural condition. There are numerous trees in this area and road medians have been landscaped. Land awaiting future development has been left in its natural condition.

The NASA Research Park is located to the west of the runways and includes the Shenandoah Plaza Historic District, within which are several Spanish Colonial Revival buildings, as well as Hangar 1 and Hangars 2 and 3 on the eastern side of the airfield. The southeastern perimeter of the research park contains open areas and a paved area used for the CAANG vehicle maintenance lot. The Ames Campus Area is located north of the NASA Research Park Area, and its most prominent feature consists of the wind tunnel complexes which tower up to 80 feet above ground. The airfield, consisting of two runways, divides up the developed portion of the installation to the west, from the mostly undeveloped northeastern section. The airfield area is mostly paved, though some undeveloped land exists at its southern end. Located at the northwest end of Moffett Field is the Bay View area, which is mostly undeveloped and includes low-growing vegetation.

3.6 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.6.1 Definition of the Resource

Socioeconomics comprises the basic attributes and resources associated with the human environment, particularly population and economic activity. Economic activity typically encompasses employment, personal income, and economic growth. Impacts on these fundamental socioeconomic components also influence other issues such as housing availability and the provision of public services. To illustrate local baseline conditions, socioeconomic data provided in this section consist primarily of county and city level data for the areas surrounding Moffett Field.

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (Environmental Justice), was issued to focus the attention of federal agencies on human health and environmental conditions in minority and low-income communities. EO 12898 aims to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. The environmental

justice analysis focuses on the distribution of race and poverty status in areas potentially affected by implementation of the Proposed Action.

For the purpose of this analysis, minority and low-income populations are defined as:

- *Minority Populations:* All categories of non-white population groups as defined in the U.S. Census, including African American, Hispanic, American Indian and Alaska Native, Asian or Pacific Islander, and other groups.
- *Low-Income Populations:* Persons living below the poverty level, as defined by the 2000 Census.

Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health risks and safety risks that may affect children, and to ensure that federal agency policy, programs, activities, and standards address environmental risks and safety risks to children. This section identifies the distribution of children and locations where the number of children in the affected area may be proportionately high (e.g., schools, childcare centers).

3.6.2 Existing Conditions

3.6.2.1 Population and Employment

The ROI for socioeconomic in the area of Moffett Field includes the “Moffett Area,” which is defined here as the combined cities of Sunnyvale and Mountain View, as well as Santa Clara County as a whole.

Population. Santa Clara County has experienced steady population growth in recent years as a result of the high-tech industrial boom. Current population data and growth projections for the County are contained in Table 3.6-1. Between 1990 and 2000, the County population grew from 1.5 million to almost 1.7 million, an increase of 12.4 percent or an average of 1.2 percent per year. This increase accounted for more than 24 percent of the population growth in the entire San Francisco Bay Area (9 counties) during this period (U.S. Census Bureau [USCB] 2009a). U.S. Census Bureau estimates yield an estimated County population of 1,731,958 in 2007 (see Table 3.6-1) (USCB 2009a).

Table 3.6-1. Population Growth within the ROIs of Moffett Field

<i>Area</i>	<i>1990 Census</i>	<i>2000 Census</i>	<i>2007 Est.</i>
Santa Clara County	1,497,577	1,682,585	1,731,958
Moffett Area	184,689	202,468	201,576

Source: USCB 2009a

Population in the Moffett Area grew from 184,689 in 1990 to 202,468 in 2000, an increase of 9.6 percent, or just less than 1 percent per year (Table 3.6-1). In 2000, the Association of Bay Area Governments projected a continued annual growth rate of 1.2 percent for the area (CAANG 2004). By 2007, the estimated population for the Moffett Area according to the USCB was 201,576.

Employment and Earnings. As of April 2009, there were an estimated 808,600 employed and 88,600 unemployed individuals residing within the county-wide ROI, resulting in an unemployment rate of 10 percent (California Employment Development Department 2009) (Table 3.6-2). The Moffett Area has a lower current unemployment rate of 8.0 percent. A large portion of the County’s employment (54 percent of all jobs) is dominated by manufacturing, professional, scientific, management, and administrative and waste management services, and educational, social and health care services (NASA 2002). The manufacturing sector has a particularly strong influence on the County economy, providing over 20 percent of the jobs (USCB 2009a). Almost 43 percent of the total jobs in the Moffett Area are in the manufacturing and the management, and administrative and waste management services sector (USCB 2007). Even with the declining national economy and downturns in the technology sector, Sunnyvale and Mountain View’s location in the heart of Silicon Valley grants these cities a prime position in the high-tech industry. Major employers in the area include Yahoo!, Google, Network Appliances, Silicon Graphics, and Hewlett Packard (NASA 2002).

Table 3.6-2. Unemployment Rates within the ROI

<i>Area</i>	<i>Labor Force</i>	<i>Employed</i>	<i>Unemployed</i>	<i>Rate (%)</i>
Santa Clara County	897,000	808,600	88,600	10.0
Moffett Area ¹	119,000	109,900	9,000	8.0

Notes: 1. The Moffett Area includes the combined jurisdictions of Mountain View and Sunnyvale.

Source: California Employment Development Department 2009

According to income data from the U.S. Census, total personal income earned in Santa Clara County in 1999 was \$55 billion annually, with an average per capita income of \$32,795, or approximately \$10,000 per year more than the average statewide (USCB 2009b). Median household income in the same year was \$74,335, almost \$27,000 more than the statewide average. Countywide, 7.5 percent of individuals and 4.9 percent of families lived below the poverty level in 1999 (USCB 2009b).

Schools. In the 2007/2008 school year, 60,293 students were enrolled in 86 public K-12 schools within the Moffett Area. In that same year, Moffett Area schools were allocated a total of \$426 million in local, state, and federal funds, or an average of approximately \$7,067 in combined funding per student (Education Data Partnership 2009).

Housing. In 2000, the number of housing units in Santa Clara County was 579,329, with a homeowner vacancy rate of 0.5 percent and a rental vacancy rate of 1.8 percent (USCB 2009a). In the Moffett Area, a total of 86,185 housing units were counted in the 2000 Census, with a homeowner vacancy rate of 0.5 percent and a rental vacancy rate of approximately 1.4 percent. The cost of housing in the Moffett Area and vicinity is the second highest in the U.S. The median house or condo value in 2007 was \$758,100 in Santa Clara County, \$804,400 in Mountain view, and \$742,400 in Sunnyvale, California (City-Data 2007). Most employees and Guardsmen commute one to two hours from homes elsewhere, since home ownership is virtually unattainable near Moffett Field (CAANG 2004).

3.6.2.2 Environmental Justice

Approximately 46.2 percent of the total population in Santa Clara County is composed of minorities (i.e., an ethnic, racial, or religious group with a distinctive presence in a community) (Table 3.6-3), compared to 40.5 percent for the state of California (USCB 2009a). Approximately 26 percent of the County’s population, or approximately 55 percent of the total minority population, is of Asian descent. The Moffett Area has a slightly smaller proportion of minorities (43.1 percent) than the County, but still has more than the state average. The percent of the population living below the poverty level within the ROI in 1999 was 5.9 percent in the Moffett Area and 7.5 percent in all of Santa Clara County, compared to 13.9 percent statewide (USCB 2009b). The USCB defines poverty by assessing whether a family’s total income falls below the threshold value set for a family of that size. This threshold value is adjusted annually for inflation (USCB 2009b).

Table 3.6-3. Minority and Low-Income Population Data for the ROI

<i>Geographic Area</i>	<i>Total Population</i>	MINORITIES (2000)		LOW-INCOME (1999)	
		<i>Population Total</i>	<i>% Of Total Population</i>	<i>Population Total</i>	<i>% Of Total Population</i>
Moffett Area	202,468	87,185	43.1	11,876	5.9
Santa Clara County	1,682,585	776,925	46.2	124,470	7.5
California	33,871,648	13,701,589	40.5	4,706,130	13.9

Source: USCB 2009a

The 129 RQW installation has no on-base housing and no facilities for children. There are no known facilities on the installation where children may be encountered on a regular basis.

3.7 CULTURAL RESOURCES

3.7.1 Definition of the Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and traditional cultural resources.

Archaeological resources are sites where human activity measurably altered the earth or left deposits of physical remains (e.g., tools, arrowheads, or bottles). “Prehistoric” refers to resources that predate the advent of written records in a region. These resources can range from a scatter composed of a few artifacts to village sites and rock art. “Historic” refers to resources that postdate the advent of written records in a region. Archaeological resources can include campsites, roads, fences, trails, dumps, battlegrounds, mines, and a variety of other features.

Architectural resources include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for protection under existing cultural resource laws. However, more recent structures, such as Cold War era military buildings, may warrant protection if they have the potential to be historically significant structures. Architectural resources must also possess integrity (i.e., the important historic features must be present and recognizable).

Traditional cultural resources can include archaeological resources, buildings, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the continuance of traditional cultures.

Only significant cultural resources, known or unknown, warrant consideration with regard to adverse impacts resulting from a proposed action. To be considered significant, archaeological or architectural resources must meet one or more criteria as defined in 36 CFR 60.4 for inclusion in the NRHP.

Several federal laws and regulations have been established to manage cultural resources, including the NHPA (1966), the Archaeological and Historic Preservation Act (1974), AIRFA (1978), the Archaeological Resource Protection Act (1979), and NAGPRA (1990). In addition, coordination with federally recognized Native American tribes must occur in accordance with EO 13084, *Consultation and Coordination with Indian Tribal Governments*.

On November 27, 1999, the DoD promulgated its Annotated American Indian and Alaska Native Policy, which emphasizes the importance of respecting and consulting with tribal governments

on a government-to-government basis. This policy requires an assessment, through consultation, of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the respective services.

3.7.2 Existing Conditions

3.7.2.1 Historical Setting

The San Francisco Bay Area has been continuously occupied for 4,000 years. Archaeological studies during the 20th century uncovered evidence from a large shellmound (believed to be an archaeological debris and burial site) in the vicinity of Moffett Field, suggesting intensive occupation of the area for several centuries (CAANG 2004). It is estimated that approximately 1,400 Native Americans of the Ohlone Tribe lived on the peninsula in 1770. By 1810, this tribe appears to have disappeared due to disease, low birthrates, and the mission system which introduced a new way of life to the tribe. From about 1834 to 1864, the property that Moffett Field currently occupies, was farmed by Native Americans. This property was formally granted to Lopez Indigo, or Ynigo, a Native American, in 1844 by Manuel Micheltorena, the California governor at that time (NASA 2002).

3.7.2.2 Identified Cultural Resources

Archaeological Resources

There are 20 areas within the perimeter of Moffett Field that have been designated as potential archaeologically-sensitive areas; the largest of these sites is located south of the runway. Two of these sites are located at the southeastern section of Moffett Field, inside the 129 RQW main cantonment area (NASA 2002). However, these sites have been damaged in the last 90 years due to agriculture and development. According to a 1991 report, the boundaries of these sites are unknown and only a small amount of information currently exists about these sites. For instance, the Crittendon Kitchen Midden (i.e., refuse heaps left by prehistoric settlements) and several other archaeological sites that were recorded in a 1909 survey of Moffett Field were not located in a later survey of the area (CAANG 2004).

Architectural Resources

Several surveys of architectural resources have been conducted at Moffett Field. Thirty-four buildings are listed as historic properties by the NRHP. Most architectural resources in the area are located in the Shenandoah Plaza Historic District within NASA Research Park. Notable structures in this area are the Administration Building (Building 17), the Bachelor Officers Quarters (Building 20), and Hangar 1. The Ames Campus Area at the western portion of Moffett Field contains three architectural structures that are eligible for listing on the NRHP: the

NASA/ARC Administration Building, the 40-by 80-foot Wind Tunnel, and the Supersonic Wind Tunnel, and one Historic Landmark, the Unitary Plan Wind Tunnel.

Traditional Cultural Resources

No information has come to the attention of NASA, the Army, or the ANG to indicate that Moffett Field is a Native American traditional cultural property. Although not expected, there is potential that subsurface cultural resources could be found during construction activities (CAANG 2004).

3.8 SOLID AND HAZARDOUS MATERIALS AND WASTES

3.8.1 Definition of the Resource

This section describes the affected environment associated with hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, and solid waste at the 129 RQW.

The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA). In general, hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous wastes that are regulated under RCRA are defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or are listed as a hazardous waste under 40 CFR Part 261, *Identification and Listing of Hazardous Waste*. The IRP is a USAF program designed to identify, characterize, and remediate environmental contamination from past activities at USAF installations.

Issues associated with hazardous material and waste typically center around waste streams, underground storage tanks (USTs), aboveground storage tanks (ASTs), and the storage, transport, use, and disposal of fuels, lubricants, and other industrial substances. When such materials are improperly used in any way, they can threaten the health and well-being of wildlife species, habitats, and soil and water systems, as well as humans.

The management of hazardous materials and hazardous waste is governed by specific environmental statutes. The key statutes include:

Comprehensive Environmental Response, Compensation and Liability Act of 1980 (42 USC 9601–9675) as amended by the Superfund Amendments and Reauthorization Act

(SARA) of 1986. CERCLA/SARA regulates the cleanup of hazardous substance releases in soil and groundwater.

Community Environmental Response Facilitation Act (CERFA) (42 USC 9620). This act amended CERCLA to require that, prior to termination of federal activities on any real property owned by the federal government, agencies must identify real property where hazardous substances were stored, released, or disposed of.

Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 (42 USC 11001–11050). EPCRA requires emergency planning for areas where hazardous materials are manufactured, handled, or stored and provides citizens and local governments with information regarding potential hazards to their community.

Resource Conservation and Recovery Act (42 USC 6901–6992). RCRA established standards and procedures for handling, storage, treatment, and disposal of hazardous waste.

Federal Facility Compliance Act (FFCA) of 1992 (Public Law [P.L.] 102-426). This act provides for a waiver of sovereign immunity on the part of federal agencies with respect to federal, state, and local requirements relating to RCRA solid and hazardous waste laws and regulations.

Pollution Prevention Act of 1990 (42 USC 13101–13109). This act encourages minimization of pollutants and waste through changes in production processes.

USEPA Regulation on Identification and Listing of Hazardous Waste (40 CFR Part 261). This regulation identifies solid wastes subject to regulation as hazardous and to notification requirements under RCRA.

USEPA Regulation on Standards for the Management of Used Oil (40 CFR Part 279). This regulation delineates requirements for storage, processing, transport, and disposal of oil that has been contaminated by physical or chemical impurities during use.

USEPA Regulation on Designation, Reportable Quantities, and Notification (40 CFR Part 302). This regulation identifies reportable quantities of substances listed in CERCLA and sets forth notification requirements for releases of those substances. It also identifies reportable quantities for hazardous substances designated in the CWA.

The ROI for hazardous materials, hazardous wastes, and petroleum products encompasses areas that could be exposed to an accidental release of hazardous substances from the construction or demolition activities, other specific geographic areas affected by past and current hazardous waste operations, and areas where hazardous materials would be utilized and hazardous wastes

generated by the 129 RQW. Therefore, the ROI for this section is defined as the boundary of the 129 RQW main cantonment area, where the proposed activities would occur.

3.8.2 Existing Conditions

This section describes the current management of hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, UST sites, ASTs, and solid waste within the ROI.

3.8.2.1 Hazardous Materials and Petroleum Products

Hazardous materials and petroleum products are used throughout the 129 RQW operations conducted at Moffett Field for various functions including aircraft maintenance, ASE maintenance, ground vehicle maintenance, and facilities maintenance. These materials include flammable and combustible liquids, acids, aerosols, batteries, corrosives, solvents, paints, hydraulic fluids, jet propellant fuel (JP-8), gasoline, diesel fuel, lubricants, cutting oils, greases, and some corrosive materials (acids and alkalines).

The governing regulations for spill prevention are contained in the NASA *Spill Prevention Plan* which describes specific protocols for preventing and responding to releases, accidents, and spills involving oils and hazardous materials. All tenants at Moffett Field are required to follow these procedures.

3.8.2.2 Hazardous and Petroleum Wastes

Hazardous and petroleum wastes have historically been generated throughout the 129 RQW installation during various operations, including fuels testing, maintenance, testing and repair of vehicles, ASE, and aircraft. Primary types of hazardous wastes generated by the 129 RQW include metal scrap, batteries, used fuel, hydraulic fluid, sludge, oil, waste paint, solvents, aerosol, absorbent pads, fuel filters, used rags, fluorescent bulbs, and solvent-contaminated solids. The majority of hazardous waste is generated as a result of aircraft maintenance operations.

A hazardous waste generation point is the location where a waste is initially created or generated through some process. After generation, the hazardous waste must be transferred immediately to an initial accumulation point (IAP), an accumulation site, or a permitted storage area. Waste cannot be accumulated or stored at the generation point unless the area has been designated as an approved IAP. An IAP is an area where waste is initially accumulated under the control of the shop supervisor of the process generating the waste. Once certain parameters are met (as described in 40 CFR 262.34, *Standards Applicable to Generators of Hazardous Waste*), waste must be moved to a 90-day accumulation site (CAANG 2008a). NASA is responsible for collecting hazardous waste generated at Moffett Field, with the exception of the Army property.

The 129 RQW operates 23 IAPs distributed throughout the various industrial shops at the installation (Table 3.8-1). The hazardous wastes generated by the 129 RQW are then turned over to NASA, who operates two 90-day accumulation sites. At the 90-day accumulation sites, the hazardous waste is labeled, manifested, and transported off-site for disposal. With the exception of the Army property, NASA and its tenants collectively (including the 129 RQW) are considered a large quantity generator (LQG) of hazardous waste (i.e., generates more than 1,000 kilograms of hazardous waste per month) and operate under *USEPA ID Number CA1800005034* (CAANG 2008a).

Table 3.8-1. 129 RQW Hazardous Waste Initial Accumulation Points

<i>IAP #</i>	<i>Location (Building Number)</i>	<i>Facility Description</i>
1	662	Pneudraulics
2	47	Engine/Propulsions Shop
3	662	Phase/Isochronal Dock
4	656	Life Support
5	662	Repair and Reclamation (wheel & tire)
6	662	Corrosion Control
7	662	Non-Destructive Inspection
8	662	Machine Shop
9	662	Sheet Metal Shop
10	662	Flightline
11	146	Vehicle Maintenance
12	146	Vehicle Maintenance/Refueler Bay
13	545	Petroleum, Oils, and Lubricants (POLs)
14	662	Electro-Environmental
15	662	Fuel Cell
16	47	Security Forces/Combat Arms Training and Maintenance
17	650	Avionics
18	650	Weapons
19	680	Communication Flight
20	679	Civil Engineering
21	684	Aerospace Support Equipment (ASE)
22	686	Survival/Parachute Shop
23	47/686	Pararescue

Source: CAANG 2008a

The 129 RQW *Hazardous Waste Management Plan* provides guidance for facilitating compliance with all federal, state, and local regulations pertaining to hazardous waste. In addition, the *Hazardous Waste Management Plan* sets forth procedures to control and manage hazardous wastes from the point where they are generated until they are ultimately disposed (CAANG 2008a). In the event of a spill, releases are appropriately contained and reported, and spill logs are maintained by the 129 RQW Environmental Manager (CAANG 2009a).

3.8.2.3 Medical/Biohazardous Waste

Medical and biohazardous wastes are generated at the 129 RQW installation for hospital, dental clinic, and paramedical operations (Buildings 47, 685, and 686). Biohazardous waste is collected and disposed of by an independent contractor in accordance with federal, state, and local regulations. There have been no documented cases of contamination associated with medical or biohazardous waste (CAANG 2009a).

3.8.2.4 Installation Restoration Program Sites

The Defense Environmental Restoration Program was established as part of the SARA of 1986 to facilitate cleanup of DoD sites. IRP sites are designated for the cleanup of hazardous substances, DoD-unique substances, and petroleum, oil, and lubricant (POL) contamination. The mission of the IRP is to identify and cleanup contamination resulting from past DoD use and disposal practices for the protection of human health and the environment.

Moffett Field was added to the National Priorities List in July 1987 under the former name NAS Moffett Field. The Navy maintains responsibility for on-going investigation and remediation of all IRP sites at Moffett Field. Under the IRP, the Navy identified several locations with the presence of contamination. To date, 29 contaminated sites have been identified at Moffett Field as sites of hazardous substance releases, including leaks, spills, and/or disposal, and all are under investigation for remediation under the Navy's IRP (NASA 2002; U.S. Department of the Navy 2009b). These sites were contaminated by wastes from 60 years of military operations. The majority of these sites are along the western edge of the airfield and near Hangar 3, and all sites predate NASA's administration of the property. There are several IRP sites located near areas occupied by the 129 RQW that are in various stages of investigation and remediation by the Navy (Table 3.8-2 and Figure 3.8-1). Remediation of contaminated sites remains the responsibility of the Navy, even though custody of the installation has been transferred to NASA, including the portions used by the 129 RQW. NASA is responsible for cleanup of contaminated sites associated with NASA activities, none of which are located within the project area. In addition, a regional groundwater contamination plume exists beneath Moffett Field and flows towards the San Francisco Bay (NASA 2009c). This regional plume, known as the Regional MEW Groundwater Plume, originated from south of U.S. Highway 101 on private, industrial property but has now merged with the Navy IRP sites on the western edge of the airfield.

**Table 3.8-2. Former and Active IRP Sites On and Near the 129 RQW
(Page 1 of 2)**

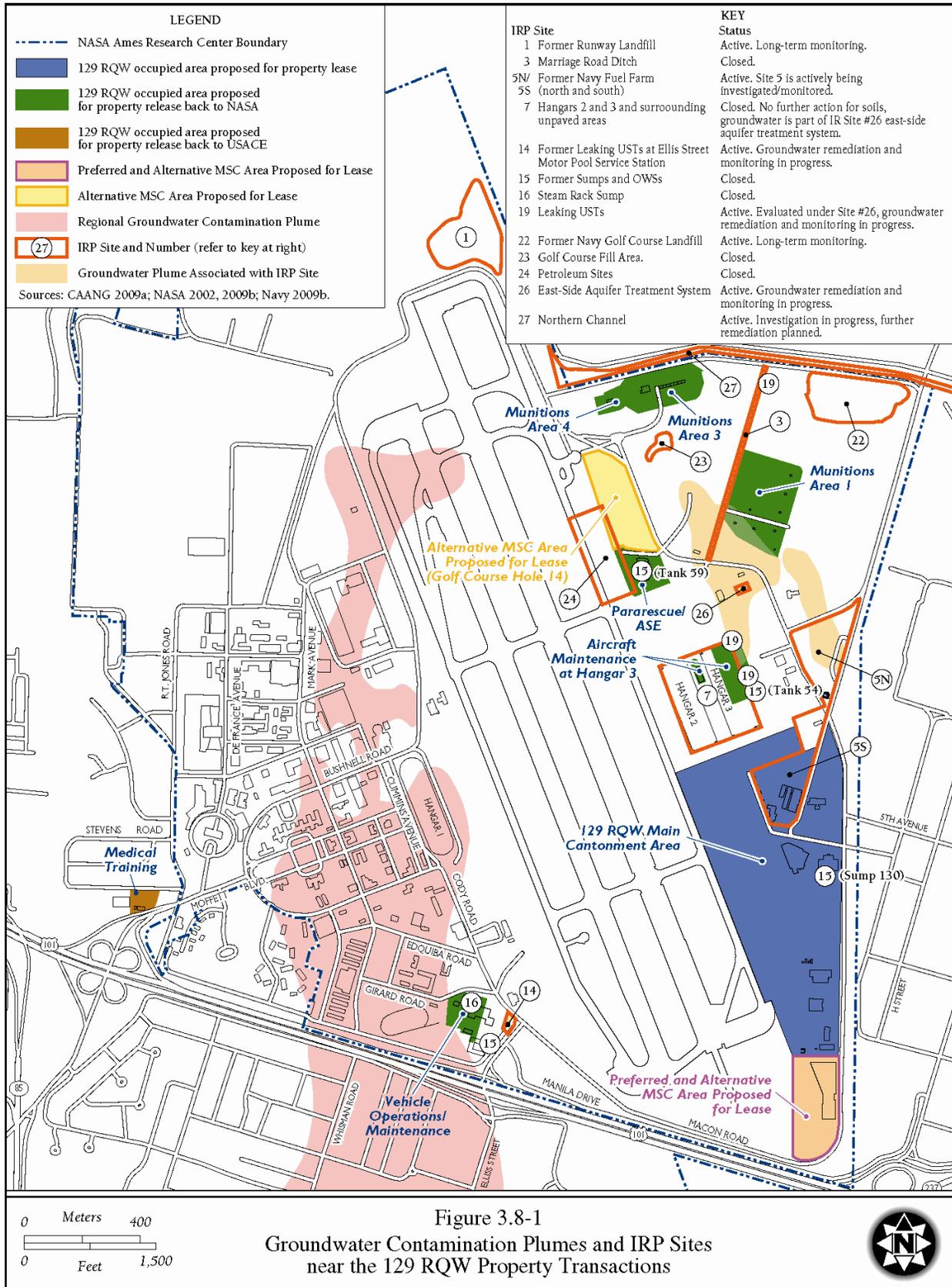
<i>IRP Site #</i>	<i>Description</i>	<i>Contaminants of Concern</i>	<i>Current Status</i>
1	Former Runway Landfill	Municipal wastes, industrial wastes, petroleum products, solvents, paints, etc.	Landfill has been capped and long-term maintenance and monitoring is in progress.
3	Marriage Road Ditch	Detergents, hydraulic fluids, oils, fuels, solvents, and paint.	No Action Record of Decision. No Further Action Required.
5	Former Navy Fuel Farm (north and south)	Petroleum contaminated soil and groundwater from former Leaking USTs (LUSTs).	Site 5 is divided into two areas: Site 5 North (bulk storage area) and Site 5 South (UST site). In 1995, six USTs were removed from this location: two 25,000-gallon concrete tanks, two 50,000-gallon concrete tanks, and two 150,000-gallon steel tanks. The RWQCB has directed the Navy to complete an investigation for petroleum contamination in a gravel channel that extends from the former fuel farm and into the golf course (U.S. Department of the Navy 2009a). The Navy concluded that no further action was required for the channel deposit. The RWQCB however, did not concur and is currently in the process of addressing Site 5 as one unit for remedial action and/or closure. The Navy is also currently developing a sampling plan to carry out additional investigation work for Site 5 South (NASA 2009c). In addition, the Defense Energy Service Center (DESC) is currently assessing releases from the bulk fuel tanks as part of closure activities for these tanks. Therefore, Site 5 is actively being investigated/monitored.
7	Hangars 2 and 3 and surrounding unpaved areas.	Petroleum contaminated soil and groundwater.	No further action for soils, groundwater is part of IR Site 26 east-side aquifer treatment system.
14	Former LUSTs at Ellis Street Motor Pool Service Station	Petroleum contaminated soil and groundwater from former LUSTs.	The Ellis Street service station is known as Site 14 South. Two USTs were removed in 1990. Several investigations have been conducted at the site; however, contamination is still present at the site. Additional corrective action is required to reduce the petroleum contamination at Site 14 South, which the Navy is currently assessing (U.S. Department of the Navy 2008a).
15	Former Sumps and Oil/Water Separators (OWSs)	Oil and fuels.	Tank 54 (located on the east side of Hangar 3) was removed in 1993 and the Water Board granted no further action to the Navy for tank 54 (U.S. Department of the Navy 2009c). Sump 130 is located within the 129 RQW main cantonment area and it is now part of the Moffett storm drain system. The Navy received concurrence on its no further action finding from the USEPA on January 8, 2004 for Sump 130 (U.S. Department of the Navy 2009c). Tank 59 is located within the Pararescue/AGE area and has been used by CAANG after Moffett was transferred to NASA. The Navy is not responsible for closure of this tank (U.S. Department of the Navy 2009c). Prior to returning the facility back to NASA, CAANG and NASA will determine whether or not the OWS tank should be closed or remain in place for use by future occupants.

**Table 3.8-2. Former and Active IRP Sites On and Near the 129 RQW
(Page 2 of 2)**

<i>IRP Site #</i>	<i>Description</i>	<i>Contaminants of Concern</i>	<i>Current Status</i>
16	Steam-cleaning Rack System (Sump 60)	VOCs, oils and fuels, metals.	Sump 60 was removed in 1990. The Navy was granted closure for Sump 60 (Site 16) (U.S. Department of the Navy 2009c). USEPA determined in 1993 the soils associated with Sump 60 required no further action; however, groundwater contamination associated with Sump 60 is being remediated by the Navy's Westside Aquifers Treatment System.
19	Former LUSTs (Tanks 2, 14, 43, and 53)	Fuels and solvents.	Groundwater contamination associated with UST 43 (suspected source of solvents) is being addressed by the Eastern Aquifer Treatment System. The Navy received no further action for tanks 2, 14, and 53 from the California Regional Water Quality Control Board [CRWQCB], San Francisco Bay Region (U.S. Department of the Navy 2009c; CRWQCB 2009).
22	Former Golf Course Landfill	Municipal wastes, industrial wastes, petroleum products, solvents, paints, etc.	Landfill has been capped and long-term maintenance and monitoring is in progress.
23	Golf Course Fill Area	Contaminated fill material.	Closed.
24	Petroleum Sites	Petroleum	Closed.
26	East-Side Aquifer Treatment System	Former LUSTs next to Hangar 3. Petroleum contaminated groundwater. Solvents.	Monitoring in progress to address groundwater contamination plume. Currently, an in situ remediation pilot study is being conducted at Site 26 to replace the former pump and treat system.
27	Northern Channel	Polychlorinated Biphenyls.	The Navy has completed the majority of the remediation required for Site 27. Contaminated soils and sediments were excavated and disposed of at appropriate facilities. Further restoration of a portion of the North Patrol Road Ditch to address elevated selenium levels is planned (U.S. Department of the Navy 2009c). The Navy plans to place a cap over the site.

Sources: NASA 2002, 2005, 2009b; U.S. Department of the Navy 2008a, b, 2009a, b, c; CRWQCB 2009.

