# ENVIRONMENTAL ASSESSMENT
May 2007

# MILITARY FAMILY HOUSING REVITALIZATION TRAVIS AIR FORCE BASE, CALIFORNIA

# Report Documentation Page

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14. ABSTRACT

**This environmental assessment (EA) evaluates the potential environmental impacts of privatization of MFH at Travis AFB. It has been determined that privatization of the housing areas is a viable option because the housing areas meet the required criteria for privatization. This EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action, Alternative 1, and the No-Action Alternative. As part of the privatization action, the Proposed Action would include demolition of 1,651 units construction of more than 400 units, and minor renovations (as necessary) of recently constructed units (built during the 1990s and 2002-2004) by a private contractor. The housing units would be conveyed to the contractor; however, the land would remain Air Force property. Under Alternative 1, the same activities as the Proposed Action would occur; however, 800 new units would be constructed. Under the No-Action Alternative, the Air Force would not privatize MFH at Travis AFB. The Air Force would continue to be responsible for providing, operating, and maintaining the MFH units and the Air Force would continue to incur costs associated with these responsibilities. Any funding required to complete renovations to upgrade substandard housing would continue to be the responsibility of the Air Force. Any required demolition of existing units and construction of new housing units would also be the responsibility of the Air Force. The environmental resources potentially affected by the Proposed Action are land use, aesthetics utilities (solid waste), hazardous materials management, hazardous waste management, storage tanks, pesticide usage, polychlorinated biphenyls, asbestos-containing material, lead-based paint and radon, geology and soils, water resources, air quality, noise, biological resources, cultural resources, and environmental justice. Based on the nature of activities associated with the privatization of the MFH units and the associated demolition, construction, and renovation activities the Air Force has determined that impacts to these resources would not be significant.**

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# ENVIRONMENTAL ASSESSMENT
# MILITARY FAMILY HOUSING REVITALIZATION
# TRAVIS AIR FORCE BASE, CALIFORNIA

**Prepared by:**
**Earth Tech**

**May 2007**

**FINDING OF NO SIGNIFICANT IMPACT**
**MILITARY FAMILY HOUSING REVITALIZATION PROJECT**
**TRAVIS AIR FORCE BASE, CALIFORNIA**

The attached environmental assessment (EA) analyzes the potential for impacts to the environment as a result of the revitalization of military family housing (MFH) areas at Travis Air Force Base (AFB), California. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [U.S.C.] 4321 et seq.), the Council on Environmental Quality regulations implementing the procedural provisions of NEPA, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and Air Force policy and procedures (32 CFR Part 989) and is hereby incorporated by reference.

This Finding of No Significant Impact (FONSI) summarizes the Proposed Action and alternatives and the results of the evaluation of the demolition, construction, and renovation of MFH units. A private contractor would accomplish project activities.

**Description of Proposed Action and Alternatives**

The Proposed Action will include demolition of 1,651 units, construction of more than 400 units, and minor renovations (as necessary) of recently constructed units (built during the 1990s and 2002-2004) by a private contractor. The housing units will be conveyed to the contractor; however, the land will remain Air Force property (land leased to the contractor for a period of 50 years). All demolition, construction, and renovation activities will be completed by 2011.

Under Alternative 1, the same activities as the Proposed Action will occur; however, 800 new units will be constructed.

Under the No-Action Alternative, the Air Force will not revitalize MFH at Travis AFB. The Air Force will continue to be responsible for providing, operating, and maintaining the MFH units.

**Summary of Environmental Consequences**

Initial analyses indicated that the Proposed Action or alternatives will not result in either short- or long-term impacts to the following resources: transportation, utilities (water, wastewater, electricity, and natural gas), Environmental Restoration Program (ERP) or other Air Force Cleanup Program sites, radon, medical/biohazardous waste, ordnance, and radioactive materials.

The resources analyzed in more detail are land use, aesthetics, utilities (solid waste), hazardous materials management, hazardous waste management, storage tanks, pesticide usage, polychlorinated biphenyls (PCBs), asbestos-containing material (ACM), lead-based paint, geology and soils, water resources, air quality, noise, biological resources, cultural resources, and environmental justice.

Revitalization activities will result in a portion of the housing areas becoming vacant land that will be available to the Air Force for future development. This will result in a change from the existing residential land use, and will be incompatible with the future land use designation of family housing in the base's general plan. However, future development in these areas will be limited to those uses that will be compatible with residential areas.

The long-term effect of construction of new housing units will result in a positive aesthetic effect on the MFH areas. The use of modern housing designs and landscaping will enhance the aesthetic quality of the housing areas. The conversion of some of the MFH areas from residential development to vacant land would cause a slight decrease in the aesthetic quality; however, the decrease in aesthetic quality will

not be expected to be significant and would be temporary. After these areas are redeveloped and landscaped, this aesthetic quality would be similar to current conditions.

Approximately 3,800 tons of building materials will require disposal in an off-base landfill. Because the Potrero Hills Landfill has a permitted daily through put of 4,330 tons per day, disposal of the 3,800 tons of demolition debris over the duration of construction, demolition, and renovation activities is not expected to significantly affect the service life of the landfill.

Storage, handling, and transportation of hazardous materials and hazardous waste will be conducted in accordance with applicable regulations and established procedures. Minimal quantities of hazardous materials and waste will be stored or generated by housing residents.

The aboveground storage tank associated with a back-up generator at Building 8499 (water pump station) will continue to be used and managed in accordance with applicable regulations.

Pesticide application practices and types of pesticides applied to MFH areas will not change. Pesticide application will be conducted in accordance with applicable laws and label instructions. It is likely that chlordane was applied within the MFH areas (with the exception of the recently constructed Castle Terrace Housing Area). The development contractor will sample soils in the MFH areas for the presence of chlordane prior to disturbing the soil. After construction activities are completed, the contractor will retest soils for the presence of chlordane. If the results of the sampling indicate that chlordane is present at concentrations that exceed U.S. Environmental Protection Agency (EPA) Region IX preliminary remediation goals (PRGs) for soils in residential areas, the development contractor will prepare a health and safety plan in accordance with Occupational Safety and Health Administration (OSHA) requirements that addresses potential hazards to workers and residents from contaminated soil during demolition and construction activities.

The development contractor will be notified of the potential presence of PCBs in transformers and light ballasts within the MFH areas and will be responsible for managing any items containing PCBs, including maintenance, removal, and disposal, in accordance with applicable regulations.

Removal of ACM or lead-based paint found in MFH units will be conducted in accordance with applicable regulations to minimize impacts.

Short-term impacts could occur to soils and water resources as a result of ground disturbance associated with demolition and construction activities. Compliance with the Construction Site Storm Water National Pollutant Discharge Elimination System permit, Storm Water Pollution Prevention Plan, and implementation of standard construction practices will reduce the potential for erosion from construction activities.

Air emissions from demolition and construction activities will not affect the Solano County emission inventory and would be insignificant. Solano County is in moderate non-attainment of the National Ambient Air Quality Standards (NAAQS) for ozone. The threshold for significant air pollutants is 100 tons per year for each of the ozone precursors nitrogen oxide ($NO_x$) and volatile organic compounds (VOCs). Emissions of $NO_x$ and VOCs will not exceed this threshold and also do not exceed 10 percent of the Bay Area Air Quality Management District (BAAQMD) air emission inventory; therefore, a conformity analysis is not required. Standard construction mitigation practices, such as dust suppression, will be implemented during demolition and construction activities.

Noise generated from proposed demolition, construction, and renovation activities will be intermittent and short term, and would primarily occur at the construction site. Once development activities are completed, proposed activities (i.e., residential) are not expected to generate a substantial amount of noise. New MFH units will be constructed with appropriate noise level reduction (NLR) features to achieve an acceptable outdoor to indoor NLR to be compatible with aircraft noise that affects the area.

The majority of the vegetation consists of landscaped areas containing nonnative grasses, ornamental shrubs, and shade trees associated with residential development. Impacts to such highly disturbed, human-created habitats are considered to be insignificant. Most of the species known to inhabit the MFH areas are common and/or disturbance tolerant. Potential impacts to wildlife include displacement of individuals to adjacent areas and direct mortality to burrowing species (e.g., mice, rats, and lizards) or individuals that are less mobile. These impacts to the common wildlife species are not expected to be significant. Demolition and construction activities will not occur within the Castle Terrace Housing Area where sensitive habitats and threatened and endangered species are likely to occur. The base will consult with the USFWS to ensure no impacts would occur in this area.

There are no prehistoric or historic archaeological properties, historic buildings and structures, or traditional resources within the MFH areas potentially affected by project activities. In the unlikely event that archaeological or cultural resources are unexpectedly uncovered during the course of demolition or construction activities, the Travis AFB Cultural Resources Manager would be notified and appropriate actions would be taken in accordance with the procedures outlined in the Travis Air Force Base Integrated Cultural Resources Management Plan.

Activities associated with the Proposed Action will not have substantial effects on any of the resources analyzed in the EA; therefore, no disproportionately high and adverse human health and environmental effects on low-income and minority populations are anticipated.

**Cumulative Impacts**

Impacts from other development projects and population growth in the region in conjunction with the impacts from the MFH Revitalization Project present the potential for cumulative impacts. Air quality is the only resource area for which potential cumulative impacts could occur; however, based on the emission levels from proposed revitalization activities, potential cumulative impacts to regional air quality (when combined with other activities in the region) are not anticipated. The BAAQMD will review emissions generated by development projects and implement control measures required for the region to demonstrate attainment of the NAAQS.

**Decision**

After reviewing the attached EA, I conclude that implementation of the Proposed Action or the Alternative Actions would not have a significant impact on the quality of the human or natural environment. Accordingly, the requirements of NEPA, regulations promulgated by the Council on Environmental Quality and Air Force instructions at 32 CFR 989 et. seq. are fulfilled and an environmental impact statement is not required and will not be prepared.

Thomas J. Sharpy

THOMAS J. SHARPY, Colonel, USAF
Vice Commander, 60th Air Mobility Wing (AMC)

21 April 07
Date

Atch: Environmental Assessment

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**COVER SHEET**
**ENVIRONMENTAL ASSESSMENT**
**MILITARY FAMILY HOUSING PRIVATIZATION**
**TRAVIS AIR FORCE BASE, CALIFORNIA**

a. Responsible Agency: U.S. Air Force

b. Proposed Action: Privatization of the military family housing (MFH) areas on Travis Air Force Base (AFB), California, including demolition, construction, and renovation of MFH units within the housing areas by a private contractor.

c. Written comments and inquiries regarding this document should be directed to: Mr. Rudy Pontemayor, 60 CES/CEVN, 411 Airmen Drive, Travis AFB, CA 94535-2176; telephone: (707) 424-7517.

d. Report Designation: Environmental Assessment

e. Abstract: This environmental assessment (EA) evaluates the potential environmental impacts of privatization of MFH at Travis AFB. It has been determined that privatization of the housing areas is a viable option because the housing areas meet the required criteria for privatization. This EA has been prepared in accordance with the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action, Alternative 1, and the No-Action Alternative.

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The environmental resources potentially affected by the Proposed Action are land use, aesthetics, utilities (solid waste), hazardous materials management, hazardous waste management, storage tanks, pesticide usage, polychlorinated biphenyls, asbestos-containing material, lead-based paint, and radon, geology and soils, water resources, air quality, noise, biological resources, cultural resources, and environmental justice. Based on the nature of activities associated with the privatization of the MFH units and the associated demolition, construction, and renovation activities, the Air Force has determined that impacts to these resources would not be significant.

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ACM | asbestos-containing material |
| AFB | Air Force Base |
| AHERA | Asbestos Hazard Emergency Response Act |
| AICUZ | Air Installation Compatible Use Zone |
| AMC | Air Mobility Command |
| AMW | Air Mobility Wing |
| AOC | Area of Concern |
| asl | above sea level |
| AST | aboveground storage tank |
| ATW | Air Transport Wing |
| AW | Airlift Wing |
| BAAQMD | Bay Area Air Quality Management District |
| CAA | Clean Air Act |
| CAAQS | California Ambient Air Quality Standards |
| CARB | California Air Resources Board |
| CCR | California Code of Regulations |
| CEQ | Council on Environmental Quality |
| CEQA | California Environmental Quality Act |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CNEL | Community Noise Equivalent Level |
| CO | carbon monoxide |
| CPSC | Consumer Product Safety Commission |
| CWA | Clean Water Act |
| dB | decibel |
| dBA | A-weighted sound levels |
| DNL | day-night average sound level |
| DOD | Department of Defense |
| DPG | Defense Planning Guidance |
| EA | environmental assessment |
| EO | Executive Order |
| EPA | Environmental Protection Agency |
| ERP | Environmental Restoration Program |
| FAA | Federal Aviation Administration |
| FIFRA | Federal Insecticide, Fungicide, and Rodenticide Act |
| FONSI | Finding of No Significant Impact |
| FY | fiscal year |
| Hazmart | hazardous materials pharmacy |
| HRMA | Housing Requirements and Market Analysis |
| INRMP | Integrated Natural Resources Management Plan |
| MAC | Military Airlift Command |
| MATS | Military Air Transport Service |
| MAW | Military Airlift Wing |
| MFH | military family housing |
| MILCON | Military Construction |
| MTBE | methyl tertiary butyl ether |
| NAAQS | National Ambient Air Quality Standards |

## LIST OF ACRONYMS AND ABBREVIATIONS
## (Continued)

| | |
|---|---|
| National Register | National Register of Historic Places |
| NEPA | National Environmental Policy Act |
| NESHAP | National Emissions Standards for Hazardous Air Pollutants |
| NHPA | National Historic Preservation Act |
| NLR | noise level reduction |
| NOA | Notice of Availability |
| $NO_2$ | nitrogen dioxide |
| $NO_x$ | nitrogen oxide |
| NPDES | National Pollutant Discharge Elimination System |
| OSD | Office of the Secretary of Defense |
| OSHA | Occupational Safety and Health Administration |
| P.L. | Public Law |
| PCB | polychlorinated biphenyl |
| pCi/l | picocuries per liter |
| $PM_{10}$ | particulate matter equal or less than 10 microns in diameter |
| $PM_{2.5}$ | particulate matter equal or less than 2.5 microns in diameter |
| ppm | parts per million |
| PRG | preliminary remediation goal |
| RAMP | Radon Assessment and Mitigation Program |
| RCRA | Resource Conservation and Recovery Act |
| ROI | region of influence |
| SAC | Strategic Air Command |
| SCAQMD | South Coast Air Quality Management District |
| SF | square feet |
| SHPO | State Historic Preservation Officer |
| SMAQMD | Sacramento Metropolitan Air Quality Management District |
| $SO_2$ | sulfur dioxide |
| SWPPP | Storm Water Pollution Prevention Plan |
| TCE | trichloroethylene |
| TSCA | Toxic Substances Control Act |
| U.S.C. | U.S. Code |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| UST | underground storage tank |
| VOC | volatile organic compound |

# 1.0 PURPOSE OF AND NEED FOR ACTION

This environmental assessment (EA) evaluates the potential environmental impacts of activities associated with revitalization of the military family housing (MFH) at Travis Air Force Base (AFB), California (Figure 1-1). The MFH Revitalization Project would include demolition, construction, and renovation activities.

This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code [U.S.C.] 4321, et seq.), the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force policy and procedures (32 CFR Part 989).

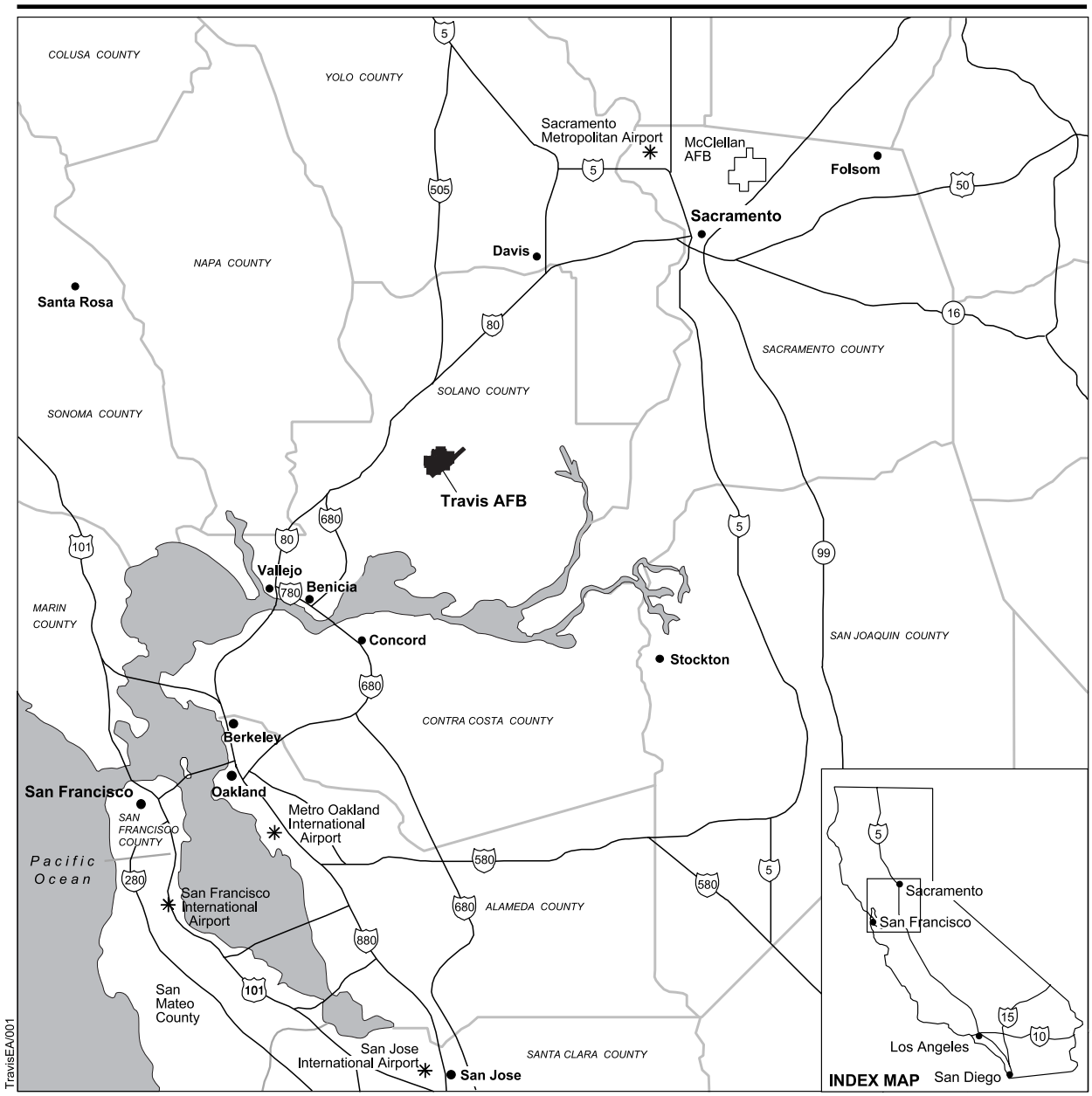
## 1.1 PURPOSE AND NEED

The purpose of the MFH Revitalization Project is to provide suitable MFH for military personnel stationed at Travis AFB. This action is needed to comply with the Office of the Secretary of Defense (OSD) Defense Planning Guidance (DPG). The OSD, in its current DPG directive has tasked the Department of Defense (DOD) services to revitalize, divest through privatization, or demolish inadequate housing by or before fiscal year (FY) 2010.