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The one active IRP site of concern in the 129 RQW main cantonment area is IRP Site #5. IRP Site #5 exists within the northeastern portion of the current main cantonment area. It is actively being investigated/monitored as part of the Navy's IRP and Petroleum Program.

In addition to active IRP sites under various stages of investigation or remediation, a former aircraft wash rack was located in an active taxiway area about 95 feet west of the new 129 RQW Hangar (Building 662). The wash rack was taken out of service and a portion of the existing concrete pad was replaced when the new hangar was built in 2002 (U.S. Department of the Navy 2008c). Currently, the entire former wash rack site is paved with concrete; however, an unpaved grassy area is adjacent to the southeastern corner of the former wash rack area. During construction of the new 129 RQW hangar, construction contractors reported fuel odors from soils excavated from the former wash rack site. Soil and groundwater investigations of the site followed and soils and groundwater contamination were detected. However, the draft investigation report for the former wash rack area included the recommendation that the site be closed with no further action. This conclusion was based on several reasons including chemicals and concentrations of chemicals found in the soil and groundwater do not pose an unacceptable risk to current and likely future receptors and that remaining petroleum compounds should continue to attenuate over time (U.S. Department of the Navy 2008c). The Navy submitted a final Investigation Report for Former Aircraft Wash Rack dated February 28, 2009, and in a letter dated April 27, 2009, the California Regional Water Quality Control Board (CRWQCB) concurred with the Navy that no further action is required (U.S. Department of the Navy 2009c; CRWQCB 2009).

3.8.2.5 Storage Tanks and Pipelines

Various storage tanks have previously been used at Moffett to store fuels and to distribute various petroleum products or wastes. There were three former USTs containing fuel oil located within the 129 RQW occupied area. In October 1998, the three USTs (servicing Buildings 680, 681, and 683) and associated piping were decommissioned, removed, and the site restored to original grade conditions (CAANG 1998b).

3.8.2.6 Oil/Water Separators

OWSs are used to separate oils, fuels, sand, and grease from wastewater and to prevent contaminants from entering the sanitary sewer and stormwater drainage systems. There are three OWSs that serve 129 RQW operations. One OWS is located at the wash rack area outside the ASE building (Building 684), one OWS services the new composite maintenance hangar located at Building 662, and one OWS is located near the vehicle maintenance facility (Building 146). These three OWSs are not the Navy's responsibility since they were used after transfer of Moffett Field (U.S. Department of the Navy 2009c). In addition, a former OWS (sump 60)

located near the vehicle maintenance facility (Building 146) was removed on 9 October 1990 and the Navy received a no further action letter for the soil contamination associated with the OWS from the USEPA on 17 December 1993 (U.S. Department of the Navy 2009c). Groundwater contamination associated with this OWS is currently being remediated by the Navy's West-side Aquifers Treatment System at IRP Site 28.

3.8.2.7 Solid Waste

Municipal solid waste management and compliance at USAF installations is established in Air Force Instruction (AFI) 32-7042, *Solid and Hazardous Waste Compliance*. In general, AFI 32-7042 establishes the requirements for installations to have a solid waste management program to incorporate a solid waste management plan, procedures for handling, storage, collection, and disposal of solid waste, record keeping and reporting, and pollution prevention. Source reduction, resource recovery, and recycling of solid waste are addressed in AFI 32-7080, *Pollution Prevention Program*.

It is USAF policy to make every effort to divert non-hazardous solid waste from landfills and incinerators through reuse, recycling, composting, or donating, while ensuring integrated non-hazardous solid waste management programs provide an economic benefit. In accordance with AFI 32-7080, the USAF requires its installations to strive to divert/recycle the following items from the waste stream as cost effectively as possible: metals, glass, plastic, used oil, lead acid batteries, and tires. Installations are encouraged to add other commodities to the list of items that are economically feasible to divert/recycle.

As discussed in Section 3.10.2, *Solid Waste Management*, the 129 RQW generates non-hazardous solid waste in the form of trash, non-hazardous industrial wastes, and construction debris.

3.8.2.8 Asbestos

AFI 32-1052, *Facility Asbestos Management* (March 22, 1994), establishes requirements and assigns responsibilities to incorporate facility asbestos management principles and practices. Installations must remove asbestos-containing material (ACM) likely to release airborne asbestos fibers that cannot be reliably maintained, repaired, or isolated. All facilities must be monitored closely to ensure ACM does not become airborne. In addition, each installation must develop a written management and operating plan to carry out the objectives of facility asbestos management.

Asbestos has been found in a number of buildings constructed before 1978 when use of asbestos in construction materials was common. An asbestos survey was conducted in February 2005; only a portion of the buildings occupied by the 129 RQW (approximately 50 buildings) were

tested for ACM (CAANG 2005). According to the 2005 asbestos survey, ACM is present in many of the existing facilities occupied by the 129 RQW at Moffett Field (Table 3.8-3). Existing asbestos surveys and a *Notification of Asbestos Containing Construction Materials* at Moffett Field Buildings was completed by the Navy to ensure that the health and welfare of all installation personnel are protected from potentially harmful effects of ACM.

3.8.2.9 Lead-Based Paint

In 1973, the Consumer Products Safety Commission established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, the Consumer Products Safety Commission lowered the allowable lead level in paint to 0.06 percent.

The most recent USAF policy with regard to lead-based paint (LBP) is described in the USAF memorandum Air Force Policy and Guidance on Lead-Based Paint in Facilities (May 24, 1993). The policy is referenced in USAF Handbook 32-9007, Managing Air Force Real Property (May 1, 1999), and requires USAF installations to identify, evaluate, control, and eliminate existing LBP hazards and past LBP hazards where potential LBP debris may have accumulated in the area surrounding facilities. Priority is given to facilities or portions of facilities frequented by children. All installations must develop and implement a plan for identifying, evaluating, managing, and abating LBP hazards. The guidance emphasizes the use of management policies and LBP abatement as part of the normal facility renovation and upgrade programs when it is cost-effective.

Most of the occupied buildings are painted and the paint appears to be in fair to good condition. A LBP survey was conducted at the 129 RQW in June 2008. In addition, buildings are tested for lead paint prior to demolition or renovation. Since many of the buildings at the 129 RQW installation were constructed prior to 1978, it is likely that a majority of these buildings contain LBP. However, most major facilities that are occupied by internal and external customers have been recently renovated, abated, and repainted.

The following buildings located within the 129 RQW tested positive for LBP, as shown in Table 3.8-4: 47, 146, 484, 650, 653, 656, 659, 661, 669, 680, and 681 (CAANG 2008b).

**Table 3.8-3. Summary of ACM Present in 129 RQW Occupied Facilities
(Page 1 of 2)**

Building	Year Constructed	Building Description	ACM Present
47	1942	Hangar 3	Pipe, sink undercoating, heating, ventilation, and air conditioning (HVAC) insulation, ceiling tile, mastic, and wallboard
146	1952	Vehicle Operations and Maintenance	Pipe, HVAC insulation, tank cover, wallboard, mastic, vibration joint cloth
147	1951	MSA 1	No suspect material found
484	1965	MSA 3	Roofing, floor tile, mastic, transite, HVAC insulation, deck caulk
485	1965	Traffic Tower House	Window caulk
486-492	1965	MSA 3	Roofing, joint seal, gasket seal
528	1951	MSA 1	No suspect material found
545	1982	Petrol Operations	Mastic, floor tile, wallboard, ceiling tile
546	2000	Dental Clinic	Gasket rope
561	1976	MSA 4	No suspect material found
574	1982	Supply and Equipment Shed	No suspect material found
650	1975	Logistics Maintenance	Testing revealed all suspect material to be negative for asbestos
651	1982	Battery Repair and Storage Area	Cement wallboard
653	1975	Mission Support Squadron	Testing revealed all suspect material to be negative for asbestos
654	1969	Squadron Operations	Insulation
655	1945	Warehouse	No suspect material found
656	1971	Squadron Operations	Testing revealed all suspect material to be negative for asbestos
657	1955	Deployment Processing Facility	Testing revealed all suspect material to be negative for asbestos
658	1955	Deployment Processing Facility	Window caulk
659, 660	1956	Temporary Munitions Vault	Testing revealed all suspect material to be negative for asbestos
662	2002	Hangar	Testing revealed all suspect material to be negative for asbestos
669	1943	Band, Storage, Classrooms	Cement wallboard, floor tiles, mastic, vibration tape
675	2004	Hazardous Waste Storage	No suspect material found
676	2004	Hazardous Waste Storage	No suspect material found
677	2004	Hazardous Waste Storage	No suspect material found
678	2004	Hazardous Waste Storage	No suspect material found
679	1994	Warehouse/Base Civil Engineering	No suspect material found
680	1980	Headquarters	Transite, floor tile, mastic

**Table 3.8-3. Summary of ACM Present in 129 RQW Occupied Facilities
(Page 2 of 2)**

Building	Year Constructed	Building Description	ACM Present
681	1980	Logistics Supply/Warehouse	Transite, exhaust vent tape
682	1980	Hazardous Materials Storage	No suspect material found
683	1980	Base Civil Engineering	Floor tile, mastic
684	1980	Aerospace Support Equipment (ASE)	Floor tile, mastic, linoleum
685	1985	Medical Training	Roof material
686	1986	Pararescue Squadron	Floor tile, mastic
992	1955	Vehicle Operations Parking Shed	Testing revealed all suspect material to be negative for asbestos

Note: Only a portion of the buildings occupied by the 129 RQW have been tested for ACM. Therefore, this list is not comprehensive.

Source: CAANG 2005

Table 3.8-4. Summary of Lead-based Paint Occurrence at the 129 RQW

<i>Building</i>	<i>Year Constructed</i>	<i>Building Description</i>	<i>Lead-based Paint Present</i>
47	1942	Hangar 3	Positive
146	1952	Vehicle Operations and Maintenance	Positive
484	1965	MSA 3	Positive
545	1982	Petrol Operations	Negative
546	2000	Dental Clinic	Negative
574	1982	Supply and Equipment Shed	Negative
650	1975	Logistics Maintenance	Positive
653	1975	Mission Support Squadron	Positive
654	1969	Squadron Operations	Negative
656	1971	Squadron Operations	Positive
658	1955	Deployment Processing Facility	Negative
659	1956	Temporary Munitions Vault	Positive
660	1956	Temporary Munitions Vault	Negative
661	1955	Deployment Processing Facility	Positive
662	2002	Hangar	Negative
669	1943	Band, Storage, Classrooms	Positive
679	1994	Warehouse/Base Civil Engineering	Negative
680	1980	Headquarters	Positive
681	1980	Logistics Supply/Warehouse	Positive
683	1980	Base Civil Engineering	Negative
684	1980	Aerospace Support Equipment (ASE)	Negative
685	1985	Medical Training	Negative
686	1986	Pararescue Squadron	Negative
992	1955	Vehicle Operations Parking Shed	Negative

Source: CAANG 2008b

3.9 SAFETY

3.9.1 Definition of the Resource

This section addresses ground, explosive, and flight safety associated with activities conducted by the 129 RQW. Ground safety considers issues associated with human activities and operations and maintenance activities that support 129 RQW operations. A specific aspect of ground safety addresses AT/FP considerations. Explosive safety discusses the management and use of ordnance or munitions associated with installation operations and training activities. Flight safety considers aircraft flight risks such as aircraft accidents and BASH. Because there

are no changes proposed that could impact flight safety, this discussion is omitted from further discussion.

The ROI for safety includes the 129 RQW and the lands immediately adjacent to the installation.

3.9.2 Existing Conditions

3.9.2.1 Ground Safety

Day-to-day operations and maintenance activities conducted by the 129 RQW are performed in accordance with applicable USAF safety regulations, published USAF Technical Orders, and standards prescribed by the USAF Office of Safety and Health.

NASA has a combined domestic and fire protection water system supplied from the San Francisco Water Department and assumes responsibility of the fire protection function for all of Moffett Field, including the 129 RQW. Building 580, owned and maintained by NASA, houses the fire rescue and support operations which service all of Moffett Field (CAANG 1998a). NASA has a cooperative response agreement with the city fire departments of Santa Clara County and is part of the Santa Clara County Fire Mutual Aid service. In the event of an emergency at Moffett Field (including the 129 RQW), Mountain View Fire Department would be contacted in request for aid. If Mountain View Fire Department was not available, the City of Sunnyvale Fire Department would be contacted (NASA 2002).

3.9.2.2 Anti-Terrorism/Force Protection

As a result of terrorist activities, the DoD and the USAF have developed a series of AT/FP guidelines for military installations: UFC 4-010-01 2007, *DoD Minimum Antiterrorism Standards for Buildings*; AFI 31-210 1999, *The Air Force Antiterrorism/Force Protection [AT/FP] Program*; DoD O-2000.12-H 1993, *Protection of DoD Personnel and Activities Against Acts of Terrorism and Political Turbulence*. These guidelines address a range of considerations that include access to the installation, access to facilities on the installation, facility siting, exterior design, interior infrastructure design, and landscaping. The intent of this siting and design guidance is to improve security, minimize fatalities, protect personnel, and limit damage to facilities in the event of a terrorist attack.

All military facilities at the 129 RQW were constructed before such considerations became a critical concern. Thus, under current conditions, many facilities do not comply with all current AT/FP standards. However, as new construction occurs and as facilities are modified, it is the intention of CAANG to incorporate these standards to the maximum extent practicable.

3.9.2.3 Explosive Safety

The 129 RQW stores, maintains, and uses a range of munitions required for performance of their mission. All ordnance is handled and stored in accordance with USAF explosive safety directives (USAF Manual 91-201, *Explosive Safety Standards*; USAF Policy Directive 91-2, *Safety Programs*; and DoD 6055.9-Std, *Ammunition and Explosives Safety Standards*), and all munitions maintenance is carried out by trained, qualified personnel using USAF-approved technical procedures. Restrictions apply to the areas immediately surrounding the munitions storage facilities to provide separation between facilities and activities to minimize serious injury, loss of life, and damage to property. The size of the safety areas, referred to as QD arcs, varies depending on the type and amount of munitions stored.

The DoD defines munitions through a system called the DoD Hazard Classification System. This system consists of nine hazard classes and takes into account the munitions' blast, fragment, debris, and thermal hazards to establish appropriate QD protection principles and design procedures to achieve personnel protection, protect facilities and equipment, and prevent propagation of explosions. There are several different types of munitions storage including underground storage facilities, earth covered materials, barricades, storage modules, and special structures and corresponding QD arcs with each type of storage, depending on the types and amounts of munitions stored. QD arcs take into account specific public transportation distance and inhabited building distance standards associated with each type of munition. A public transportation distance (PTR) is the distance between any public street, road, or highway (including roads on a military installation) used routinely by the general public and munition, while an inhabited building distance (IBD) is defined as the distance maintained between munition and an inhabited building (DoD 6055.09-STD).

The 129 RQW currently maintains three existing MSAs at Moffett Field, all located in the northeast corner of the installation. QD arcs associated with the MSAs encompass Buildings 70-74, 143, 147, 484, 486-492, 528, and 561. Flammable and combustible materials, such as explosives, flares, and paints are stored at the 129 RQW installation.

3.10 INFRASTRUCTURE

3.10.1 Definition of the Resource

Infrastructure refers to the system of public works, such as utilities and transportation that provide the underlying framework for a community. Utilities include such amenities as water, power supply, and waste management. Transportation and circulation refer to roadway and street systems, the movement of vehicles, pedestrian and bicycle traffic, and mass transit. The infrastructure components to be discussed in this section include the transportation network,

electricity, natural gas, liquid fuels, sanitary sewer, solid waste, stormwater drainage, and potable water.

The ROI for this resource primarily consists of the 129 RQW installation, with additional information presented for Moffett Field, where relevant.

3.10.2 Existing Conditions

Transportation System. There are three major highways that provide access to Moffett Field (Figure 1.3-1). U.S. Highway 101 (US-101), which is located to the south of the airfield, is a major north-south route through the entire length of California. US-101 is an eight-lane freeway that provides regional access to the project area and has three mixed-flow lanes and one high occupancy vehicle lane in each direction as it traverses Sunnyvale. US-101 carries about 155,000 vehicles daily south of Mathilda Avenue (Caltrans 1999). State Route 85, which ties into US-101 south of Moffett Field, passes by the southwest corner of Moffett Field and extends south and east. Route 85 is a six-lane freeway that extends from US-101 in Mountain View to a southern connection with US-101 in south San Jose. State Route 85 carries about 99,000 vehicles daily north of El Camino Real (Caltrans). State Route 237 runs east-west and intersects with US-101 near the southeast corner of Moffett Field. Route 237 forms the southern border of the Moffett Park area. Route 237 is a four to six lane freeway that provides access between Route 82 (El Camino Real) to the west and Interstate 880 to the east. Route 237 carries about 85,000 vehicles daily east of Mathilda Avenue (Caltrans 1999). The main gate to Moffett Field is located on Moffett Boulevard and provides direct access to US-101 and State Route 85, while the secondary gate is located on Ellis Street and provides direct access to US-101.

The roadway network in the City of Sunnyvale is classified by roadway types in the Land Use and Transportation element of the City of Sunnyvale General Plan (City of Sunnyvale 1997). Classification types include the following:

- State Freeway,
- County Expressway,
- Regionally Significant Roadway,
- Class 1 Arterial,
- Class 2 Arterial,
- Commercial/Industrial Collector,
- and Residential Collector.

US-101, State Route 85, and State Route 237 are considered freeways or expressways; Mathilda Avenue is a Class 1 arterial, and streets such as 8th and 11th Avenues are considered commercial/industrial collectors. Though Level of Service (LOS) definitions vary based on the roadway classification, in general, a rating of A is the best rating in terms of traffic congestion and F is the worst rating. Table 3.10-1 presents LOS and other data on roadways in the vicinity of proposed activities.

Table 3.10-1. Existing Traffic Conditions and Projected Conditions for Intersections in the Vicinity of Proposed Activities

Location	EXISTING CONDITIONS						PROJECTED CONDITIONS IN 2020					
	AM PEAK HOUR			PM PEAK HOUR			AM PEAK HOUR			PM PEAK HOUR		
	LOS	Delay ¹	V/C ²	LOS	Delay ¹	V/C ²	LOS	Delay ¹	V/C ²	LOS	Delay ¹	V/C ²
H St. & 11th Ave.	B+	6	.22	B	8	.07	B	12	.63	B+	7	.42
H St. & 5th Ave.	C+	16	.13	C+	15	.11	B-	14	.40	C	22	.41
H St. & 8th Ave.	A	14	.14	B+	7	.13	A	4	.51	C	17	.59
H St. & Manila Dr.	B-	14	.36	B	11	.26	C	21	.69	C	21	.60
Mathilda Ave. & 5th Ave.	C+	17	.20	D+	26	.30	C	21	.40	D	32	.72
Moffett Park Dr. & US-101 Northbound On-Ramp	A	3	.07	B	10	.18	A	2	.36	B	8	.36
Mathilda Ave. & Moffett Park Dr.	B	12	.61	F	107	.73	E	68	1.19	F	139	1.30
Mathilda Ave. & State Route 237 Westbound Ramps	B	12	.57	C	26	.73	D	39	1.02	C	27	.94
Mathilda Ave. & State Route 237 Eastbound Ramps	B	11	.77	A	9	.58	B	15	.67	B	14	.71

Notes: 1. Delay in seconds
2. V/C = volume to capacity ratio based on traffic counts
Source: City of Sunnyvale 2002

Airfield. The airfield at Moffett Field consists of runways, taxiways, aircraft parking aprons, alert areas, and arm/disarm areas. There are two parallel runways, 32R/14L and 32L/14R. 32R/14L is 9,200 feet in length and 32L/14R is 8,125 feet in length. Both runways are 200 feet

in width and are separated laterally by 600 feet. Two taxiways, each 50 feet in width, border each runway. The apron used by the 129 RQW is located on the east side of the airfield south of Hangars 2 and 3. An additional apron located north of Hangars 2 and 3 is not currently in use (CAANG 1998a).

Electrical System. Electricity at Moffett Field is currently supplied by United States Department of Energy Western Area Power Administration. If power requirements are exceeded, then additional supply is purchased from Pacific Gas and Electric. A substation located on the Eastside/Airfield currently provides electricity to the 129 RQW and receives power from a single Pacific Gas and Electric 115 kilovolt transmission line. The substation and related equipment are considered to be in good condition (NASA 2002).

Natural Gas System. Natural Gas is currently provided to the 129 RWQ by Pacific Gas and Electric supplied through a 250 millimeter line located at the north end of the airfield (NASA 2002). The natural gas system on the 129 RQW primarily consists of a 4-inch main which extends to Building 656 and a 2-inch line that extends to Building 650. The southern portion of the 129 RQW does not receive gas service (CAANG 1998a). The primary use for natural gas is heating for domestic water and heat in buildings.

Liquid Fuels. Liquid fuels for the 129 RQW consist of primarily JP-8 aircraft fuel. Three 50,000-gallon ASTs are operated by the Defense Energy Support Center (DESC) for storing and dispensing fuel at Moffett Field. Aviation fuel for consumption for 129 RQW operations is approximately 74 thousand gallons per month (CAANG 2009a). The liquid fuels system and property is not included in the proposed permit to the USAF on behalf of the 129 RQW. It is under an existing permit between NASA and DESC.

Sanitary Sewer System. The 129 RQW generates wastewater from sanitary, stormwater, and industrial processes, including vehicle, equipment, and aircraft washing; fuels and aircraft component testing; and vehicle, ASE, and aircraft maintenance. The sanitary sewer infrastructure at Moffett Field includes approximately 90,900 linear feet of collection lines. The discharge of site wastewater is handled by two cities, portions managed by Palo Alto and portions managed by Sunnyvale. Each of the two systems flows to one of two Publicly Owned Treatment Works (POTW) plants, the Palo Alto Regional Water Quality Control Plant (in the City of Palo Alto) or the Sunnyvale Water Pollution Control Plant (Santa Clara County 2007). The sanitary sewer conveyance system between Moffett Field and the two POTW plants are experiencing capacity problems and portions of the conveyance piping would require upgrading (NASA 2002). The treated wastewater from the POTW plants is ultimately discharged to the San Francisco Bay under permits issued by the California RWQCB (CAANG 2008a). In addition, NASA is using reclaimed water from the Sunnyvale POTW to irrigate the golf course.

Solid Waste Management. Municipal solid waste at Moffett Field is managed in accordance with the guidelines specified in AFI 32-7042, *Waste Management*. This AFI incorporates, by reference, the federal standard for solid waste regulations contained within 40 CFR, Subtitle D, *Non-hazardous Waste*, and other applicable federal regulations, AFIs, and DoD Directives. In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program that incorporates the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; goals for recycling and solid waste and construction and demolition debris diversion; recordkeeping and reporting; and pollution prevention.

The 129 RQW generates solid waste in the form of office trash, non-hazardous industrial wastes, normal municipal waste, and construction debris. These nonhazardous solid wastes are collected in dumpsters located throughout the 129 RQW installation and are picked up by a contractor for disposal off of the installation. There is no disposal of solid waste on the 129 RQW installation. Solid waste collection and disposal are handled by a private contractor and delivered to the Newby Island Landfill in Milpitas. This landfill is expected to reach capacity in 2020 (NASA 2002).

Recycling programs have been implemented at Moffett Field to reduce off-site waste disposal at landfills, in accordance with the 2002 *Pollution Prevention Plan*. Currently, landscape debris, paper, cardboard, construction and demolition waste, scrap metal, tires, toner cartridges, and computers are all recycled off-site (NASA 2002).

Stormwater Drainage System. Stormwater drainage at the 129 RQW consists of a series of enclosed storm sewers, open channels, catch basins, and inlets. Drainage occurs by overland flow to storm drain inlets connected to a series of underground pipes, or percolates into the groundwater system via subsurface soils. In general, there are two separate drainage areas for Moffett Field. Stormwater from the eastern drainage system (including the 129 RQW, airfield runways, and all lands east of the runways) flows north through several storm drain lines and overland flow to a pump station at Building 191. Building 191 then pumps the stormwater to the Northern Channel. The major conveyance system, in particular Marriage Road Ditch, is prone to flooding. Any increase in runoff would exacerbate the current condition. In addition, auxiliary pumps are used to handle stormwater during heavy rain events. This water is discharged downstream to the easternmost Lockheed pond through a culvert. This water is then pumped into the Moffett Channel where it is ultimately discharged into the Guadalupe Slough and then to the San Francisco Bay. Stormwater from the western drainage system of Moffett Field, including most of the area west of the runways, discharges to the Stormwater Retention Pond (NASA 2002, 2009a). When flow into the pond exceeds the storage capacity in the wet season, water is pumped directly into Stevens Creek (U.S. Department of the Army 2007).

NASA and its tenants (including the 129 RQW) operate under NPDES permits (including General Permit *No. CAS000004* for stormwater discharges from small municipal separate storm sewer systems and *No. CAS000001* for industrial activities excluding construction activities) for stormwater discharge at Moffett Field (NASA 2009a).

Potable Water System. Potable water and fire protection is supplied to Moffett Field from the San Francisco Water Department. Approximately 90 percent of this water comes from the Hetch Hetchy Reservoir in the Sierra Nevada, similar to many other municipalities in the region (personal communication, Kono 2009a). The water supplied from the Hetch Hetchy Reservoir is considered to be some of the nation's highest quality drinking water (San Francisco Public Utility Commission 2006). The remaining 10 percent is supplied from local reservoirs in the East Bay managed by the San Francisco Public Utilities Commission. NASA does not supply any of their potable water from groundwater sources (NASA 2002).

The drinking water supply for Moffett Field is managed as part of NASA's permitted community water system (Kono 2009b). NASA owns and operates the entire potable water system at Moffett Field, including the 129 RQW. The overall condition of the system is fair; however, some sections have required repairs in recent years and a large portion of the system has deteriorated to the point that it must be operated under lower pressure to reduce the occurrence of leaks and malfunctions. In addition, pipes are generally undersized and cannot allow adequate flow for fire protection (NASA 2002).

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

The resource analyses presented in this chapter are based on an examination of potential effects that the Proposed Action, alternative action, or No Action Alternative may have on existing environmental conditions. The Proposed Action and alternatives are described in Chapter 2, and the existing environmental conditions are described in Chapter 3. This chapter examines the potential environmental consequences for each of the resource areas in the same sequence as presented in Chapter 3. Within each resource area, the methodology used to evaluate potential impacts is described, followed by the evaluation of those potential impacts as a result of implementation of each of the alternatives using the methodology presented.

4.1 EARTH RESOURCES

4.1.1 Methodology

Protection of unique geologic features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards and soil limitations are considered when evaluating impacts to earth resources. If a proposed action were to substantially affect or be substantially affected by any of these features, impacts would be considered significant. Generally, impacts associated with earth resources can be avoided or minimized to a level of insignificance if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development.

Analysis of potential impacts to geologic resources typically includes identification and description of resources that could potentially be affected, examination of the potential effects that an action may have on the resource, assessment of the significance of potential impacts, and provision of management measures in the event that potentially significant impacts are identified. Analysis of impacts to soil resources resulting from proposed activities examines the suitability of locations for proposed operations and activities. Impacts to soil resources can result from earth disturbance that would expose soil to wind or water erosion.

Adverse impacts to soils and the associated potential indirect impacts to water resources can be minimized through the implementation of Best Management Practices (BMPs) such as those typically required to be in compliance with the CWA. The NPDES program, administered by the state of California, requires a construction General Permit for surface disturbance of one acre or more. Compliance with this permit involves development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that includes site-specific management measures.

4.1.2 Impacts

4.1.2.1 Alternative #1

Geology

Implementation of the proposed construction and land acquisition activities would not significantly affect the geologic units underlying Moffett Field as no unique geologic features are present. However, earthquakes can generate several different geologic hazards. In addition to ground shaking, other hazards include soil liquefaction, surface fault rupture, flooding, and slope failure. Not only are buildings endangered by these hazards, but water tanks, dams, roads, bridges, railways, airports, and utility corridors carrying electricity, water, sewage, natural gas, petroleum, and telephone service are at risk. Earthquake hazards can occur miles from an earthquake epicenter; this distance depends on the type of hazard and size of the earthquake. Earthquake hazards can be managed to the extent possible by designing structures in accordance with current Uniform Building Code and California Building Code regulations for seismic safety.

Soils

As a result of implementation of Alternative #1, there would be approximately 412,392 SF (9.5 acres) of net new impervious surface and 1,097,079 SF (25 acres) that would be temporarily disturbed as a result of construction and demolition of the proposed facilities. The high clay content of the soils within the ROI could result in localized slow recharge potential and consequently, a high runoff potential. Any potential impacts resulting from erosion or an increase in surface runoff during construction activities would be controlled through the use of standard erosion control measures such as soil compaction, wetting of the soils, sandbags, silt fencing, earthen berms, or temporary sediment basins, in accordance with CWA Section 402. A Notice of Intent would be filed with the state of California RWQCB to obtain coverage under the NPDES construction General Permit before construction would occur. Consequently, impacts from erosion and surface runoff would be minimal. It is likely that grading of existing soils and placement of structural fill for proposed facilities would not substantially alter existing soil conditions at the 129 RQW installation because much of the property has been previously disturbed as a result of prior development.

In addition, according to the California Farmland Mapping and Monitoring Program, overseen by the California Division of Land and Resource Protection, there is no Prime Farmland, Farmland of Statewide Significance, or Unique Farmland on or near Moffett Field. The land surrounding the installation falls under one of two categories, Urban and Built-up Land or Other Land (land not included in any other mapping category; commonly low-density rural

developments, brush, timber, wetland, and riparian areas) (California Department of Conservation 2006).

As a result of the high clay content typical of soils within the Santa Clara Valley, new buildings could be exposed to structural hazards from ground subsidence, differential settlement around buildings, cracking and heaving, and flooding during high volume precipitation events, as discussed in Section 3.1.2.2. These construction hazards can be managed to the extent possible by designing structures in accordance with current Uniform Building Code and California Building Code regulations and conducting geotechnical analyses of the proposed sites to determine the structural measures necessary to avoid possible subsidence or settlement. Site specific management measures, like detailed geotechnical investigations, may be required for individual sites, and construction would incorporate the results of those studies into the building design and construction. Therefore, no significant impacts to soils would occur as a result of implementation of this alternative.

Topography

Although ground disturbance would occur at the installation during construction, the majority of construction would occur over previously disturbed surfaces. While proposed construction activities at the installation would require grading, no identifiable topographic features would be affected as a result of development associated with this alternative. Therefore, no significant impacts to topography would occur as a result of implementation of Alternative #1.

4.1.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ. The amount of impervious surface and surface disturbance would be the same for Alternative #2 as Alternative #1. Thus, the types of impacts to earth resources as a result of Alternative #2 would occur as described under Alternative #1. In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Therefore, no significant impacts to geology, soils, or topography would occur as a result of implementation of Alternative #2.

4.1.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the

weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. This alternative would result in a reduction of 315,880 SF (7.25 acres) of disturbed surface as compared to Alternative #1, since a portion of Project #13 would be eliminated. The portion of Project #13 that would be eliminated would be the proposed parking area east of Macon Road (approximately 325,400 SF). In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Therefore, no significant impacts to geology, soils, or topography would occur as a result of implementation of Alternative #3.

4.1.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. The types of impacts to earth resources as a result of Alternative #4 would occur as described under Alternative #2. However, this alternative would result in a reduction of 315,880 SF (7.25 acres) of disturbed surface as compared to Alternative #1, since a portion of Project #13 would be eliminated. The portion of Project #13 that would be eliminated would be the proposed parking area east of Macon Road (approximately 325,400 SF). In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Therefore, no significant impacts to geology, soils, or topography would occur as a result of implementation of Alternative #4.

4.1.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property transfers at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline geological, soils, and topographical resources, as described in Section 3.1,

would remain unchanged. Therefore, no significant impact to earth resources would occur as a result of implementation of the No Action Alternative.

4.2 WATER RESOURCES

4.2.1 Methodology

Land development changes the physical, chemical, and biological conditions of water resources. When land is developed, the hydrology, or the natural cycle of water, can be altered. Impacts on hydrology can result from land clearing activities, disruption of the soil profile, loss of vegetation, introduction of pollutants, new impervious surfaces, and an increased rate or volume of runoff after major storm events. Without proper management controls, these actions can adversely impact the quality and/or quantity of water resources.

Criteria for evaluating impacts related to water resources associated with the Proposed Action are water availability, water quality, and adherence to applicable regulations. Impacts are measured by the potential to reduce water availability to existing users, endanger public health or safety by creating or worsening health hazards or safety conditions, or violate laws or regulations adopted to protect or manage water resources. An impact to water resources would be significant if it would: (1) reduce water availability to or interfere with the supply of existing users; (2) create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources; (3) adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions; (4) threaten or damage unique hydrologic characteristics; or (5) violate established laws or regulations that have been adopted to protect or manage water resources of an area. Impacts of flood hazards on proposed actions can be significant if such actions are proposed in areas with high probabilities of flooding; however, these impacts can be mitigated through the use of specific design features to minimize the effects of flooding.

Increases in impervious surfaces act to increase peak discharge volume and speed delivery of water to nearby waterways, which ultimately increases the potential for flooding as well as the transport of pollutants to surface waters. In undeveloped land, rainfall is collected and stored in vegetation, in the soil column, or in topographic depressions. Water is then utilized by plants and respired, or it moves slowly into groundwater and/or eventually to waterbodies where it slowly moves through the hydrologic cycle. Removal of vegetation and/or soil compaction decreases infiltration into the soil column and thereby increases the quantity and timing of runoff. Replacement of vegetation with an impervious surface, such as concrete, eliminates any potential for infiltration and also speeds up delivery of the water to nearby drainage channels. With less storage capacity in the soil column and vegetation, urban streams rise more quickly

during storm events and have higher peak discharge rates, both of which increase the potential for flooding downstream and damage to public infrastructure and private property.

The NPDES program is administered by the state of California RWQCBs, while the USEPA is responsible for inspection activities and routine correspondence for regulatory programs with the opportunity to provide compliance assistance for permitted facilities.

4.2.2 Impacts

With regard to water resources, the primary concerns associated with the Proposed Action and its alternatives include changes to surface water drainage, effects on water quality during construction activities, and groundwater recharge.

4.2.2.1 Alternative #1

Surface Water

Under Alternative #1, approximately 1,097,079 SF (25 acres) would be temporarily disturbed as a result of construction and demolition activities that could result in temporary localized increases in runoff and total suspended particulate matter to nearby surface waters. However, it is unlikely that all surface disturbance and construction would occur within the same year. Table 2.2-1 provides projected timelines for the completion of each of these projects. To minimize potential impacts associated with erosion, runoff, and sedimentation, BMPs as described in NASA's *Storm Water Pollution Prevention Plan* (NASA 2009a), as well as those specified in the *California Stormwater Best Management Practice Handbook for Construction* (California Stormwater Quality Association 2003) would be implemented during the construction period. Such BMPs could include the use of well maintained silt fences or straw wattles, minimizing surficial areas disturbed, stabilization of cut/fill slopes, minimization of earth-moving activities during wet weather, and covering of soil stockpiles, as appropriate. Following construction, disturbed areas not covered with impervious surface would be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential. A Notice of Intent must be filed with the state of California RWQCB to obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (99-08-DWQ) prior to implementation of individual projects, in addition to the implementation of a site-specific SWPPP and associated BMPs, for any change in the quality or quantity of wastewater discharge and/or stormwater runoff from construction sites where one or more acres would be disturbed. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation.

Under this alternative, there would be a net increase of approximately 412,392 SF (9.5 acres) of impervious surface area that would occur following construction of new structures, pavements,

and building additions. In addition, the large parking area that would be constructed outside the proposed cantonment area, described in Project 13, would be designed using a pervious surface to enhance infiltration and minimize surface runoff. The increase in impervious surface could result in an associated increase in stormwater runoff volume and intensity. Increased runoff and peak discharge volumes as a result of increases to impervious surface can be managed by appropriately designed conveyance structures (such as roadways, channels, and culverts) in accordance with site-specific engineering standards that take into consideration the influence of surface water drainage within, adjacent to, and downstream of the project. In addition, implementing features into the design of the project that manage surface water runoff such as the use of water harvesting and open natural space, retention/detention basins for water recharge or for release of runoff at predetermined times to minimize peak discharges, the use of porous materials to construct driveways and walkways, and directing runoff toward permeable areas, such that discharge exiting each site post-construction would be equal to or less than existing conditions would allow construction to occur as intended without conflicting with any city, county, state, or federal regulations and without adversely affecting adjacent properties and/or the project itself.

Groundwater

The proposed facilities would increase the amount of impervious surface by up to 412,392 SF (9.5 acres), resulting in an increase in the amount of surface water runoff and consequent decrease in groundwater recharge. However, as noted above, any increase in surface water runoff as a result of the proposed construction would be attenuated through the use of permit-related temporary and/or permanent drainage management features such as detention/retention basins and BMPs. The integration of water harvesting and open natural space into the design of the proposed sites such that discharge exiting each site post-construction would be equal to or less than existing conditions further minimizes potential adverse impacts associated with an increase in impervious surface area. The use of these features would also increase groundwater recharge through direct percolation offsetting the loss of pervious surface due to construction. Additionally, the impervious surface area resulting from this alternative would not be one continuous hardened surface. Rather, the impervious surfaces would occupy several smaller areas, rather than one large site which would further minimize localized impacts to ground water recharge.

Floodplains

Proposed construction activities at the installation would not occur within a 100-year floodplain zone. There would be no impacts to floodplains under Alternative #1, as no construction activities would occur within the 100-year floodplain zone.

4.2.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ. Therefore, impacts to water resources under Alternative #2 would be the same as Alternative #1, with the exception of the impacts related to the parcel acquisition and construction of the MSC.

The proposed construction of the new MSC under Alternative #2 would occur within a 100-year floodplain zone. If it is determined that Alternative #1, as described in Section 4.2.2.1 cannot be implemented, then it has been determined that there is no practicable alternative to locating the MSC within the floodplain, as described under this alternative. As such, a Finding of No Practicable Alternative (FONPA) in accordance with EO 11988, *Floodplain Management*, will be prepared.

4.2.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. Impacts to water resources would be similar to those described under Alternative #1. However, this alternative would result in a reduction of 315,880 SF (7.25 acres) of disturbed surface as compared to Alternative #1, since a portion of Project #13 would be eliminated. The portion of Project #13 that would be eliminated would be the proposed parking area east of Macon Road (approximately 325,400 SF).

4.2.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new

entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Sidewalks, curbs, and gutters would also be included in this roadway extension. Impacts to water resources would be similar to those described under Alternative #2. However, this alternative would result in a reduction of 315,880 SF (7.25 acres) of disturbed surface as compared to Alternative #1, since a portion of Project #13 would be eliminated. The portion of Project #13 that would be eliminated would be the proposed parking area east of Macon Road (approximately 325,400 SF).

4.2.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline water resources, as described in Section 3.2, would remain unchanged. Therefore, no significant impacts to water resources would occur as a result of implementation of the No Action Alternative.

4.3 BIOLOGICAL RESOURCES

4.3.1 Methodology

This section analyzes the potential for impacts to biological resources at Moffett Field as a result of the Proposed Action. Analysis of impacts focuses on whether and how ground-disturbing activities and changes in airfield operations could affect biological resources.

Determination of the significance of potential impacts to biological resources is based on: (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; (2) the proportion of the resource that would be affected relative to its occurrence in the region; (3) the sensitivity of the resource to proposed activities; and (4) the duration of ecological ramifications. Impacts to biological resources would be considered significant if species or habitats of concern were significantly affected over relatively large areas or disturbances result in reductions in the population size or distribution of a special status species, or if laws, codes, or ordinances protecting special status species were violated.

4.3.2 Impacts

4.3.2.1 Alternative #1

Vegetation

Construction of facilities associated with Alternative #1 would require vegetation removal in landscaped and previously disturbed areas totaling approximately 412,392 SF (9.5 acres). However, due to the lack of sensitive vegetation at the proposed sites, proposed construction would not be expected to have significant impacts on vegetation at the installation. In addition, the areas disturbed by construction would be reestablished with native plants to the extent possible.

Wildlife

Construction activities associated with Alternative #1 would occur on previously developed lands or disturbed, actively managed areas (i.e., mowed or landscaped), and would result in temporary increases in noise associated with construction equipment. Construction related noise may temporarily displace wildlife from suitable habitat in the immediate vicinity of the project area. However, quality wildlife habitat is limited in areas of proposed construction because of the developed nature of the site. Additionally, wildlife species at Moffett Field are adapted to the existing urban/industrial environment. Impacts on wildlife from operations and maintenance of the new facilities would be minor, as they would be similar to existing operations and maintenance activities. Measures to deter raptors and other birds would be implemented on the communications tower, and USFWS guidelines for communication towers would be adhered to. In addition, the tower would be relocated to the antenna farm on the west side of the airfield, which would improve the overall habitat of the area. Long-term impacts to wildlife populations would not occur and there would be no significant impacts to wildlife as a result of implementation of the construction activities associated with Alternative #1.

Threatened and Endangered and Special Status Species

No significant impacts to special status species would be expected from the construction, demolition, or operation and maintenance of the new facilities associated with Alternative #1. No federally listed or proposed threatened or endangered species are known to reside within the proposed project area. However, several special status raptor species, including two Golden Eagles, Northern Harriers, White-tailed Kites, and American Peregrine Falcons occur at Moffett Field. Construction of the proposed projects could result in a loss of a small portion of raptor foraging habitat, including non-native grasslands and weed-dominated areas. However, the majority of the habitat is low quality. The amount and quality of habitat lost as a result of implementing Alternative #1 would be small compared to the amount of foraging habitat

available in the vicinity. This includes higher quality habitat present in the Bay View area and North of Bay View area on Moffett Field.

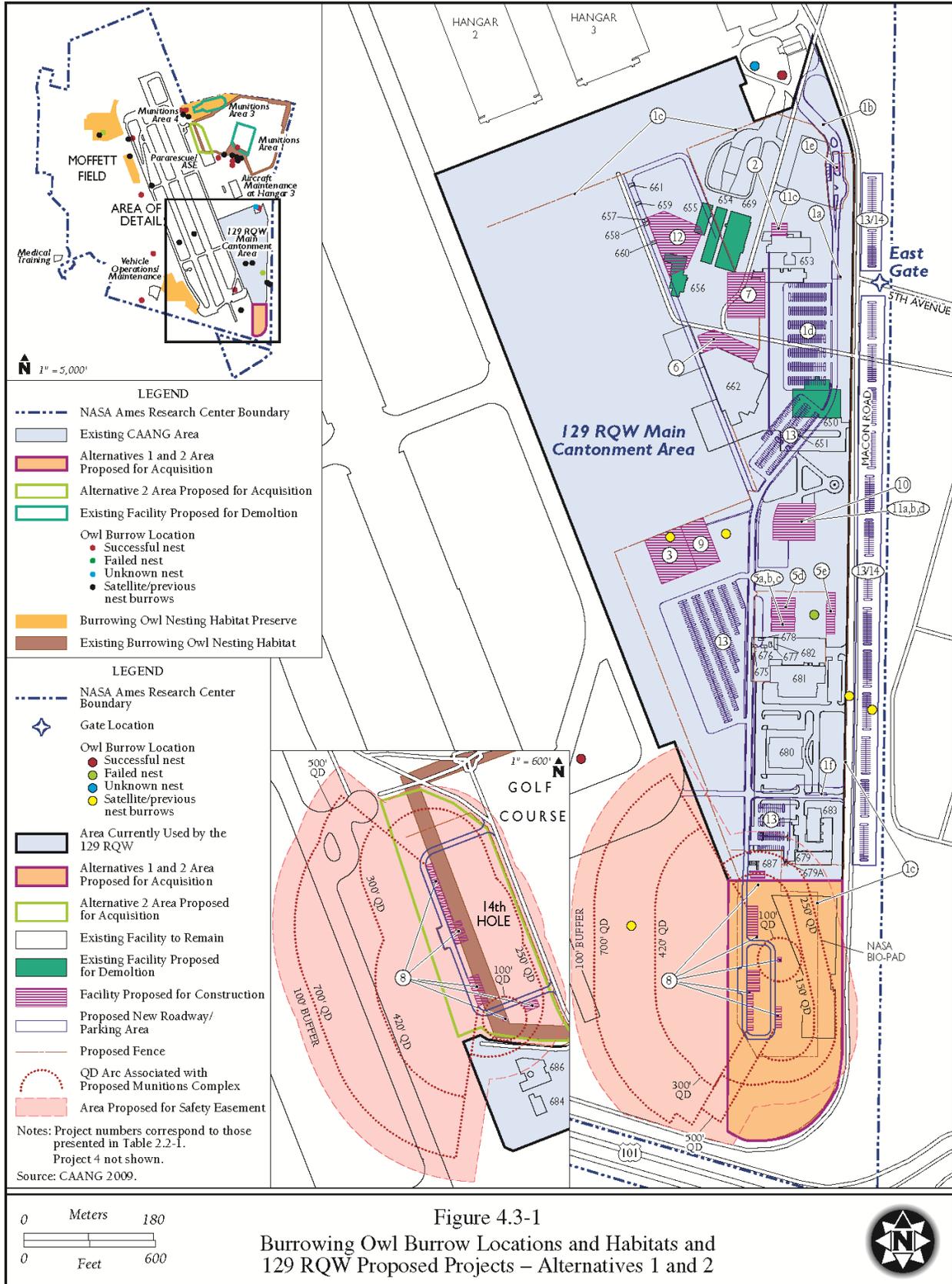
The western pond turtle has not been observed within the main cantonment area or within the footprints of the proposed projects, however, they have been observed within the Marriage Road Ditch in the eastside/airfield area and in the Northern channel, north of the eastside/airfield area. CAANG would adhere to NASA's Western Pond Turtle Management Plan and would survey for pond turtles prior to the start of construction. If pond turtles are found within the construction areas, they would be relocated.

The Western Burrowing Owl, which is listed as a California Species of Concern, has been observed within the main cantonment area. Project 8, MSC, would not be located within a designated Burrowing Owl nesting habitat preserve; however, historically owls have nested within this area. With the construction of the new MSC, there would be an opportunity for the Burrowing Owl to nest within the grassy areas around the new buildings, as the grass in these areas would be maintained at a relatively short height. The return of MSCs 1, 3, and 4 back to NASA, as well as their eventual demolition, would also provide opportunity for new habitat for the Burrowing Owl.

Currently, no active burrows with nests are located within footprints of the proposed projects; however, one successful nest and one unknown nest is located near the proposed main gate (Project 1), and one failed nest is located near the proposed Vehicle Maintenance and Base Hazardous Storage Shed (Project 5e). In addition, one satellite burrow that previously had nests is located within the footprint of the proposed pervious parking area east of Macon Road (part of Project #13), and one satellite burrow is located within the footprint of Project 3. Given that these projects would be implemented in phases over several years, it is also possible that new active burrows may be located in the future near the proposed construction areas.

In 2002, NASA prepared a Burrowing Owl Habitat Management plan that presents techniques for protecting the owls and their habitat, and establishes several Burrowing Owl nesting habitat preserves comprising 81 acres (NASA 2002) (Figure 4.3-1). Mitigation and avoidance measures were developed by NASA to avoid impacts to owls during normal operations and construction (NASA 2002). These same measures described in the 2002 NASA Ames Development Plan Final Programmatic EIS and Burrowing Owl Habitat Management Plan would be followed during construction of the proposed projects. Some of these measures are listed below:

1. For construction areas near owl habitat, CAANG would perform as much construction as possible outside of the breeding season, which typically runs from February 1 to August 31.



2. CAANG would minimize impacts during construction by keeping as far from nesting areas as possible. If possible, CAANG would provide a 160-foot buffer distance between occupied burrows and construction during the non-nesting season and a 250-foot buffer during the nesting season. If these distances could not be met (e.g., development near the NASA Research Park Preserve), CAANG would:
 - Work with a qualified owl biologist to determine appropriate distances.
 - Ensure that burrows are fenced off from construction areas.
 - Provide owls the opportunity to move from their existing burrows by installing artificial burrows further from construction activities. These burrows should be installed prior to construction.
3. CAANG would work with a qualified owl biologist to find routes for construction vehicles, construction staging areas, and other construction-related activities that would not impact owls or their burrows.
4. To avoid or mitigate for long-term impacts of more people near owl habitat, CAANG would:
 - Fence off owl habitat areas with attractive fencing and low, native shrubs.
 - Design paths around the perimeter of the owl habitat to allow people to see the owls, but not disturb them.
 - Not plan paths or traffic patterns through owl habitat.
 - Post educational signage to educate people about the Burrowing Owl and to help people understand the sensitive nature of the habitat.
 - Prohibit walkers, bikers, and dogs from walking through the habitat.
 - Monitor the areas for degradation associated with human use and implement further protective measures as needed.
 - Cooperate and coordinate with NASA Ames Environmental Management Division in implementing NASA Ames Feral Cat Management Plan in response to USFWS direction to control predators known to prey on species occurring at Moffett Field that are protected under the ESA and to also prevent predation of Burrowing Owls.

5. To avoid road collisions, CAANG would:
 - Post 25 mile per hour (mph) speed limit signs along roads next to owl habitat, and 5 mph signs next to active owl nests.
 - Route as much traffic as possible along roads away from owl habitats if significant increases in traffic would occur at night.
 - Plan new roads or other transportation corridors away from owl habitat and concentrate traffic in already developed areas, whenever possible.
 - Develop and implement a program to monitor traffic impacts to Burrowing Owls.
6. If nesting habitat or potential nesting habitat would be affected by development, CAANG would survey all development areas in accordance with the CDFG *Staff Report on Burrowing Owl Mitigation* prior to construction. If owls are found on site and they would be passively relocated outside the breeding season in accordance with CDFG requirements. If owls must be relocated, at least three artificial burrows per owl pair or single bird would be installed in on-site areas enhanced for owl use if this is deemed appropriate by a qualified wildlife biologist. Burrows may also be installed in owl preserves or existing owl habitat areas, if this is deemed acceptable by a qualified owl biologist.
7. To raise awareness of Burrowing Owl mitigation requirements, CAANG would coordinate with NASA Ames Environmental Management Division to present awareness material to CAANG personnel and contractors. NASA will provide training to all contractors coming onto the 129 RQW, and will provide a flyer briefing temporary contractors regarding the Burrowing Owl.
8. CAANG would coordinate its mowing schedule with NASA in order to be consistent with their Burrowing Owl management.

NASA is continuing to practice adaptive management strategies with regard to Burrowing Owl Management. This includes a Squirrel Management team composed of members from NASA, the Army, athletic teams that utilize NASA property, the USDA, and CAANG. This team annually reviews the action plan in order to take into account current Burrowing Owl management needs. In addition, after discussion with the CDFG and the Santa Clara Valley Audubon Society in 2008, NASA is following the basic approach adopted in the San Jose International Airport (SJC) EIS Burrowing Owl Management Plan that these organizations recommended. The SJC Airport plan includes abatement by maintenance crews of ground squirrels in the safety boxes around the runways and between the runways and to passively

relocate Burrowing Owls from these areas and around construction sites. Since CAANG is not proposing a change in the use of the airfield, Alternative #1 would not impact these on-going efforts. In contrast to SJC Airport, NASA does abate ground squirrels in the approach zones because of the high risk associated with Red-tailed Hawks when large and very heavy aircraft approach at low altitude, and the use of single engine T-38's (flown by astronauts) that are highly vulnerable to bird ingestion. NASA Ames Airfield Operations also participates on the Squirrel Team and actively coordinates with the Ames Environmental Management Division to minimize risk to Burrowing Owls when passive relocation is required for safety reasons. Airfield Operations maintains a contract with USDA for wildlife hazard management on the airfield proper and USDA maintains requisite permits from USFWS. USDA participates in the Ames Environmental Management Division's Squirrel Team and weekly wildlife management updates to coordinate responses to changing wildlife conditions on the airfield and anticipated flight operations. The Ames Environmental Management Division also participates in the Airfield Operations meetings and the ANG BASH twice yearly meetings.

In addition, NASA is currently updating their 20 year Master Plan, while actively reviewing and incorporating habitat requirements in order to help maintain a stable population. The 129 RQW would continue to coordinate with NASA as these updates occur.

Implementation of these mitigation and avoidance measures by CAANG, and continual coordination with NASA Environmental regarding any updated management strategies, would ensure that potential impacts to the Burrowing Owls would be minimized. With these measures in place, impacts to Burrowing Owls would not be expected to be significant.

Wetlands

Approximately 42.4 acres of seasonal jurisdictional wetlands have been identified on Moffett Field. However, no wetlands occur within the project identified for construction projects associated with this EA. Therefore, construction activities under this alternative would have no impact on wetlands.

4.3.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described under Alternative #1 would be implemented; however the location of Project 8, MSC, would differ in location. The impacts to biological resources from Alternative #2 would be expected to be similar to those resulting from Alternative #1 since no Burrowing Owl preserves and no active burrows are located within Alternative #2 location. In addition, while existing habitat does occur, historically no burrows have been found in this area. Since the projects would occur over a span of several years, a Burrowing Owl survey would be completed prior to construction of each project. If new burrows are found within or near the project areas, mitigation and avoidance measures as described under Alternative #1 would also be implemented for Alternative #2.

4.3.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface) (see Figure 4.3-2). In general, impacts to biological resources would be similar to those described in Alternative #1. However, impacts to Burrowing Owls and potential habitat would be less than those described under Alternative #1 and #2, since less potential habitat would be lost east of Macon Road, and the satellite burrow located within this area would not be affected. Since the projects would occur over a span of several years, a Burrowing Owl survey would be completed prior to construction of each project. If new burrows are found within or near the project areas, mitigation and avoidance measures as described under Alternative #1 would also be implemented for Alternative #3.

4.3.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). In general impacts to biological resources would be similar to those described in Alternative #2. However, impacts to Burrowing Owls and potential habitat would be less than those described under Alternative #1 and #2, since less potential habitat would be lost east of Macon Road, and the satellite burrow located within this area would not be affected. Since the projects would occur over a span of several years, a Burrowing Owl survey would be completed prior to construction of each project. If new burrows are found within or near the project areas, mitigation and avoidance measures as described under Alternative #1 would also be implemented for Alternative #4.

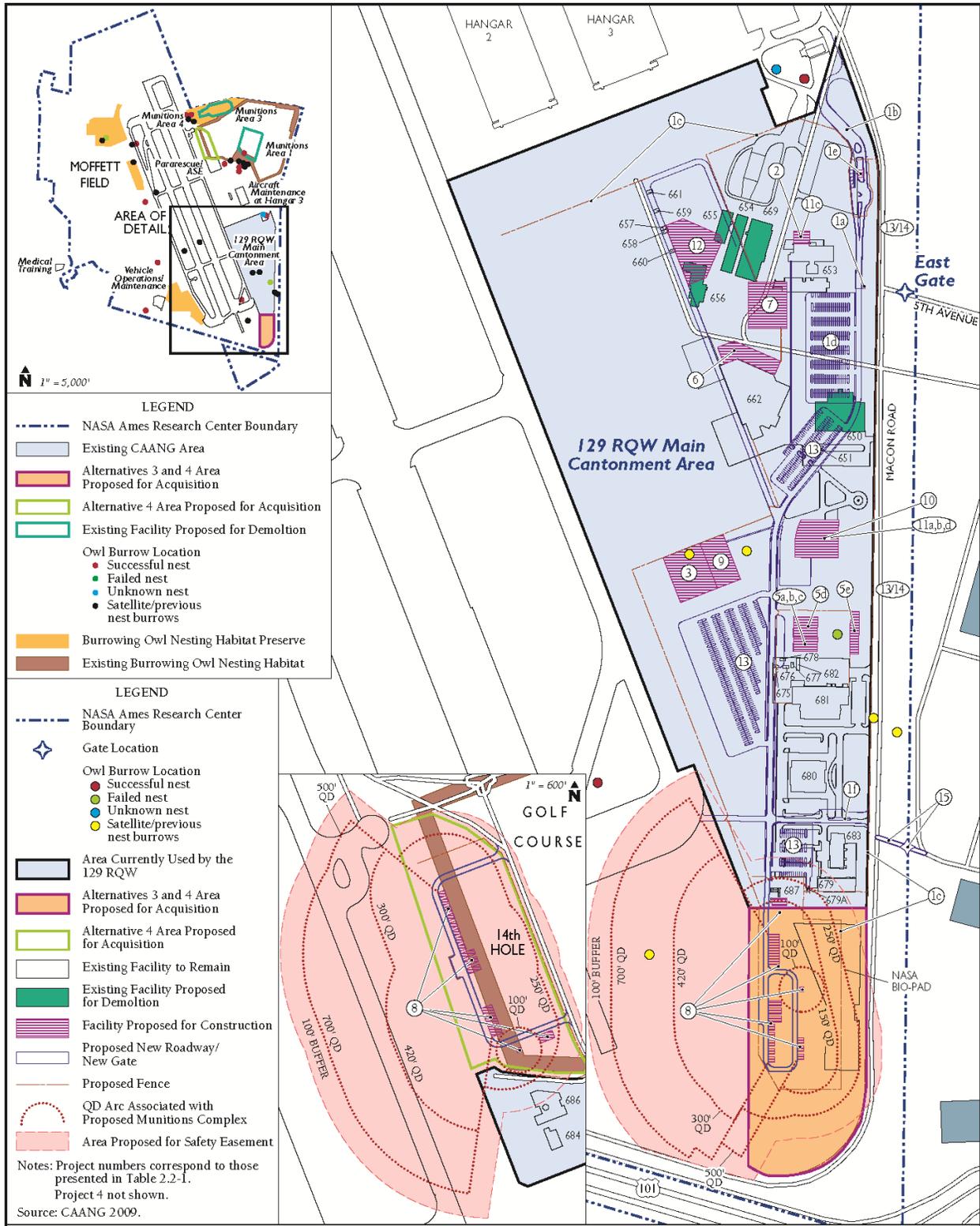
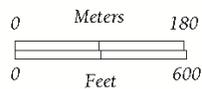


Figure 4.3-2
 Burrowing Owl Burrow Locations and Habitats and
 129 RQW Proposed Projects – Alternatives 3 and 4



4.3.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline biological resources, as described in Section 3.3, would remain unchanged. Therefore, no significant impacts to biological resources would occur as a result of implementation of the No Action Alternative.

4.4 AIR QUALITY

4.4.1 Methodology

Emission thresholds associated with federal CAA conformity requirements are the primary means of assessing the significance of potential air quality impacts associated with implementation of a proposed action under NEPA. A formal conformity determination is required for federal actions occurring in nonattainment or maintenance areas when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed *de minimis* thresholds. In addition, a formal conformity determination is required for actions defined as regionally significant (i.e., if the total emissions from a federal action exceed 10 percent of a nonattainment area's emission inventory for that pollutant).

Significant air quality impacts would occur if implementation of any of the alternatives would directly or indirectly:

1. expose people and sensitive receptors to localized (as opposed to regional) air pollutant concentrations that violate state or federal ambient air quality standards;
2. cause a net increase in pollutant or pollutant precursor emissions that exceeds relevant emission significance thresholds (such as CAA conformity *de minimis* levels or the numerical values of major source thresholds for nonattainment pollutants); or
3. conflicts with adopted air quality management plans, policies, or programs.

Criteria to determine the significance of air quality impacts are based on federal, state, and local air pollution standards and regulations. For purposes of this air quality analysis, project emissions within the project area would be considered significant if project emissions exceed the thresholds that trigger a conformity determination under Section 176(c) of the 1990 CAA (100 tons per year of VOC, NO_x, or CO).

If emissions exceed a significance threshold described above, further analysis of the emissions and their consequences would be performed to assess whether there was likelihood of a significant impact to air quality. The nature and extent of such analysis would depend on the

specific circumstances. The analysis could range from simply a more detailed and precise examination of the likely emitting activities and equipment, to air dispersion modeling analyses. If project emissions were determined to increase ambient pollutant levels from below to above a national or state ambient air quality standard, these emissions would be considered significant.