Due to advancing age and continual degradation, many of the MFH units at Travis AFB do not meet modern standards and require either major improvements or replacement. Additionally, many of these units have deteriorated beyond the reasonable cost of whole unit renovation. Therefore, demolition activities are necessary to comply with the DPG directive. It is the Air Force's goal to meet the OSD mandate by 2007.

A Housing Requirements and Market Analysis (HRMA) was prepared in 2007 to determine the total MFH requirement for personnel at Travis AFB. Based on the findings of the HRMA, the Travis AFB housing requirement is 1,134 units (Parsons, 2003). Currently, the base has 2,336 units within 9 housing areas (excluding units within the Georgetown MFH Area) (Table 1-1). Therefore, there is a potential surplus of 1,202 units as the total MFH requirement is less than the current Travis AFB housing inventory.

In order to comply with the requirements of the OSD directive and to meet the demand for MFH at Travis AFB, the MFH Revitalization Project includes renovating some MFH units, demolishing inadequate housing units, and constructing new housing units. Privatization to meet MFH requirements is authorized by the 1996 Defense Authorization Act when economically feasible. Travis AFB has determined that privatization is feasible for the MFH areas. Privatization would involve the lease of Air Force land and conveyance of Air Force buildings and structures to a private contractor for the purpose of satisfying new construction, replacement, and improvement requirements.




**EXPLANATION**

- Airports
- California State Highway
- U.S. Highway
- Interstate Highway
- County Boundary

0 3.5 7 14 Miles

NORTH
MAG DEG 16° 49.5'

## Regional Map
## Travis Air Force Base

**Figure 1-1**

**Table 1-1. Travis AFB Existing Military Family Housing**

| Housing Area | No. of Units | Years Built |
|---|---|---|
| Hamilton Court | 382 | 1951 to 1962 |
| Mather Manor | 307 | 1958 |
| Castle Terrace | 228 | 2001 |
| McClellan Corridor | 196 | 1958 |
| March Landing | 439 | 1997 to 2004 |
| Onizuka Flats | 490 | 1951 |
| Norton Heights | 204 | 1962 |
| Moffett Courtyard | 80 | 1946 to 1958 |
| Arnold Estates | 10 | 1957 |
| Georgetown[(a)] | 300 | 1990's |
| Total | 2,336 | |

Note: (a) Housing units within the Georgetown MFH Area are excluded from the privatization action. Housing units are not part of Air Force real property.

Source: Travis AFB, 2003.

## 1.2 LOCATION OF THE PROPOSED ACTION

Travis AFB is in northern California, in Solano County. The base is within the city limits of Fairfield and is approximately 40 miles southwest of Sacramento and 50 miles northeast of San Francisco (see Figure 1-1). The base's MFH areas cover approximately 690 acres (excluding the Georgetown MFH Area) and are situated in the northern portion of the base (Figure 1-2).

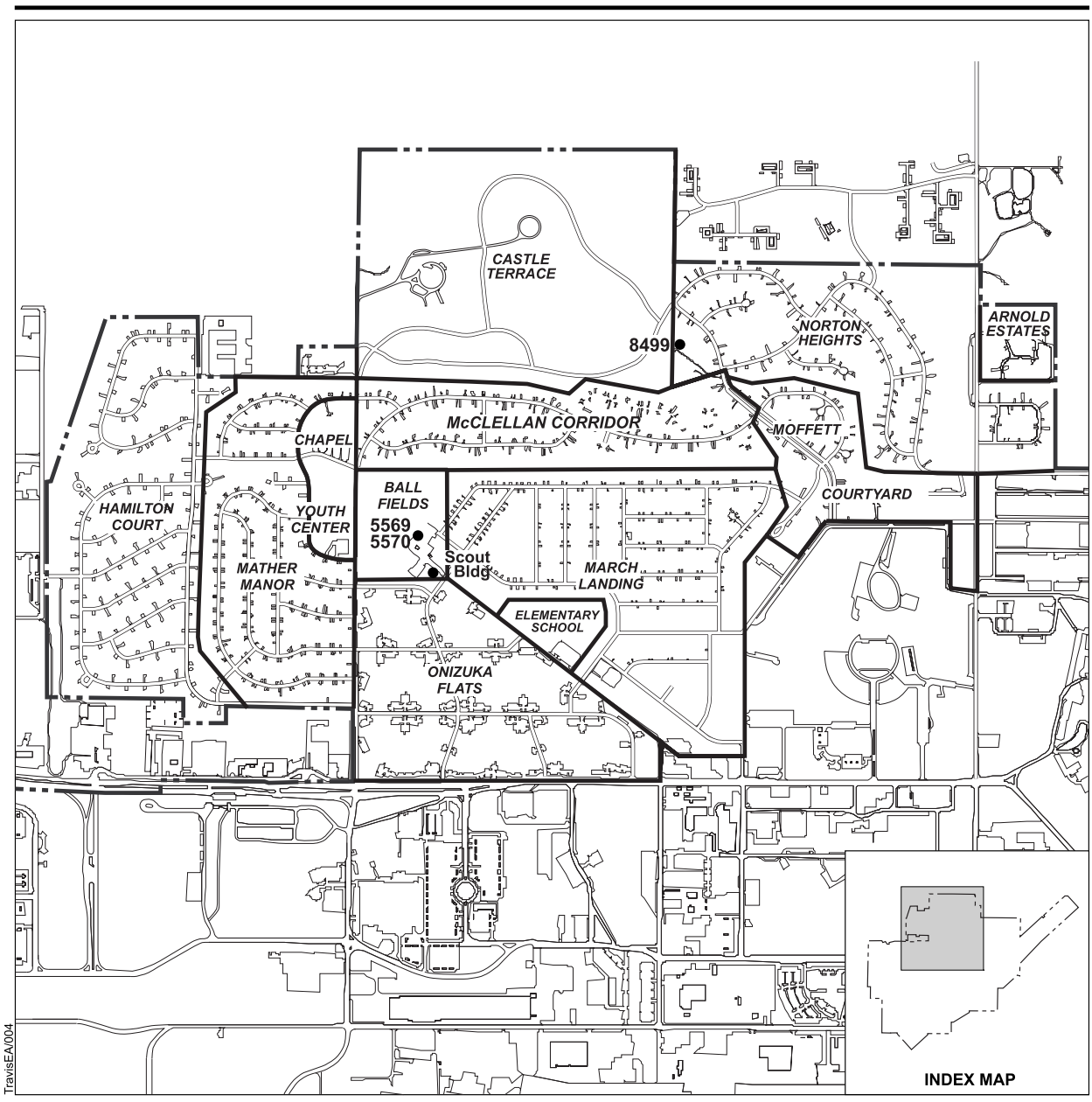
## 1.3 PUBLIC INVOLVEMENT

During the week of July 26, 2004, a Notice of Availability (NOA) was placed in a local newspaper informing the public of where copies of the Draft EA were available for review and who to contact for further information or to submit comments. The Draft EA was circulated to the interested public and government agencies for a 30-day review and comment period (July 26 to August 24, 2004). The EA was subsequently revised, and distributed for another 30-day review and comment period (December 15, 2005 to January 13, 2005). Appendix A contains the public comments and Air Force responses to the draft EA.

## 1.4 SCOPE OF ENVIRONMENTAL REVIEW

This document is "issue-driven," in that it concentrates on those resources that may be affected by implementation of the Proposed Action or alternatives. The EA describes and addresses the potential environmental impacts of the activities associated with the Proposed Action and alternatives. These activities include the demolition, construction, and renovation of housing units within the Travis AFB MFH areas.

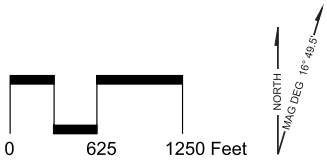
Consistent with the CEQ regulations, the scope of analysis presented in this EA is defined by the potential range of environmental impacts that would result from implementation of the Proposed Action and alternatives.




**EXPLANATION**

Base Boundary

Housing Area Boundary




**Travis AFB Housing Areas**

**Figure 1-2**

Resources that have a potential for impact were considered in more detail in order to provide the Air Force decision maker with sufficient evidence and analysis to determine whether or not additional analysis is required pursuant to 40 CFR Part 1508.9. The resources analyzed in more detail are socioeconomics, land use, aesthetics, hazardous materials management, hazardous waste management, storage tanks, pesticides, polychlorinated biphenyls (PCBs), asbestos-containing material (ACM), lead-based paint, soils and geology, water resources, air quality, noise, biological resources, cultural resources, and environmental justice. The affected environment and the potential environmental consequences relative to these resources are described in Chapters 3.0 and 4.0, respectively.

Initial analysis indicates that demolition and construction activities would not result in short- or long-term impacts to transportation, utilities, Environmental Restoration Program (ERP) sites, radon, medical/biohazardous waste, ordnance, and radioactive materials. The reasons for not addressing these resources are briefly discussed in the following paragraphs.

**Transportation.** Because the Travis AFB housing inventory would decrease by 1,248 units and authorized permanent party personnel are anticipated to decrease by approximately 230 personnel, traffic within the MFH areas would decrease. Construction-related traffic would use South Gate to access the MFH areas; the construction-related traffic would be localized to the housing area and would be temporary lasting as long as the project activity. Personnel relocated to surrounding communities would now commute to Travis AFB and would not contribute a significant increase to the morning and afternoon peak-hour traffic volume at the installation access gates. Based on the number of personnel that would commute to Travis AFB, a significant decrease in the level of service on roadways surrounding and providing access to Travis AFB is not anticipated. Therefore, potential impacts to transportation are not anticipated and are not analyzed further in this EA.

**Utilities.** Because the Travis AFB housing inventory would decrease by 1,248 units and on-base population is anticipated to decrease, on-base utility usage is expected to decrease from current conditions. Because these families would be relocated into surrounding communities, regional utility usage is not expected to change. Impacts to utilities (water, wastewater, electricity, and natural gas) are not expected and are not analyzed further in this EA.

**Environmental Restoration Program Sites.** There are no ERP sites or other sites, under the Air Force Cleanup Program, situated within the MFH areas at Travis AFB. Four ERP sites are situated to the south and southeast of the MFH areas and contaminants associated with these sites do not affect the MFH property. Groundwater contamination plumes associated with these sites flow to the south-southeast away from the MFH areas. Therefore, impacts to the MFH areas from ERP investigative/remedial activities are not expected and are not analyzed further in this EA.

**Radon.** Radon sample results from MFH units at Travis AFB are below the U.S. Environmental Protection Agency's (EPA's) recommended mitigation level of 4.0 picocuries per liter (U.S. Air Force, 2003). Therefore, impacts from radon would not be expected and are not analyzed further in this EA.

**Medical/Biohazardous Waste.** Medical/biohazardous waste has not been generated within the Travis AFB MFH areas, and none would be generated under the Proposed Action or alternatives. Therefore, impacts from medical/ biohazardous waste are not expected and are not analyzed further in this EA.

**Ordnance.** Ordnance has not been stored, used, or disposed within the Travis AFB MFH areas. The Proposed Action and alternatives would not require the use of ordnance. Therefore, impacts from ordnance are not expected and are not analyzed further in this EA.

**Radioactive Materials.** Radioactive materials have not been stored, used, or disposed within the Travis AFB MFH areas. The Proposed Action and alternatives would not require the use of radioactive materials. Therefore, impacts from radioactive materials are not expected and are not analyzed further in this EA.

## 1.5 FEDERAL, STATE, AND LOCAL PERMITS, LICENSES, AND FEES

The contractor responsible for conducting demolition, construction, and renovation activities would obtain required federal, state, and local permits. This includes, but is not necessarily limited to, a Construction Site Storm Water National Pollutant Discharge Elimination System (NPDES) permit for construction areas. The contractor would cooperate with the Air Force to ensure compliance with applicable Air Force, federal, state, and local regulations and/or requirements.

## 1.6 RELATED ENVIRONMENTAL DOCUMENTS

The documents listed below have been prepared for Travis AFB. These documents provided supporting information for the environmental analysis contained within this EA.

The Housing Requirements and Market Analysis 2006-2011 was prepared in 2007 to determine the total MFH requirement for personnel at Travis AFB (Parsons, 2007). The U.S. Government has the responsibility to ensure that personnel at the installation have access to acceptable housing. Acceptable housing is defined by the Air Force as affordable, within a reasonable commute, of good quality, and with a proper number of bedrooms for a family. Based on the findings of the HRMA, the Travis AFB housing requirement is 1,134 units; therefore, there is a potential surplus of MFH units at Travis AFB.

The Final Environmental Assessment for the Travis Air Force Base Burke Property Housing (U.S. Air Force, 1999) analyzes the potential environmental impacts from construction of MFH units (current Castle Terrace MFH area) on the Burke Property. This EA provides baseline information for the affected environment within the MFH area.

The Environmental Assessment for the West Coast Basing of C-17 Aircraft (U.S. Air Force, 2003b) analyzes the potential environmental impacts of basing C-17 aircraft at Travis AFB. The new aircraft would replace existing aircraft operating from Travis AFB. This EA provides baseline information for the affected environment at Travis AFB.

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# 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action includes the activities associated with the MFH Revitalization Project at Travis AFB. Activities associated with the project will be discussed in three subsections: Housing; Infrastructure and Utilities; and Landscaping, Common Areas, and Recreational Facilities. Project activities would include demolition, construction, and renovation of MFH units on Travis AFB. The Proposed Action and alternatives are described in this chapter.

The Air Force would convey all of the existing MFH units to the privatization contractor for demolition, construction, and renovation as appropriate. The Air Force would lease the land to the contractor, but would retain ownership. Areas where MFH units are designated for demolition and no new MFH is planned would be leased for up to 4 years or until demolition is completed. Upon completion of demolition, the land would revert to Air Force control and would be available to the base for future use. The remainder of the MFH areas would be leased to the contractor for up to 50 years for construction of the new MFH units and long-term maintenance and operation of the MFH areas. Infrastructure, including utilities (from the MFH unit to the mainline), would also be conveyed to the contractor. The contractor would finance, plan, design, and construct improvements, as well as own and manage the MFH areas.

The Proposed Action and Alternatives analyzed in this EA were selected because they met all of the selection criteria for the MFH revitalization project for Travis AFB. These criteria include:

- Comply with the OSD DPG requirement to revitalize, divest through privatization, or demolish inadequate housing by or before FY 2010

- Meet the housing requirement identified in the HRMA (i.e., 1,134 units on base)

- Meet the minimum family housing requirement (Floor Requirement) as established in the HRMA:

  - Provide housing for 10 percent of the military family housing requirement by grade
  - Provide housing for all key and essential military and civilian personnel
  - Preserve U.S. Government-owned housing units listed on or eligible for the National Register of Historic Places (National Register)
  - Provide housing for personnel whose regular military compensation is less than 50 percent of the local median family income.

- Provide housing in a community where military families will choose to live.

## 2.1 DESCRIPTION OF THE PROPOSED ACTION

### 2.1.1 Housing

The Proposed Action would include demolition of 1,560 units and construction of 358 units at Travis AFB (Figure 2-1). The Housing Maintenance Office would also be demolished and replaced in its current location. Project activities would begin in 2009, and demolition and construction activities would be completed by 2013 (Table 2-1). Revitalization activities would result in approximately 380 acres of disturbance within the MFH area. Travis AFB would specify certain requirements for the MFH areas such as minimum square footage for each type of unit, the number of units to be built within each housing area, and the minimum number and type of amenities (e.g., tot lots, picnic areas). The schedule for project activities, configuration of neighborhoods, design of housing units, and the incorporation of supplemental amenities to enhance the quality of life would be determined by the Air Force and privatization contractor.