4.4.2 Impacts

4.4.2.1 Alternative #1

Air quality impacts would occur from the use of heavy equipment during demolition and construction activities, other project-related vehicles, worker commute trips, and demolition debris truck trips. Total emissions resulting from project activities have been estimated using data presented in Chapter 2, general air quality assumptions, and standard emission factors. For the purposes of establishing compliance with conformity requirements, emissions have been estimated by project implementation year (refer to Table 2.2-1). Emissions calculations and assumptions are presented in Appendix B.

Although demolition activities may occur over multiple years, for the purposes of providing “worst-case” estimated emissions, it was assumed that all facility demolition activities would occur within one calendar year (i.e., 2010) with the exception of demolition of the existing MSA facilities, which would occur during the 2013 calendar year (Project 8). Emissions calculations also account for demolition debris transport to a regional landfill. Construction of Project 13, Additional Parking, would also likely occur over multiple years; however, for the purposes of providing “worst-case” estimated emissions, the entire project was assumed to occur within the 2015 proposed implementation year. Since emissions associated with installation of Project 14, Solar Panels, was assumed to be minor or non-existent, no emissions estimates are provided for the 2017 implementation year.

Implementation of Alternative #1 would result in temporary increases in criteria pollutant emissions associated with demolition and construction activities. Annual emissions resulting from proposed activities have been estimated and compared with *de minimis* thresholds to assess potential air quality impacts (Table 4.4-1).

Vehicle emissions generated by proposed demolition and construction activities would be temporary and short-term; no long-term increases in vehicle emissions would occur under the proposal. Emissions associated with construction and demolition-related vehicles and equipment would be minor, as most vehicles would be driven to and kept at the relevant site until project activities are complete. There would be no long-term increase in mobile or stationary source emissions in the region. In addition, the proposed demolition and construction activities would comply with CAA Section 112g provisions for controlling the release of HAPs through the use of Best Available Control Technologies during demolition and construction activities. Resulting emissions would be expected to be below *de minimis* levels for conformity. Furthermore,

estimated emissions would not be regionally significant, as they would be substantially less than 10 percent of the Air Basin’s estimated emission budgets (refer to Table 4.4-1). Therefore, implementation of Alternative #1 would not trigger a formal conformity determination under Section 176(c) of the CAA and no significant impacts to air quality would occur.

Table 4.4-1. Estimated Emissions Resulting from Implementation of Alternative #1

<i>Project Emissions per Implementation Year</i> <i>Annual Tons Total</i>	POLLUTANT					
	<i>VOCs¹</i>	<i>NO_x¹</i>	<i>CO²</i>	<i>SO_x</i>	<i>PM₁₀</i>	<i>PM_{2.5}</i>
2010 Construction & Demolition Emissions	1.09	12.29	4.78	0.01	4.58	0.52
2011 Construction Emissions	0.41	4.55	1.96	0.00	0.44	0.21
2012 Construction Emissions	0.42	4.73	2.08	0.00	0.45	0.22
2013 Construction and Demolition Emissions	0.77	6.41	2.68	0.00	0.60	0.30
2014 Construction Emissions	0.44	4.91	2.14	0.00	0.68	0.25
2015 Construction Emissions	0.76	8.72	3.51	0.01	4.87	0.81
2016 Construction Emissions	0.23	2.53	1.09	0.00	0.34	0.13
<i>de minimis</i> threshold ³	100	100	100	100	100	100
Exceeds <i>de minimis</i> threshold?	No	No	No	No	No	No
Air Basin emissions forecast (2010)	59,532	126,144	506,401	5,256	7,227	57,301
Exceeds 10% of forecast?	No	No	No	No	No	No

- Notes:
1. The San Francisco Bay Area Air Basin is in “marginal” nonattainment of the federal O₃ standard; VOCs and NO_x are precursors to the formation of O₃.
 2. The San Francisco Bay Area Air Basin is a “moderate” maintenance area for the federal CO standard and is in attainment of all other federal criteria pollutant standards.
 3. *de minimis* thresholds are not applicable to NAAQS attainment areas (i.e., SO₂, PM₁₀ and PM_{2.5}) but have been presented for planning purposes only.

Sources: USEPA 2009c; CARB 2009e

Fugitive dust (i.e., PM₁₀ and PM_{2.5}) would increase (as a result of surface disturbances associated with construction and demolition activities) and would temporarily impact local air quality. However, fugitive dust generated by proposed construction and demolition activities would be temporary and short-term; no long-term increases in fugitive dust would occur. Additionally, increases in PM₁₀ and PM_{2.5} and would be moderated through BMPs (i.e., watering exposed soils, soil stockpiling, and soil stabilization), thereby limiting the total quantity of fugitive dust emitted during project implementation. Therefore, no significant impacts to air quality would occur as a result of increases in PM₁₀ and PM_{2.5} associated with Alternative #1.

4.4.2.2 Alternative #2

The differences between Alternatives #1 and #2 are modest. Under Alternative #2, the same demolition and construction projects described under Alternative #1 would be implemented, with the exception that the location of Project 8, MSC, would differ.

Although the location of Project 8 would differ, the general construction footprint, design, equipment mix, and duration would be virtually the same as Alternative #1. Thus, the amount of air emissions generated by demolition and construction activities with implementation of Alternative #2 would be expected to be the same as described under Alternative #1 (refer to Table 4.4-1). Therefore, estimated emissions associated with Alternative #2 would also be below the *de minimis* levels for conformity, and no significant impacts to air quality would be expected with implementation of Alternative #2.

4.4.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be constructed. The amount of air emissions generated by demolition and construction activities with implementation of Alternative #3 would be expected to be similar to, but slightly less than those listed under Alternative #1 (refer to Table 4.4-1). Therefore, estimated emissions associated with Alternative #3 would also be below the *de minimis* levels for conformity, and no significant impacts to air quality would be expected with implementation of Alternative #3.

4.4.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be constructed. The amount of air emissions generated by demolition and construction activities with implementation of Alternative #4 would be expected to be similar to, but slightly less than those described under Alternative #1 (refer to Table 4.4-1). Therefore, estimated emissions associated with Alternative #4 would also be below the *de minimis* levels for conformity, and no significant impacts to air quality would be expected with implementation of Alternative #4.

4.4.2.5 No Action Alternative

Under the No Action Alternative, the proposed demolition and construction activities would not occur. Existing air quality conditions (as described in Section 3.4.1) would remain unchanged; therefore, no significant impacts to air quality would occur.

4.5 LAND USE AND VISUAL RESOURCES

4.5.1 Methodology

The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a Proposed Action. In general, land use impacts would be significant if the action would: (1) be inconsistent or in non-compliance with applicable land use plans or policies, including the General Plans of Santa Clara County or the Cities of Mountain View and Sunnyvale (2) preclude the viability of an existing land use activity within Moffett Field, (3) preclude continued use or occupation of an area, (4) be incompatible with adjacent or vicinity land use to the extent that public health or safety is threatened, or (5) conflict with airfield planning criteria established to ensure the safety and protection of human life and property.

Determination of the significance of impacts on visual resources is based on the level of visual sensitivity in the area. Visual sensitivity is defined as the degree of public interest in a visual resource and the concern over potential adverse changes in the quality of that resource. In general, impacts to visual resources would be considered significant if implementation of an action resulted in a substantial alteration to an existing sensitive visual setting.

4.5.2 Impacts

4.5.2.1 Alternative #1

Proposed renovation and construction activities would be short-term but may cause minor traffic and/or noise disruptions to local residents as well as employees at Moffett Field. However, construction activities would be temporary, would be located within the airfield environment, which is typically dominated by aircraft noise, and would occur during normal business hours (i.e., between 7 a.m. and 5 p.m., Monday through Friday). Furthermore, much of the renovation activities would occur within the 129 RQW main cantonment area. Therefore, impacts on land use would not be significant.

The 129 RQW functions are currently spread out among seven separate parcels at Moffett Field; whereas, under Alternative #1, facilities would be situated on one contiguous parcel adjacent to the airfield. This would greatly streamline the 129 RQW's efficiency in daily operations. Implementation of this alternative would involve the 129 RQW obtaining a permit for the

cantonment area they have historically used, in addition to the 39.8 acres in the southern portion of Moffett Field for the construction of the new MSC and the protective easement. CAANG land uses would consist of similar functions at these locations. All facilities would be designed and sited to be compatible with existing land uses and airfield safety guidelines. Therefore, land use impacts at Moffett Field would not be significant.

Proposed renovation and construction would be visually consistent with existing structures at Moffett Field. The consolidation of like facilities would result in a more visually cohesive installation, which would result in a minor beneficial impact to visual resources. The addition of Project 8, MSC, would add additional structures that are visible from outside the main cantonment area, however, the visual environment of Moffett Field is already characteristic of an airport, and this would not be incongruent with the existing visual nature. Therefore, no significant impacts on local or regional visual resources would occur as a result of implementation of Alternative #1.

4.5.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC would differ in location. Rather than being located as described under Alternative #1, it would be located north of the 129 RQW main cantonment area, where Hole 14 of the golf course is currently located. This would require the CAANG to reconfigure the golf course and reconstruct Hole 14 in an alternate location, temporarily disrupting operations of the golf course. However, unlike Alternative #1, the MSA would not be visible from outside the installation, decreasing these minor impacts to visual resources. In general, impacts to land use and visual resources as a result of Alternative #2 would be temporary and minor.

4.5.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to land use and visual resources would be similar to those described in Alternative #1.

4.5.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to land use and visual resources would be similar to those described in Alternative #2.

4.5.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline land use and visual resources, as described in Section 3.5, would remain unchanged. Therefore, no significant impacts to land use and visual resources would occur as a result of implementation of the No Action Alternative.

4.6 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.6.1 Methodology

Socioeconomic impacts are assessed in terms of direct effects on the local economy and population and related indirect effects on other socioeconomic resources within the ROI. Socioeconomic impacts would be considered significant if the Proposed Action resulted in a substantial shift in population trends or notably affected regional employment, earnings, or community resources such as schools.

In order to comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, areas containing relatively high disadvantaged or youth populations are given special consideration regarding potential impacts in order to address the potential for disproportionately high or adverse human health or environmental effects to these communities. Ethnicity and poverty status in the vicinity of the Proposed Action have been examined and compared to city, county, state, and national data to determine if any minority or low-income communities could potentially be disproportionately affected by implementation of the Proposed Action or alternatives.

Three criteria must be met for impacts to minority and low-income communities to be considered significant: (1) there must be one or more such populations within the ROI, (2) there must be adverse (or significant) impacts from the Proposed Action; and (3) the environmental justice populations within the ROI must bear a disproportionate burden of those adverse impacts. If any of these criteria are not met, then impacts with respect to environmental justice would not be significant.

4.6.2 Impacts

4.6.2.1 Alternative #1

Economic activity associated with proposed construction and land acquisition activities at Moffett Field, such as employment and materials purchasing, would provide short-term economic benefits to the local economy. However, short-term beneficial impacts resulting from construction payrolls and materials purchased would be negligible on a regional scale. As Alternative #1 would not result in an increase or decrease in CAANG personnel levels, no long-term economic or demographic changes would occur upon implementation of Alternative #1. Therefore, implementation of Alternative #1 would not result in a significant impact to regional or local socioeconomic characteristics.

Under Alternative #1, construction and land acquisition activities would be contained entirely within the boundaries of Moffett Field. Analyses of resource areas have concluded that populations (including minority and low-income populations) outside the boundaries of Moffett Field would not be significantly impacted by implementation of Alternative #1. Therefore, implementation of Alternative #1 would not disproportionately impact minority or low-income populations.

Implementation of Alternative #1 would not result in environmental health risks or safety risks to children. NASA Ames Child Care Center is located near R.T. Jones Road, west of the runway, outside the project area. However, during proposed construction and renovation projects, standard construction site safety precautions (e.g., fencing and patrolling) would be implemented. The existing high-security environment at the installation prohibits access by unauthorized personnel. For these reasons, potential health or safety impacts to children living or playing in the vicinity of the installation would be minimized. Therefore, no significant impacts to children from health risks or safety risks would occur as a result of implementing Alternative #1.

4.6.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however the location of Project 8, MSC, would differ. The impacts to

economic resources from Alternative #2 would be virtually identical to that those resulting from Alternative #1.

4.6.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to economic resources would be similar to those described in Alternative #1.

4.6.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to economic resources would be similar to those described in Alternative #2.

4.6.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities at Moffett Field. Baseline socioeconomics and environmental justice conditions, as described in Section 3.6, would remain unchanged. Therefore, no significant impacts to environmental justice conditions would occur, nor would children be disproportionately exposed to increased health or safety risks as a result of implementation of the No Action Alternative.

4.7 CULTURAL RESOURCES

4.7.1 Methodology

Cultural resources are subject to review under both federal and state laws and regulations. Section 106 of the NHPA of 1966 empowers the ACHP to comment on federally initiated,

licensed, or permitted projects affecting cultural sites listed or eligible for inclusion on the NRHP. Once cultural resources have been identified, significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the NHPA.

Analysis of potential impacts on cultural resources considers both direct and indirect impacts. Direct impacts may occur by: (1) physically altering, damaging, or destroying all or part of a resource; (2) altering characteristics of the surrounding environment that contribute to resource significance; (3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or (4) neglecting the resource to the extent that it deteriorates or is destroyed. Direct impacts can be assessed by identifying the type and location of the proposed action and by determining the exact locations of cultural resources that could be affected. Indirect impacts primarily result from the effects of project-induced population increases and the resultant need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. Subsequent use of these activities and facilities can disturb or destroy cultural resources.

4.7.2 Impacts

4.7.2.1 Alternative #1

There are several buildings listed on the NRHP within Moffett Field; however, none are proposed for demolition or renovation as part of the 129 RQW Master Plan Update (CAANG 2009b). Visual, noise, and air pollution impacts to these historic buildings would be controlled through design, and during construction, demolition, operations, and maintenance in accordance with Programmatic Agreement associated with NASA Ames Development Plan Programmatic EIS and ROD (NASA 2002)

Three projects (Projects 4, 11 and 13) overlap with three potential archaeologically-sensitive areas. However, it is no longer possible to find evidence of any of the sites due to the disturbed nature of the sites resulting from agriculture, fill, and development over the course of the century (NASA 2002; Ashbaugh 2009). Future construction/excavation activities in these areas would follow standard construction procedures, and in the event that archaeological materials are encountered, construction would cease until the materials could be properly evaluated, and mitigation measures developed in accordance with the Programmatic Agreement associated with NASA Ames Development Plan Programmatic EIS and ROD (NASA 2002).

Given these conditions, Alternative #1 would not result in significant direct or indirect effects on historic facilities, including the Shenandoah Plaza Historic District that also includes Hangars 2

and 3, or on archaeological resources. Therefore, no significant impacts to cultural resources would occur from implementation of Alternative #1.

4.7.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ. The Alternative #2 location for the new MSC does not overlap any known archaeological sites. As a result, the potential for impacts to cultural resources from Alternative #2 would be somewhat less than under Alternative #1, even though there would be no anticipated significant impacts under Alternative #1 either. No significant impacts to cultural resources would occur from implementation of the Alternative #2.

4.7.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Impacts to cultural resources would be similar to those described in Alternative #1.

4.7.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to cultural resources would be similar to those described in Alternative #2.

4.7.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities at Moffett field. Baseline conditions for cultural resources, as described in Section 3.7, would remain unchanged. Therefore, no significant impacts to cultural resources would occur as a result of implementation of the No Action Alternative.

4.8 SOLID AND HAZARDOUS MATERIALS AND WASTES

4.8.1 Methodology

This section addresses the potential impacts caused by hazardous materials and waste management practices and the impacts of existing contaminated sites on reuse options. Hazardous materials and petroleum products, hazardous and petroleum wastes, IRP sites, asbestos, LBP, and solid wastes are discussed in this section.

The qualitative and quantitative assessment of impacts from hazardous materials and solid waste management focuses on how and to what degree the alternatives affect hazardous materials usage and management, hazardous waste generation and management, and waste disposal. A substantial increase in the quantity or toxicity of hazardous substances used or generated would be considered potentially significant. Significant impacts could result if a substantial increase in human health risk or environmental exposure was generated at a level that cannot be mitigated to acceptable standards.

Regulatory standards and guidelines have been applied in evaluating the potential impacts that may be caused by hazardous materials and wastes. The following criteria were used to identify potential impacts:

- Generation of 100 kilograms (or more) of hazardous waste or 1 kilogram (or more) of an acutely hazardous waste in a calendar month, resulting in increased regulatory requirements.
- A spill or release of a reportable quantity of a hazardous substance as defined by the USEPA in 40 CFR Part 302.
- Manufacturing, use, or storage of a compound that requires notifying the pertinent regulatory agency according to the EPCRA.
- Exposure of the environment or public to any hazardous material and/or waste through release or disposal practices.

Impacts to solid waste are evaluated in terms of decrease in capacity or life span at receiving landfills.

4.8.2 Impacts

4.8.2.1 Alternative #1

Hazardous Materials and Petroleum Products

Under Alternative #1, the quantities of hazardous materials and petroleum substances used throughout the installation would not change substantially over the long term. Construction and demolition activities would cause short-term increases in the quantities of hazardous materials (e.g., paint) and petroleum products (e.g., vehicle fuel) used and stored within the installation. The 129 RQW is responsible for managing these materials in accordance with federal, state, and local regulations to protect their employees from occupational exposure to hazardous materials and to protect the public health of the surrounding community. The operating location would be responsible for the safe storage and handling of hazardous materials used in conjunction with all construction and demolition activities. These materials would be delivered to the installation in compliance with the Hazardous Materials Transportation Act, and the Chemical Transportation Security Plans developed by NASA Ames and CAANG.

The number of operations flown with the MC-130P aircraft and HH-60 helicopters is not expected to change as a result of Alternative #1. Therefore, the amount of maintenance fluids, aircraft lubricants, and jet fuel would be expected to remain the same after implementation of Alternative #1.

Hazardous and Petroleum Wastes

The proposed construction and demolition activities would cause short-term increases in the volume of hazardous and petroleum wastes generated. Wastes generated by the construction and demolition contractors are managed and removed offsite by these contractors and would be handled in accordance with federal, state, and local laws and regulations. In addition, under Alternative #1, Building 662, an IAP, is scheduled for an addition and Buildings 650 and 656, also existing IAP sites, are scheduled for demolition. Further, Buildings 686 and 685 currently generate medical and biohazardous wastes and are scheduled for release. Hazardous waste would be removed under USEPA ID Number CA1800005034 and an authorized representative would sign all manifests to ensure they are correct. The contractor would manage waste on site in accordance with the installation Hazardous Waste Management Plan.

With regard to long-term impacts, the amount of hazardous and petroleum wastes generated would be expected to remain the same after implementation of Alternative #1 because flying operations would not change under Alternative #1.

Installation Restoration Program Sites

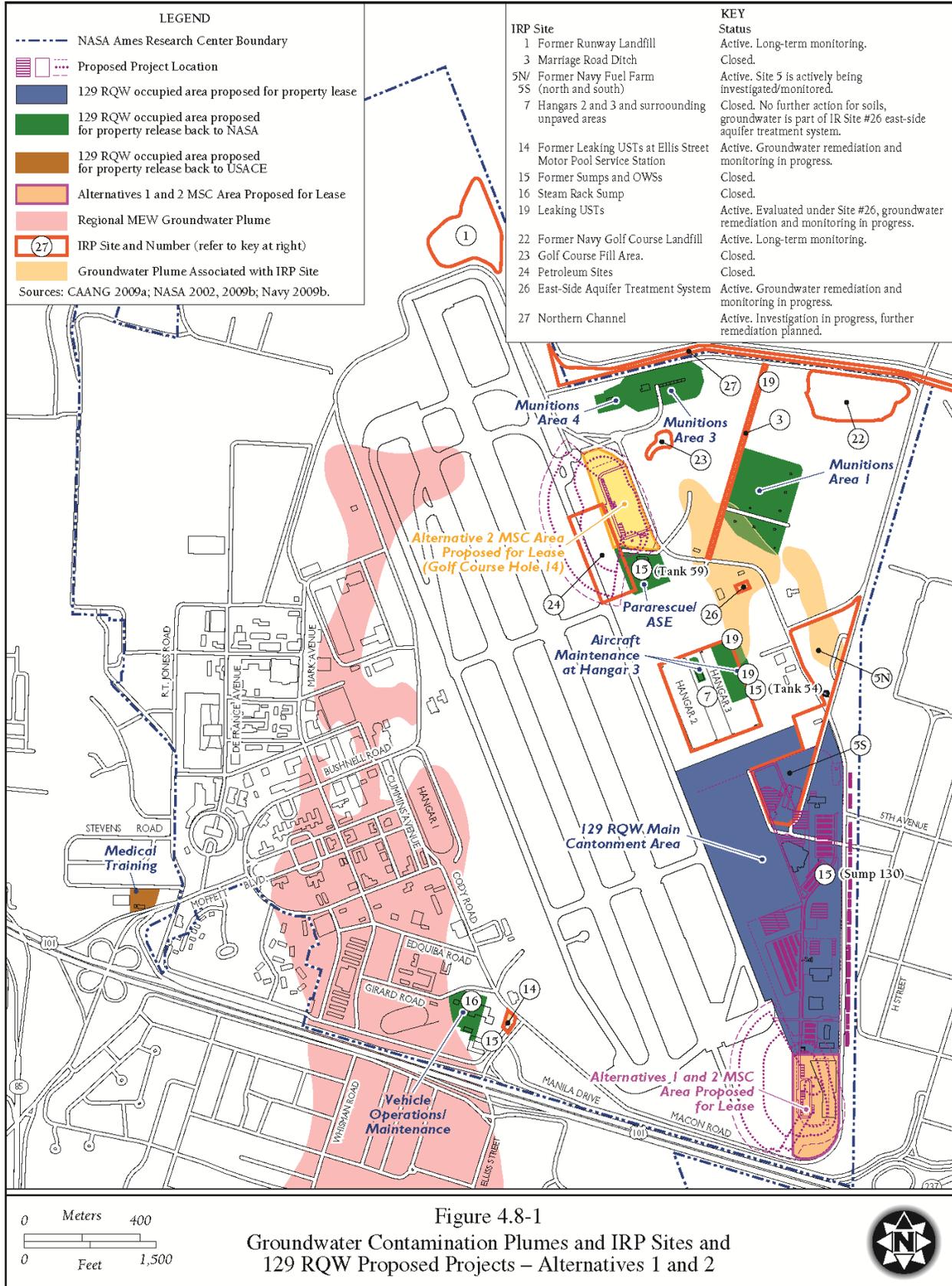
Project #3, as shown on Figure 4.8-1, with regard to exposure to contaminated soils, one active IRP site, Site 5 South, the former Navy Fuel Farm, is located within the vicinity of Alternative #1 within the Main Campus of the CAANG. However, prior to initiating construction near the existing IRP Site 5, close coordination with U.S. Department of the Navy, NASA, and other appropriate regulatory agencies (e.g., County of Santa Clara Department of Environmental Health, Hazardous Materials Compliance Division, USEPA, and RWQCB) would be necessary in order to establish protective measures for future development and use of the property, without disturbing the Navy remediation and restoration activities. In addition, the existing NASA Bio Pad has been used by the Navy Base Realignment and Closure Program Management Office in the past as a laydown area for on-going environmental remediation work. If the Alternative #1 MSC area is selected, a suitable replacement NASA Bio Pad would be constructed to accommodate future environmental remediation work.

If contaminated media (e.g., soil, groundwater) were encountered during the course of site preparation (e.g., clearing, grading) or site development (e.g., excavation for installation of building footers) for any of the projects under Alternative #1, samples would be collected to determine whether the media are contaminated, and contaminated media would be segregated for offsite disposal or for onsite reuse as appropriate. The CAANG would consult with the Environmental Manager to ensure that none of the proposed activities would expose personnel to unacceptable levels of contaminated soil or groundwater and to establish an appropriate course of action for each proposed construction project to ensure that federal and state agency notification requirements are met and to arrange for agency consultation as necessary should existing IRP sites be affected. During the bidding and scoping processes for each construction project, contractors would be notified of the nature and extent of known contamination so that they can inform their employees in advance of onsite activities and take appropriate precautions to protect health and safety and to prevent the spread of contamination to minimize any potential risk of exposure.

Storage Tanks and Oil Water Separators

With regard to exposure to contaminated soils, no active USTs or ASTs are located within the areas for proposed construction. Two active OWSs that serve the 129 RQW (located at Buildings 684, scheduled for release and 662, scheduled for an addition) are located within areas associated with Alternative #1. Since the proposed repairs/additions to Building 662 and release of Building 684 do not include the removal or disturbance of the OWSs, exposure to contaminated soils is not expected.

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Solid Waste

Alternative #1 would create a temporary increase in the quantities of solid waste from debris generated during demolition and construction. Approximately 3,432 tons would be generated due to demolition activities, while approximately 1,972 tons would be generated during construction. However, the increase would only last through the duration of the construction and demolition projects and would occur intermittently; therefore, these quantities would not generate substantial impacts to Santa Clara County. The contractor would be responsible for arranging transportation and disposal of waste generated during the demolition and construction activities. To assist in the reduction of demolition and construction debris to reduce impacts on current landfill space and in accordance with AFI 32-7042, *Waste Management*, every practical effort would be made to maximize non-hazardous waste reduction from landfills through reuse, donation, recycling, composting, and mulching or other waste diversion activities. In addition, construction projects would incorporate LEED and sustainable development concepts, so as to achieve optimum resource efficiency, constructability, sustainability, and energy conservation.

Asbestos

Asbestos has been found in a number of buildings constructed before 1978 when use of asbestos in construction materials was common. An asbestos survey was conducted in February 2005; only a portion of the buildings occupied by the 129 RQW (approximately 50 buildings) were tested for ACM (CAANG 2005). According to the 2005 asbestos survey, ACM is present in Buildings 654 and 669 scheduled to be demolished. When required by law or as a precautionary measure, ACM is removed through contract action by specialized firms. Removed ACM is transported offsite by appropriately licensed transporters and disposed in permitted landfill facilities in accordance with applicable federal, state, local, and DoD regulations. Prior to renovation and demolition activities under Alternative #1, surveys would be conducted to determine the presence of ACM. If ACM are found to be present, the CAANG employ appropriately trained and licensed contractors to perform the ACM removal work, and would notify the contractor of the presence of ACM so that appropriate precautions can be taken to protect the health and safety of the workers. ACM would be segregated for disposal and managed in accordance with applicable federal, state, and local regulations. Since no ACM would be used in the construction /finishing of the proposed new facilities and demolition/renovation would likely remove small quantities of ACM from the existing facilities, the proposed projects are expected either to have no impact or slightly reduce the quantity of ACM at the installation

Lead-Based Paint

There are several structures and buildings known to contain LBP on the CAANG installation, and the LBP in these areas is managed in-place in accordance with industry guidelines and practices in order to minimize the potential for creation of respirable dust, direct contact with the LBP surfaces, and contamination of the surrounding environment. According to the 2008 LBP survey, LBP is present in Building 653, scheduled to be renovated, and Buildings 650, 656, and 669 scheduled to be demolished under Alternative #1. Additionally, it is possible LBP may be encountered during repair and/or renovation of other buildings as a result of Alternative #1. Therefore, all construction debris with potential LBP would be tested to determine if it qualifies as a RCRA-hazardous waste and then disposed of in accordance with applicable federal, state, and ANG regulations. In those buildings where LBP is found to be present, the CAANG would employ appropriately trained and licensed contractors to perform work involving the LBP and would notify the contractor of the presence of LBP so that appropriate precautions can be taken to protect the health and safety of the workers. Since no LBP would be used in the construction/finishing of the proposed new facilities and renovation would likely remove small quantities of LBP from the existing facilities, Alternative #1 is expected to either have no impact or slightly reduce the quantity of LBP at the installation.

4.8.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ. The proposed permit acquisition of the alternative MSC area is classified as a Category 2 Property (*Areas where hazardous substances or petroleum products were stored, but no release, disposal, or migration from adjacent areas has occurred*). Although the site is currently the location of Golf Course Hole #14, based on interviews and a review of historical aerial photographs when the site was used for Navy operations, it has been presumed that hazardous substances or petroleum products may have been stored on or near the site, but no evidence of previous releases or contamination exists. As with Alternative #1, should any indication of contamination be present during construction activities, work would stop and the Environmental Manager would be contacted for further direction. In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Impacts associated with implementation of Alternative #2 would not be expected to be significant.

4.8.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of

Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue (Figure 4.8-2). A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to solid and hazardous waste materials would be similar to those described in Alternative #1. As with the other alternatives, should any indication of contamination be present during construction activities, work would stop and the Environmental Manager would be contacted for further direction. In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Impacts associated with implementation of Alternative #3 would not be expected to be significant.

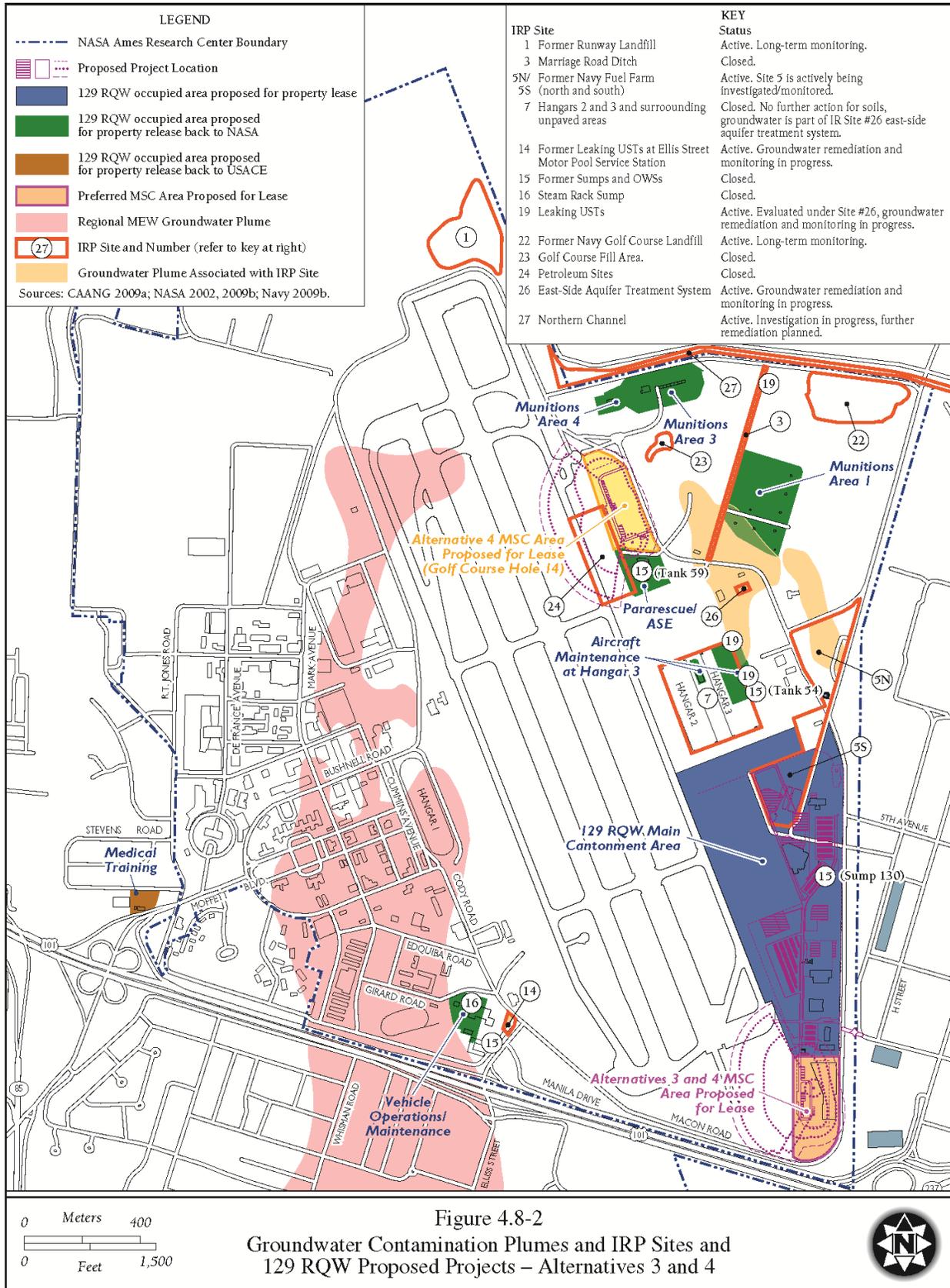
4.8.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to solid and hazardous waste materials would be similar to those described in Alternative #2. As with the other alternatives, should any indication of contamination be present during construction activities, work would stop and the Environmental Manager would be contacted for further direction. In addition, soils testing for contamination and seismic capability (as defined in EO 12941, *Seismic Safety of Existing Federally Owned or Leased Buildings*) would be conducted prior to construction. Impacts associated with implementation of Alternative #4 would not be expected to be significant.

4.8.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline hazardous materials and wastes, as described in Section 3.8, would remain unchanged. Therefore, no significant impacts to hazardous materials and wastes would occur as a result of implementation of the No Action Alternative.

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4.9 SAFETY

4.9.1 Methodology

Impacts to safety would be considered significant if implementation of the Proposed Action would substantially increase risks associated with aircraft mishap potential or flight safety relevant to the public or the environment. In addition, significant impacts would occur if implementation of the Proposed Action would result in incompatible land use with regard to safety criteria such as QD arcs.

4.9.2 Impacts

4.9.2.1 Alternative #1

Providing new and renovated facilities in a more consolidated layout for the 129 RQW that support operational requirements and are properly sited with adequate space and a modernized supporting infrastructure would generally enhance ground and explosive flight safety during required operations, training, maintenance and support procedures, security functions, and other activities conducted by the 129 RQW.

Ground Safety

The installation of new and upgraded fire suppression systems in proposed new buildings to be constructed under Alternative #1 would result in an increase in structures on the installation being in compliance with USAF fire safety regulations. Implementation of Alternative #1 would result in positive impacts to fire safety at the 129 RQW installation.

Proposed projects would bring some of the 129 RQW's existing facilities into compliance with AT/FP standards, including Project 1, Force Protection Measures, and Project 13, Additional Parking. In addition, all proposed new structures would be in full compliance with AT/FP requirements.

Implementation of Alternative #1 would involve ground activities that may expose workers performing the required site preparation, grading, and building construction to some risk. The Department of Labor Bureau of Labor Statistics maintains data analyzing fatal and non-fatal occupational injuries based on occupation. Due to the varying range of events classified as non-fatal injuries, the considerations described below focus on fatal injuries since they are the most catastrophic. Data are categorized as incidence rates per 100,000 workers employed (on an annual average) in a specific occupation. To assess relative risk associated with this proposal, it was assumed that the industrial classifications of workers involved are in the construction trades. Based on Department of Labor Bureau of Labor Statistics data for calendar year 2007, the probability of a fatal injury was 10.5 per year out of 100,000 employed (Bureau of Labor

Statistics 2007). Although DoD guidelines for assessing risk hazards would categorize the hazard category as “catastrophic” (because a fatality would be involved), the expected frequency of the occurrence would be considered “remote” (MIL-STD-882D 2000). Strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with these construction activities. In addition, the installation of photovoltaic panels associated with the installation of a photovoltaic power generation system may cause an increase in glare to pilots with a southern/southeasterly orientation of panels. A siting study for any photovoltaic power generation system installation would be reviewed by the NASA.

Therefore, no significant safety impacts related to proposed renovation and construction would occur.

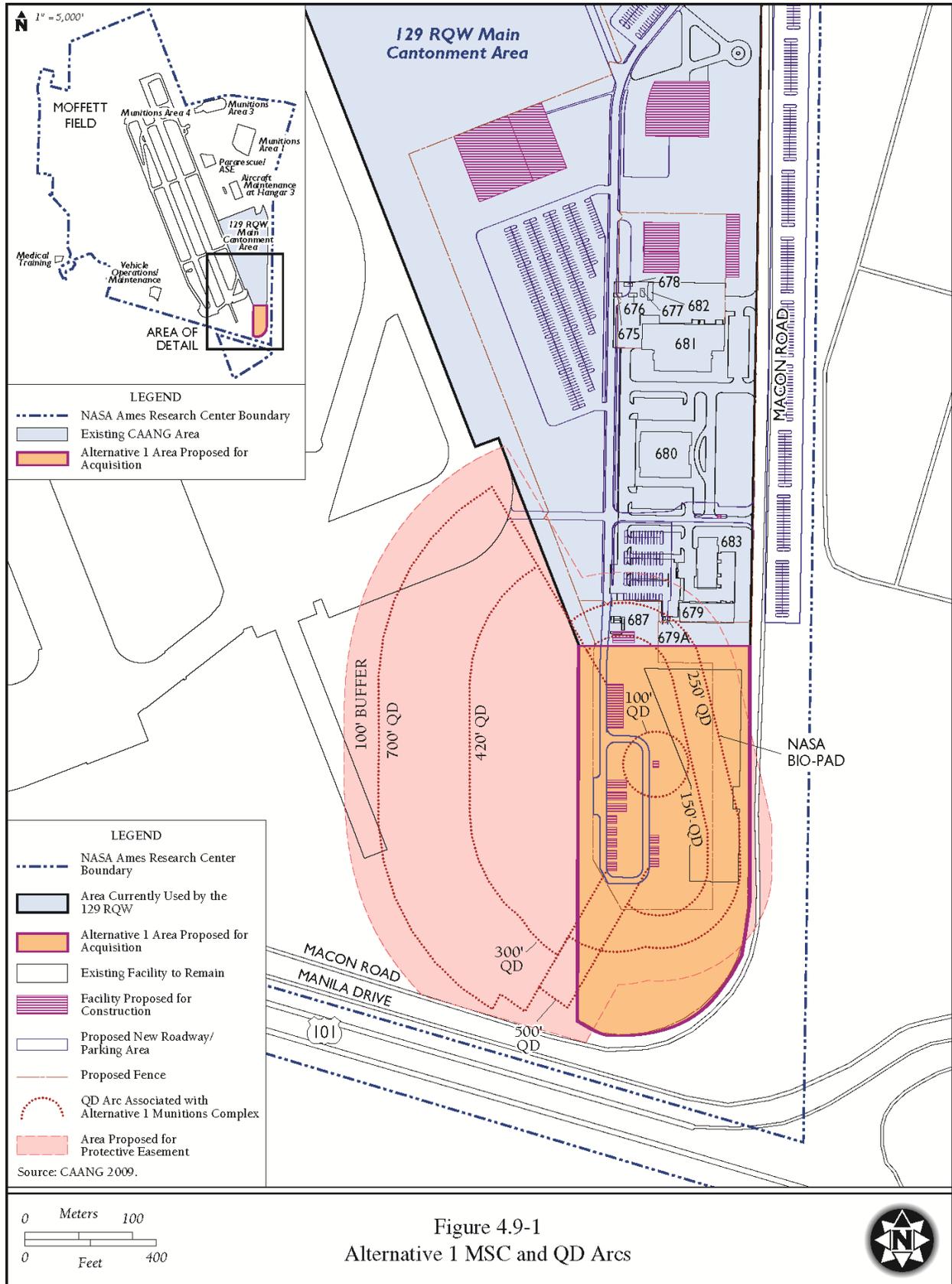
Explosive Safety

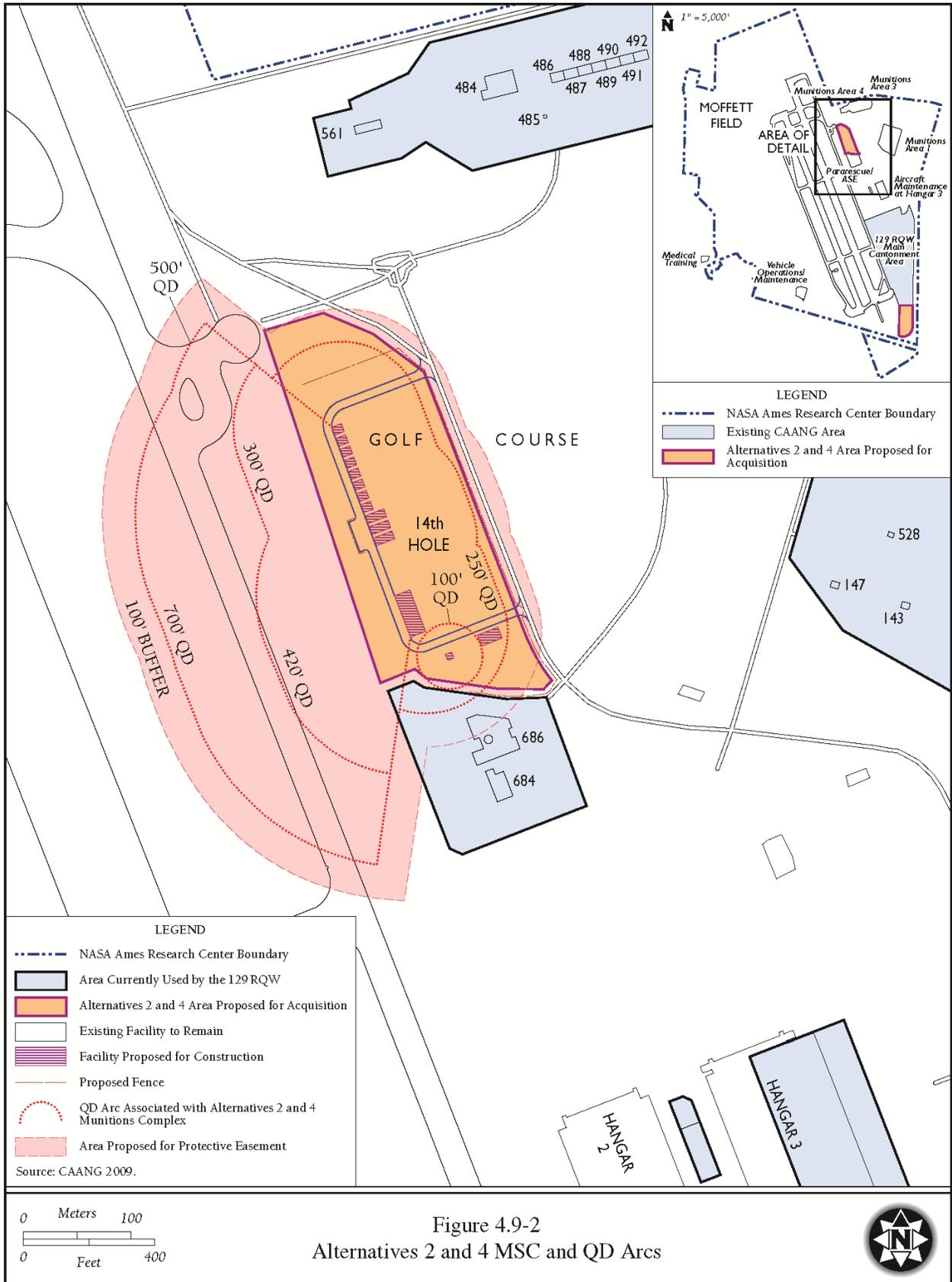
Under Alternative #1, the existing three MSAs (1, 3, and 4) would be returned to NASA in their current condition, and a new consolidated MSA would be constructed within the 129 RQW’s main cantonment area. Alternative #1 would result in a shift in location of established QD arcs associated with the MSAs at the 129 RQW installation (Figure 4.9-1).

All facilities would be sited to be in compliance with the proposed QD arcs and no unauthorized construction would occur within the proposed QD arcs. None of the construction or demolition would be in conflict with the QD arcs. Per USAF Manual 91-201, there would be no public transportation route or inhabited building located within the proposed QD arcs. No explosives would be handled during construction or demolition activities. Therefore, no additional risk would be expected as a result of implementation of Alternative #1. Following construction of the new MSA facility, long-term impacts to safety would be positive as consolidation of the facility and shorter travel distance for munitions shipments would decrease exposure of munitions to the public and CAANG personnel.

4.9.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described under Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ as shown in Figure 4.9-2. The QD arcs associated with this alternative would be contained within the acquired CAANG parcel to the west, and as with Alternative #1, would extend onto the taxiway and apron to the west. Therefore, no significant impacts to safety would occur as a result of implementation of Alternative #2. However, this alternative would require a longer travel distance for munitions shipments than Alternative #1 and #3. This could result in an increase in exposure to the public during shipments from off-base, as well as transportation to and from aircraft due to the close proximity of the travel routes to the golf course and Hangars 2 and 3, which are currently used by the public.



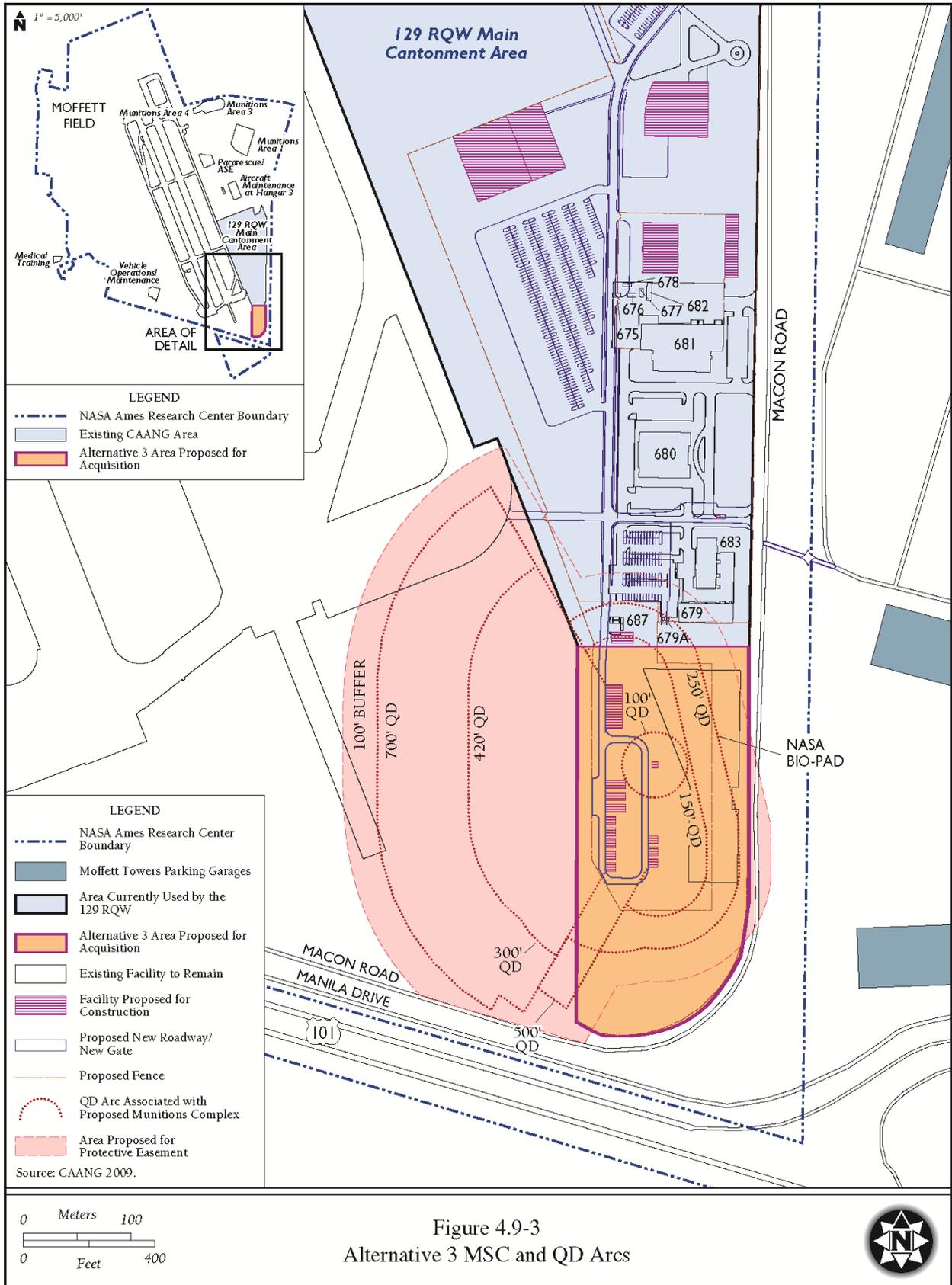


4.9.2.3 Alternative #3

Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed (see Figure 4.9-3). Impacts to safety would be similar to those described in Alternative #1. Therefore, no additional risk would be expected as a result of implementation of Alternative #3. Following construction of the new MSA facility, long-term impacts to safety would be positive as consolidation of the facility and shorter travel distance for munitions shipments would decrease exposure of munitions to the public and CAANG personnel.

4.9.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed. Impacts to safety would be similar to those described in Alternative #2. Therefore, no additional risk would be expected as a result of implementation of Alternative #2. Significant impacts to safety would occur as a result of implementation of Alternative #2. However, this alternative would require a longer travel distance for munitions shipments than Alternative #1 and #3. This could result in an increase in exposure to the public during shipments from off-base, as well as transportation to and from aircraft due to the close proximity of the travel routes to the golf course and Hangars 2 and 3, which are currently used by the public.



4.9.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Baseline safety conditions, as described in Section 3.9, would remain unchanged. Therefore, no significant impacts to safety would occur as a result of implementation of the No Action Alternative.

4.10 INFRASTRUCTURE

4.10.1 Methodology

Potential impacts to infrastructure elements at the 129 RQW are assessed in terms of effects of the proposed projects on existing service levels, described in Section 3.10.2. Impacts to transportation and utilities are assessed with respect to the potential for disruption or improvement of current circulation patterns and utility systems, deterioration or improvement of existing levels of service, and changes in existing levels of transportation and utility safety. Impacts may arise from physical changes to circulation or utility corridors, construction activity, and introduction of construction-related traffic and utility use. Adverse impacts on roadway capacities would be significant if roads with no history of capacity exceedance had to operate at or above their full design capacity as a result of an action. Transportation effects may arise from changes in traffic circulation, delays due to construction activity, or changes in traffic volumes.

Utility system effects may include disruption, degradation, or improvement of existing levels of service or potential change in demand for energy or water resources that exceeds available capacity. Significant impacts related to water systems would occur if a demand for water service exceeded the existing water supply, there were substantially depleted ground water supplies, and any exceedance of water demand from baseline conditions would interfere with water service to existing off-site land uses. Significant impacts with respect to the sanitary sewer system would occur if a demand for wastewater treatment exceeded existing treatment capacity. Effects on storm drainage would result if storm runoff exceeded capacity of existing receiving bodies, water quality standards were violated, caused substantial soil erosion, interfered with groundwater recharge, or place housing susceptible to flooding.

For this analysis, potential infrastructure impacts associated with implementation of the Proposed Action were evaluated. Potential infrastructure impacts would be related to construction activity and facility operations after completion.

4.10.2 Impacts

4.10.2.1 Alternative #1

Under Alternative #1, the 129 RQW would implement construction and demolition projects as described in detail in Section 2.2. Implementation of Alternative #1 would gradually remove and replace aging facilities, consolidate facilities and functions, and improve the installation circulation system.

Transportation System. Construction traffic associated with implementation of Alternative #1 would temporarily result in a minor increase use of the installation's roadways during construction activities. Demolition and construction equipment would be driven to the areas of the proposed construction and would be kept onsite for the duration of the respective activity. Construction workers would drive daily in their personal vehicles to and from the construction site. Waste resulting from the demolition and materials necessary for construction of the new facilities would be transported using the installation roadways. Demolition and construction would occur in phases and intermittently, thus resulting in minor impacts to circulation patterns or overall traffic.

Construction and demolition activities associated with repairs to roadways, as well as parking and driveways, could result in moderate short-term adverse impacts to transportation and parking on the 129 RQW installation; however, because of improvements to the installation's transportation and parking system, the resulting long-term impact would be positive.

Airfield. No change is anticipated to the airfield because of the construction or demolition activities planned as part of Alternative #1. Thus, no impact is anticipated to the airfield at the 129 RQW installation due to construction and demolition.

Electrical System/Natural Gas System/Liquid Fuels. The demand for energy (primarily electricity and gasoline/diesel) could increase during the demolition and construction phases of Alternative #1. The energy supply at the installation and in the region is adequate and would not be affected by this temporary, minor increase in demand (NASA 2002).

Any new facilities or additions/repairs associated with Alternative #1 would be implemented with more energy efficient design standards and utility systems. In addition, construction projects would incorporate LEED and sustainable development concepts, so as to achieve optimum resource efficiency, constructability, sustainability, and energy conservation. Therefore, energy consumption would be expected to remain consistent or possibly decrease slightly compared to energy consumption associated with the current facilities.

The installation of the photovoltaic power generation system would help the 129 RQW meet their energy demands required to meet their assigned missions. All operations associated with the 129 RQW, including operational, administrative, logistical, medical, and support, are in need of reliable and cost effective electrical energy to meet current and forecasted demand loads and energy consumption. The 129 RQW is required to meet DoD requirements for the implementation of the use of renewable energy sources wherever economically feasible, and such sources would provide a portion of the required electrical power to the installation. Implementation of this project would result in a positive impact to the overall energy demand at Moffett Field.

Sanitary Sewer System. No change is anticipated to the generation of wastewater (excluding stormwater discharges, discussed below under Stormwater Drainage System) because of the construction or demolition activities planned as part of Alternative #1. As there is no increase in personnel associated with Alternative #1, and it is expected that the existing sanitary sewer system is generally adequate to serve the facilities proposed under this alternative (NASA 2002). Thus, no impact is anticipated to the sanitary sewer system at the 129 RQW installation due to proposed construction and demolition.

Solid Waste Management. Off-base contractors completing construction and demolition projects at the 129 RQW would be responsible for disposing of waste generated from these activities. Contractors would be required to comply with federal, state, local and USAF regulations for the collection and disposal of municipal solid waste from the installation. Much of this material can be recycled or reused, or otherwise diverted from landfills. All non-recyclable construction and demolition waste would be collected in a dumpster until removal. Construction and demolition waste contaminated with hazardous waste, ACM, LBP, or other undesirable components would be managed in accordance with AFI 32-7042. Thus, no impact is anticipated to the solid waste management system at the 129 RQW installation due to the proposed construction and demolition.

Stormwater Drainage System. The proposed construction and demolition activities could temporarily affect the quality of stormwater runoff through potential increases in soil erosion. These activities can expose soils and during storm events, stormwater can pick up soil particles, thereby increasing sediment loading of the stormwater runoff. Parking within the pervious parking area east of Macon Road would be incidental, only occurring during special events and Unit Training Assembly (UTA) weekends. Therefore, impacts from any POLs would be negligible. In accordance with the CWA Section 402 NPDES program, BMPs would be implemented during construction and demolition to minimize runoff. A Notice of Intent would be filed with the state of California RWQCB to obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity (99-08-DWQ) prior to implementation of individual projects, in addition to the implementation of a site-specific

SWPPP and associated BMPs. Therefore, Alternative #1 would not adversely affect the stormwater drainage system.

There would be an increase of 412,392 SF (9.5 acres) of impervious surface as a result of Alternative #1 which could potentially increase stormwater runoff volume and peak discharge rates. As discussed in further detail in Water Resources, Section 4.2.2, this potential increase in stormwater runoff as a result of the increase in impervious surface would be managed such that discharge exiting each site post-construction would be equal to or less than existing conditions through the use of appropriately designed conveyance structures and BMPs.

In addition, implementing features into the design of the project that manage surface water runoff (such as the use of water harvesting and open natural space, retention/detention basins for water recharge or for release of runoff at predetermined times to minimize peak discharges, the use of porous materials to construct driveways and walkways, and directing runoff toward permeable areas such that discharge exiting each site post-construction would be equal to or less than existing conditions) would allow construction to occur as intended without conflicting with any city, county, state, or federal regulations and without adversely affecting adjacent properties and/or the project itself.

Potable Water System. The demand for potable water used for dust control during the construction and demolition activities of Alternative #1 would increase minimally. However, reclaimed water would be available for dust control. The installation's potable water supply is adequate as determined by the San Francisco Water Department (NASA 2002) and would not be affected by this minor, temporary increase in demand.

4.10.2.2 Alternative #2

Under Alternative #2, all construction and demolition projects described in Alternative #1 would be implemented; however, the location of Project 8, MSC, would differ. Traffic circulation patterns would be expected to be slightly different under this alternative, given the alternate location of the MSC; however, given the frequency of the trips to and from this complex on a daily basis, the difference in circulation patterns would be expected to be negligible. Therefore, impacts to infrastructure would be expected to be as described under Alternative #1.

4.10.2.3 Alternative #3

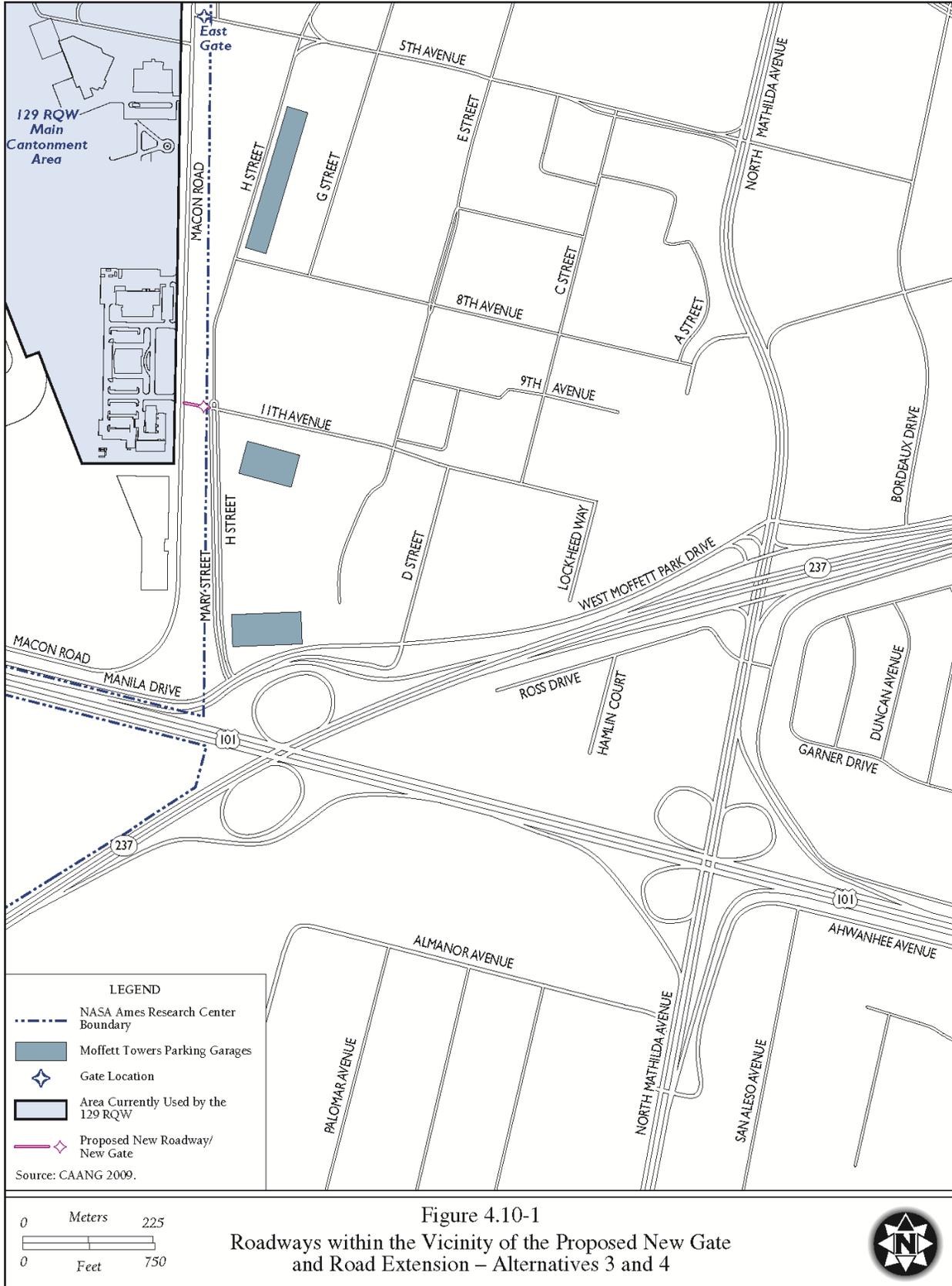
Under Alternative #3, all construction and demolition projects described in Alternative #1 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the

weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface).