**Table 2-1. Proposed Action, Proposed Demolition and Construction (Housing Units)**

| Fiscal Year | Current | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | Total |
|---|---|---|---|---|---|---|---|
| Demolition | | 300 | 300 | 300 | 350 | 310 | 1,560 |
| Construction | | 0 | 119 | 120 | 119 | | 358 |
| Total Units[(a)] | 2,336 | 2,036 | 1,855 | 1,675 | 1,444 | 1,134 | |

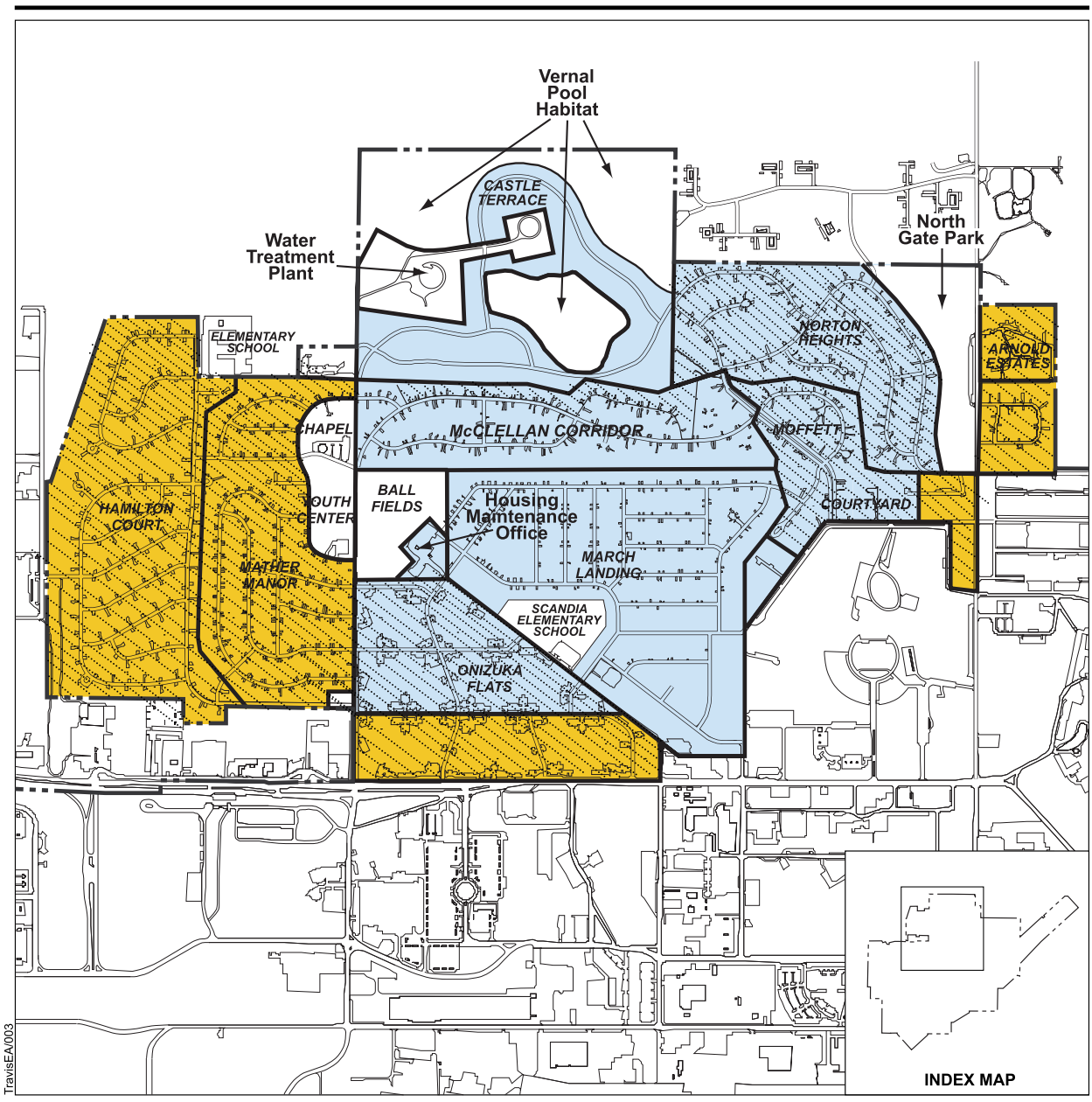
Notes: (a) Excludes 300 housing units within the Georgetown MFH Area.
FY = Fiscal Year

#### *2.1.1.1 Demolition.*

The Proposed Action would require the demolition of 1,651 MFH units at Travis AFB. It has not been determined which units would be demolished each year; however, these activities would be scheduled to minimize or avoid displacement of residents by the prudent scheduling of construction activities and the routine transfer of personnel to and from Travis AFB.

**Hamilton Court.** All of the 382 MFH units within the Hamilton Court MFH Area would be demolished (see Figure 2-1). The Hamilton Court area is approximately 97 acres in size; the entire parcel would be disturbed during demolition activities. These MFH units were constructed between 1951 and 1962. Demolition would include removal of most paved areas within the housing area. After demolition activities are complete, the area would be left as vacant land and would be available to the base for potential future development.

**Mather Manor.** All of the 307 MFH units within the Mather Manor MFH Area would be demolished (see Figure 2-1). The Mather Manor area is approximately 66 acres in size; the entire parcel would be disturbed during demolition activities. These MFH units were constructed in 1958. Demolition would include removal of most paved areas within the housing area. After demolition activities are complete, the area would be left as vacant land and would be available to the base for potential future development.




**EXPLANATION**

- Base Boundary
- Housing Area Boundary
- Land available for future Air Force development
- Land Leased for 50 years, Military Family Housing
- Area Excluded from Privatization Action
- Demolition

0 625 1250 Feet

NORTH
MAG DEG 16° 49.5'

Note: Georgetown Housing Area, Chapel, Youth Center, Ball Field, Elementary Schools, Water Treatment Plant, North Gate Park, and Vernal pool habitat excluded from the privatization action.

## Proposed Action

**Figure 2-1**

**Castle Terrace.** No demolition activities are proposed within the Castle Terrace MFH Area. The Castle Terrace area is approximately 105 acres in size (including areas excluded from the lease, to include ecologically sensitive vernal pools and endangered species habitats) and contains 228 MFH units. These MFH units were constructed in 2001.

There is one non-residential complex within the Castle Terrace MFH Area: a water pump station and storage tank. This complex will remain in its present condition with no improvements.

**McClellan Corridor.** A total of 88 MFH units within the McClellan Corridor MFH Area would be demolished. The other 108 units constructed in 2003 would remain in place (see Figure 2-1). The MFH units to be demolished were constructed in 1958. The McClellan Corridor housing area is approximately 61 acres in size; approximately 27 acres would be disturbed during demolition activities. After demolition activities are complete, a portion of the area could be redeveloped for residential purposes; the remainder of the area would be available to the base for potential future development. It is assumed that the paved areas and existing utilities would not be demolished.

**March Landing.** No MFH units within the March Landing MFH Area would be demolished. The 438 units would remain in place (see Figure 2-1). The MFH units were constructed between 1997 and 2004. The March Landing MFH Area is approximately 104 acres in size.

There are four non-residential facilities within the March Landing MFH Area: the Scandia Elementary School, Housing Maintenance Office, U-Fix-It Center, and Scout Building. The Housing Maintenance Office would be demolished and replaced in the same location. The remaining buildings would remain in their present condition with no improvements.

**Onizuka Flats.** All of the 490 MFH units within the Onizuka Flats MFH Area would be demolished (see Figure 2-1). The Onizuka Flats area is approximately 75 acres in size; the entire parcel would be disturbed during demolition activities. These MFH units were remodeled in 1994. Demolition would include removal of most paved areas within the housing area. After demolition activities are complete, a portion of the area would likely be redeveloped for residential purposes; the remainder of the area would be available to the base for potential future development.

**Norton Heights.** The 204 MFH units within the Norton Heights MFH Area would be demolished (see Figure 2-1). The Norton Heights area consists of two housing parcels that total approximately 70 acres; both parcels would be disturbed during demolition activities. These MFH units were constructed in 1962. Demolition would include the removal of a portion of the paved areas within the housing area. After demolition activities are complete, a portion of the area would likely be redeveloped for residential purposes. The portion of the housing area that is not redeveloped for residential purposes would be available to the base for potential future development.

**Moffett Courtyard.** The 80 MFH units within the Moffett Courtyard Housing Area would be demolished (see Figure 2-1). The Moffett Courtyard area is approximately 39 acres in size; the entire parcel would be disturbed during demolition activities. These MFH units were constructed between 1946 and 1958. Demolition would include the removal of a portion of the paved areas within the housing area. After demolition activities are complete, the area would likely be redeveloped for residential purposes.

**Arnold Estates.** The ten MFH units within the Arnold Estates Housing Area would be demolished (see Figure 2-1). The Arnold Estates Area is approximately 10 acres in size; the entire parcel would be disturbed during demolition activities. These MFH units were constructed in 1957. Demolition would include the removal of most paved areas within the housing area and the area to the south. After demolition activities are complete, the area would be left as vacant land and would be available to the base for potential future development.

#### *2.1.1.2 Construction.*

The Proposed Action includes the construction of 358 MFH units at Travis AFB. The specific location of the new housing units would be determined by the Air Force and privatization contractor. Although no specific plans or layout for the housing units have been determined, for the purposes of analysis it is assumed that development would occur within the existing housing areas and the existing paved areas and utilities would be utilized to the extent possible. Housing areas in which new units could be constructed include McClellan Corridor, March Landing, Onizuka Flats, Norton Heights, and Moffett Courtyard.

**Construction Practice Requirements.** In accordance with the MFH revitalization requirements, two-bedroom units would be a minimum of 1,340 and a maximum of 1,500 square feet (SF) in size, three-bedroom housing units would be a minimum of 1,630 and a maximum of 2,300 SF in size, and four-bedroom units would be a minimum of 1,950 and a maximum of 4,060 SF in size. At the completion of project activities, there will be a total of 1,134 MFH units on Travis AFB consisting of 505 two-bedroom units, 319 three-bedroom units, and 310 four-bedroom units. Housing units may be constructed as a combination of single-family units, multifamily duplex units, or townhouses. No stacked units (dwelling units above each other) would be constructed.

Traffic patterns associated with the MFH Revitalization Project have not been determined. The traffic routes for the project would be approved by the base prior to the start of project activities. However, for the purposes of analysis, it is assumed that all traffic associated with the demolition, construction, or renovation of housing units would enter the base at the South Gate and proceed via Ragsdale Street.

The contractor would be required to transport and dispose all hazardous material, construction debris, and hazardous waste (including nonregulated waste such as used motor oil) off site to approved or permitted facilities in accordance with federal, state, and local regulations. The contractor would be required to maintain a hazardous waste accumulation point and designate an individual responsible

for the management of the site, including the certification, administration, and removal of hazardous wastes. If a spill occurs during activities conducted by the contractor, the spill would be cleaned up immediately by the contractor. If ACM, lead-based paint, or other hazardous materials are identified in areas proposed for demolition, removal and disposal would be conducted by a certified contractor in accordance with applicable federal, state, and local regulations.

#### *2.1.1.3 Renovations.*

The Proposed Action would include minor renovation of housing units that have not previously been renovated by the Air Force. These renovations include such actions as installing utility meters, upgrading appliances, installing ceiling fans, painting exterior finishes, and hard-wiring carbon monoxide and smoke detectors. These renovations would be accomplished over a 4-year period in association with proposed demolition and construction activities.

### 2.1.2 Infrastructure and Utilities

New housing units would be connected to existing utility infrastructure (i.e., natural gas, electric, water, wastewater) through construction of new utilities lines. Infrastructure such as roads, parking areas, sidewalks, street lighting, utilities, and storm water drainage systems within the MFH areas would be conveyed to the contractor who would be responsible for their operation and maintenance.

New access roads to provide direct access between off-base areas and the housing areas would not be constructed as part of the Proposed Action. Currently, access points from off-base areas are in place. Although no configuration has been determined for the housing areas, it is likely that these access points would be maintained after the new development and would provide access to the housing areas.

### 2.1.3 Landscaping, Common Areas, and Recreational Facilities

Landscaping would be provided within the housing areas. Within the existing MFH areas where new MFH units will be constructed, existing healthy landscaping would be retained as much as possible during demolition and construction activities. Upon completion of construction activities, landscaping would be completed in both the existing and new MFH areas. Landscaping would be constructed around each housing unit and in common areas. The landscaping design and types of plants and materials used would be determined by the Air Force and privatization contractor.

Recreational facilities would be configured into the housing areas. These facilities would include tot lots and playgrounds. The design and locations of these facilities would be determined by the privatization contractor.

## 2.2 ALTERNATIVES TO THE PROPOSED ACTION

### 2.2.1 Alternative 1

#### *2.2.1.1 Housing.*

Alternative 1 would include demolition of 1,560 MFH units and construction of 800 units on Travis AFB (Figure 2-2). Project activities would begin in 2009, and demolition and construction activities would be completed by 2013 (Table 2-2). Travis AFB would specify certain requirements for the MFH areas such as minimum square footage for each type of unit, the number of units to be built within each housing area, and the minimum number and type of amenities (e.g., tot lots, picnic areas). The schedule for project activities, configuration of neighborhoods, design of housing units, and the incorporation of supplemental amenities to enhance the quality of life would be determined by the Air Force and privatization contractor.

**Table 2-2. Alternative 1, Proposed Demolition and Construction (Housing Units)**

| Fiscal Year | Current | FY 09 | FY 10 | FY 11 | FY 12 | FY 13 | Total |
|---|---|---|---|---|---|---|---|
| Demolition | | 300 | 300 | 350 | 350 | 310 | 1,560 |
| Construction | | 0 | 200 | 200 | 200 | 200 | 800 |
| Total Units[(a)] | 2,336 | 2,045 | 1935 | 1,785 | 1,635 | 1,525 | |

Notes: (a) Excludes 300 housing units within the Georgetown Housing Area.
FY = Fiscal Year

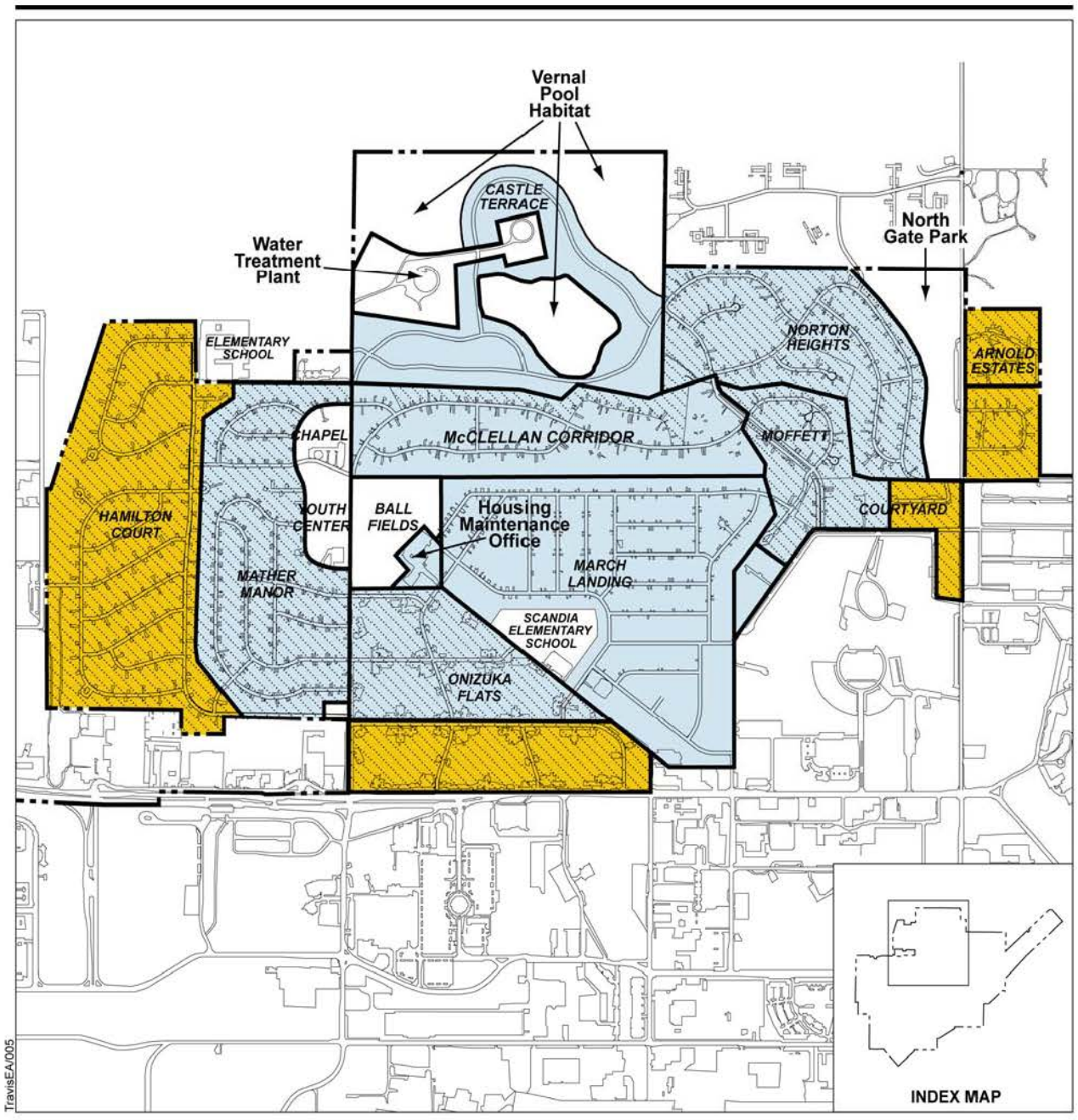
#### *2.2.1.2 Demolition.*

Alternative 1 would require the demolition of 1,560 MFH units. It has not been determined which units would be demolished each year; however, these activities would be scheduled to minimize or avoid displacement of residents by the prudent scheduling of construction activities and the routine transfer of personnel to and from Travis AFB. Demolition activities within each of the housing areas would be the same as that described for the Proposed Action.