Permanent localized traffic circulation patterns for those roadway segments near the proposed new gate along Mary Street would be expected to change somewhat under this alternative when compared to the other alternatives described above. Short-term construction impacts would be noticeable immediately near the new gate and road extension, perhaps delaying traffic along Mary Street for short periods of time during the construction phase. Long-term impacts were further analyzed below using available data on current traffic and projected conditions.

It is estimated that the only people who would use the proposed new entrance gate would be those who are conducting business on that side of the airfield. This would likely be the CAANG personnel who access Moffett Field from the east, or people using the golf course and are also traveling from the east. Those people accessing this side of the airfield from the west would continue to use either the Main or Ellis gates. People who would use the proposed entrance would likely be driving to Moffett Field from the east on US-101 or Highway 237 and would likely exit at Mathilda Drive and then drive along West Moffett Park Drive towards Mary Street or north on Mathilda Drive to 8th or 11th Avenue towards the new gate (Figure 4.10-1). Approximately 250 CAANG personnel work at Moffett Field Monday through Friday with an increase to 900 personnel on drill weekends. Because NASA's facilities are on the western side of Moffett Field near two existing gates, few, if any, NASA staff would be expected to use the new gate on the east end and thus these personnel have not been included in this analysis.

The golf course at Moffett Field sees an average of approximately 75 golfers per day Monday through Thursday and 155 per day Friday through Sunday, with fewer golfers during the rainy season in January through March, and more golfers during the peak season in July through September. It is estimated that 75-100 percent of these users would use the new gate (personal communication, Hill 2009). If these golfers, in addition to the 50 percent of the 250 CAANG personnel (125) entering the facility on weekdays, entered Moffett Field through the proposed new gate, the difference in traffic and circulation patterns in the immediate vicinity would be noticeable, but would be expected to be minor. If 50 percent of the 900 people (450) who enter the facility on the once-per-month drill weekend enter through the new gate, the difference in traffic and circulation patterns could be noticeable, moderate, and if this occurred during the weekday commute, it could affect the LOS of some of the roadways in the vicinity during this period. However, overall traffic in the area on the weekend is different than during the work week, with peak loads occurring at different times, and this would likely offset any noticeable increase in traffic during these drill weekends. LOS would not be expected to decline.



A transportation study was completed in 2002 for the development of the Moffett Tower Commercial Park (City of Sunnyvale 2002); an increase in local traffic immediately surrounding the proposed entrance gate would be expected and would contribute cumulatively to transportation impacts from this project. Overall, as a result of the new gate and road extension, long-term impacts could be noticeable and moderate in the immediate vicinity of the new construction west of Mathilda Avenue and north of US-101 and State Route 237. However, the greatest expected change would occur on one weekend per month, and would occur at a time when traffic on these roadway segments is lower than a typical weekday. The LOS along these roadways would not be expected to decline.

4.10.2.4 Alternative #4

Under Alternative #4, all construction and demolition projects described in Alternative #2 would be implemented, with the exception of the pervious parking area proposed for the east side of Macon Road (part of Project #13) and the photovoltaic generation system that is associated with it (Project #14). The 129 RQW would instead use the existing parking garages located in the Moffett Towers development east of Mary Street for additional parking to support UTA on the weekends. To facilitate parking off-installation at the Moffett Towers development, a new entrance gate would be installed near the intersection of Mary Street and 11th Avenue. A roadway extension connecting 11th Avenue to Macon Road would also be developed and would be approximately 68 feet wide and 140 feet long (approximately 9,520 SF of additional impervious surface). Traffic circulation patterns would likely change with this construction as described in Alternative #3. Impacts would be the same as those under Alternative #2, with the exception of the new gate and road extension, which would have the same impacts as those described under Alternative #3.

4.10.2.5 No Action Alternative

Under the No Action Alternative, the proposed construction and property acquisition at Moffett Field would not occur and the 129 RQW would continue to operate out of their existing facilities. Infrastructure, as described in Section 3.10, would remain unchanged. Therefore, no significant impacts to infrastructure at the 129 RQW would occur as a result of implementation of the No Action Alternative.

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CHAPTER 5

CUMULATIVE IMPACTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE IMPACTS

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor, but collectively substantial actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, or anticipated over the foreseeable future, is required.

NASA, as the host at Moffett Field, and their tenants update facilities on a continual basis, as necessary. While it is not practical to catalog all minor projects that could occur over the short-term, a list of the major projects in the ROI has been analyzed for the potential to create cumulative environmental impacts. Short- and long-term planning efforts at Moffett Field include the actions described within this EA, as well as several others that are either ongoing or planned over the short-term. Any other improvements at Moffett Field would be subject to separate environmental review as applicable.

5.1.1 Current and Reasonably Foreseeable Actions in the ROI

NASA conducts facility renovations and improvements on an on-going basis. In addition, NASA has leased a portion of its property to the Army and Google Inc. Some of these development projects proposed at Moffett Field are described below. No other projects have been proposed by NASA at Moffett Field at this time.

- *NASA Ames Development Plan Final Programmatic EIS and ROD.* In 2002, an EIS was prepared to assess the environmental consequences associated with development under the proposed NASA Ames Development Plan. The goal of this plan is intended to bring new research and development uses to the NASA ARC. This includes 5.7 million SF of new use and demolition of 1.3 million SF of existing facilities. NASA has leased portions of its property to other federal agencies and to private entities. For example, the Southern portion known as NASA Research Park includes the University Associates Development area that includes educational space to be shared by a number of universities and educational organizations. A portion of the University project is located over the current 129 RQW vehicle maintenance facility, an area that as part of this plan is proposed to be released back to NASA. Additionally, approximately 7,088 new employees and students will be using the facilities on a daily basis, and 4,909 residents will

be living in the proposed 1,930 housing units (NASA 2002). NASA has a current approved 20-year Master Plan (2007) which delineates the described physical and capital plans.

- In 2008, NASA entered into a 40-year agreement with Google Inc. that will allow Google to lease 42.2 acres of this land and construct up to one-half million SF of offices and research and development facilities in a campus-style setting. Construction will occur in three phases beginning in 2013, and continue through 2022 (Google 2008).
- *Environmental Assessment of Construction and Operation of an Armed Reserve Forces Center Complex (AFRC) at Moffett Field* – In 2007, an EA was prepared to address the construction of 270,000 SF of facilities for the Army, including an AFRC, and demolition of 346,876 SF of housing and facilities. The project site is located on approximately 30 acres of land at the former Orion Park Military Housing Site, west of Ames Campus, and north of the existing CAANG Medical Training Building (U.S. Department of the Army 2007). All of this land is DoD/Army land and is not leased from NASA.

Regional Projects

- Regional projects within the city of Mountain View and Sunnyvale primarily consist of retail, office, warehouse, and apartment housing development (NASA 2002). One such development is the Moffett Park development, including Moffett Towers, located on the eastern border of Moffett Field. This is comprised of a business park dominated by high tech industrial, light industrial, light manufacturing, and interspersed commercial uses. An additional 8.7 million SF of this park is still awaiting development (City of Sunnyvale 2002).
- Construction of a high speed rail line through Mountain View and Sunnyvale, as well as local highway and road improvements along the U.S. Highway 101 corridor are also proposed as future transportation projects for the region (U.S. Department of Transportation 2008).
- The USACE is currently preparing an EIS that addresses proposed improvements and levees described in the South San Francisco Bay Shoreline Study. These projects are proposed for flood damage reduction, ecosystem restoration, and related purposes such as public access for the bay north of Moffett Field (USACE 2009).
- The USFWS is currently preparing an EIS for the South Bay Salt Pond Restoration Project that addresses tidal wetland restoration of 15,100 acres of industrial salt ponds in the bay north of Moffett Field (USFWS 2009b).

These planned activities have the potential to generate environmental impacts that could exacerbate impacts associated with the proposal described in this EA unless projects are planned and implemented with consideration for this potential. Each of the actions listed are the subject of separate environmental review, which either has already been conducted, or would be conducted in the future. Each has or will evaluate the existing environment at the time of each proposal.

5.1.2 Analysis of Cumulative Impacts

Cumulative impacts anticipated in association with the actions described within this EA in addition to those actions described above, and continuing operations in areas that would be described as shared use and temporary use, are described in the following paragraphs.

Earth Resources. In addition to the 9.72 acres of increased impervious surface that would result from implementation of the proposal described in this EA, additional surface area could be disturbed at Moffett Field and in the vicinity over the next several years as a result of the projects described above. It is expected that implementation of construction BMPs would be used to limit or eliminate soil movement, stabilize runoff, and control sedimentation. These BMPs would include the use of: well maintained silt fences; minimizing surficial area disturbed; stabilization of cut/fill slopes; minimization of earth-moving activities during wet weather; and use of temporary detention ponds. Following construction, disturbed areas not covered with impervious surfaces would be reestablished with appropriate vegetation and managed to minimize future erosion potential. Given the employment of engineering practices that would minimize potential erosion, cumulative impacts to earth resources are expected to be minor. The city and county would be responsible for management practices required for future development of private and local government undertakings.

Water Resources. In addition to the 9.72 acres of increased impervious surface that would result from implementation of the Proposed Action, additional land surface could be disturbed and converted to impervious surface over the next several years as a result of the projects described in Section 5.1.1. It is expected that any construction activities would adhere to NPDES requirements including implementation of BMPs described above. As such, cumulative impacts to water resources are expected to be less than significant.

Biological Resources. In general, construction activities at Moffett Field and the vicinity would primarily occur on sites that are already highly altered by man. These impacts would include the removal of some vegetation and associated wildlife habitat. However, wildlife that uses these areas is typical of urban and suburban areas. Implementation of mitigation measures and adaptive management techniques with respect to Burrowing Owls would minimize impacts. Cumulative impacts to biological resources would be expected to be minor.

Air Quality. In general, combustive and fugitive dust emissions from construction activities associated with the Proposed Action, and those additional actions described in Section 5.1.1, would contribute localized, short-term, elevated air pollutant concentrations, but would not result in any long-term impacts to the air quality of San Francisco Bay Area Air Basin, nor have any significant adverse impacts on the California SIP. It is expected that emission increases from all projected activities would contribute less than significant air quality impacts to the Air Basin.

Land Use/Visual Resources. In general, land uses at Moffett Field would not be adversely affected by the activities described under the Proposed Action or Section 5.1.1. The location and function of the proposed structures are generally compatible with the surrounding area and work to consolidate like functions, consolidate CAANG activities into fewer locations, and improve overall utility. Some of the projects described above include measures to improve operations and capabilities for the installation. Described activities would not adversely affect the viewshed at or near Moffett Field. While the proposed construction activities include some relatively large structures, the size and type of buildings would be similar to other buildings at Moffett Field. As the proposed structures would not be incongruent with the surrounding buildings or land uses, cumulative impacts to land use and visual resources would be expected to be negligible.

Socioeconomics and Environmental Justice. Expenditures from the activities at the 129 RQW installation at Moffett Field and other projects within the ROI described above would generally result in minor beneficial economic impacts to the region by generating ongoing construction-related employment and income in the ROI. Impacts would be temporary in nature; however, only accruing economic benefits to the region for the duration of construction activities. No permanent or long-lasting cumulative socioeconomic impacts are anticipated as a result of implementation of these activities. Because no significant adverse impacts are anticipated, there would be no adverse cumulative impact to minority or low-income populations. There are no known cumulative environmental health or safety risks associated with these activities that may disproportionately affect children.

Cultural Resources. In the event of unanticipated discoveries of cultural resources during construction, work would halt at that specific location and the resources would be managed in compliance with federal law and DoD regulations. Cumulative impacts to cultural resources are not expected as a result of all planned activities at Moffett Field. Compliance with Section 106 of the NHPA, including SHPO and Native American consultation to identify any known archaeological resources would be accomplished prior to implementation of any of the actions described under the Proposed Action or in Section 5.1.1.

Solid and Hazardous Materials and Waste. Products containing hazardous materials and petroleum products would be procured and used during the construction activities described under the Proposed Action as well as those described above in Section 5.1.1. It is anticipated

that the quantity of products containing hazardous materials used during the construction of these facilities would be minimal and their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with federal and state regulations. Cumulative impacts as a result of the described activities are expected to be minor.

Safety. Risk of a catastrophic event occurring during construction activities described under the Proposed Action or those activities described in Section 5.1.1 is considered to be low, and strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with described construction activities. Additionally, facilities would be sited in relation to the proposed MSC in accordance with USAF Manual 91-201. Cumulative impacts to safety are expected to be negligible.

Infrastructure. In general, cumulative impacts to installation infrastructure as a result of described activities are expected to be positive over the long-term. Construction activities could result in some temporary interruption of utility services and minor hindrances of transportation and circulation during construction activities; however, these minor impacts would be temporary. Energy consumption would be expected to remain consistent or possibly decrease slightly compared to energy consumption associated with the current facilities due to incorporation of LEED and sustainable development concepts in the new construction. New facilities and circulation systems would further enhance the existing installation transportation networks. Overall, as a result of the new gate and road extension, long-term impacts could be noticeable in the immediate vicinity of the new construction west of Mathilda Avenue and north of US-101 and State Route 237. The LOS along these roadways would not be expected to decline. A transportation study was completed in 2002 for the development of the Moffett Tower Commercial Park (City of Sunnyvale 2002); an increase in local traffic immediately surrounding the proposed development is expected and would contribute cumulatively to transportation impacts from this project.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA CEQ regulations require environmental analyses to identify any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented (40 CFR Section 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Building construction material such as gravel and gasoline usage for construction equipment would constitute the consumption of non-renewable resources.

The Proposed Action would not have irreversible impacts because future options for using these project locations would remain possible. The sites could be used for alternative uses in the future, ranging from natural open space to urban development. No loss of future options would occur as a result of the Proposed Action.

The primary irretrievable impacts of the Proposed Action would involve the use of energy, labor, materials and funds, and the conversion of some lands from an undeveloped condition through the construction of buildings and facilities. Irretrievable impacts would occur as a result of construction, facility operation, and maintenance activities. Direct losses of biological productivity and the use of natural resources from these impacts would be inconsequential.

CHAPTER 6

SPECIAL OPERATING PROCEDURES AND MITIGATIONS

Impact evaluations presented in this EA have determined that no significant environmental impacts would be expected to occur as a result of implementation of the Proposed Action at the CAANG installation at Moffett Field. This determination is based upon a thorough review and analysis of existing environmental and human resource information, the application of accepted modeling methodologies, and coordination with knowledgeable personnel from the 129 RQW, the CAANG, and local, state, and federal agencies. However, this determination is based on the following procedures being completed by knowledgeable, responsible personnel from the 129 RQW, working through the appropriate federal, state and local agencies.

- The 129 RQW would coordinate with the USEPA and the state of California and would apply for coverage under the applicable permits for construction, stormwater runoff and erosion and sedimentation control from construction activities. After detailed site plans of the proposed construction have been finalized, the net impervious cover created would be determined and the appropriate permits would be obtained from the USEPA and the state of California. This includes the review of the SWPPP by the CRWQCB who would then send to the CDFG to review. Any concerns by the CDFG will be addressed in the terms and conditions of the permit.
- The Proposed Action is not expected to result in adverse impacts to cultural resources. However, in the event that construction/excavation activities uncovered unexpected archaeological materials in these areas, construction would cease until the materials could be properly evaluated, and the resources would be managed in compliance with federal law and DoD regulations. All activity would take place in accordance with agreements made between the CAANG and the SHPO, in accordance with the Programmatic Agreement associated with the NASA Ames Development Plan Programmatic EIS and ROD. Construction activities would be restricted to designated areas in order to minimize potential disturbance to the remainder of archaeological resources.
- The Proposed Action would require permits for emitters such as mobile sources, generators, boilers, etc.
- As shown on Figure 4.8-1, with regard to exposure to contaminated soils, two active IRP sites, Site 15, Former Sumps and OWSs and Site 5S, the former Navy Fuel Farm, are located within the vicinity of the Proposed Action within the main cantonment area of the CAANG. If contaminated media (e.g., soil, groundwater) are encountered during the course of site preparation (e.g., clearing, grading) or site development (e.g., excavation

for installation of building footers) for any of the projects under the Proposed Action, samples would be collected to determine whether the media are contaminated, and contaminated media will be segregated for offsite disposal or for onsite reuse as appropriate. Contractors would be notified during the bidding and scoping processes for each construction project of the nature and extent of known contamination so that they can inform their employees in advance of onsite activities and take appropriate precautions to protect their health and safety and to prevent the spread of contamination.

- Construction BMPs would be employed during construction activities to minimize soil movement, stabilize runoff, and generally control sedimentation. These BMPs would include, but not be limited to: the use of silt fences, covering of soil stockpiles, use of secondary containment for the temporary storage of hazardous liquids, and establishment of buffer areas near intermittent streams, as appropriate.
- Mitigation and avoidance measures developed by NASA in 2002 to avoid impacts to Burrowing Owls, Golden Eagles, salt marsh harvest mouse, and other threatened and endangered species during normal operations and construction in cantonment and shared use areas would be followed during construction of the proposed projects. These measures are further described in Section 4.3.2.1. In addition, CAANG would coordinate with NASA Ames Environmental Management Division in presenting wildlife awareness materials to CAANG personnel and contractors.

CHAPTER 7

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Appendix A

***Interagency and Intergovernmental Coordination
for Environmental Planning (IICEP)***

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IICEP Distribution List

California Department of Fish and Game
Mr. Donald Koch
1416 Ninth St., 13th Floor
Sacramento, CA 95814

California Department of Health Services
Mr. David Maxwell-Jolly
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714/744 P Street
Sacramento, CA 95814

California Department of Parks and
Recreation
Ms. Ruth Coleman
Director
1416 9th Street
Sacramento, CA 95814

California Department of Transportation
Mr. Will Kempton
Director
1120 N Street
Sacramento, CA 95814

California Environmental Protection Agency
Mr. Winston H. Hickox
Secretary
1001 I Street
Sacramento, CA 95814

California State Clearinghouse
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Sacramento, CA 95814

California Dept. of Toxic Substances,
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Mr. Shawn Puma
Explosive Safety Officer/OSH Specialist
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Moffett Field, CA 94035-1000

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Protect Our Water (POW)
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Transportation Authority
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Association of Bay Area Governments, San
Francisco Bay Trail Project
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State Coastal Conservancy, So. San
Francisco Bay Salt Pond Restoration Project
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Sunnyvale, CA 94086

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Development
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Santa Clara Valley Water District
Director
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Paul Kot, REM
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Region
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Ecological Services Division Chief
911 NE 11th Avenue
Portland, OR 97232-4181



Sample IICEP Letter
NATIONAL GUARD BUREAU
3500 FETCHET AVENUE
ANDREWS AFB MD 20762-5157

AUG 07 2007

NGB/A7AM

Scott Morgan
California State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

Dear Ms. Roberts

The 129th Rescue Wing (129 RQW) of the California Air National Guard (CAANG) has prepared a draft Environmental Assessment (EA) for implementation of a long-term lease and proposed installation development plan at their installation at Moffett Field, California. The draft EA and draft Finding of No Significant Impact (FONSI) is provided for your review and comment (Atch).

The environmental analysis for the Proposed Action is being conducted by the Air National Guard in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached draft EA, and solicit your comments concerning the proposal and any potential environmental consequences of the action. Please provide any comments you may have within 30 days of receipt of this letter.

Any questions concerning the proposal should be directed to our consultant, TEC, Inc. The point of contact at TEC is Ms. Kate Bartz. She can be reached at (520) 326-0951. Please forward your written comments to Ms. Bartz, in care of TEC, Inc., 2617 East 7th Street, Tucson, AZ 85716 or email to klbartz@tecinc.com. Thank you for your assistance.

Sincerely

A handwritten signature in black ink, appearing to read "R. L. Dogan", is positioned above the typed name.

ROBERT L. DOGAN, REM
Plans and Requirements Branch

Attachment:

Draft EA/FONSI for Environmental Assessment for Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Squadron, California Air National Guard, Moffett Field, California

To: Kate L. Bartz, TEC, Inc.
From: Wilson Doctor, Navy Project Manager
Subject: Comments on August 2009 Draft Environmental Assessment Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Wing

1) The North Patrol Road Ditch, Marriage Road Ditch, East Patrol Road Ditch, and the Northern Channel are designated as "Other Waters of the United States" by the Army Corps of Engineers, not wetlands as depicted in Figure 3.2-1.

Army Corps point of contact:
Nina Cavett
Regulatory Project Manager
U.S. Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, CA 94103
415-503-6765

2) Figure 3.5-1 incorrectly shows the North Patrol Road Ditch, Marriage Road Ditch, East Patrol Road Ditch, and the Northern Channel as "Diked Marsh/Stormwater Retention Pond".

3) Table 3.8-2, Page 3-37, Site 15: Sump 130, which is within the 129 RQW main cantonment area, is now part of the Moffett storm drain system. The Navy received no further action from the EPA for sump 130. The EPA also granted no further action to the Navy for Sump 62. The Water Board granted no further action to the Navy for tank 54.

4) Table 3.8-2, the Navy was granted closure for sump 60 (Site 16). The statement "USEPA determined in 1993 the soils associated with Sump 60 required No Further Action; however, Sump 60 has been identified as a potential location that may require additional excavation" is not entirely correct. As stated, the USEPA granted no further action for the soils; therefore, no additional excavation is required. However, groundwater contamination from Sump 60 (Site 16) is being remediated by the Navy's operating groundwater treatment system known as WATS (Westside Aquifers Treatment System) at IRP Site 28 known as the WATS Area. Perhaps change the statement to "USEPA determined in 1993 the soils associated with Sump 60 required No Further Action; however, groundwater contamination associated with Sump 60 is being remediated by the Navy's Westside Aquifers Treatment System."

5) Table 3.8-2, Site 19: Groundwater contamination associated with UST 43 is being addressed by the Eastern Aquifer Treatment System, not Tank 14. The Navy received no further action for tanks 2, 14 & 53 from the California Regional Water Quality Control Board, San Francisco Bay Region.

6) Table 3.8-2, Site 27: Delete "191 Pump Station" from the site description. The pump station is in the area of Site 27, not actually part of Site 27. Please revise "Further investigation/remediation of one of the associated storm ditches is required" to state that further restoration of a portion of the North Patrol Road Ditch is planned.

7) Figures 3.8-1 and 4.8-1 Key: The Site 5 Status description is not consistent with that of Table 3.8-2. Revise status to reflect Site 5 is currently being investigated.

8) Figures 3.8-1 and 4.8-1 Key: Change the Site 27 status description to reflect that further restoration is planned.

9) Figures 3.8-1 and 4.8-1 show IRP Site 15 within the green area of "129 RQW occupied area proposed for property release to NASA" labeled "Pararescue/AGE." This is tank 59. Please note the Navy is not responsible for closure of this tank since the CAANG has been using it after Moffett was transferred to NASA. Please make note of this in Table 3.8-2, Site 15, "Current Status."

10) Figure 3.8-1 and 4.8-1: The IRP Site 15 label that is closer to the east side of Hangar 3 was tank 54. The Water Board granted no further action to the Navy for tank 54. Perhaps indicate the sites that achieved closure/no further action on the figures or remove them from the figures.

11) Page 3-40, paragraph 1: "Navy Sump 130 is located within the 129 RQW main cantonment area at Building 651, the battery shop. It historically received acid/water wastes from the battery shop. The sump is still in place and is currently being reviewed by the Navy and RWQCB (NASA 2009a, b)." See comments above related to Sump 130.

12) Page 3-40, Section 3.8.2.4, last paragraph: The Navy submitted a final Investigation Report for Former Aircraft Wash Rack dated February 28, 2009, and the Water Board granted no further action.

From: Cavett, Christina A SPN [mailto:Christina.A.Cavett@usace.army.mil]
Sent: Friday, August 14, 2009 10:30 AM
To: Bartz, Kate L.
Subject: RE: Review of the draft Environmental Assessment of the 129th Rescue Wing at the Moffitt field

Ms. Bartz,
Thank you for the opportunity to review the draft Environmental Assessment (EA), dated August 2009 for the implementation of a long-term lease and proposed installation development plan at Moffett Field, California. We concur that the proposed project described in the draft EA will not impact waters of the U.S. regulated under 404 of the Clean Water Act. However, if project plans should change and it becomes questionable whether the project will impact waters of the U.S. you are encouraged to contact the Corps with the revised plans and project description. Thank you,

Nina Cavett
Regulatory Project Manager
U.S. Army Corps of Engineers
San Francisco District
1455 Market Street
San Francisco, CA 94103
415-503-6765

County of Santa Clara

Roads and Airports Department



101 Skyport Drive
San Jose, California 95110-1302
(408) 573-2400

September 1, 2009

Ms. Kate Bratz
TEC Incorporated
2617 East 7th Street
Tucson, AZ 85716

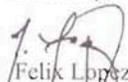
Subj: Draft Environmental Assessment for the 129th Rescue Wing, California Air National Guard

Dear Ms. Bratz:

We have received and reviewed your Draft Environmental Assessment for the 129th Rescue Wing Proposed Long Term Lease and Installation Development Plan dated August 2009. We have no comments.

Thank you for the opportunity to review and comment on this project. If you have questions, please call me at (408) 573-2462.

Sincerely,


Felix Lopez
Project Engineer

cc: AP, WRL, RN, file



Santa Clara Valley Audubon Society
Founded 1926

September 4th, 2009

National Guard Bureau
3500 Fetchet Ave.
Andrews Air Force Base, MD 20762-5157
Attn: Robert L. Dogan, NGB/A7AM

Dear Mr. Dogan,

Please review Santa Clara Valley Audubon Society (SCVAS) comments on the Draft Environmental Assessment FONSI /FONPA for the Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Wing California National Guard Moffett Field, California 129th CAANG.

SCVAS has nearly 4000 members in Santa Clara County. We are dismayed at the Finding Of No Significant Impact and Finding of No Practical Alternative for the 129th Rescue Wing California National Guard facility at Moffett Field, and request that complete EIR/EIS documents be prepared for the proposed project.

PURPOSE and ALTERNATIVES (P. 1-2)

The proposed alternatives are almost identical in components, planning and scope, and as a result, their impact is assessed to be almost identical. We see an urgent need for the development of real alternatives and configurations for different components of the plan. For example, alternatives could consider creating parking spaces as the first story of buildings, or developing shuttle programs as an alternative to extensive surface parking. Partial consolidation alternatives that would configure some facilities (such as the Vehicle Operations/Maintenance) at their current location in Moffett Field should also be explored. Moreover, the impact of the “No Action” alternative was not truly considered. There seems to be no urgency since NASA’s plans to open parts of the airfield to the public are not imminent. We believe that there are ample opportunities and time to seriously explore alternatives, including the entire relocation of the 129th RQW CAANG away from this location, a positive impact alternative that would protect residents of this area from risks associated with the presence of munitions and of toxic chemicals in a densely populated area described in this document as susceptible to earthquakes and soil movement.

WESTERN BURROWING OWLS

The Summary of Findings, p. 4 references the removal of wildlife habitat and claims that “wildlife that uses these areas is typical of urban and suburban areas.” There is nothing “typical” about the Western Burrowing Owl, a species of special concern in the state of California that has been all but extirpated from Santa Clara County.

p. 1 of 5

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email: scvas@scvas.org * www.scvas.org

We agree with the assessment that “The impacts to biological resources from Alternative #2 would be expected to be similar to those resulting from Alternative #1”. However, we insist that **both alternatives will have dire consequences for the remnant population of Western Burrowing Owl in Santa Clara County and that the conclusions that “Impacts to biological resources as a result of both alternatives will be minor“ and that “cumulative impacts to biological resources are expected to be minor” are unsubstantiated.** We expect that either alternative will have a significant impact on species and habitats of concern will be significantly affected and disturbances will result in reductions in the population size and distribution of this special status species.

The document’s section 3.3.2.3 (Threatened and Endangered and Special Status Species) references a current south bay population of Burrowing Owls at 120 breeding pairs. The current surveys that Santa Clara Valley Audubon is aware of estimate the population at between 25 and 30 breeding pairs. The 14 pairs of breeding Burrowing Owls identified by the 2009 Moffett Field study represent over one third of the south bay population of breeding Burrowing Owls. The project area is in the heart of nesting and foraging Burrowing Owl habitat and every action taken by this project will have an impact on Western Burrowing Owls, and will have a huge impact on whether this species of special concern survives in the south bay.

The opening paragraph on P. 4 of the Summary of Findings section claims that “no Burrowing Owl Preserves or active burrows are located within or near either alternative.” Section 3.3.2.3 states that the Burrowing Owl is known to occur in the project area. Regardless of this obvious contradiction, with 14 pair of breeding Burrowing Owls on the Moffett property, they all are located within or near either alternative. **The alternatives encompass current, historic and potential future breeding locations, and the alternatives also encompass existing and future foraging habitat for Western Burrowing Owls.** The suggestions (section 4.3.2.) that “the majority of the habitat is low quality” for foraging, and that better foraging grounds are to be found elsewhere “the amount and quality of habitat lost as a result of implementing the Proposed Action would be small compared to the amount of foraging habitat available in the vicinity” are inaccurate in respect to Burrowing Owls.

On page 7 of the Summary of Findings, both the FONPA and the FONSI indicate that all practicable measures have been addressed to minimize harm to the environment and that the project will not have a significant impact on the quality of the natural environment. In light of the potential impact on 33% of the regional population of Western Burrowing Owls, this conclusion is misleading. In section 4.3 (Biological Resources) subsection 4.3.1 (Methodology) we find the following: “Determination of the significance of potential impacts to biological resources is based on: (2) the proportion of the resource that would be affected relative to its occurrence in the region.” The proposed project will be impacting 33% of the region’s population of a species of special concern: the Western Burrowing Owl. Please explain how this is not a significant impact.