#### *2.2.1.3 Construction.*

Alternative 1 includes the construction of 800 MFH units at Travis AFB. The specific location of the new housing units would be determined by the Air Force and privatization contractor. Although no specific plans or layout for the housing units have been determined, for the purposes of analysis it is assumed that development would occur within the existing housing areas and the existing paved areas and utilities would be utilized to the extent possible. Therefore, construction of new roadways and utility lines would not be required.

**Construction Practice Requirements.** The construction practice requirements would be the same as discussed under the Proposed Action.




**EXPLANATION**

- Base Boundary
- Housing Area Boundary
- Land available for future Air Force development
- Land Leased for 50 years, Military Family Housing
- Area Excluded from Privatization Action
- Demolition

**Alternative 1**

0 625 1250 Feet

NORTH MAG DEG 18° 49.5'

Note: Georgetown Housing Area, Chapel, Youth Center, Ball Field, Elementary Schools, Water Treatment Plant, North Gate Park, and Vernal pool habitat excluded from the privatization action.

**Figure 2-2**

#### *2.2.1.4 Renovations.*

Alternative 1 would include minor renovation of housing units as described under the Proposed Action. These renovations include such actions as installing utility meters, upgrading appliances, installing ceiling fans, painting exterior finishes, and hard-wiring carbon monoxide and smoke detectors.

#### *2.2.1.5 Infrastructure and Utilities.*

Infrastructure and utility improvements and connections would be the same as described under the Proposed Action.

#### *2.2.1.6 Landscaping, Common Areas, and Recreational Facilities.*

Landscaping, common areas, and recreational facility construction and improvements would be the same as described under the Proposed Action.

### 2.2.2 No-Action Alternative

Under the No-Action Alternative, Travis AFB would not implement the Proposed Action but would continue to provide for the MFH needs of its personnel through use of traditional military maintenance and construction procedures. Travis AFB would continue to obtain funding for MFH through the Congressional authorization process. Based on historical trends, it is assumed that the amount of Congressional funding for MFH would not change and that the housing maintenance backlog would continue to increase. Any major changes to existing housing or construction of new housing would require that appropriate NEPA analyses be completed before implementing such actions.

## 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

**Abandon Inadequate MFH Units Alternative.** This alternative would entail placing military families in off-base housing and abandoning inadequate MFH units in place. This alternative was eliminated because abandoning the housing units does not comply with the OSD DPG that inadequate housing be revitalized, divested through privatization, or demolished. Therefore, this alternative was eliminated from further consideration.

**Demolish all Housing Units and Construct 1,134 New Housing Units Alternative.** This alternative would entail demolishing all MFH units and constructing all new units. Many of the housing units (228 units in Castle Terrace MFH Area, 108 units in McClellan Corridor MFH Area, and 438 units in March Landing MFH Area) were recently constructed (between 1999 and 2004) and are in excellent condition for occupation. Therefore, this alternative was eliminated from further consideration.

## 2.4 COMPARISON OF ENVIRONMENTAL IMPACTS

This section provides a comparative analysis of the potential environmental effects of implementing the Proposed Action and alternatives (Table 2-3). A detailed discussion is presented in Chapter 4.0, Environmental Consequences.

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**

**Page 1 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Influencing Factors** | | | |
| Socioeconomics | • On-base population decrease<br>• Increase in the number of military personnel and their families that live off base<br>• No significant changes in employment on the base<br>• Regional population and military payrolls within the region are not expected to change significantly<br>• No significant impacts are anticipated. | • Potential socioeconomic impacts would be similar to those described under the Proposed Action | • No increase in population or employment<br>• No impacts are anticipated |
| Land Use | • Six of the nine MFH areas would remain residential areas, the remaining three MFH areas would become vacant land that would be available for future development<br>• Future development in these areas would be limited to those uses that would be compatible with residential areas<br>• The existing areas of community, outdoor recreation, and industrial land uses within the MFH areas, would not be conveyed and no land use changes would occur in these areas<br>• The open space areas containing ponds, vernal pools, and other wetlands would remain as open space<br>• No significant impacts are anticipated. | • Potential land use impacts would be similar to those described under the Proposed Action<br>• The Mather Manor MFH Area would be redeveloped for residential purposes rather than being designated for future development<br>• No impacts are anticipated | • No changes in land use<br>• No impacts are anticipated |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**

**Page 2 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Influencing Factors (Continued)** | | | |
| Aesthetics | • Temporary impacts to the aesthetic quality of the area may occur during the demolition, construction, and renovation activities<br>• Landscaping of common areas and housing unit perimeters would enhance the aesthetic quality of the MFH areas<br>• Housing designs would be developed with the intent of creating an attractive appearance<br>• No significant impacts are anticipated. | • Potential aesthetic impacts would be similar to those described under the Proposed Action | • No change to aesthetics<br>• No impacts are anticipated |
| Transportation | • Traffic within the MFH areas would decrease<br>• A significant increase to the morning and afternoon peak-hour traffic volume at the installation access gates is not anticipated<br>• A significant decrease in the level of service on roadways surrounding and providing access to Travis AFB is not anticipated<br>• No significant impacts to local or base transportation networks are anticipated. | • Potential transportation impacts would be similar to those described under the Proposed Action | • No change in traffic volumes or patterns<br>• No impacts are anticipated |
| Utilities | • On-base utility usage is expected to decrease from current conditions<br>• Regional utility usage is not expected to change Impacts to water, wastewater, electricity, and natural gas are not expected<br>• Demolition of MFH units would create approximately 44,840 tons of solid waste; with recycling approximately 3,800 tons would require disposal in a landfill<br>• Disposal of the 3,800 tons of debris over the 4-year duration of the project would not significantly affect the service life of the Potrero Landfill. | • Potential utility impacts would be similar to those described under the Proposed Action<br>• Demolition of MFH units would create approximately 45,600 tons of solid waste; with recycling approximately 3,870 tons would require disposal in a landfill<br>• Disposal of the 3,870 tons of debris over the 4-year duration of the project would not significantly affect the service life of the Potrero Landfill | • No change in utility usage<br>• No impacts are anticipated. |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 3 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Hazardous Materials and Hazardous Waste Management** | | | |
| Pesticide Usage | • Pesticide application practices and types of pesticides applied would not change<br>• Pesticide application would be conducted in accordance with applicable laws and label instructions<br>• It is likely that chlordane was applied within the MFH areas<br>• The development contractor would sample soils in the MFH areas for the presence of chlordane prior to disturbing the soil. If chlordane is present, the development contractor would be required to prepare a health and safety plan that would address potential hazards to workers and residents from contaminated soil during demolition and construction activities<br>• The contractor/developer would be responsible for properly characterizing and managing the soil in accordance with federal and state regulations<br>• No significant impacts are anticipated. | • Potential pesticide impacts would be the same as those described under the Proposed Action | • No change in pesticide use<br>• No impacts are anticipated |
| Polychlorinated Biphenyls | • Transformers containing oil with concentrations of PCBs less than 50 ppm and light ballasts of older light fixtures containing PCBs may be present in the MFH areas<br>• The development contractor would be notified of the potential presence of PCBs in the transformers and the light ballasts and would be responsible for managing any items containing PCBs in accordance with applicable regulations. Management of PCBs in accordance with applicable regulations would preclude any significant impacts<br>• No significant impacts are anticipated. | • Potential PCB impacts would be the same as those described under the Proposed Action | • No change in PCB status<br>• No impacts are anticipated |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 4 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Hazardous Materials and Hazardous Waste Management (Continued)** | | | |
| Medical/Biohazardous Waste | • Medical/biohazardous waste would not be generated within the MFH areas<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Potential impacts would be the same as those described under the Proposed Action |
| Ordnance | • Ordnance would not be stored, used, or disposed within the MFH areas<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Potential impacts would be the same as those described under the Proposed Action |
| Radioactive Materials | • Radioactive materials have not been stored, used, or disposed within the MFH housing areas and none would be would be required<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Potential impacts would be the same as those described under the Proposed Action |
| Hazardous Materials/Hazardous Waste Management | • Hazardous materials and hazardous waste would continue to be stored, used, and disposed in accordance with applicable regulations<br>• Provisions would be included in the contract between the Air Force and the contractor to ensure continued regulatory compliance<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Hazardous materials and waste would continue to be stored, used, and generated by the housing maintenance contractor, in accordance with applicable regulations<br>• No impacts are anticipated |
| Environmental Restoration Program Sites | • There are no ERP sites or Air Force Cleanup Program sites within the MFH areas at Travis AFB<br>• Sites adjacent to the MFH areas do not impact the MFH property<br>• Demolition and construction activities would not impact ERP sites<br>• No land use restrictions are required<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Potential impacts would be the same as those described under the Proposed Action |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 5 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Hazardous Materials and Hazardous Waste Management (Continued)** | | | |
| Storage Tanks | • The AST at Building 8499 would be privatized and conveyed to a contractor<br>• Proper management of this AST would minimize the potential for impacts<br>• No significant impacts are anticipated. | • Potential storage tank impacts would be the same as those described under the Proposed Action | • Management of the AST at Building 8499 would remain the responsibility of the Air Force<br>• No impacts are anticipated |
| Asbestos-Containing Material | • ACM would likely be encountered during demolition and renovation activities associated with revitalization activities<br>• Demolition and renovation activities would be subject to applicable federal, state, and local regulations to minimize the potential risk to human health and the environment<br>• The development contractor would be advised, to the extent known, of the type, condition, and amount of ACM present within housing units conveyed<br>• No significant impacts are anticipated. | • Potential ACM impacts would be the same as those described under the Proposed Action | • The Air Force would continue to be responsible for management of ACM, and would continue to manage ACM in accordance with its own policy and applicable regulations<br>• No impacts are anticipated |
| Lead-Based Paint | • Lead-based paint would likely be encountered during demolition and renovation activities associated with revitalization activities<br>• Demolition and renovation activities would be subject to applicable federal, state, and local regulations to minimize the potential risk to human health and the environment<br>• The development contractor would be advised, to the extent known, of the type, condition, and amount of lead-based paint present within housing units conveyed.<br>• No significant impacts are anticipated. | • Potential lead-based paint impacts would be the same as those described under the Proposed Action | • The Air Force would continue to be responsible for management of lead-based paint, and would continue to manage lead-based paint in accordance with its own policy and applicable regulations<br>• No impacts are anticipated |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 6 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Hazardous Materials and Hazardous Waste Management (Continued)** | | | |
| Radon | • Radon sample results from MFH units at Travis AFB are below the U.S. EPA's recommended mitigation level of 4.0 picocuries per liter<br>• No significant impacts are anticipated. | • Potential impacts would be the same as those described under the Proposed Action | • Potential impacts would be the same as those described under the Proposed Action |
| **Natural Environment** | | | |
| Geology and Soils | • Short-term impacts would occur as a result of ground disturbance associated with new construction in the MFH areas<br>• Compliance with Construction Site Storm Water NPDES permit and SWPPP and implementation of standard construction practices would reduce the potential for erosion effects<br>• Upon completion of construction activities, maintenance of a vegetative cover or covering undeveloped areas with gravel would serve as effective long-term erosion control<br>• No significant impacts are anticipated. | • Potential geology and soils impacts would be the same as those described under the Proposed Action | • No new construction or demolition of existing facilities would occur<br>• No impacts are anticipated |
| Water Resources | • Temporary impacts in surface water drainage patterns may occur during construction in the MFH areas.<br>• Effects of increased runoff to surface water would be reduced through compliance with the Construction Site Storm Water NPDES permit and the SWPPP.<br>• No significant impacts are anticipated. | • Potential water resources impacts would be the same as those described under the Proposed Action | • No new construction or demolition of existing facilities would occur<br>• No impacts are anticipated |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 7 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| **Natural Environment (Continued)** | | | |
| Air Quality | • Construction and demolition activities would result in short-term air quality impacts<br>• Watering of the construction areas, dust suppressants, and monitored speeds on unpaved road would be used to reduce emissions of dust and particulate matter.<br>• Emissions associated with the revitalization activities would not hinder maintenance of the NAAQS. | • Potential air quality impacts would be similar to those described under the Proposed Action | • No new construction or demolition of existing facilities would occur<br>• No impacts are anticipated |
| Noise | • MFH units within the DNL 65-70 dB noise contour (Arnold Estates, Norton Heights, and Moffett Courtyard housing areas) would be demolished and reconstructed with appropriate NLR features to achieve an outdoor to indoor NLR of 20 to 25 dB<br>• The portion of the March Landing Housing Area within the DNL 65-70 dB noise contour have been recently constructed (between 1997 and 2004) and incorporate features to achieve appropriate outdoor to indoor NLR<br>• Noise generated from revitalization activities would be intermittent and short term, and would primarily occur at the construction site<br>• Once revitalization activities are completed, proposed activities (i.e., residential) would not generate a substantial amount of noise<br>• No significant impacts are anticipated. | • Potential noise impacts would be similar to those described under the Proposed Action | • No change to the noise environment<br>• No impacts are anticipated |
| Biological Resources | • Demolition and construction activities would create a short-term impact to wildlife<br>• Most species within the MFH areas are common and are disturbance-tolerant<br>• Jurisdictional wetlands within the Castle Terrace Housing Area would not be disturbed<br>• No significant impacts to biological resources are anticipated. | • Potential impacts to biological resources would be the same as those described under the Proposed Action | • Demolition and construction would not occur<br>• No impacts are anticipated |

**Table 2-3. Summary of Influencing Factors and Environmental Impacts**
**Page 8 of 8**

| Resource | Proposed Action | Alternative 1 | No-Action Alternative |
|---|---|---|---|
| Cultural Resources | • There are no prehistoric or historic archaeological properties, historic buildings and structures, or traditional resources within the MFH housing areas<br>• No significant impacts are anticipated | • Potential impacts to cultural resources would be the same as those described under the Proposed Action | • There are no prehistoric or historic archaeological properties, historic buildings and structures, or traditional resources within the MFH areas<br>• No impacts are anticipated |

ACM = asbestos-containing material
AFB = Air Force Base
AOC = area of concern
AST = aboveground storage tank
dB = decibel
DNL = day-night average sound level
ERP = Environmental Restoration Program
MFH = military family housing
NAAQS = National Ambient Air Quality Standards
NPDES = National Pollutant Discharge Elimination System
PCB = polychlorinated biphenyl
SWPPP = Storm Water Pollution Prevention Plan

# 3.0 AFFECTED ENVIRONMENT

## 3.1 INTRODUCTION

This chapter describes the existing environmental conditions at the Travis AFB MFH property (Hamilton Court, Mather Manor, Castle Terrace, McClellan Corridor, March Landing, Onizuka Flats, Norton Heights, Moffett Courtyard, and Arnold Estates). It provides information to serve as a baseline from which to identify and evaluate environmental changes resulting from demolition, construction, and renovation of MFH units at Travis AFB. The environmental components addressed include relevant natural or human environments likely to be affected by the Proposed Action and alternatives.

Based upon the nature of the activities that would occur under the Proposed Action and alternatives, it was determined that the potential exists for the following resources to be affected or to create environmental effects: land use, aesthetics, hazardous materials management, hazardous waste management, storage tanks, pesticides, PCBs, ACM, lead-based paint, geology and soils, water resources, air quality, noise, biological resources, cultural resources, and environmental justice.

## 3.2 COMMUNITY SETTING

Travis AFB is in northern California, in Solano County. The base is within the city limits of Fairfield and is approximately 40 miles southwest of Sacramento and 50 miles northeast of San Francisco (see Figure 1-1). The base's MFH areas cover approximately 690 acres (excluding the Georgetown MFH Area) and are situated in the northern portion of the base (see Figure 1-2).

Travis AFB occupies approximately 5,200 acres; the Travis AFB MFH property encompasses approximately 690 acres situated in the northern portion of the installation. The Travis AFB MFH property contains 2,336 units within 9 housing areas (excluding the housing units within the Georgetown Housing Area) (see Table 1-1). There are also a housing maintenance office, U-Fix-It Center, Scout Building, and a water pump station within the Travis AFB MFH property. In the vicinity of the Travis AFB housing area (but excluded from the privatization action) are two elementary schools, a chapel, a child development center, and a youth center (see Figure 2-1).

Travis AFB is home to approximately 7,730 personnel and their dependants who live on base in the MFH units and dormitories or within the local communities surrounding the base. The primary local communities include Fairfield, Suisun, Vacaville, Dixon, and Davis. The Travis AFB workforce consists of approximately 14,350 military personnel and civilian employees (U.S. Air Force, 2002b).

The region of influence (ROI) to be studied will be defined for each resource area affected by the proposed project. The ROI determines the geographic area to be addressed as the Affected Environment. Although the base boundary may

constitute the ROI limit for some resources, potential impacts associated with certain issues (e.g., water resources, air quality) transcend these limits.

### 3.2.1 Land Use

The ROI for land use includes the Travis AFB MFH property and adjacent areas both on and off the base.

The MFH areas consist primarily of a residential land use of single-family, duplex, and multifamily (townhouse) housing units. Community service (elementary schools, child development center, youth center, and chapel), industrial (water treatment plant and water tank), and outdoor recreation (ball fields, ball courts, skate park, and North Gate Park) land use areas are situated within the Travis AFB MFH property (Figure 3-1). Also within the Castle Terrace Housing Area are areas of open space and vernal pool habitat (see Section 3.4.5.4, Sensitive Habitats).

Areas adjacent to the Travis AFB MFH property include Travis AFB property to the south, and off-base areas to the east, north, and west. On-base areas to the south are designated as administrative, community service (vehicle fueling station, commissary, base exchange), and unaccompanied (dormitory) housing. Off-base areas to the west consist of open space with a High School and Junior High School nearby. Off-base areas to the north and east consist of open space (see Figure 3-1).

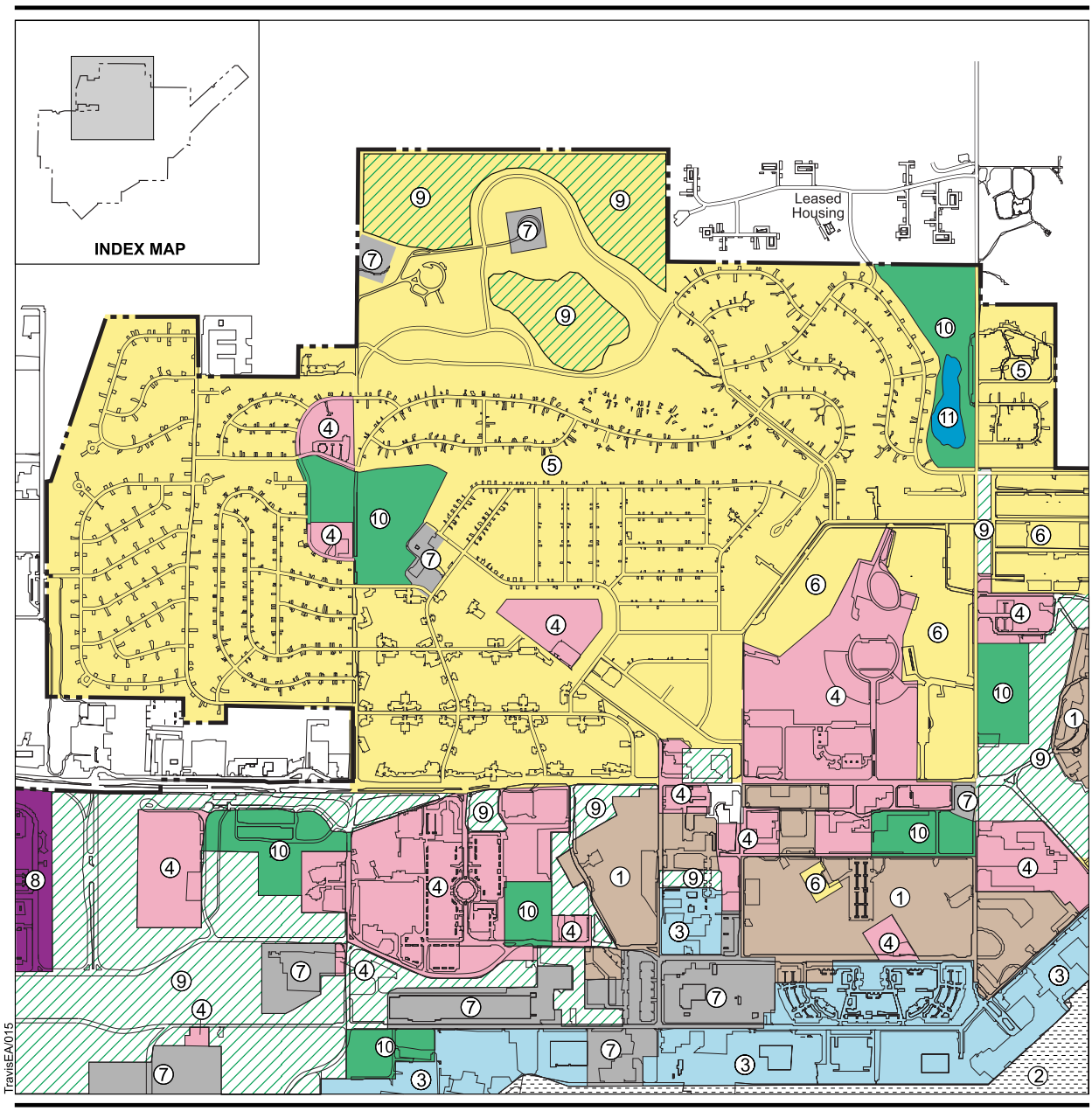
### 3.2.2 Aesthetics

Visual sensitivity is characterized in terms of high, medium, and low levels. High visual sensitivity exists in areas where views are rare, unique, or in other ways special, such as in a remote pristine environment. Medium visual sensitivity is characteristic of areas where human influence and modern civilization are evident and the presence of motorized vehicles is commonplace. Low visual sensitivity areas tend to have minimal landscape features with little change in form, line, color, and texture.

The visual environment of the Travis AFB MFH property and surrounding areas are characteristic of an urban environment. These areas are mostly developed with roads, houses, and other structures. The undeveloped off-base areas to the north and east provide views of relatively undisturbed, natural vegetation; however, adjacent developed areas and transportation networks (highway and rail) are readily visible. For these reasons, areas within the ROI for aesthetics are considered to have a medium visual sensitivity.

### 3.2.3 Utilities

Solid waste is discussed in this section. The ROI for solid waste includes the service area for the provider that serves the Travis AFB MFH property. The major attributes of solid waste include processing, daily/annual disposal, and landfill capacities. These factors are used to determine whether the existing solid waste disposal facilities are capable and adequate to provide services.




**EXPLANATION**

- Base Boundary
- (1) Administrative
- (2) Airfield
- (3) Aircraft Operations and Maintenance
- (4) Community
- (5) Housing (Family)
- (6) Housing (Unaccompanied)
- (7) Industrial
- (8) Medical
- (9) Open Space
- (10) Outdoor Recreation
- (11) Water

0 625 1250 Feet

NORTH
MAG DEG 16° 49.5'

Source: U.S. Air Force, 2002a.

**Travis AFB Land Use**

**Figure 3-1**

Because the Travis AFB housing population would be reduced by approximately 940 families, on-base utility usage is expected to decrease from current conditions. Because these families would be relocated into surrounding communities, regional utility usage is not expected to change. Therefore, impacts to utilities (water, wastewater, electricity, and natural gas) are not expected and are not analyzed further in this EA.

#### *3.2.3.1 Solid Waste.*

Nonhazardous solid waste generated on Travis AFB totaled 45.5 tons per day (16,604 tons for the year) in FY 2001. An average of 20.5 tons per day, (7,468 tons for the year) were diverted from being sent to a solid waste disposal facility by means including recycling, reuse, composting, and mulching. The remaining solid waste, an average of 25 tons per day (9,136 tons for the year), was sent to the Potrero Hills Landfill. Solid waste, excluding metals, is disposed by a private contractor. Metals are recycled by the Defense Reutilization Marketing Office. The Potrero Hills Landfill is a Class III permitted landfill. This is a 190-acre landfill that has a permitted daily throughput of 4,330 tons per day and a permitted capacity of 21,500,000 cubic yards. Its remaining capacity, as of December 2001, was 13,800,000 cubic yards. The landfill has an estimated closure date of 2035 (California Integrated Waste Management Board, 2003).

## 3.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

Hazardous materials and hazardous waste management activities at Travis AFB are governed by specific environmental regulations. For the purposes of analysis, the term “hazardous materials” will refer to those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9601, et seq., as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901-6992, as amended. In general, these include substances that, because of their quantity, concentration, or physical or chemical, characteristics, may present substantial danger to public health, welfare, or the environment when released into the environment.

The ROI for hazardous materials and hazardous waste encompasses those areas that could potentially be exposed to a release during demolition, construction, and renovation activities associated with the MFH areas.

### 3.3.1 Hazardous Materials Management

Travis AFB has an Integrated Contingency Plan that was prepared in 2003 in accordance with 40 CFR 112. The base also has a Hazardous Materials Plan, dated April 2003, that includes a hazards analysis for hazardous materials at specific locations throughout the installation. These plans cover hazardous materials emergency planning, training, response, and reporting, and are used to respond to releases on base (U.S. Air Force, 2002a).

The base housing facility maintenance provider, Pride Industries, occupies a small facility within the Travis AFB MFH property. The facility contains two buildings, an office building (Building 5569) with a storage facility for small quantities of household cleaners, and a U-Fix-It Center (Building 5570) for the occupants of the family housing units to acquire products for home maintenance. The U-Fix-It Center stores small quantities of hazardous materials such as paint, adhesives, sealants, and cleaning supplies. These materials are also used by housing maintenance personnel when making repairs to MFH units.

Small quantities of household hazardous materials (e.g., paints, household cleaners) may be stored by residents within the Travis AFB MFH property.

### 3.3.2 Hazardous Waste Management

Procedures for management of hazardous waste generated at Travis AFB are described in the Travis AFB Hazardous Waste Management Plan. This plan fulfills the requirements in Title 40, CFR Parts 260-270 and the California Code of Regulations (CCR), Title 22 Parts 66264.13 and 66268.7(a), which establishes procedures to achieve and maintain regulatory compliance regarding accumulation, transportation, and disposal of hazardous wastes. Travis AFB has one facility permitted for long-term storage of hazardous wastes. Most hazardous waste is collected and stored for less than 90 days at various accumulation points on the base and then transported to the long-term storage facility. Wastes are removed from the long term storage facility by a contractor (U.S. Air Force, 2002a).

No hazardous wastes are stored within the Travis AFB MFH property. Small quantities of household hazardous waste may be generated by residents. The housing maintenance facility; generates small quantities of waste which are managed in accordance with the Travis Hazardous Waste Management Plan.

### 3.3.3 Storage Tanks

The U.S. EPA has issued federal regulations related to underground storage tanks (USTs) in 40 CFR Parts 280 and 112. Aboveground storage tanks (ASTs) are subject to regulation under the Clean Water Act (CWA) (33 U.S.C. Sections 1251-1578) and the Oil Pollution Act (specifically, 40 CFR Part 112). The operation and construction of ASTs is subject to National Fire Protection Association fire codes and the Uniform Fire Code. The base maintains an Integrated Contingency Plan, which establish responsibilities and provide prevention guidelines, as well as contingency plans, for use in the event of a release.

There are no USTs within the Travis AFB MFH property. One AST is situated within the Norton Heights Housing Area. The AST is situated outside Building 8499 (water pump station) in the western portion of the Norton Heights Housing Area. This AST is a 300-gallon tank that stores diesel fuel for an emergency generator.

### 3.3.4 Pesticide Usage

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. Sections 136-136y) regulates the registration and use of pesticides. Pesticide management activities are subject to federal regulations contained in 40 CFR Parts 162, 165, 166, 170, and 171. Pesticide usage at Travis AFB is coordinated by the Civil Engineer Pest Management Shop in accordance with the Installation Pest Management Plan and is generally limited to the treatment of health-related pests (rats, mosquitoes, etc.). Only Air Force-approved pesticides may be utilized and all pesticides must be requisitioned by the Pest Management Shop through the base hazardous materials pharmacy (Hazmart). Only authorized and certified personnel are permitted to apply pesticides. Pesticides are no longer used for preventative measures. Instead, physical processes (e.g., caulking of screens, cleanliness, etc.) are recommended to prevent infestations of nuisance pests (U.S. Air Force, 2003c).

Pest management personnel adhere to the pesticide label directions when handling all pesticides. The Entomology Shop provides treatment for all base buildings and housing areas and maintain and monitor files of building and home treatments.

Based on interviews with entomology shop personnel, the pesticide chlordane was likely applied within the MFH areas in the past; however, records of past usage are not available. Chlordane was typically applied to the soil around building foundations to control termites. Chlordane is a persistent bioaccumulative and toxic chemical; therefore, it may still be present in the soils within the MFH areas. All uses of chlordane were banned by the U.S. EPA in 1988.

### 3.3.5 Polychlorinated Biphenyls

The disposal of PCBs is regulated under the federal Toxic Substances Control Act (TSCA) (15 U.S.C. Section 2601, et seq., as implemented by 40 CFR Part 761), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. By federal definition, PCB equipment contains 500 parts per million (ppm) PCBs or more, whereas PCB-contaminated equipment contains PCB concentrations equal to or greater than 50 ppm, but less than 500 ppm. The TSCA regulates and the U.S. EPA enforces the removal and disposal of all sources of PCBs containing 50 ppm or more; the regulations are more stringent for PCB equipment than for PCB-contaminated equipment.

Travis AFB (including the Travis AFB Housing Areas) has met the criteria established by the Air Force as being “PCB-free”(U.S. Air Force, 1998). Transformers containing concentrations of PCBs greater than 50 ppm have been removed form Travis AFB. Although Travis AFB is considered "PCB-free," equipment that contains PCBs may still be present within the installation. PCBs may be present in ballasts of older light fixtures; some transformers with PCB concentrations of less than 50 ppm are also present on base. While not defined as PCB equipment or PCB-contaminated equipment, these items could leak or spill and result in a release of PCBs. An inventory of transformers with PCB

concentrations less than 50 ppm is in the process of being compiled by the Travis AFB Electric Shop; however, this inventory is not yet available. Because this inventory is not yet available, the specific location of these transformers within the Travis AFB MFH property cannot be determined. No PCB spills have been identified within the Travis AFB MFH property.

### 3.3.6 Asbestos-Containing Material

ACM and ACM abatement are regulated by the U.S. EPA and the Occupational Safety and Health Administration (OSHA). Asbestos fiber emissions into the ambient air are regulated in accordance with Section 112 of the Clean Air Act (CAA), which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). Under NESHAP, the owner of a structure must, prior to demolition or renovation of buildings with ACM, provide notice to the regulator with CAA authority (either the U.S. EPA or its state counterpart). The NESHAP regulations (40 CFR Part 61, Subpart M) address the demolition or renovation of buildings with ACM. The Asbestos Hazard Emergency Response Act (AHERA), Public Law (P.L.) 99-519 and P.L. 101-637, addresses worker protection for employees who work around or remediate ACM.

Renovation or demolition of buildings with ACM can release asbestos fibers into the air. The current Air Force practice is to manage or abate ACM in active facilities and abate any ACM that has been identified as a hazard to human health, following regulatory requirements and prior to facility demolition or renovation. Removal of ACM occurs when there is a potential for asbestos fiber release that would affect human health or the environment.

An asbestos survey of 29 housing units was conducted in 1995. These 29 units were used as a representative sampling for all housing units based on the year of construction and structure type. The survey of units identified ACM in floor tile, joint compound, transite siding panels, adhesives, light fixture insulators, sheet rock, and joint tape (U.S. Air Force, 1995). The majority of the housing units within the Travis AFB MFH property were constructed in the 1950s and 1960s and potentially contain ACM. This includes all MFH units within Mather Manor, Norton Heights, Hamilton Court, Onizuka Flats, Arnold Estates, and some of the units within McClellan Corridor and Moffett Courtyard. The MFH units within Castle Terrace and March Landing, and some units within the McClellan Corridor and Moffett Courtyard were constructed during the 1990s and 2002-2004. Because of their recent construction dates, these units are not expected to contain ACM.

Results of ACM sampling conducted at Building 5569 (Housing Maintenance Office) indicate that ACM is present in the form of ceiling sheet rock and floor tile. No ACM survey results were available for Building 5570 (U-Fix-It Center), Building 5581 (Scout Building), or Building 8499 (Water Pump Station).

### 3.3.7 Lead-Based Paint

Human exposure to lead has been determined to pose an adverse health risk by agencies such as OSHA and the U.S. EPA. Sources of exposure to lead are

dust, soils, and paint. In 1973, the Consumer Product Safety Commission (CPSC) established a maximum lead content in paint of 0.5 percent by weight in a dry film of newly applied paint. In 1978, under the Consumer Product Safety Act (P.L. 101-608, as implemented by 16 CFR Part 1303), the CPSC lowered the allowable lead level in paint to 0.06 percent. The Act also restricted the use of lead-based paint in nonindustrial facilities. DOD implemented a ban of lead-based paint use in 1978; therefore, it is possible that facilities constructed prior to or during 1978 may contain lead-based paint. The Air Force does not actively pursue removal of lead-based paint. Instead, it is managed in place and removed by the Air Force, as necessary.

A lead-based paint survey of 29 housing units was conducted in 1995. The survey identified lead-based paint on the interior doors, door jambs, interior window casings, some shelves, some interior walls, on the ceilings, and on the exterior walls (U.S. Air Force, 1995). These 29 units were used as a representative sampling for all housing units based on the year of construction and structure type. The majority of the housing units within the Travis AFB MFH property were constructed in the 1950s and 1960s and potentially contain lead-based paint. This includes all MFH units within Mather Manor, Norton Heights, Hamilton Court, Onizuka Flats, Arnold Estates, and some of the units within McClellan Corridor and Moffett Courtyard. The Castle Terrace and March Landing, and some units within McClellan Corridor and Moffett Courtyard were constructed during the 1990s and 2002-2004. Because of their recent construction dates, these units are not expected to contain lead-based paint.

Results of lead-based paint sampling conducted at Building 5569 (Housing Maintenance Office) indicate that lead-based paint is present. No lead-based paint survey results were available for Building 5570 (U-Fix-It Center), Building 5581 (Scout Building), or Building 8499 (Water Pump Station).

### 3.3.8 Radon

Radon is a naturally occurring, colorless, and odorless radioactive gas that is produced by radioactive decay of naturally occurring uranium. Radon that is present in soil can enter a building through small spaces and openings, accumulating in enclosed areas such as basements. There are currently no federal or state standards regulating radon exposure. The U.S. EPA offers a pamphlet, A Citizen's Guide to Radon (U.S. Environmental Protection Agency, 1992), which offers advice to persons concerned with radon in their homes.

Air Force policy requires implementation of the Air Force Radon Assessment and Mitigation Program (RAMP) to determine levels of radon exposure on military personnel and their dependents. The U.S. EPA has made testing recommendations for both residential structures and schools. For residential structures, a level between 4 and 20 picocuries per liter (pCi/l) should lead to additional screening within a few years. For levels of 20 to 200 pCi/l, additional confirmation sampling should be accomplished within a few months. If the level is in excess of 200 pCi/l, the structure should be evacuated immediately.