On page 7 of the Summary of Findings, the statement that “cumulative impacts to biological resources are expected to be minor” is unsubstantiated, since disturbance from construction of

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the proposed projects will augment and prolong the disturbances associated with NASA's and Google development plans. Section 4.3 (Biological Resources) subsection 4.3.1 (Methodology) also states "Determination of the significance of potential impacts to biological resources is based on: (4) the duration of ecological ramifications." The assessments of duration of ecological ramification suffers from a biased perspective of the human life span; birds and other wildlife have much shorter life spans so projects that span several years may cause irreversible damage to their populations. Construction of the RQW CAANG is expected to span from 2010 to 2016. Construction of the new Google Campus at the Bay View area is planned for 2013 to 2022. The EA does not specify expected construction dates for NASA projects within Moffett Field, expected to develop 3.6 million square feet, or the AFRC project at the Orion site. Burrowing Owls live up to 9 years in the wild, please explain how this compounded construction can be considered a temporary, insignificant impact? Please explain how the plan participants analyzed this issue and came to this conclusion.

Section 4.3.2 includes mitigations for the Western Burrowing Owl. Many of these measures are imprecise and need to be revised for precise dates, precise distances, and precise actions. Although these measures are numerous, they are not summarized in a Mitigation and Monitoring Reporting Plan. The substantive mitigation measures imposed on the project will be less meaningful if an adequate system of mitigation monitoring is not in place. Public Resources Code Section 21081 requires a mitigation monitoring or reporting plan and "periodic reports" in order to "ensure" that mitigations required of a given development project are in fact implemented successfully. Clearly, the existence of an adequate system to monitor and enforce the required mitigation measures is necessary to ensure the public that those mitigation measures imposed on a project are completed. For the proposed mitigation to succeed, an active, long term management plan is an additional yet necessary mitigation measure, and a dedicated resource will be necessary to oversee implementation as well as to monitor, enforce, maintain and improve conditions for the Burrowing Owls at this site.

OTHER RAPTORS and MIGRATORY BIRDS

Section 4.3.2.1 describes the occurrence of Golden Eagles (protected under the Bald Eagle and Golden Eagle Protection Act), Northern Harriers, White-tailed Kites, and Peregrine Falcons (Protected under the Migratory Bird Treaty Act). Please describe or reference the current nesting surveys that determined these birds are not nesting in an area that will be impacted by the project activities. What mitigations are proposed to ensure that nesting of these species will not be disturbed by project activities?

Section 2, Project 4: Relocation of Communications Towers states that measures to deter raptors and other birds would be implemented on the communications tower. What specific mitigations are proposed for the protection of raptors and other birds, including night flying migratory birds? Again, Public Resources Code Section 21081 requires a mitigation monitoring or reporting plan and "periodic reports" in order to "ensure" that mitigations required of a given development project are in fact implemented successfully.

p. 3 of 5

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WESTERN POND TURTLE

Western Pond Turtles (California Species of Special Concern) use both aquatic and terrestrial habitats. They nest on land, and nests have been found as far as 400m (1200ft) from water. According to Table 3.3-1. (Endangered, Threatened, and Special Status Species Present at Moffett Field) Western Pond Turtles have been observed at Marriage Road Ditch in the eastside/airfield area, and in the Northern channel, north of the eastside/airfield area. What is the distance between these sites and the project's sites? How was the assessment that Western Pond Turtle are not present within the project area made?

MITIGATION PROCESSES

The project sponsor is required to "ensure" that all mitigation measures are carried out. What specific actions will the United States Air Force (USAF) undertake to make this assurance?

Please describe the USAF's current method of mitigation monitoring.

What legal mechanisms does the USAF have in place to address problems with mitigation implementation or permit compliance? For example, can the USAF fine the California Air National Guard, call the permit up for modification or revocation, or issue a stop-work order? Please list the possible enforcement mechanisms.

Please identify the staff member(s) who will be responsible for ensuring that the mitigations imposed on this project are implemented. If responsibilities for monitoring or enforcement change to other staff members, or even other departments, in the future, how will those responsibilities be transferred, and will you inform commenting parties on this document of such a change?

The USAF should require at least yearly monitoring reports generated by the USAF or from the California Air National Guard, tracking compliance with each and every mitigation contained in the Mitigation Monitoring and Reporting Plan. These reports should be public documents, along with any attachments, such as biologists' reports, that substantiate compliance or lack thereof. Any member of the public requesting so should be advised when the monitoring reports are submitted. The reports should continue until the USAF has determined that all mitigation measures are completed. The reports should also be sent to whoever asks for them, and Santa Clara Valley Audubon Society would like to receive them. Please specify where, in the future, all documents related to mitigation compliance will be located, so that the public may inspect them. All documentation, not just summary reports, should be considered public records.

At neighboring Shoreline Park in Mt. View, loss of Burrowing Owl foraging habitat is being mitigated in areas where owls are not presently residing. Mitigation for disturbance to habitat is typically compensated in the range of 1:1 to 3:1 compensation ratio. What is the precise proposed mitigation acreage for disturbance of this species' breeding and foraging habitat?

Mitigations need to include a monitoring plan that includes annual population surveys of nesting pairs of owls as well as adaptive management plans should the owl population decline during or

p. 4 of 5

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following the implementation of this project. Please describe in detail who will be carrying out these surveys, how this land will be managed, and who will be responsible for implementing an adaptive management plan.

Mitigations need to include the use of best practices for actively managing Burrowing Owl habitat, including but not limited to, timing of mowing, maintenance of plant and grass height, and certification training of staff responsible for habitat maintenance.

Santa Clara County is currently in the 4th year of a five-year Habitat Conservation Plan planning process. Included in this plan is the conservation strategy for Western Burrowing Owls. Please describe how your project is working in concert with this overall Santa Clara County effort.

CONCLUSION

Thank you for the opportunity to comment on this document. We wish to stress the importance of preparing an adequate EIR/EIS for this project. A complete and legally binding environmental document is needed in order to prevent damaging impacts to our county's wildlife, and to allow the public to fully understand the implications of the proposed development.

Please keep SCVAS informed of the progress of the 129th RQW CAANG development plans as they move forward. We look forward to remaining engaged on this vital issue.

Sincerely,



Shani Kleinhaus, PhD.
Environmental Advocate
Santa Clara Valley Audubon Society
22221 McClellan Rd.
Cupertino, CA 95014
shani@scvas.org

p. 5 of 5

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-----Original Message-----

From: JLucas1099@aol.com [mailto:JLucas1099@aol.com]

Sent: Wednesday, September 09, 2009 3:42 PM

To: Bryan.Ellis@camoff.af.mil

Cc: kloss.sarah@epa.gov; Paula.C.Gill@spd02.usace.army.mil;
florence@refuge.org

Subject: EA 129 RQW National Guard Draft Moffett Field Long-Term Lease & Development Plan

September 9, 2009

Major Bryan Ellis, Base Civil Engineer
129 RQW/CE, PO Box 103, Stop 17
Moffett Field, CA 94035

RE: Environmental Assessment for 129 RQW Proposed Long-Term Lease and Installation
Development Plan

Dear Major Ellis,

In regards the Environmental Assessment of an upgrade of California's Air National Guard 129 RQW facilities at Moffett Field and a proposed long-term lease of this installation, I request consideration of some concerns:

~ Figure 3.2-1 of the Hydrologic Resources Adjacent to the 129 RQW Property at Moffett Field neglects to include the Jurisdictional Wetlands, ponds and drainage ditches that distinguish the Eastern Airfield, which provide biological preserves for waterfowl and wildlife, such as the resident colony of Western Pond Turtles.

~ Although Western Pond Turtles are listed as a protected California Species of Special Concern (P 3-12) this environmental assessment finds only two in the Northern Channel and one in Marriage Road Ditch when a year and a half ago 52 turtles were identified in Eastern

Airfield wetlands. The EA resource evaluation is critically deficient in this regards. NASA's Western Pond Turtle Management Plan should be adhered to.

~ Vegetation losses of 9.5 acres (due to impervious surface development) should be mitigated by high caliber re-vegetation in buffer zones that will provide both habitat for wildlife and filtration of pollutants for sustainable levels of water quality in runoff. Our Santa Clara Valley Chapter of California Native Plant Society would appreciate being given the opportunity to consult on the choice of plantings, especially grasses. The hydro-seed mix that the Navy has used on levees has so far not provided viable habitat or erosion control. Please provide a detailed vegetation palette and management plan for the proposed 9.5 acre development.

~ The EA documentation does not support a Finding of No Practicable Alternative to Alternative #2 (P. 7). This Alternative #2 expansion of the development footprint into Hole # 14 of the golf course is into a 100-year floodplain so to say that siting this facility here is "Pursuant to E0 11988, Floodplain Management: E0 11990, Protection of Wetlands" makes no rational argument for such a selection of Alternative #2. Please explain how Alternative # 2 can be made the "practicable alternative" based on an adherence to accepted floodplain and wetlands criteria? This explanation should include the viable re-siting of Hole # 14 in the golf course design and the siting of proposed mitigation for the loss of burrowing owl nesting preserve acreage.

~ The conclusion that "cumulative impacts to water resources are expected to be minor" needs further documentation. The increase of 9.5 acres in impervious surface demands a storm water permit, I believe, and might entail evaluation of the capacity of the drainage ditches under high storm events.

The value of these wetlands and their connectivity with the golf course ponds and wetlands and the Northern Channel and interface with San Francisco Bay's National Wildlife Refuge saltponds cannot be underestimated so it is imperative that appropriate attention be paid to the type of wetlands vegetation that is maintained here. These are US COE jurisdictional wetlands and they need to be consulted on any and all 'enhancements'.

Thank you very much for consideration of these concerns. We are in favor of 129 RQW National Guard Unit being stationed at Moffett Field and hope it can be accomplished with the appropriate conditions that will protect the unique biological resources that have managed to survive under the U.S. Navy's tenure.

Libby Lucas, RAB Member,
CNPS Santa Clara Valley Chapter, Conservation
174 Yerba Santa Ave., Los Altos, CA 94022



5750 ALMADEN EXPWY
SAN JOSE, CA 95118-3686
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File: 24739
Stevens Creek

September 9, 2009

Ms. Kate Bartz
TEC, Inc.
2617 East 7th Street
Tucson, AZ 85716

Subject: Draft Environmental Assessment – Development Plan for the 129th Rescue Wing

Dear Ms. Bartz:

Santa Clara Valley Water District (District) reviewed the Draft Environmental Assessment for the proposed consolidation of the 129th Rescue Wing (129 RQW) facilities at Moffett Field, received on August 10, 2009. The following are our comments.

Section 3.2.2.2 of the document includes inaccurate statements with respect to the level of flood protection to Moffett Field Area. The mud levees that surround the area weren't built to provide protection from 100-year flooding. The mud levees may provide some incidental flood protection, provided the levees are maintained by the current federal owner. It should also be noted that the mud levees would provide even lesser incidental flood protection in the future, given documented bay level rise. U. S. Army Corps of Engineers (USACE) will be releasing maps to show estimates of flood risk, given the above referenced factors, in the near future. The District recommends that NASA use the Corps maps for their planning purposes.

We appreciate the opportunity to review this document. I can be reached either by phone at (408) 265-2607, extension 2731 or by e-mail at uchatwani@valleywater.org.

Sincerely,


Usha Chatwani, P.E.
Associate Civil Engineer
Community Projects Review Unit

cc: C. Elias, A. Draper, S. Tippetts, B. Springer, M. Martin, U. Chatwani, File

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California Regional Water Quality Control Board
San Francisco Bay Region



Linda S. Adams
Secretary for
Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.waterboards.ca.gov/sanfranciscobay>

Arnold Schwarzenegger
Governor

Date: September 10, 2009
Geotracker ID: SL608592714 (EKW)

TEC, Inc.
Attn: Ms. Kate Bartz
2617 East 7th Street
Tucson, AZ 85716
Via E-mail: klbartz@tecinc.com

Subject: Comments on Draft Environmental Assessment, Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Wing
California Air National Guard, Moffett Field, Santa Clara County

Dear Ms. Bartz:

Thank you for the opportunity to review the August 2009 *Draft Environmental Assessment, Proposed Long-Term Lease and Installation Development Plan for the 19th Rescue Wing (EA)*. Based on my review, the EA is deficient in its discussion of environmental conditions within the project area. Comments are presented below.

General Comments

1. The California Air National Guard (CAANG) must demonstrate that no releases occurred from its potential environmental sources, or that releases have been adequately addressed. No data are presented to document that soil and groundwater contamination is not present as a result of CAANG activities.
2. The EA is deficient in its description of potential environmental source areas other than those that are part of the Navy's Installation Restoration and petroleum programs. CAANG operated chemical use and/or storage areas, including, but not limited to, vehicle operations and maintenance, aircraft operation and maintenance, fuels testing, munitions storage areas, hazardous materials storage areas, and hazardous waste storage areas. Because these areas have not been investigated, the environmental status is unknown.
3. Revise the text (multiple locations) regarding the status of the petroleum tanks and sumps being addressed by the Navy. Much of the information presented regarding closure status, investigation activities, and tank details is inaccurate. Mr. Wilson Doctor, Remedial Project Manager with the Navy (wilson.doctor@navy.mil or 619-532-0928), oversees the petroleum program at Moffett Field and can provide current information on the status of the Navy's petroleum program at an in the vicinity of the project area.

Preserving, enhancing, and restoring the San Francisco Bay Area's waters for over 50 years



Water Board Comment Letter

*Environmental Assessment
CAANG 129th Rescue Wing*

4. The EA does not include contingency plans to be implemented if contaminated soil and/or groundwater are encountered during implementation of the project.

Specific Comments

1. Section 2.2.2: Water Board staff commend CAANG for including pervious surface parking for a portion of the proposed development. Clarify why pervious surface parking cannot be used for the entire proposed development.
2. Section 3.8.2.4: Revise the text regarding Sump 130. In addition, revise the text to correctly reflect that Water Board staff, in a letter dated April 27, 2009, concurred with the Navy that no further action is required at the former aircraft wash rack.
3. Table 3.8-2:
 - a. Site 15: Correct the information regarding Sump 130. The U.S. Environmental Protection Agency (EPA), in a January 8, 2004, letter to the Navy, states that no further action is necessary. No additional action has been requested at Sump 130 by Water Board staff.
 - b. Site 16: Revise the “Current Status” text to clarify who or what agency may require additional excavation at Sump 60. EPA determined no additional action is required for soil at Sump 60 in a December 17, 1993, letter to the Navy. Groundwater contamination is being addressed as part of Site 28, the West-Side Aquifer Treatment System.
 - c. Site 19: Revise the text to show that Tank 43 is the suspected source of solvents in groundwater near Hangar 3. Tank 14, which is listed, was closed by the Water Board in October 2004. Remove the sampling and analytical details for Tank 14 from the table.
 - d. Site 19: Tanks 2 and 53 were closed by the Water Board in May 2003 and February 2004, respectively. Clarify why these tanks are listed in the table.
 - e. Site 26: Add solvents to the “Contaminants of Concern” column. Revise the text in the “Current Status” column. A groundwater extraction and treatment system was installed at Site 26 in accordance with the June 28, 1996, Record of Decision for Operable Unit 5. The system was operated until 2003. Currently, an in situ remediation pilot study is being conducted at Site 26. Ms. Julie Crosby, Remediation Project Manager with the Navy (julie.crosby@navy.mil or 619-532-0929), can provide you with information on Site 26.

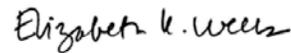
Water Board Comment Letter

*Environmental Assessment
CAANG 129th Rescue Wing*

- f. Site 27: Revise the “Site Description” to include the North Patrol Road Ditch and the Marriage Road Ditch. Modify the “Current Status” description to reflect that restoration of a portion of the North Patrol Road Ditch is required.
4. Section 3.8.2.5: Clarify the number of fuel tanks (above- or underground) owned, operated, and removed by CAANG. State whether regulatory closure was received for the three fuel tanks removed in 1998; if closure was received, provide the date of closure and regulatory agency.
5. Section 3.8.2.6: State whether testing has been conducted to assess soil and groundwater conditions at and beneath the three oil/water separators. Clarify if the oil/water separator at Building 146 received concurrence for no further action from a regulatory agency, and if so, when and which agency.

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

cc (via E-mail):

Ms. Alana Lee, U.S. EPA Region IX, lee.alana@epa.gov
Mr. Wilson Doctor, Department of the Navy, BRAC PMO West, wilson.doctor@navy.mil
Ms. Julie Crosby, Department of the Navy, BRAC PMO West, julie.crosby@navy.mil
Mr. Donald Chuck, NASA Ames Research Center, donald.m.chuck@nasa.gov



ARNOLD SCHWARZENEGGER
GOVERNOR

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT



CYNTHIA BRYANT
DIRECTOR

September 10, 2009

Robert Dogan
National Guard Bureau
3500 Fetchet Avenue
Conaway Hall
Andrews AFB, CA 20762-5157

Subject: Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Wing,
California Air National Guard, Moffett Field, California
SCH#: 2009084001

Dear Robert Dogan:

The State Clearinghouse submitted the above named Joint Document to selected state agencies for review. The review period closed on September 9, 2009, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Morgan".

Scott Morgan
Acting Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

**Document Details Report
State Clearinghouse Data Base**

SCH# 2009084001
Project Title Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Wing, California
Lead Agency Air National Guard, Moffett Field, California
 U.S. Air National Guard

Type JD Joint Document

Description Moffett Field is a secure federal facility with a secure perimeter and 6 controlled access points (gates) controlled by NASA and the Army; however, only 2 of these access points are used on a continuous basis for normal access control (Main Gate and Ellis Gate). NASA has plans to eventually open the NASA Research Park (on the west side of the runway) and the Eastside/Airfield Statement (EIS) and Record of Decision (ROD) (2002). However, current NASA security requirements still require that the NASA Ames Research Center (ARC) be fenced with access control. Similarly, the Army is redeveloping Orion Park, where the CAANG medical facility is located. As a result, the 129 RQW proposes to implement several construction and demolition projects, as well as implement real estate transactions, including a long-term lease, in order to provide secure access and consolidate the 129 RQW facilities. In addition, several of the 129 RQW facilities. In addition, several of the 129 RQW facilities do not meet the authorized square footage requirements per the Air National Guard Handbook 32-1084, Facility Requirements.

Lead Agency Contact

Name Robert Dogan
Agency National Guard Bureau
Phone 301-836-8859 **Fax**
email
Address 3500 Fetchet Avenue
 Conaway Hall
City Andrews AFB **State** CA **Zip** 20762-5157

Project Location

County Santa Clara
City
Region
Lat / Long 37° 34' 53" N / 122° 02' 28" W
Cross Streets US Hwy 101 and SR 237
Parcel No.
Township 6S **Range** 2W **Section** **Base**

Proximity to:

Highways SR 237, Hwy 101
Airports
Railways
Waterways San Francisco Bay
Schools
Land Use

Project Issues Aesthetic/Visual; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Flood Plain/Flooding; Landuse; Soil Erosion/Compaction/Grading; Traffic/Circulation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Fish and Game, Region 3; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 4; Integrated Waste Management Board; Regional Water Quality Control Board, Region 2; Department of Toxic Substances Control; Native American Heritage Commission

Note: Blanks in data fields result from insufficient information provided by lead agency.

**Document Details Report
State Clearinghouse Data Base**

Date Received 08/11/2009 *Start of Review* 08/11/2009 *End of Review* 09/09/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.



California Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
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ARNOLD SCHWARZENEGGER, Governor
DONALD KOCH, Director



September 10, 2009

Mr. Robert Dogan
National Guard Bureau
Conaway Hall
3500 Fetchet Avenue
Andrews AFB, Maryland 20762-5157

Dear Mr Dogan:

Subject: Proposed Long-term Lease and Installation Development Plan for the
129th Rescue Wing, Draft Environmental Assessment, SCH# 2009084001,
Moffett Field, City of Sunnyvale, Santa Clara County, California

The California Department of Fish and Game (CDFG) has received the draft Environmental Assessment (EA) for the above referenced proposal at Moffett Field in California. CDFG is the State Agency with jurisdiction over the fish, wildlife, native plants and habitats necessary for biologically sustainable populations of these species. As the Trustee Agency for those resources, CDFG provides the scientific expertise and staffing to review and comment on proposals that can have impacts on those public trust resources.

As noted in the draft EA, the purpose of the proposal is to consolidate the facilities of the 129th Rescue Wing (129th RQW) currently located at the NASA Ames Facility that contains Moffett Field. This overall action is necessary for the 129th RQW to provide adequate security for operation and to improve the various functions of the 129th RQW. The overall action includes consolidation of facilities to the extent practicable, securing those new boundaries, signing of a long-term lease, acquiring a new parcel for a munitions storage complex (MSC) and consolidating the existing three MSCs into the new location, demolition of some facilities, construction of additional facilities and remodeling/rehabilitation of existing structures. Specific actions are described in Table 2.2-1 and Section 2.2 of the draft EA. Two potentially practicable alternatives are described (in addition to a 'No Action' alternative), which differ in the location of the additional parcel. Under Alternative 1, the parcel would be contiguous with the final 129th RQW facilities and in Alternative 2 it would not.

The Findings of the draft EA (page 7) state that there is no practicable alternative to Alternative 2, that all practicable measures have been applied to minimize harm, that neither Alternative will result in significant impacts or generate controversy, either by itself or cumulatively. Accordingly, it is proposed that the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality, and 32 Code of Federal Regulations (CFR) 989, *et seq.*, have been met and an Environmental Impact Statement (EIS) is not necessary.

Conserving California's Wildlife Since 1870

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In evaluating proposals at the NASA Ames facility, CDFG focuses on two primary areas, impacts to burrowing owls and impacts to wetland and shoreline species. For this project, CDFG assumes no significant changes in management by any entity of the wetland areas at the northwestern runway terminus. If this is not correct, those activities, if allowed or proposed under the lease, should be evaluated in the draft EA. If this is the case, CDFG requests revision and recirculation of the draft EA.

For the other category of impact, we disagree that all potential impacts have been evaluated. Specifically, no mention of airfield use is included, although the operation of the 129th RQW is clearly dependent on it. Since the project description includes a long-term lease over the facilities, we assume that the lease includes the use of the airfield. Granting of the lease is a discretionary action under NEPA, which in turn means that actions proposed under that lease should be evaluated in the draft EA, even if they do not occur in the core project areas.

In addition, CDFG cannot concur that the draft EA lays out adequate mitigation for impacts that could occur as a result of the activities and mitigations described. In particular, the specified mitigation for the displacement of burrowing owl and construction of new artificial burrows has questionable biological value as presented; does not meet the full range of mitigation measures identified in the NASA Ames Development Plan and associated MIMP; and does not meet the long standing mitigation standard utilized in the surrounding geographic area, a standard under which the local burrowing owl population has collapsed. Before discussing each of these issues individually, it is appropriate to describe the existing condition in the area.

Background

Historically, burrowing owls were found in most Bay Area counties, although they were most numerous in Alameda, Contra Costa and Santa Clara counties (Grinnell and Wythe, 1927). The most recent published attempt at a Statewide survey of the owl was in 1991-1993 (DeSante, et al, 2007). In addition, Townsend and Lenihan (2007) have published an analysis of the status of burrowing owls in the Bay Area.

The results of these studies indicate that as of 1991-1993, there were approximately 9,127 pairs of burrowing owls in the State and approximately 165 pairs in the San Francisco Bay Area. Of the former, roughly 95% are located in the Central and Imperial valleys. In the Bay Area itself, the owls have vanished from all but three counties: Alameda, Contra Costa and Santa Clara. The numbers of owls in those 3 counties are equally discouraging: none in western Contra Costa, around 6 pairs in western Alameda and 101 pairs in Santa Clara. Eastern Contra Costa County and the portions of Alameda County containing the majority of burrowing owls are considered outside of the Bay Area since they are ecologically and geographically separated. These numbers should not be taken as absolute, but they are clearly indicative of the magnitude of the issue. In addition, there is general consensus that burrowing owl populations in the Bay Area are declining, so the cited numbers are likely to be high. Finally, while the number of breeding pairs in the State may seem high relative to other listed species, the number is extremely misleading. Approximately 71% of the California burrowing owls are located in the Imperial Valley and are more or less dependent on irrigation facilities. As a result, any significant change in water use in the Imperial Valley is likely to result in an immediate and very significant reduction of those owls.

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In Santa Clara County, which contains the vast majority of burrowing owls in the greater Bay Area, there are only two relatively large and stable populations: at San Jose Mineta International Airport and at the NASA Ames Facility (Townsend and Lenihan 2007). From this, it can be reasonably inferred that substantial impacts to either of those populations can result in very significant impacts to the San Francisco Bay Area burrowing owl population. This position is confirmed by NASA's own documentation which states:

"The ARC (Ames Research Center) subpopulation is the largest in the South Bay and constitutes approximately 25% of the region's population of 120 pairs of owls (DeSante, 1995). Consequently, the Center is critical to the survival of burrowing owls in the region (emphasis added). The population of breeding pairs at the Center has been very stable over the past 8 years (Trulio, 1999a), indicating that the management of owls and their habitat has been beneficial to the birds." (NASA Ames Development Plan, Appendix F, page 14).

It should be noted that awareness of the implications of this statement is even more critical today, as there are nowhere near the 120 estimated pairs present when the Development Plan was produced. For reasons which are currently unclear, over the past four years, the burrowing owl population has appeared to decline catastrophically, resulting in somewhat less than 50 burrowing owls being known in the 2008 season. Therefore, any activities that cause a further decline in the local burrowing owl population should be considered to likely result in a significant impact.

Monitoring over recent years indicates a relatively stable population of 20-25 pairs of owls at the NASA Ames Facility (J. Barclay, pers.com.). This number is consistent with the information in NASA's 2001 Development Plan Analysis. The draft EA states that there are currently 14 pairs of owls on the site, although this number (cited in the text and in Table 3.3-1) is inconsistent with Figure 3.3-1 which identifies 13 owls, 3 of which are single owls, meaning a maximum of 10 pairs.

Data is extremely scarce on the full impact of exclusion of burrowing owls from an area, in part because it is difficult and expensive to adequately track and monitor the movements and survival of dispersers from a central area. As a general rule, displacing of animals causes significant stress and expenditure of effort that would otherwise be directed toward gaining body mass, avoiding predation and reproducing. It is reasonable to infer that displaced animals are likely to have lower survivorship and reproductive success than undisturbed owls. Because of this, CDFG encourages entities displacing owls to ensure there is adequate compensatory habitat in very close proximity before exclusion occurs. This position derives from a reasonable belief that the less disruptive the exclusion process, the more likely the target animals are to survive and reproduce. In addition, this approach increases the probability that the displaced animals will continue to be part of the local population at large, a particularly important concern in the Bay Area.

For burrowing owls in general, there is little information to suggest that passive exclusion of burrowing owls have any beneficial effect, other than the immediate avoidance of mortality. While the species can disperse very significant distances, all evidence indicates that these events are relatively rare and should not be considered in mitigation or recovery planning.

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In the South Bay Area, there has been a fair amount of informal tracking of burrowing owls due to the intense local interest in this species. However, even though more than 1,000 burrowing owls have been banded in the region, only 10-12 bands have been documented subsequently. It is important to note that of those bands, four of those owls were individuals that originated at San Jose Mineta International Airport and relocated to Moffett. This demonstrates that movement occurs between the two core populations and that they can support each other. In a biological realm, this is absolutely critical and every effort should be made to maintain those populations and that connection.

CDFG believes that relocation of owls, passive or non-passive, without adequate mitigation, is likely to result in the following:

1. An unknown amount of direct or indirect mortality to the displaced owls.
2. A loss of cumulative breeding success, either through loss of owls or because breeding efforts are not undertaken or otherwise fail because owls have to expend energy relocating and avoiding predation rather than breeding.
3. An unknown, potentially extremely significant impact to the Santa Clara burrowing owl population and, by extension, to the greater Bay Area population.

Adequate mitigation is considered to be proportional compensation for the impact. That simple formula is complicated in this case since the very low population level of the species in this area means that any impact can be disproportional relative to a similar impact in a more robust population. In particular, any impacts to either of the core populations should be considered significant. Since management at the NASA Ames facility has, over the years, allowed a sizeable and stable population of burrowing owls to persist in a way that has not hindered facility operation, the primary way a significant impact would occur is by changing the way in which the facility, or subsets of the facility, manage the burrowing owls present.

CDFG staff had worked directly with NASA-Ames staff and contractors during preparation and review of the Environmental Impact Statement (EIS) for the NASA Ames Development Plan in 2001 and concurred with analysis and findings, particularly relative to Appendix F, a portion of which is also referenced above. That document states, in part:

"...no change in land use is proposed for the airfield and recommendations presented in this study are based on this assumption. If development or management changes were planned in the future for the airfield area, any impacts to burrowing owls would require mitigation above and beyond the mitigations presented in this document."
(Page 17, Emphasis in original).

The analysis and mitigation proposed in the Development Plan were focused only on the 213-acre core area and specifically excluded changes to airfield operation as well as the 110-acre California Air National Guard parcel. The standard set by the 2001 EIS included a determination that impacts to three pairs of burrowing owls was considered a significant

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impact (Appendix F, Impact 2, page 21). If anything, this standard is now likely too high, since that figure was selected during a period when the burrowing owl population was considerably healthier than it is now.

Analysis

As an agency with special expertise in this issue due to agency mission and related program experience, CDFG recommends that any impacts to burrowing owls as a result of activities resulting from the implementation of the lease agreement and installation development plan be considered potentially significant, both individually and cumulatively.

At this point, we cannot fully judge what the extent or effect of impacts may be, since there may be additional information needed. As noted above, our primary concern is with impacts to the burrowing owls utilizing the area. The impacts to owls can be divided into two categories, those identified in the draft EA as associated with facility reconfiguration and those associated with long-term maintenance, particularly of the runway area. These latter impacts do not appear to be fully addressed in the draft EA.