The RAMP screening for Travis AFB MFH units was performed in 1988. A total of 35 locations were screened and the results showed no levels of radon exceeding 4 pCi/l, which was the criterion for determining whether a detailed assessment would be required. Since the measurements were below the criteria, no further evaluation was required (U.S. Air Force 2002a).

## 3.4 NATURAL ENVIRONMENT

Aspects of the natural environment discussed in this EA include geology and soils, water resources, air quality, noise, biological resources, and cultural resources.

### 3.4.1 Geology and Soils

This discussion of geology and soils covers features of the physical environment that may be affected by the proposed activities. These include topography/ physiography, geology (including units and structure), the potential for natural hazards, and soils (types and properties). The ROI considered for geology is the regional setting surrounding the base as well as specific localized features on, or proximal to, the MFH areas.

#### *3.4.1.1 Topography.*

Travis AFB is situated partially in the Sacramento Valley on the east and partially in the Coast Ranges on the west. The Sacramento Valley is an interior lowland area that, with the San Joaquin Valley to the south, forms the Great Central Valley of California. The Coast Ranges bound the valley to the west. In the Travis AFB area the Coast Ranges consists of low ridges of bedrock that extend from the Vaca Mountains to the northwest of the base to the Montezuma Hills southeast of the base.

The base is in a relatively flat area with elevations ranging from 20 feet above sea level (asl) at the southwestern boundary to more than 160 feet asl near the north boundary. The topography of the base generally slopes gently to the south.

Within the MFH areas elevations range from more than 160 feet asl at the water tank near the geographic center of the Castle Terrace Housing Area to approximately 60 feet asl in the southeastern corner of the Moffett Courtyard Housing Area and the southwestern corner of the Hamilton Court Housing Area. The northern MFH areas, Castle Terrace, Norton Heights, and the northern part of Moffett Courtyard are generally hillier and at a higher elevation than the remaining MFH areas.

#### *3.4.1.2 Geology.*

The majority of Travis AFB is underlain by shallow Pleistocene age alluvium consisting of interfingering lenses of sands, gravels, silts, and clays. However, the northern part of the base is underlain by alluvium of recent origin consisting of sand, gravel, silt, and clays that vary in thickness from 5 to 60 feet. Underlying the alluvium, but in places cropping out through it, are the Tertiary consolidated

sediments with interbedded volcanic debris of the Tehama Formation, Pleistocene-Pliocene non-marine sediments, and the Eocene marine sediments of the Markley Formation. The total thickness of these deposits reaches 7,500 feet in the Fairfield-Suisun area.

#### *3.4.1.3 Natural Hazards.*

Travis AFB is situated in Seismic Hazard Zone 4 (International Conference of Building Officials, 1997). Areas within Zone 4 are expected to experience maximum magnitudes and damage in the event of an earthquake (Lindenburg, 1998). The U.S. Geological Survey (USGS) Working Group on California Earthquake Probabilities has evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The result of the evaluation indicated a 70 percent likelihood that such an earthquake event will occur in the Bay Area between 2000 and 2030 (U.S. Geological Survey, 1999).

Potential earthquakes in this zone have been correlated to a Modified Mercalli intensity level value of VII (Lindenburg and Baradar, 2001). Typical results of a Level VII earthquake, considered to have strong shaking severity, are described as follows (Louie, 1996):

- People have difficulty standing
- Drivers feel their cars shaking
- Some furniture breaks
- Loose bricks fall from buildings
- Damage is slight to moderate in well-built buildings; considerable in poorly built buildings.

The San Francisco Bay area is an area of historic and recent seismic activity primarily due to the presence of the San Andreas, Hayward, and Calaveras fault zones. These faults are situated more than 20 miles from the base. The combined southern and northern segments of the Hayward fault, as well as the San Andreas fault and Calaveras fault, are considered by the USGS to pose the greatest threat of generating at least one earthquake with a magnitude 6.7 or greater earthquake over the next 30 years (U.S. Geological Survey, 1999). The Green Valley Fault is a smaller potentially active fault situated 10 miles west of the base. The Vaca Fault System is situated generally east and northeast of Travis AFB (U.S. Air Force, 2003c).

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. The composition of underlying soils in areas relatively distant from faults can intensify ground shaking.

#### *3.4.1.4 Soils.*

The lower layers of most soils on Travis AFB are dense and compact and comparatively impervious to air, materially retarding the penetration of roots and water. Consequently, there is little drainage through the soil (U.S. Air Force, 2003c).

According to the base's Integrated Natural Resources Management Pan (INRMP), 14 soil types occur on Travis AFB. Seven of these are found in the MFH areas on Travis AFB. These are described below:

Antioch-San Ysidro Complex. This soil complex is found in the southwestern corner of the Hamilton Court Housing Area and in the eastern part of the Moffett Courtyard Housing Area and North Gate Park. The Antioch series consists of moderately well-drained soils on terraces. These soils are formed in alluvium from sedimentary sources. Slopes are 0 to 2 percent. Permeability is very slow. This complex is approximately 50 percent Antioch loam and 35 percent San Ysidro sandy loam, with the remaining 15 percent including small areas of Solano loam and Pescadero clay loam. Antioch soils have slightly concave slopes; San Ysidro soils have slightly convex slopes.

Antioch-San Ysidro Complex, thick phase. This soil complex is found in the southern and central part of the MFH area, including most of the Hamilton Court, Mather Manor, March Landing, Onizuka Flats housing areas, and the southern part of the Moffett Courtyard Housing Area. This complex is approximately 55 percent Antioch loam and 35 percent San Ysidro sandy loam, with the remaining 10 percent including small areas where the clay-like subsoil is at a depth of less than 20 inches. Slopes are 0 to 2 percent. Antioch soils are mostly in slightly concave areas and San Ysidro soils are mostly in slightly convex areas.

Corning Gravelly Loam. This soil is found in the Castle Terrace Housing Area. It is well drained and occurs on moderately steep (2 to 15 percent slopes), eroding slopes. It has a depth of more than 60 inches. Corning soils have a slow permeability. The depth to the seasonal high water table is 5 feet, unless limited by bedrock or hardpan.

Dibble-Los Osos Loam. This soil complex is found primarily in the northern part of the Moffett Courtyard Housing Area and the western part of the Norton Heights Housing Area. The Dibble series consists of well-drained soils that are underlain by sandstone at a depth of 20 to 40 inches. Slopes are 9 to 30 percent. Permeability is slow. This complex is approximately 60 percent Dibble loam and 30 percent Los Osos loam. The remaining 10 percent is Millsholm loam. Dibble soil is found on ridge crests and south-facing slopes, while Los Osos is found on north-facing slopes.

Dibble-Los Osos Clay Loam. This soil complex is found in the McClellan Corridor Housing Area, the northeastern corner of the Hamilton Court Housing Area, the southwestern corner of the Castle Terrace Housing Area, the central part of the Moffett Courtyard Housing Area, and the eastern part of the Norton Heights Housing Area. This complex consists of approximately 60 percent Dibble clay

loam and 30 percent Los Osos clay loam. The remaining 10 percent is Millsholm loam. Slopes are 2 to 9 percent. These soils are 30 to 40 inches deep.

Millsap Sandy Loam. This soil is found in the eastern part of the Mather Manor Housing Area, the southwestern corner of the McClellan Corridor Housing Area, and the northern part of the Onizuka Flats Housing Area. It consists of moderately well-drained soils on uplands and is underlain by sandstone at a depth of 20 to 30 inches. Slopes are 0 to 2 percent. Permeability in the subsoil is very low.

Millsholm Loam. This soil is found in the Arnold Estates Housing Area and the northern edge of the Castle Terrace Housing Area. It consists of well drained soils on mountainous uplands and are underlain by sandstone at a depth of 10 to 20 inches. Slopes are 15 to 30 percent. Permeability is moderate.

### 3.4.2 Water Resources

The following subsections describe the existing environment as it relates to surface water and groundwater. The ROI for water resources encompasses the housing areas, as well as the surface and groundwater features that proposed activities within these areas have the potential to affect.

#### *3.4.2.1 Surface Water.*

Two creeks enter Travis AFB from the north and flow generally to the south. These are the west and east branches of Union Creek, which diverge approximately 1 mile north of the base. The west branch is channelized and flows along the western edge of the Hamilton Court Housing Area. The east branch enters North Gate Park and flows into the North Gate Park Pond. Outflow from the pond, as well as surface drainage, enters the storm drain system and flows underground until it discharges into Union Creek in the southern part of Travis AFB (U.S. Air Force, 2003c).

Travis AFB has six storm water drainage areas and six corresponding outfalls in the southern part of the base. Five of these outfalls drain into Union Creek, which exits the base via the remaining outfall. All drainage from Travis AFB ultimately reaches Suisun Bay to the south (U.S. Air Force, 2003c).

One 100-year flood plain area is situated near the MFH areas. This is the west branch of Union Creek, which flows 4,300 feet along the western boundary of the Hamilton Court Housing Area. The west branch of Union Creek is a drainage channel approximately 15-25 feet wide and 4-15 feet deep that fills with water during heavy rains (U.S. Air Force, 2003c).

Surface water features in the MFH areas include the North Gate Park Pond and five stock ponds in the Castle Terrace Housing Area. The North Gate Park Pond is a 2.2-acre artificial pond created by the impoundment of the eastern branch on Union Creek (U.S. Air Force, 2003c). The stock ponds occupy borrow pits associated with former quarrying activities. The open water area of these five ponds totals approximately 6 acres (U.S. Air Force, 1999). A number of vernal

pools and vernal swales that contain water seasonally are also situated in the Castle Terrace Housing Area. These areas fill with water during the winter rainy season and are dry in the summer. Vernal pools and other wetlands are discussed in more detail under Biological Resources in Section 3.4.5.4, Sensitive Habitats.

#### *3.4.2.2 Groundwater.*

Travis AFB is not underlain by extensive water-bearing materials and there are no major water supply wells in the vicinity of the base. Extensive well fields are situated to the northeast in the Great Valley Putah Plain Area and to the west in the Fairfield/Green Valley area where there are more extensive water bearing deposits. Groundwater occurs under Travis AFB in shallow deposits and flows to the south, generally following surface topography, into the Suisun Marsh. Groundwater recharge to the shallow water table occurs in the foothills of Cement Hill to the north, from in-channel infiltration from creeks in the area, including Union Creek, and from precipitation (U.S. Air Force, 2003c).

Groundwater contamination occurs in the vicinity of the MFH area property. Three ERP sites, two former landfills, and an active gas station are sites of groundwater contamination. The landfills are situated southeast of the MFH area property and the gas station is to the south. Groundwater at the landfill sites is contaminated with trichloroethylene (TCE), benzene, chlorobenzene, PCBs, and dioxins (Travis AFB, 2003). Fuel products at the gas station have contaminated the groundwater with benzene, toluene, ethylbenzene, xylenes, and methyl tertiary butyl ether (MTBE) (Travis AFB, 2003). Groundwater contamination plumes at these sites flow south-southeast and do not affect the MFH area property.

### 3.4.3 Air Quality

Air quality in a given location is defined by the concentration of various pollutants in the atmosphere. The ROI for air quality includes Solano County, California.

The federal CAA, 42 U.S.C. 7401-7671(q), amended in November 1990, stipulates that emissions sources must comply with the air quality standards and regulations that have been established by federal, state, and county regulatory agencies. These standards and regulations focus on (1) the maximum allowable ambient pollutant concentrations, and (2) the maximum allowable emissions from individual sources.

The U.S. EPA established the federal standards for the permissible levels of certain pollutants in the atmosphere. The National Ambient Air Quality Standards (NAAQS) have been established for seven criteria pollutants: ozone, nitrogen dioxide ($NO_2$), particulate matter equal to or less than 10 microns in diameter ($PM_{10}$), particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$), carbon monoxide (CO), sulfur dioxide ($SO_2$), and lead. Ozone is a secondary pollutant formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors. The ozone precursors are nitrogen oxide ($NO_X$) and volatile organic compounds (VOCs). The California Air Resources Board

(CARB) has established the California Ambient Air Quality Standards (CAAQS) for these air pollutants, and also for visibility reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Both the NAAQS and the CAAQS are shown in Table 3-1.

The U.S. EPA designates all areas of the United States as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. Pollutants in an area may be designated as unclassified when there are insufficient ambient air quality data for the U.S. EPA to form a basis for an attainment status. Under the CAA, the nonattainment classifications for CO and $PM_{10}$ were further divided into moderate and serious categories. Ozone nonattainment was divided into marginal, moderate, serious, severe, and extreme categories. The CARB also designates areas that exceed the CAAQS as nonattainment for the specific pollutant.

Travis AFB is in the portion of Solano County that is within the San Francisco Bay Area Air Basin. The San Francisco Bay Area Air Basin also consists of all or portions of Alameda, Contra Cost, Marin, Napa, San Francisco, San Mateo, Santa Clara, and Sonoma counties. The remainder of Solano County is within the Sacramento Valley Air Basin (California Air Resources Board, 2003). All of Solano County is designated as a nonattainment area of the NAAQS for ozone. The San Francisco Bay Area portion of Solano County is designated as a moderate ozone nonattainment area, while the Sacramento Valley Air Basin portion of the county is designated as a severe nonattainment area of the NAAQS for ozone (U.S. Environmental Protection Agency, 2003).

The entire county is designated by the CARB is a nonattainment area of the CAAQS for $PM_{10}$ and serious nonattainment of the CAAQS for ozone (California Air Resources Board, 2003). This area is in attainment or not classified for all other NAAQS and CAAQS.

The primary source of ozone precursors in the San Francisco Bay Area Air Basin portion of Solano County is from on-road motor vehicles for $NO_X$ and on-road vehicles and other mobile sources (e.g., aircraft, recreational boats, and off-road equipment) for VOCs. The primary sources of $PM_{10}$ emissions include construction and demolition, dust from paved and unpaved roads, and fugitive windblown dust (California Air Resources Board, 2003).

In areas where the NAAQS are exceeded, preparation of a State Implementation Plan detailing how the state would attain the standard within mandated time frames is required. Section 176c of the CAA provides that a federal agency cannot support an activity in any way unless the federal agency determines that the activity will conform to the State Implementation Plan's purpose of attaining and maintaining the NAAQS, listed in Table 3-1. In accordance with this part of the CAA, U.S. EPA announced promulgation of its final conformity rule for general federal actions for nonattainment and maintenance areas in the November 30, 1993, Federal Register (40 CFR Part 51). The final rule applies to Travis AFB because the installation is situated within a nonattainment area for the NAAQS for ozone.

## Table 3-1. National and California Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards[a,c] | National Standards[b] Primary[c,d] | National Standards[b] Secondary[c,e] |
|---|---|---|---|---|
| Ozone | 1-hour | 0.09 ppm (180 µg/m$^3$) | 0.12 ppm (235 µg/m$^3$) | Same as primary standard |
| | 8-hour[f] | -- | 0.08 ppm (157 µg/m$^3$) | Same as primary standard |
| Carbon monoxide | 8-hour | 9 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 | Annual Arithmetic Mean | -- | 0.053 ppm (100 µg/m$^3$) | Same as primary standard |
| | 1-hour | 0.25 ppm (470 µg/m$^3$) | -- | -- |
| Sulfur dioxide | Annual Arithmetic Mean | -- | 0.03 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 (1,300 µg/m$^3$) |
| | 1-hour | 0.25 ppm (655 µg/m$^3$) | -- | -- |
| $PM_{10}$ | Annual Arithmetic Mean | 20 µg/m$^3$ [g] | 50 µg/m$^3$ | Same as primary standard |
| | 24-hour | 50 µg/m$^3$ | 150 µg/m$^3$ | Same as primary standard |
| $PM_{2.5}$ | Annual Arithmetic Mean | 12 µg/m$^3$[g] | 15 µg/m$^3$[f] | Same as primary standard |
| | 24-hour | -- | 65 µg/m$^3$[f] | Same as primary standard |
| Lead | 30-day | 1.5 µg/m$^3$ | -- | -- |
| | Quarterly | -- | 1.5 µg/m$^3$ | Same as primary standard |
| Sulfates | 24-hour | 25 µg/m$^3$ | -- | -- |
| Hydrogen sulfide | 1-hour | 0.03 ppm (42 µg/m$^3$) | -- | -- |
| Vinyl chloride | 24-hour | 0.01 ppm (26 µg/m$^3$) | -- | -- |
| Visibility reducing particles | 8-hour (10 a.m. to 6 p.m., Pacific Standard Time) | In a sufficient amount to produce an extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particles when the relative humidity is less than 70 percent. | -- | -- |

Notes:
(a) California standards for ozone, carbon monoxide, sulfur dioxide (1 hour and 24 hour), nitrogen dioxide, $PM_{10}$, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. The sulfates, lead, hydrogen sulfide, and vinyl chloride standards are not to be equaled or exceeded.
(b) National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current federal policies.
(c) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius ($^{B}$C) and a reference pressure of 760 millimeters (mm) of mercury. All measurements of air quality are to be corrected to a reference temperature of 25$^{B}$C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to parts per million by volume, or micromoles of pollutant per mole of gas.
(d) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
(e) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of pollutant.
(f) New federal 8-hour ozone and $PM_{2.5}$ standards were promulgated by the U.S. EPA on July 18, 1997. Contact U.S. EPA for further clarification and current federal policies.
(g) On June 20, 2003, the CARB approved the recommendations to revise the $PM_{10}$ annual average standard to 20 µg/m$^3$ and to establish an annual average standard for $PM_{2.5}$ of 12 µg/m$^3$. These standards will take effect upon final approval by the Office of Administrative Law.

µg/m$^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter
$PM_{10}$ = particulate matter equal to or less than 10 microns in diameter
ppm = parts per million

If emissions from a federal action do not exceed de minimis thresholds and if the federal action is not considered a regionally significant action, it is exempt from further conformity analysis. De minimis thresholds are specified in the conformity rule for the criteria pollutants based on the degree of nonattainment of the area. The applicable de minimis thresholds for the San Francisco Bay Area portion of Solano County are 100 tons/year for the ozone precursors VOCs and $NO_X$. A regionally significant action is defined as one whose total emissions meet or exceed 10 percent of the air quality control area's emission inventory for any criteria pollutant. Table 3-2 shows the 2002 estimated annual emissions of these pollutants in the San Francisco Bay Area Air Basin.

**Table 3-2. San Francisco Bay Area Air Basin 2002 Estimated Annual Emissions for Criteria Pollutants (tons per year)**

| $PM_{10}$ | CO | $NO_x$ | VOC | $SO_2$ |
|---|---|---|---|---|
| 71,631 | 901,627 | 226,946 | 166,652 | 23,371 |

CO = carbon monoxide
$NO_X$ = nitrogen oxides
$PM_{10}$ = particulate matter equal to or less than 10 microns in diameter
$SO_2$ = sulfur dioxide
VOC = volatile organic compound

Source: California Air Resources Board, 2003.

Travis AFB holds operational permits for stationary emissions sources, such as generators, internal combustion engines, abrasive cleaning, jet engine testing, fuel dispensing, welding, and surface coating. Mobile emission sources such as aircraft and on-road vehicles are not regulated by Title V of the CAA.

### 3.4.4 Noise

Noise is defined as sound that is undesirable because it interferes with speech communication and hearing, is intense enough to damage hearing, or is otherwise annoying. The decibel (dB), a logarithmic unit that accounts for the large variations in amplitude, is the accepted standard unit for the measurement of sound. A-weighted sound levels (dBAs) are commonly used to account for the frequency response to the human ear. The day-night average sound level (DNL) was developed to evaluate the total community noise environment and is an accepted unit for quantifying human annoyance to general environmental noise, which includes aircraft noise. However, in California, a descriptor similar to DNL is used to evaluate impacts due to noise. The Community Noise Equivalent Level (CNEL) is similar to the DNL with the exception that there is a 5-dB penalty added to those noises occurring during evening hours (7:00 p.m. to 10:00 p.m.). Both DNL and CNEL represent a 24-hour average of the A-weighted noise levels at a particular location. For most transportation and community noise sources, the CNEL and DNL are equal, to within 1 dB. CNEL is used in this report because it is the noise descriptor recognized for evaluating noise environments within the state of California.

In accordance with the Air Installation Compatible Use Zone (AICUZ) program, a program designed to achieve compatible uses of public and private lands in the vicinity of military airfields, Travis AFB has conducted noise studies for the base. Noise contours were generated by NOISEMAP, a computerized program that produces contour maps indicating ground dB-level averages and noise exposure from aircraft operations. Noise contours based on the existing Travis AFB aircraft operations are used as the baseline noise contours for this EA.

The California Department of Health, Office of Noise Control, has developed land use compatibility guidelines. These guidelines determine the ranges of acceptable levels for noise-sensitive receptors similar to those presented in Federal Aviation Administration (FAA)–developed land use compatibility guidelines. The most relevant difference between the two guidelines is the acceptable level for residential land uses. The federal guidelines indicate that 65 dB is the maximum acceptable exterior noise level compatible with residential land uses, whereas the California guidelines establish 60 dB as the maximum normally acceptable level. The California guidelines were used in this study to determine noise impacts.

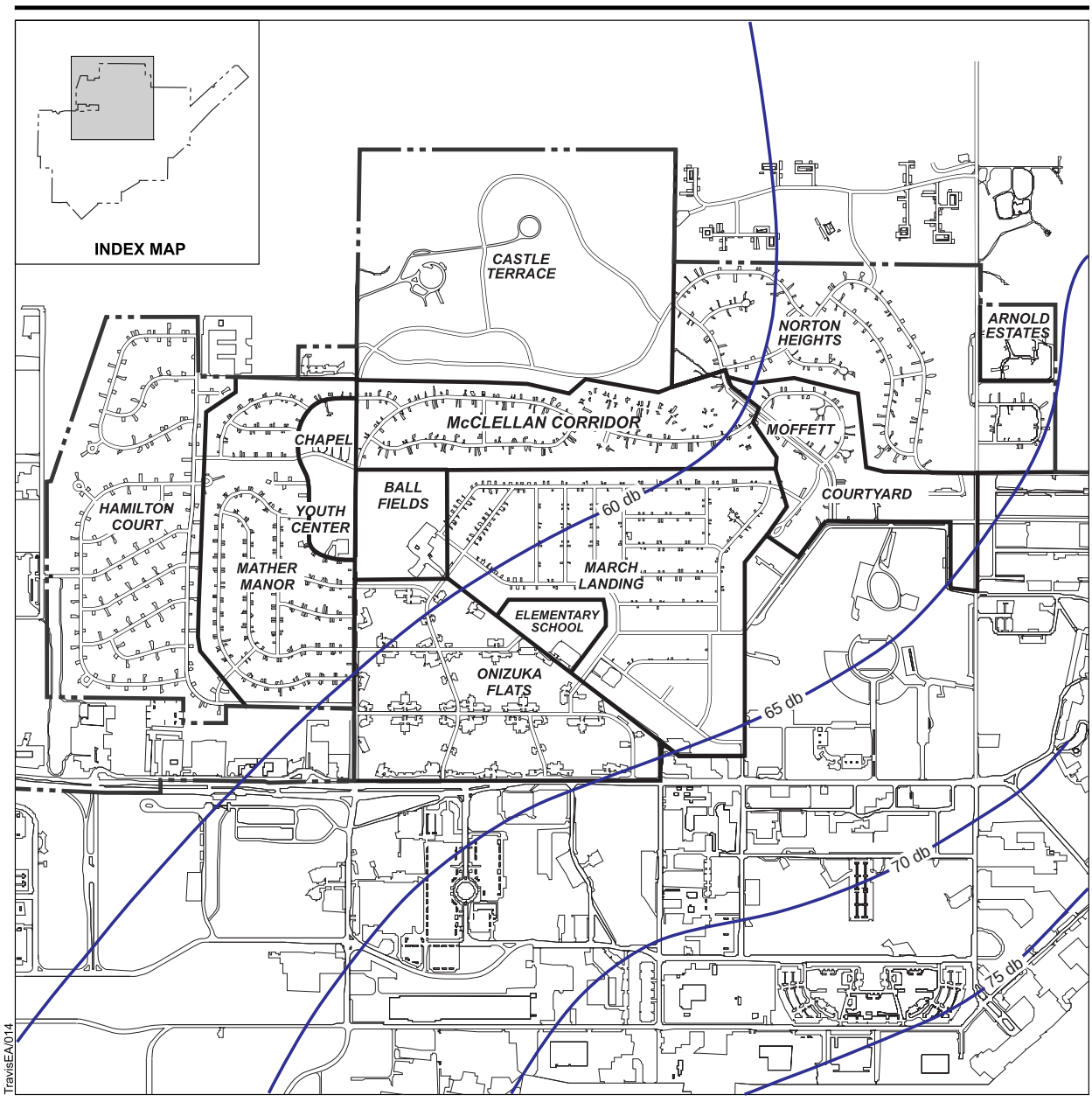
Within the 60-65 dB range, measures to achieve outdoor-to-indoor Noise Level Reduction (NLR) of at least 15 dB and 20 dB should be incorporated into the building design in order to achieve an indoor noise level that does not exceed 45 dB. Normal residential construction can typically be expected to provide an NLR of 20 dB. The use of NLR will eliminate outdoor noise problems. No restrictions are required for residential land uses within noise levels of 60 dB or lower.

The ROI for the noise analysis includes the Travis AFB MFH property.

The extreme southern and eastern portions of the Travis AFB MFH property (portions of Norton Heights, Moffett Courtyard, March Landing, and Onizuka Flats) is situated within the 65-70 dB noise contour zone. The central portion (all of Arnold Estates, and portions of McClellan Corridor, Norton Heights, Moffett Courtyard, March Landing, Onizuka Flats, and Mather Manor) are situated within the 60-65 dB noise contour zone. The western portion (all of Hamilton Court, and Castle Terrace, and portions of Mather Manor, Onizuka Flats, March Landing, McClellan Corridor, and Norton Heights) are situated below the 55-60 dB noise contour zone (Figure 3-2).

### 3.4.5 Biological Resources

Biological resources include the native and introduced plants and animals in the project area. For discussion purposes, these resources have been separated into the following sections: vegetation, wildlife, threatened and endangered species, and sensitive habitats. The ROI for biological resources comprises the existing MFH property. This is the area within which potential impacts could occur, and provides a basis for evaluating the level of impact.




**EXPLANATION**

Base Boundary

Housing Area Boundary

60 db — DNL Noise Contour (5-db intervals)

0 625 1250 Feet

NORTH MAG DEG 16° 49.5'

Source: U.S. Air Force, 2002a.

**Travis AFB Noise Contours**

**Figure 3-2**

#### *3.4.5.1 Vegetation.*

The majority of the Travis AFB MFH areas consists of irrigated, improved urban landscapes containing nonnative vegetation (U.S. Air Force, 2003c). Within the Castle Terrace Housing Area are undeveloped areas containing annual grassland and wetland vegetation. Wetland vegetation is discussed in detail in Section 3.4.5.4, Sensitive Habitats. A number of sensitive plant species are associated with the wetland habitats and are discussed in Section 3.4.5.3.

The annual grassland vegetation is dominated by non-native species, but contains native grasses and herbs. Abundant weedy, non-native species include barleys (*Hordeum* spp.), bromes (*Bromus* spp.), medusa head grass (*Taeniatherum caputmedusae*), spiny cocklebur (*Xanthium spinosum*), and yellow star thistle (*Centaurea solstitalis*). Native plants occasionally found include turkeymullein (*Eremocarpus setigerus*), butter-and-eggs (*Tryphisaria eriantha* ssp. *eriantha*), valley castles (*Catilleja attenuata*), blue dicks (*Dichelostemma capitatum* spp*. capitatum*), blue-eyed grass (*Sisyrinchium bellum*), harvest brodiaea (*Brodiaea elegans* ssp*. elegans*), and crown brodiaea (*Brodiaea coronaria*) (U.S. Air Force, 1999). Large patches of the native perennial bunch grass, purple needlegrass (*Nasella pulchra*), are also present in the grasslands in the Castle Terrace Housing Area (U.S. Air Force, 2003c). Groves of planted blue gum (*Eucalyptus globulus*), along with other planted trees, including plum (*Prunus domesticus*), apricot (*Prunus armenianus*), and velvet ash (*Fraxinus velutina*), are also present. Five stock ponds (former quarry borrow pits) present on the Castle Terrace Housing Area support willows (Salix sp.) and Fremont cottonwoods (*Populus fremontii*) (U.S. Air Force, 1999).

In addition, North Gate Park, between the Arnold Estates, Georgetown, Moffett Courtyard, and Norton Heights housing areas contains areas of riparian vegetation north of the North Gate Park Pond. This habitat is dominated by small stands of cattails (*Typha latifolia*) and willows (*Salix* spp.) along the edge of the East Branch of Union Creek (U.S. Air Force, 2003c).

#### *3.4.5.2 Wildlife.*

Within the urban landscaped area of the MFH areas there are abundant wildlife species, including song sparrows (*Melospiza melodia*), tricolored blackbird (*Aegelius tricolor*), killdeer (*Charadrius vociferus*), house sparrow (Passer domesticus), western harvest mouse (*Reithrodontomys megalotis*), and California ground squirrels (*Spermophilus beecheyi*). California ground squirrels and black-tailed jackrabbits (*Lepus californicus*) are abundant mammals throughout Travis AFB, while the northwestern fence lizard (*Sceloporus occidentalis*) and Pacific gopher snake (*Pituophis melanoleucus*) are abundant reptiles found in a wide variety of habitats, including annual grasslands (U.S. Air Force, 2003c). The annual grassland and trees within the Castle Terrace Housing Area provide habitat for common mammals in the area, including California ground squirrel, Suisun shrew (*Sorex sinuousus*), valley pocket gopher (*Thomomys bottae*), house mouse (*Mus musculus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and coyote (*Canis latrans*). Common reptiles and amphibians known to inhabit Travis AFB and likely to occur on the undeveloped areas of the

Castle Terrace Housing Area include the western toad (*Bufo boreas*), bullfrog (*Rana catesbiana*), common garter snake (*Thamnophis sirtalis*), California horned lizard (*Phrynosoma coronatum*), and western skink (*Eumeces skiltonianus*). Six raptor species, great horned owl (*Bubo virginianus*), American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), and golden eagle (*Aquila chrysaetos*), have been observed on the property (U.S. Air Force, 1999). The open waters of North Gate Park Pond support game fish species, including large-mouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), green sunfish (*Lepomis cyanellus*), and channel catfish (*Ictalurus puctatus*).

A number of sensitive animal species are associated with wetland habitats and are discussed in Section 3.4.5.3.

#### *3.4.5.3 Threatened and Endangered Species.*

According to the INRMP for Travis AFB, there are 40 special status species that occur or could potentially occur on Travis AFB (U.S. Air Force, 2003c). Twelve of these could occur within the Travis AFB MFH property. The vernal pool and other wetland habitats encompassed by Castle Terrace and North Gate Park (within the Norton Heights Housing Area) are home to several threatened and endangered species (Table 3.3).

**Table 3.3. Threatened and Endangered Species**

| Common Name | Scientific Name | Federal Status | State Status |
|---|---|---|---|
| **Plants** | | | |
| Colusa grass | *Neostapfia colusana* | T | E |
| Contra Costa goldfields | *Lasthenia conjugens* | E | - |
| Crampton's tuctoria | *Tuctoria mucronata* | E | E |
| Showy Indian clover | *Trifolium amoenum* | E | - |
| **Amphibians** | | | |
| California red-legged frog | *Rana aurora draytonii* | T | - |
| California tiger salamander | *Ambystoma californiense* | T | - |
| **Reptiles** | | | |
| Giant garter snake | *Thamnophis gigas* | T | T |
| **Birds** | | | |
| American peregrine falcon | *Falco peregrinus tundrius* | Delisted | T |
| **Invertebrates** | | | |
| Conservancy fairy shrimp | *Branchinecta conservation* | E | - |
| Delta green ground beetle | *Elaphrus viridis* | T | - |
| Vernal pool fairy shrimp | *Branchinecta lynchi* | T | - |
| Vernal pool tadpole shrimp | *Lepidurus packardi* | E | - |

E = endangered
T = threatened

Of the federally listed species, Contra Costa goldfields, vernal pool fairy shrimp, California tiger salamander, and alkali milk-vetch (*Astragalus tener* var. *tener*) and San Joaquin spearscale (*Atriplex joaquiniana*) (federal species of concern) are known to occur within the MFH area. In addition, the following federal species of concern may occur within the MFH area: western spadefoot toad (*Scaphiopus hammondi*), long-billed curlew (*Numenius americanus*), western burrowing owl (*Athene cunicularia hypugea*), loggerhead shrike (*Lanius ludovicianus*), and rufous hummingbird (*Selasphorus rufus*).

#### *3.4.5.4 Sensitive Habitats.*

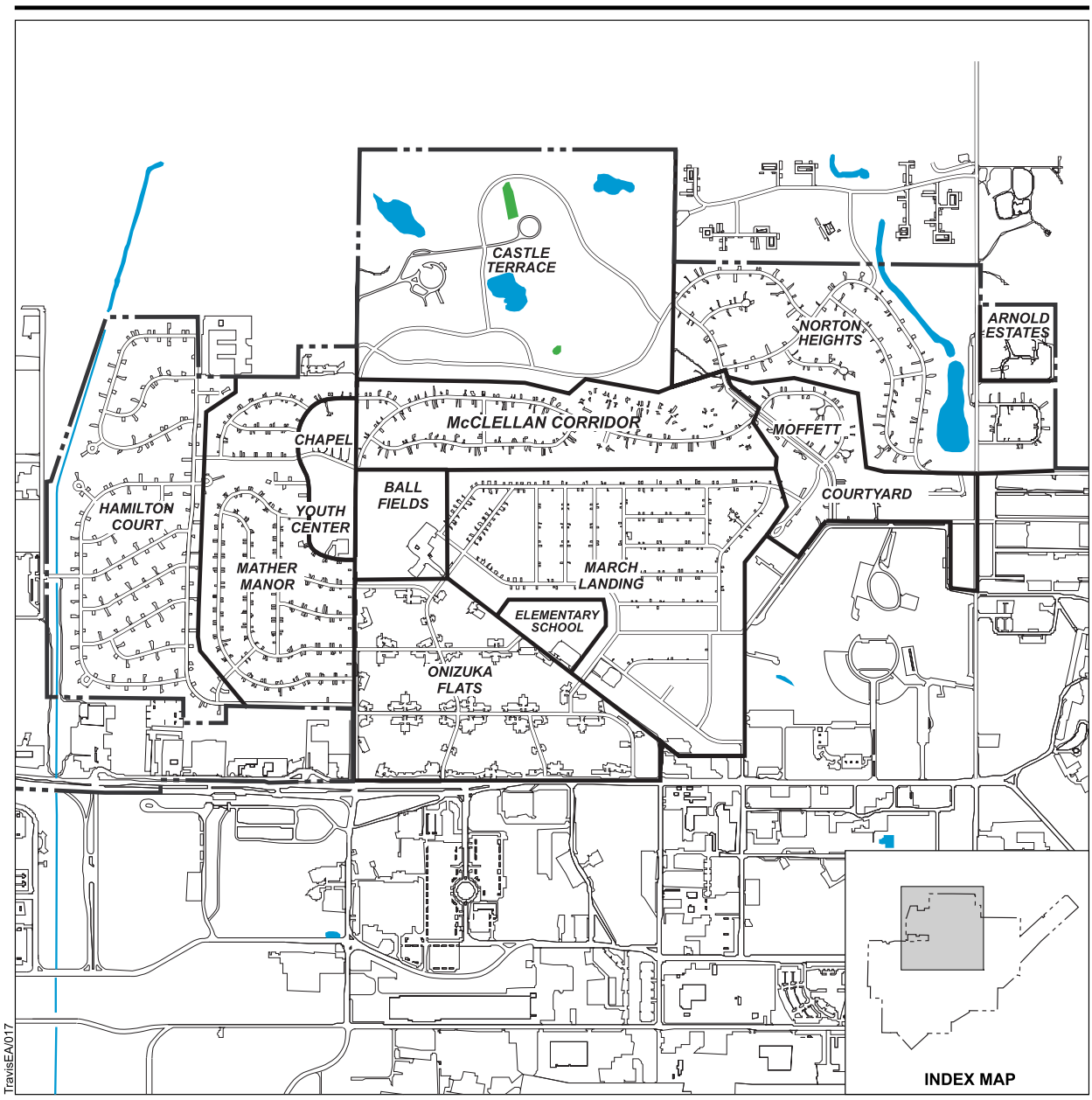
Sensitive habitats include wetlands and plant communities that are designated as unusual or of limited distribution and support important seasonal use for wildlife.