Impacts to Burrowing Owls From Facility Realignment

The draft EA identifies a number of activities associated with the proposed action that could affect burrowing owls. Those activities fit into the following general and specific categories: relocation of the munitions storage facilities into one location, construction of new buildings on the 129th RQW parcel, remodeling/expansion of various structures already located on the 129th RQW parcel, new fencing, new security procedures, and significant new amounts of pavement. The draft EA summarizes these activities, acknowledges the possible presence of burrowing owls in the areas affected by the proposed activities and describes measures to avoid impacts. After review of this material, CDFG finds that the analysis does not fully evaluate the potential impacts and the mitigation measures do not adequately compensate for possible impacts. Our conclusion is that the full range of impacts has not been fully addressed in the draft EA, and that it has not been adequately demonstrated that the impacts that do occur have been reduced to a level of insignificance.

While the draft EA identifies a range of impacts associated with the proposed activities, it does not appear that all potential impacts have been anticipated and analyzed. The measures proposed as mitigations are primarily intended to avoid direct mortality or injury. What does not appear to be addressed are the indirect effects of the actions associated with the project and the mitigation measures. As described above, displacement of a burrowing owl can lead to immediate and/or indirect impacts, such as predation due to a lack of cover; general loss of fitness due to energy spent relocating rather than foraging; death or injury due to an inability to find a suitable relocation site; and loss of a breeding opportunity further reducing overall local population resilience. In short, the act of displacement in itself creates additional impacts which must be considered in a complete analysis.

The way this is normally resolved is to ensure that an adequate compensatory habitat is set aside in close enough proximity to the displacement site so that there is a reasonable assurance that displaced owls will be able to find replacement habitat nearby and avoid the impacts mentioned previously. Adequate compensatory habitat means an area that provides

Mr. Robert Dogan
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the same biological value or better as the area from which the owl(s) was/were displaced. Habitat values include nesting, cover, and forage at a minimum. The area needs to have protection in perpetuity for the habitation and use by burrowing owls and, in some cases, be actively managed to maintain the habitat values.

Another impact not fully addressed in the draft EA is the cumulative loss of foraging and nesting habitat. It appears the project will result in a loss of habitat due to approximately 600,000 square feet of new pavement and an unknown additional loss due to new construction. The single most limiting factor affecting burrowing owls in the Bay Area appears to be the ongoing, incremental loss of grassland habitat, ruderal or not. By converting portions of an area that is actively utilized by burrowing owl, the project will contribute to this cumulative loss and should be mitigated.

Finally, the draft EA cites the CDFG *Staff Report on Burrowing Owl Mitigation*, and the measures adopted in the draft EA from the NASA Ames Long Range Development Plan mirror those in the report. Please be aware that while CDFG agreed in 2001 that the measures proposed were adequate, subsequent experience has shown that they are, in fact, not adequate for avoiding or mitigating impacts and the guidelines are currently undergoing extensive revision.

Impacts to Burrowing Owls From Long-term Operations and Maintenance

An issue that does not appear to be addressed in the draft EA is that of long-term maintenance. Long-term maintenance is of critical importance at the NASA Ames Facility, including the airfield and 129th RQW facilities. CDFG is aware of pressure from various parties at the NASA Ames Facility to increase exclusion of ground squirrels from areas where they have historically occurred. The reasons for doing so appear to vary with the specific party, but the result will be the same, an impact to burrowing owls. Burrowing owls are highly dependent on ground squirrel burrows and exclusion of ground squirrels usually results in the extirpation of owls in the same area.

The draft EA should clearly identify what actions will be allowed under the lease and evaluate what impacts, if any, will occur to burrowing owls. Suitable mitigation should be proposed for any impacts. CDFG recommends the following standards should be used as the baseline to determine impacts:

1. Any increase in ground squirrel exclusion from the areas occupied at the time of the analysis completed for the NASA Ames Development Plan (approximately 2001);
2. An intensity of exclusion in those same areas.

CDFG also recommends that any increases should be considered significant due to the exceptional circumstances relative to the NASA Ames burrowing owls and the state of the burrowing owl population in the greater Bay Area.

We wish to emphasize we are not making a judgment at this time since the information necessary to do so is not available. The extent that this issue must be addressed by the 129th RQW is dependent on who will carry out airfield and facility maintenance after the

Mr. Robert Dogan
September 10, 2009
Page 7

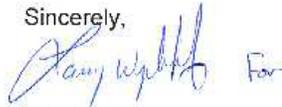
lease signing and how much that maintenance has changed or not changed since the EIS completed by NASA in 2001. As a reminder, that document identified any changes to airfield maintenance as needing further environmental review and that impacts to more than three pairs of owls was the standard of significance. That standard would be exceeded almost immediately by any increase in ground squirrel exclusion since it would result in a loss of nesting and foraging opportunities. Please also note that the existing burrowing owl refugia created at the NASA Ames Facility were for the project described in the Development Plan project description. Impacts beyond that, as these would be, would require additional mitigation.

We recommend that the draft EA be amended as outlined above, then recirculated for comment. CDFG cannot concur with the language in the draft findings that no significant impacts will occur and that no controversy has been generated. As noted above, due to the exceptional circumstances created by the state of the burrowing owl population in the San Francisco Bay Area and the extreme importance of the NASA Ames colony to that regional population, CDFG believes that the impacts described in the draft EA have not been adequately mitigated so as to reduce them to a level of insignificance, either individually, indirectly or cumulatively; nor have all the potential impacts been discussed or adequately explained as not likely to occur. As the State Agency with expertise and jurisdiction over wildlife, including burrowing owls, these opinions constitute 'controversy' under NEPA.

Protection and stability of the burrowing owl population at the NASA Ames Facility are a priority for CDFG, and to the extent that the California Air National Guard is responsible for impacts and mitigation to that population, CDFG is available, on a priority basis, to work with you on these issues, while still meeting the 129th RQW mission and maintaining safety.

Questions regarding this letter and further coordination on these issues should be directed to Mr. Dave Johnston, Environmental Scientist, at (831) 464-6870; or Mr. Liam Davis, Habitat Conservation Supervisor, at (707) 944-5529.

Sincerely,



Charles Armor
Region Manager
Bay Delta Region

cc: State Clearinghouse

Ms. Kate Bartz
TEC, Inc.
KLBartz@tecinc.com

Mr. Robert Dogan
September 10, 2009
Page 8

Ms. Cori Mustin
U.S. Fish and Wildlife Service
2800 Cottage Way, W-2605
Sacramento, CA 95825

Mr. Ken Schreiber
County of Santa Clara, Planning Office
County Government Center, East Wing
70 West Hedding Street
San Jose, CA 95110

Mr. David Zippin
ICF Jones and Stokes
268 Grand Avenue
Oakland, CA 94610

References

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- Townsend, Susan E. and Colleen Lenihan. Burrowing Owl Status in the Greater San Francisco Bay Area. In: Proceedings of the California Burrowing Owl Symposium. Pages 60-69.
- Trulio, Lynne and Debra Chromczak. Burrowing Owl Nesting Success at Urban and Parkland Sites in Northern California. In: Proceedings of the California Burrowing Owl Symposium. Pages 115-122.



NATIONAL GUARD BUREAU

3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

17 Nov 09

Shani Kleinhaus, PhD.
Environmental Advocate
Santa Clara Valley Audubon Society
22221 McClellan Rd.
Cupertino, CA 95014

Dear Dr. Kleinhaus

The 129th Rescue Wing (129 RQW) of the California Air National Guard (CAANG) has prepared a revised draft Environmental Assessment (EA) for implementation of a long-term lease and proposed installation development plan at their installation at Moffett Field, California. The revised draft EA and revised draft Finding of No Significant Impact (FONSI) are provided for your review (Atch). Agency and public comments provided during the 30-day review period have been considered. Although the changes in the revised draft EA are not major, we are providing the revised draft EA for your information.

The environmental analysis for the Proposed Action is being conducted by the Air National Guard in accordance with the Council on Environmental Quality guidelines pursuant to the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached revised draft EA. Please provide any comments NLT the COB of 4 December 2009.

Any questions concerning the proposal should be directed to our consultant, TEC, Inc. The point of contact at TEC is Ms. Kate Bartz. She can be reached at (520) 326-0951. Please forward your written comments to Ms. Bartz, in care of TEC, Inc., 2617 East 7th Street, Tucson, AZ 85716 or email to klbartz@tecinc.com. Thank you for your assistance.

Sincerely

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ROBERT L. DOGAN, REM
Plans and Requirements Branch

Attachment:

Revised Draft EA/FONSI for Environmental Assessment for Proposed Long-Term Lease and Installation Development Plan for the 129th Rescue Squadron, California Air National Guard, Moffett Field, California



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3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

17 Nov 09

Dave Johnston
California Department of Fish and Game
Central Coast Region
PO Box 47
Yountville, CA 94599

Dear Mr. Johnston

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Plans and Requirements Branch

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NATIONAL GUARD BUREAU
3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

17 Nov 09

Hanson Hom
City of Sunnyvale, Community Development
PO Box 3707
Sunnyvale, CA 94086

Dear Mr. Hom

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NATIONAL GUARD BUREAU

3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

23 November 2009

Dave Johnston
California Department of Fish and Game
Central Coast Region
PO Box 47
Yountville, CA 94599

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Based on very recent communication, the owner of the parking facilities identified for use by the 129 RQW is unwilling to enter into any use agreement, even during weekends. Due to the unavailability of these parking structures at this time, Alternative #1 will be identified as the 129 RQW's preferred alternative in the final EA. Alternatives #3 and #4 will remain in the EA in the event that the owner may be agreeable to leasing parking to the 129 RQW at a future date.

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Sincerely

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ROBERT L. DOGAN, YA-02, REM
Plans and Requirements Branch

Cc:
ARC-J (Mr. Fluegemann)
ARC-JQ (Dr. Clarke)



NATIONAL GUARD BUREAU

3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

23 November 2009

Shani Kleinhaus, PhD.
Environmental Advocate
Santa Clara Valley Audubon Society
22221 McClellan Rd.
Cupertino, CA 95014

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ROBERT L. DOGAN, YA-02, REM
Plans and Requirements Branch

Cc:
ARC-J (Mr. Fluegemann)
ARC-JQ (Dr. Clarke)



NATIONAL GUARD BUREAU

3500 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

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23 November 2009

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Based on very recent communication, the owner of the parking facilities identified for use by the 129 RQW is unwilling to enter into any use agreement, even during weekends. Due to the unavailability of these parking structures at this time, Alternative #1 will be identified as the 129 RQW's preferred alternative in the final EA. Alternatives #3 and #4 will remain in the EA in the event that the owner may be agreeable to leasing parking to the 129 RQW at a future date.

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ROBERT L. DOGAN, YA-02, REM
Plans and Requirements Branch

Cc:
ARC-J (Mr. Fluegemann)
ARC-JQ (Dr. Clarke)



Santa Clara Valley Audubon Society
Founded 1926

December 7th, 2009

National Guard Bureau
3500 Fetchet Ave.
Andrews Air Force Base, MD 20762-5157
Attn: Robert L. Dogan, NGB/A7AM

Dear Mr. Dogan,

I am writing in reference to the “REVISED DRAFT FINAL FINDING OF NO SIGNIFICANT IMPACT/ FINDING OF NO PRACTICABLE ALTERNATIVE FOR PROPOSED LONG-TERM LEASE AND INSTALLATION DEVELOPMENT PLAN FOR THE 129TH RESCUE WING CALIFORNIA AIR NATIONAL GUARD MOFFETT FIELD, CALIFORNIA” and the letter (dated November 23, 2009) that followed the revised draft and informed SCVAS of the reinstatement of Alternative #1 as the preferred alternative for the project, and the possible future implementation of Alternatives #3 or #4 in the hypothetical event that a property owner may be agreeable to leasing parking to the 129th RQW.

SCVAS appreciates your creativity and good faith efforts to address our concerns and create better alternatives for the project that reduce the impact on Burrowing Owl habitat. However, CEQA and NEPA laws requires procedures and processes that disclose to decision-makers and the public the environmental effects of proposed projects, identify ways to avoid environmental damage, implement feasible alternatives or mitigation measures, and disclose to the public the reasons for agency approval of projects with significant adverse environmental effects. We encourage your department to re-circulate this document for further review and comment from the appropriate agencies, decision-makers, and the general public.

Comments:

1. The revised draft does not specifically address SCVAS comments on the original draft. We appreciate the effort to create a plan that better addresses our concerns, but this format leaves many of our original concerns without answer or resolution.
2. The revised draft offers new alternatives (alternatives #3 and #4) that were not included in the original document. CEQA and NEPA require that this draft be re-circulated for government agencies and public review for at least 30 days.
3. The letter that announced the suspension of alternatives #3 and #4 should also be subjected to the 30 days circulation requirement.
4. Both the original and the revised draft make the erroneous statement that “wildlife that uses

p. 1 of 2

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these areas is typical of urban and suburban areas”, a statement that supports the findings of no significant impact/no practical alternative. SCVAS comments on the original draft negate this assertion.

5. Reverting to Alternative #1 subjects the draft to all the comments made by SCVAS on the original draft. These comments have yet to be addressed by CAANG.

6. We wish to reiterate that the many mitigations included in both drafts provide evidence that there will be a significant impact on biological resources, and that thus a proper and comprehensive EIS/EIR is required for this project.

7. We appreciate your goodwill, but goodwill does not provide the transparency required by law. CEQA requires that the lead agency be able to implement, track, monitor, and **report** on any proposed mitigations for any identified impact.

8. As you revise the project, please continue to be creative in looking for weekend parking solutions that may reduce impacts to Burrowing Owl habitat.

Respectfully,



Shani Kleinhaus
Environmental Advocate
Santa Clara Valley Audubon Society
22221 McClellan Rd.
Cupertino, CA 95014
shani@scvas.org

p. 2 of 2

22221 McClellan Road, Cupertino, CA 95014 Phone: (408) 252-3748 * Fax: (408) 252-2850
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From: David Johnston [mailto:DJOHNSTON@dfg.ca.gov]
Sent: Wednesday, December 09, 2009 8:01 AM
To: Bartz, Kate L.
Cc: Liam Davis
Subject: CAANG Final EA

Good Morning Ms. Bartz

I am responding to your voice mail of last Friday regarding comments from CDFG on this document.

We will not be providing further comment. It is pretty clear that CAANG is not willing to address this adequately and in the absence of a strong enough regulatory hook to compel CAANG to do so, there isn't much point in spending much additional time on it.

Thank you for your assistance throughout the process.

Dave Johnston
Calif. Department of Fish and Game
(831) 464-6870

Appendix B

Air Quality Calculations

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Emissions Summary

Implementation Year	Emission (tons/yr)					
	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
<i>2010 Construction & Demolition</i>						
Heavy Equipment	3.89	0.98	11.78	0.01	0.55	0.49
Project Management Trucks	0.23	0.02	0.02	0.00	0.00	0.00
Worker Commute	0.41	0.02	0.03	0.00	0.00	0.00
Demo Truck Trips	0.24	0.07	0.45	0.00	0.00	0.00
Fugitive Dust					4.02	0.02
2010 Subtotal	4.78	1.09	12.29	0.01	4.58	0.52
<i>2011 Construction</i>						
Heavy Equipment	1.49	0.38	4.51	0.00	0.21	0.19
Project Management Trucks	0.17	0.02	0.01	0.00	0.00	0.00
Worker Commute	0.30	0.01	0.03	0.00	0.00	0.00
Fugitive Dust					0.22	0.02
2011 Subtotal	1.96	0.41	4.55	0.00	0.44	0.21
<i>2012 Construction</i>						
Heavy Equipment	1.55	0.39	4.69	0.00	0.22	0.19
Project Management Trucks	0.19	0.02	0.01	0.00	0.00	0.00
Worker Commute	0.34	0.02	0.03	0.00	0.00	0.00
Fugitive Dust					0.22	0.02
2012 Subtotal	2.08	0.42	4.73	0.00	0.45	0.22
<i>2013 Construction</i>						
Heavy Equipment	2.10	0.53	6.34	0.00	0.29	0.26
Project Management Trucks	0.17	0.02	0.01	0.00	0.00	0.00
Worker Commute	0.30	0.01	0.03	0.00	0.00	0.00
Demo Truck Trips	0.11	0.21	0.03	0.00	0.00	0.00
Fugitive Dust					0.30	0.03
2013 Subtotal	2.68	0.77	6.41	0.00	0.60	0.30
<i>2014 Construction</i>						
Heavy Equipment	1.61	0.41	4.87	0.00	0.23	0.20
Project Management Trucks	0.19	0.02	0.01	0.00	0.00	0.00
Worker Commute	0.34	0.02	0.03	0.00	0.00	0.00
Fugitive Dust					0.45	0.04
2014 Subtotal	2.14	0.44	4.91	0.00	0.68	0.25
<i>2015 Construction</i>						
Heavy Equipment	2.86	0.72	8.67	0.01	0.40	0.36
Project Management Trucks	0.23	0.02	0.02	0.00	0.00	0.00
Worker Commute	0.41	0.02	0.03	0.00	0.00	0.00
Fugitive Dust					4.46	0.45
2015 Subtotal	3.51	0.76	8.72	0.01	4.87	0.81
<i>2016 Construction</i>						
Heavy Equipment	0.83	0.21	2.51	0.00	0.12	0.10
Project Management Trucks	0.09	0.01	0.01	0.00	0.00	0.00
Worker Commute	0.17	0.01	0.01	0.00	0.00	0.00
Fugitive Dust					0.22	0.02
2016 Subtotal	1.09	0.23	2.53	0.00	0.34	0.13

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Heavy Equipment

Emissions By Implementation Year

Equipment	FUEL	HP	Load Factor	Emission Factors (g/hp-hr)							Emission (tons total)						
				CO	VOC	NO _x	SO _x	PM ₁₀	No of Equip	Hrs/Day	Days in Service	CO	VOC	NO _x	SO _x	PM ₁₀	PM _{2.5}
2010 Construction Emissions (Project 1 - 6.5 acres & Project 2 - 0.03 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	2	4	259	0.632	0.159	1.913	0.001	0.089	0.079
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	200	0.199	0.050	0.601	0.000	0.028	0.025
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	90	0.152	0.038	0.459	0.000	0.021	0.019
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	200	0.328	0.083	0.992	0.001	0.046	0.041
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	200	0.625	0.157	1.890	0.001	0.088	0.078
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	8	259	0.771	0.194	2.333	0.001	0.108	0.097
TOTAL											2.71	0.68	8.19	0.00	0.38	0.34	
<i>Note: It has been conservatively estimated that construction activities would last for 259 days (12 months without weekends and holidays)</i>																	
2011 Construction Emissions (Project 3 - 1.3 acres & Project 4 - NA)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	190	0.232	0.058	0.702	0.000	0.033	0.029
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	60	0.060	0.015	0.180	0.000	0.008	0.007
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	60	0.067	0.017	0.204	0.000	0.009	0.008
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	190	0.311	0.078	0.942	0.001	0.044	0.039
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	190	0.396	0.100	1.197	0.001	0.056	0.050
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	190	0.424	0.107	1.283	0.001	0.060	0.053
TOTAL											1.49	0.38	4.51	0.00	0.21	0.19	
<i>Note: It has been conservatively estimated that construction activities would last for 190 days (9 months without weekends and holidays)</i>																	
2012 Construction Emissions (Project 5 - 0.8 acres & Project 6 - 0.16 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	212	0.259	0.065	0.783	0.000	0.036	0.032
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	70	0.069	0.017	0.210	0.000	0.010	0.009
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	70	0.079	0.020	0.238	0.000	0.011	0.010
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	180	0.295	0.074	0.893	0.001	0.042	0.037
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	180	0.375	0.094	1.134	0.001	0.053	0.047
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	212	0.473	0.119	1.432	0.001	0.067	0.059
TOTAL											1.55	0.39	4.69	0.00	0.22	0.19	
<i>Note: It has been conservatively estimated that construction activities would last for 212 days (10 months without weekends and holidays)</i>																	
2013 Construction Emissions (Project 7 - 0.17 acres & Project 8 - 0.45 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	3	4	190	0.696	0.175	2.105	0.001	0.098	0.087
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	60	0.060	0.015	0.180	0.000	0.008	0.007
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	60	0.067	0.017	0.204	0.000	0.009	0.008
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	190	0.311	0.078	0.942	0.001	0.044	0.039
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	190	0.396	0.100	1.197	0.001	0.056	0.050
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	8	190	0.565	0.142	1.711	0.001	0.080	0.071
TOTAL											2.10	0.53	6.34	0.00	0.29	0.26	
<i>Note: It has been conservatively estimated that construction activities would last for 157 days (9 months without weekends and holidays)</i>																	
2014 Construction Emissions (Project 9 - 0.9 acres & Project 10 - 0.7 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	212	0.259	0.065	0.783	0.000	0.036	0.032
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	80	0.079	0.020	0.240	0.000	0.011	0.010
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	80	0.090	0.023	0.272	0.000	0.013	0.011
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	190	0.311	0.078	0.942	0.001	0.044	0.039
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	190	0.396	0.100	1.197	0.001	0.056	0.050
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	212	0.473	0.119	1.432	0.001	0.067	0.059

Heavy Equipment

											TOTAL	1.61	0.41	4.87	0.00	0.23	0.20
<i>Note:</i> It has been conservatively estimated that construction activities would last for 212 days (10 months without weekends and holidays)																	
2015 Construction Emissions (Project 11 - 0.5 acres & Project 13 - 13.9 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	259	0.474	0.119	1.435	0.001	0.067	0.059
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	2	6	180	0.536	0.135	1.622	0.001	0.075	0.067
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	2	6	180	0.607	0.153	1.836	0.001	0.085	0.076
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	100	0.164	0.041	0.496	0.000	0.023	0.021
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	100	0.312	0.079	0.945	0.001	0.044	0.039
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	8	259	0.771	0.194	2.333	0.001	0.108	0.097
											TOTAL	2.86	0.72	8.67	0.01	0.40	0.36
<i>Note:</i> It has been conservatively estimated that construction activities would last for 259 days (12 months without weekends and holidays)																	
2016 Construction Emissions (Project 12 - 1.0 acres)																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	106	0.129	0.033	0.391	0.000	0.018	0.016
Roller	DIESEL	145	57.5	5.95E-03	1.50E-03	1.80E-02	1.08E-05	8.38E-04	1	4	60	0.060	0.015	0.180	0.000	0.008	0.007
Paver	DIESEL	160	59	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	60	0.067	0.017	0.204	0.000	0.009	0.008
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	90	0.148	0.037	0.446	0.000	0.021	0.018
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	4	90	0.187	0.047	0.567	0.000	0.026	0.023
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	106	0.237	0.060	0.716	0.000	0.033	0.030
											TOTAL	0.83	0.21	2.51	0.00	0.12	0.10
<i>Note:</i> It has been conservatively estimated that construction activities would last for 106 days (5 months without weekends and holidays)																	
2010 Facility Demolitions: Bldgs. 650, 654, 655, 656, 669, 687 - 2.15 acres total																	
Dump Truck	DIESEL	250	41	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	8	127	0.310	0.078	0.938	0.001	0.044	0.039
Roller	DIESEL	145	57.5	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	80	0.119	0.030	0.360	0.000	0.017	0.015
Loader	DIESEL	170	54	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	80	0.131	0.033	0.397	0.000	0.018	0.016
Scraper	DIESEL	265	66	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	6	80	0.250	0.063	0.756	0.000	0.035	0.031
Water Truck	DIESEL	250	50	0.005953	0.001499	0.018012	1.08E-05	0.000838	1	8	127	0.378	0.095	1.144	0.001	0.053	0.047
											TOTAL	1.19	0.30	3.59	0.00	0.17	0.15
<i>Note:</i> It has been conservatively estimated that all demolition activities would last for 1 month per building (6 months total), 127 days without weekends and holidays																	

Fugitive Dust Emissions

Fugitive Dust (unpaved roads)	Emission Factor, lbs/VMT	k				Silt		Speed
		a	b	MVW	Content			
2010 Construction & Demolition Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	90							
Vehicles	12							
Total	lbs	Tons						
PM ₁₀	8035.6876	4.01784						
PM _{2.5}	803.5688	0.40178						
2011 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	10							

Heavy Equipment

Vehicles	6							
Total	lbs	Tons						
PM ₁₀	446.4271	0.22321						
PM _{2.5}	44.6427	0.02232						
2012 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	10							
Vehicles	6							
Total	lbs	Tons						
PM ₁₀	446.4271	0.22321						
PM _{2.5}	44.6427	0.02232						
2013 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	10							
Vehicles	8							
Total	lbs	Tons						
PM ₁₀	595.2361	0.29762						
PM _{2.5}	59.5236	0.02976						
2014 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	20							
Vehicles	6							
Total	lbs	Tons						
PM ₁₀	892.8542	0.44643						
PM _{2.5}	89.2854	0.04464						
2015 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	150							
Vehicles	8							
Total	lbs	Tons						
PM ₁₀	8928.5418	4.46427						
PM _{2.5}	892.8542	0.44643						
2016 Construction Fugitive Dust								
PM ₁₀	7.44E+00	1.5	0.9	0.45	210.00	8.50	10.00	
PM _{2.5}	7.44E-01	0.15	0.9	0.45	210.00	8.50	10.00	
Mileage	10							
Vehicles	6							
Total	lbs	Tons						
PM ₁₀	446.4271	0.22321						
PM _{2.5}	44.6427	0.02232						

Project Management Truck Trips

Vehicle Class	VMT			CO		NO _x		VOCs						SO _x		PM10				Days in Service	Emissions, tons total						
	No. of Trucks	Speed (mph)	(mi/vehicle-day)	Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Hot-Soak (g/trip)	Resting Loss (g/hr)	Running Evaporative (g/mi)	Diurnal Evaporative (g/hr)	Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Tire Wear (g/mi)	Brake Wear (g/mi)		CO	NO _x	VOCs	SO _x	PM ₁₀	PM _{2.5}	
2010 Construction & Demolition																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	259	0.0772	0.0057	0.0071	0.0001	0.0006	0.0006
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	259	0.1545	0.0114	0.0143	0.0002	0.0012	0.0012
2010 Total																											
2011 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	190	0.0567	0.0042	0.0052	0.0001	0.0004	0.0004
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	190	0.1133	0.0084	0.0105	0.0001	0.0009	0.0009
2011 Total																											
2012 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	212	0.0632	0.0047	0.0058	0.0001	0.0005	0.0005
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	212	0.1264	0.0093	0.0117	0.0001	0.0010	0.0010
2012 Total																											
2013 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	190	0.0567	0.0042	0.0052	0.0001	0.0004	0.0004
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	190	0.1133	0.0084	0.0105	0.0001	0.0009	0.0009
2013 Total																											
2014 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	212	0.0632	0.0047	0.0058	0.0001	0.0005	0.0005
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	212	0.1264	0.0093	0.0117	0.0001	0.0010	0.0010
2014 Total																											
2015 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	259	0.0772	0.0057	0.0071	0.0001	0.0006	0.0006
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	259	0.1545	0.0114	0.0143	0.0002	0.0012	0.0012
2015 Total																											
2016 Construction																											
Project Management Vehicle	Light-duty truck, catalyst	4	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	106	0.0316	0.0023	0.0029	0.0000	0.0002	0.0002
Crew Cab Trucks	Light-duty truck, catalyst	8	15	10	4.405	11.792	0.382	0.586	0.152	0.867	0.177	0.026	0.047	0.061	0.007	0.002	0.028	0.015	0.008	0.013	106	0.0632	0.0047	0.0058	0.0001	0.0005	0.0005
2016 Total																											

Worker Commute

Construction Year	Vehicle Class	No. of Workers	Speed (mi/vehicle-day)	YMT	CO		NO _x		VOCs					SO _x		PM ₁₀				Days in Service	Emissions, tons total						
					Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Hot-Soak (g/trip)	Resting Loss (g/hr)	Running Evaporative (g/mi)	Diurnal Evaporative (g/hr)	Running Exhaust (g/mi)	Start-Up (g/start)	Running Exhaust (g/mi)	Start-Up (g/start)	Tire Wear (g/mi)		Brake Wear (g/mi)	CO	NO _x	VOCs	SO _x	PM ₁₀	PM _{2.5}
2010	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	259	0.41	0.03	0.02	0.00	0.00	0.00
2011	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	190	0.30	0.03	0.01	0.00	0.00	0.00
2012	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	212	0.34	0.03	0.02	0.00	0.00	0.00
2013	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	190	0.30	0.03	0.01	0.00	0.00	0.00
2014	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	212	0.34	0.03	0.02	0.00	0.00	0.00
2015	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	259	0.41	0.03	0.02	0.00	0.00	0.00
2016	Light-duty	10	35	40	3.019	11.792	0.27	0.586	0.056	0.867	0.177	0.026	0.047	0.061	0.004	0.002	0.01	0.015	0.008	0.013	106	0.17	0.01	0.01	0.00	0.00	0.00

Demolition Debris Truck Trips

Demolition Phase	Vehicle Class	No. of Vehicles Per Day	Speed (mph)	VMT (mi/vehicle-day)	CO	NOX	VOCs	SOx	PM10			Days of Demo	Emissions, tons per year					
					Running Exhaust (g/mi)	Tire Wear (g/mi)	Brake Wear (g/mi)		CO	NOx	VOCs	SOx	PM10	PM2.5				
2010 Demolition	Heavy-duty truck, diesel	5	15	30	11.383	21.608	3.438	0.025	0.141	0.036	0.028	127	0.24	0.45	0.07	0.00	0.00	0.00
2013 Demolition	Heavy-duty truck, diesel	5	15	30	11.383	21.608	3.438	0.025	0.141	0.036	0.028	60	0.11	0.21	0.03	0.00	0.00	0.00

Assumptions:

- * Assuming 30 miles round trip per vehicle (distance to Landfill)
- * Assume 127 days for 2010 demolitions debris disposal
- * Assume 60 days for 2013 demolitions debris disposal