Travis AFB supports numerous wetlands and vernal pools. The National Wetlands Inventory, the U.S. Fish and Wildlife Service (USFWS), and the U.S. Department of Agriculture Soil Conservation Service have identified several wetland areas within the Castle Terrace Housing Area and along the banks of Union Creek leading to the North Gate Park duck pond. The Castle Terrace Housing Area is built around 12.94 acres of wetland and vernal pool habitat (U.S. Air Force, 1999). The North Gate Park (within the Norton Heights Housing Area) is considered a riparian area with the east branch of Union Creek passing through that area. These sensitive habitats are within the Travis AFB MFH property; however, they are excluded from the land area to be privatized.

Vernal pools are wetlands that occur in shallow depression where an underlying clay pan or bedrock prevents drainage, resulting in a seasonally ponded habitat that fills during the rainy season but becomes completely dry during the normal summer dry season. Riparian vegetation is found along the vernal swale that connects Union Creek to the North Gate Park duck pond. The vernal pool habitats that exhibit the best characteristics to support special status plants and animals are found in the area within the Castle Terrace Housing Area and along the banks of Union Creek. This area is characterized by high alkaline soils and halophytic plants. Many of the pools in this area are also hydrologically connected in the rainy season. The abundance of invertebrates in the vernal pools and in Union Creek attracts large numbers of birds, including shorebirds and waterfowl. These vernal pools are within the Travis AFB MFH area; however, they are excluded from the land area to be privatized. Figure 3-3 depicts the wetlands and vernal pools within the Travis AFB MFH property.

### 3.4.6 Cultural Resources

Cultural resources are defined as prehistoric or historic archaeological sites, buildings, structures, districts, artifacts, or other physical evidence of human activity considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. For ease of discussion, cultural resources have been divided into prehistoric and historic archaeological resources, historic buildings and structures, and traditional cultural resources (e.g., sacred or ceremonial sites).




**EXPLANATION**

- Base Boundary
- Housing Area Boundary
- Open Water
- Vernal Wetlands

0 625 1250 Feet

NORTH MAG DEG 16° 49.5'

Source: U.S. Air Force, 2002a.

**Travis AFB Sensitive Habitats**

**Figure 3-3**

Numerous laws and regulations require federal agencies to consider the effects of a Proposed Action on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the federal agency proposing the action, and prescribe the relationships among other involved agencies (e.g., the State Historic Preservation Officer [SHPO], the Advisory Council on Historic Preservation). The primary law governing the treatment of cultural resources is the National Historic Preservation Act (NHPA), which requires a federal agency to consider potential impacts on historic properties from any proposed undertaking.

Only those cultural resources determined to be significant under cultural resources legislation are subject to protection or consideration by a federal agency. Significant cultural resources, whether they be prehistoric, historic, or traditional in nature, are referred to as "historic properties."

For the purposes of this analysis, the term ROI is synonymous with the "area of potential effect" as defined under cultural resources legislation. The ROI for the analysis of cultural resources within this EA includes any areas where ground disturbance or demolition may occur.

Brief Travis AFB History. Travis AFB was originally constructed in September 1942 as a bomber base. Recognizing the site as ideal for a major transfer point for supply and personnel for the Pacific Theater operations during World War II, the War Department cancelled plans to make the facility a bomber base. On October 13, 1942, the War Department announced that the base would be assigned to the Air Transport command. On February 8, 1943, the installation was named the Fairfield-Suisun Army Air Base and was formally assigned to the Air Transport Command. The base was officially activated on May 17, 1943, and operations began on June 1, 1943 (U.S. Air Force, 2003c).

The primary mission for the new base was servicing and ferrying tactical aircraft from California to the Pacific Theater. In addition to airlifting troops and supplies, the base was used to prepare new bombers and transports for flight to the war zones. By 1945, the base had become the West Coast's largest aerial port. Construction in the post war era made the base one of the most modern installations in the Air Force. On May 1, 1949, the base was transferred to the Strategic Air Command (SAC) and was used as a major long-range reconnaissance and intercontinental bomber installation. The base was renamed Travis Air Force Base on October 20, 1950, in honor of Brigadier General Robert Falligant Travis, who was killed when the B-29 he was copiloting crashed on takeoff (U.S. Air Force, 2003c).

During the early 1950s, a drawdown of SAC forces occurred, and in 1955, the 1501st Air Transport Wing (ATW) of the Military Air Transport Service (MATS) was activated and stationed at Travis AFB along with the SAC units. By 1958, further reduction in SAC forces resulted in the return of the base to an MATS mission (U.S. Air Force, 2003c).

By 1965, Travis AFB became a primary center for air logistic support for Southeast Asia during the Vietnam conflict. In 1966, MATS was redesignated the

Military Airlift Command (MAC). In the same year, the 1501st ATW was discontinued, and the personnel and equipment were used to form the 60th Military Airlift Wing (MAW) (U.S. Air Force, 2003c).

On November 1, 1991, the 60th MAW was redesignated the 60th Airlift Wing (AW). On June 1, 1992, MAC and SAC were inactivated and the Air Mobility Command (AMC) formed from the two elements of these organizations (i.e., airlift system and tanker force). The 60th AW was designated the 60th Air Mobility Wing (AMW) in 1994, reflecting the incorporation of aerial refueling into the wing mission (U.S. Air Force, 2003c).

#### *3.4.6.1 Prehistoric and Historic Archaeological Resources.*

Travis AFB has been surveyed for prehistoric and historic archaeological resources. Ten archaeological sites have been identified on Travis AFB, including three prehistoric and seven historic sites. The three prehistoric sites are no longer extant and none of the historic sites is considered eligible for inclusion in the National Register (U.S. Air Force Base, 2003a). None of these sites is within the Travis AFB MFH property.

#### *3.4.6.2 Historic Buildings and Structures.*

Travis AFB has been surveyed for historic buildings and structures. A total of 39 World War II-era buildings remain in Travis AFB. Three of these World War II-era buildings, Buildings 8961, 8962, and 8963, are situated within the MFH property. These are former visiting officer quarters constructed in 1946 that are now officer quarters in the Moffett Courtyard Housing Area. An inventory and evaluation of World War II-era buildings conducted in 1995 concluded that none are eligible for listing on the Nation Register; the SHPO concurred with these findings. A total of 27 buildings potentially eligible for the National Register due to their association with the Cold War era (1945-1991) have been identified (U.S. Air Force, 2003a). None of these historic properties is situated within the Travis AFB MFH property.

Approximately 552 housing structures on Travis AFB are what have been termed Wherry-Capehart housing. Six of these houses (all of the Wherry-type housing built in 1951) have been completely rebuilt. The 546 Capehart-type housing units were built in 1958 and have undergone various renovations through the years to maintain quality of life for the residents (U.S. Air Force, 2003a).

The Wherry and Capehart housing programs were two of the larger and more influential military housing programs in DOD history. Wherry housing was built between the years 1949 to 1955 and Capehart housing from 1955 to 1962. These two programs provided nearly a quarter-million military family housing units across the nation. The end of World War II in 1945 brought about a housing shortage that continued into the next decade. Senator Kenneth Wherry of Nebraska introduced a bill to provide affordable housing on or near military facilities. The Wherry bill did not designate specific housing designs, therefore the Wherry homes do not have a particular architectural style (U.S. Air Force, 2003a).

The Congress passed the Capehart Housing Act in 1955 because there was an estimated deficit of 100,000 housing units when the Wherry housing was scheduled to be completed in 1957. The Capehart homes were designed to be larger than the Wherry homes, have a greater emphasis on privacy, and more duplex and single family homes were required to be built. In 1964 when the Capehart program came to an end, nearly 250,000 units of Wherry and Capehart housing had been built for military facilities (U.S. Air Force, 2003a).

The U.S. Army Environmental Center has recently completed a national-level study of Capehart and Wherry housing to determine if it should be considered and treated as historically significant. Although some Wherry housing units are found on Travis AFB, they are considered altered to such an extent as to not be representative of that housing style. Capehart housing is found in the Hamilton Court, Mather Manor, Norton Heights, McClellan Corridor, Moffett Courtyard and the Arnold Estates areas. Results of the U.S. Army study indicate that at the national level, these types of buildings would not be eligible for listing in the National Register (U.S. Army Environmental Center, no date).

#### *3.4.6.3 Traditional Cultural Resources.*

Travis AFB has contacted American Indian groups to determine if there are any known sacred or other culturally sensitive areas on Travis AFB. No areas of concern were identified on the base. Archaeological surveys have not found any evidence of culturally sensitive areas such as burial mounds and there is currently no evidence that any American Indian burial ground or sacred areas are situated on Travis AFB property that would be subject to the American Indian Religious Freedom Act or the Native American Graves Protection and Repatriation Act (U.S. Air Force, 2003a). Based on these findings, traditional cultural resources are not a concern within the Travis AFB MFH property.

### 3.4.7 Environmental Justice

Executive Order (EO) 12898, Environmental Justice, was issued by the President on February 11, 1994. Objectives of the EO, as it pertains to this EA, include development of federal agency implementation strategies, identification of low-income and minority populations potentially affected because of proposed federal actions. Accompanying EO 12898 was a Presidential Transmittal Memorandum referencing existing Federal statutes and regulations to be used in conjunction with EO 12898. One of the items in this memorandum was the use of the policies and procedures of NEPA. Specifically, the memorandum indicates that,

> Each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by the NEPA 42 U.S.C. section 4321 et. seq.

Although an environmental justice analysis is not mandated by NEPA, DOD has directed that NEPA will be used as the primary mechanism to implement the provision of the EO.

#### *3.4.7.1 Demographic Analysis.*

Although EO 12898 provides no guidelines for determination of concentrations of low-income or minority populations, the demographic analysis provides information on the approximate locations of minority and low-income populations in the area potentially affected by the proposed federal action. Potential environmental impacts from the Proposed Action and alternatives would occur on and in the vicinity of the MFH areas.

Demographic information from the U.S. Bureau of the Census was used to extract data on minority and low-income populations within Solano County. The census reports both ethnicity and household income status. Minority populations included in the census are identified as Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and other Pacific Islander, or some other race. Based on the 2000 Census if Population and Housing, Solano County had a population of 394,542 persons. Of this total, 172,155 persons (44 percent) were minority.

U.S. Census Bureau poverty status is used in this EA to define low-income status. Poverty status is reported for families with income below poverty level ($18,267 for a family of four in 2001, as reported in the Census of Population and Housing). The most recent data available on poverty status are from 1989, as reported in the 1990 Census of Population and Housing. Based on a total of 325,662 persons for whom poverty status was determined, 24,434 persons (7.5 percent) were below poverty level and, therefore, considered low income (U.S. Census Bureau, 2003).

### 3.4.8 Safety and Occupational Health

This project involves the demolition of existing military family housing units and construction of new replacement units. During the demolition and construction, dust may be emitted. There will be noise from construction equipment. Isolating the construction site with fences and barriers will alleviate the noise problem. Stabilization of bare soil and mobile equipment access areas by implementing the Storm Water Pollution Prevention Plan (SWPPP) will prevent fugitive dust emission and water erosion. The impact is not considered significant.

The housing units will be built using standard construction materials and practices. Construction workers will wear standard personnel protective equipment (PPE) as required by OSHA for this type of work. The construction area is fenced off; traffic will be rerouted and therefore not accessible to base personnel. There is a minor impact for residents making a detour from their regular driving or walking route.

All aspects of worker safety and hygiene will be addressed fully in the Health and Safety Plan (HASP) and Asbestos and Lead-Based Paint (LBP) Abatement Plans. The contractor will submit this plans for approval by the Contracting Officer before commencement of the work. The HASP and required California State Certifications (e.g., asbestos supervisor/worker, LBP supervisor/worker and pest control certifications), will be retained at the construction office for reference. Implementation of these plans will have a minimum impact to base resources other than construction oversight and monitoring.

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# 4.0 ENVIRONMENTAL CONSEQUENCES

## 4.1 INTRODUCTION

This chapter presents the results of the analysis of potential environmental effects of the MFH Revitalization Project. The Proposed Action, Alternative 1, and the No-Action Alternative are analyzed. Changes to the natural and human environments that may result from the Proposed Action and alternatives were evaluated relative to the existing environment as described in Chapter 3.0. The potential for significant environmental consequences was evaluated utilizing the context and intensity considerations as defined in CEQ regulations for implementing the procedural provisions of NEPA (40 CFR Part 1508.27).

## 4.2 COMMUNITY SETTING

### 4.2.1 Socioeconomics

#### *4.2.1.1 Proposed Action.*

The Proposed Action would produce a net decrease of 1,248 housing units on Travis AFB. This would result in an on-base population decrease and an increase in the number of military personnel and their families that live off the base. However, the majority of these personnel and their families would be expected to reside within the Travis AFB housing market area. This is the area around Travis AFB that is within a 60-minute commute of or within 20 miles of the base headquarters building. It includes most of Solano County and small areas of adjacent Napa and Yolo counties (Parsons, 2003). No significant changes in employment on the base would be expected. The employment associated with the demolition, construction, and renovation activities would represent a temporary increase in the workforce on the base; however, the construction workers are expected to come from the local area, and no permanent increase in the workforce is expected. Regional population and military payrolls within the region are not expected to change significantly. No significant impacts are anticipated.

#### *4.2.1.2 Alternative 1.*

Potential socioeconomic impacts under Alternative 1 would be similar to those described under the Proposed Action. Alternative 1 would produce a net decrease of 851 housing units on Travis AFB. This would result in an on-base population decrease (although smaller than that of the Proposed Action) and an increase in the number of military personnel and their families that live off the base. The majority of these personnel and their families would be expected to reside within the Travis AFB housing market area. No permanent changes in employment on the base would be expected. A temporary increase in the workforce during project activities would be expected; however, the construction workers are expected to come from the local area. Regional population and

military payrolls within the region are not expected to change significantly. No significant impacts are anticipated.

#### *4.2.1.3 No-Action Alternative.*

Under the No-Action Alternative, there would be no change in the number of MFH units on Travis AFB. Regional population and military payrolls are not expected to change as a result of the No-Action Alternative. No significant impacts are anticipated under the No-Action Alternative.

### 4.2.2 Land Use

The effects of the Proposed Action and alternatives on land use within the ROI are presented in this section.

#### *4.2.2.1 Proposed Action.*

Under the Proposed Action, six of the nine MFH areas (Castle Terrace, March Landing, McClellan Corridor, and most of Norton Heights, Moffett Courtyard, and Onizuka Flats) would remain residential areas. The remaining three MFH areas (Arnold Estates, Hamilton Court, Mather Manor) and a portion of the Norton Heights, Moffett Courtyard, and Onizuka Flats housing areas would become vacant land that would be available to the Air Force for future development. This would result in a change from the existing residential land use, and would be incompatible with the future land use designation as family housing for these areas in the base's general plan. However, future development in these areas would be limited to those uses that would be compatible with residential areas, such as outdoor recreation, community (e.g., banking facilities, chapels, and libraries), or administrative (e.g., offices). The existing areas of community and outdoor recreation land uses within the MFH area, such as North Gate Park, ball fields, chapel, youth center, child development center, and elementary schools, and the industrial land use areas of the water tank and water treatment plant in the Castle Terrace Housing Area would not be conveyed and no land use changes would occur in these areas under the Proposed Action. The open space areas containing ponds, vernal pools, and other wetlands within the Castle Terrace Housing Area would remain as open space. No significant impacts to land use are anticipated.

#### *4.2.2.2 Alternative 1.*

Land use impacts from Alternative 1 would be similar to those described under the Proposed Action. Under this alternative, the Mather Manor Housing Area would be redeveloped for residential purposes rather than being designated for future development. Residential use of this area is compatible with the future land use designation in the base General Plan.

No significant impacts to land use are anticipated.

#### *4.2.2.3 No-Action Alternative.*

Under the No-Action Alternative, the MFH areas would remain as they are now. No changes to existing land use would occur. No land use impacts are anticipated under the No-Action Alternative.

### 4.2.3 Aesthetics

The effects of the Proposed Action and alternatives on aesthetics within the ROI are presented in this section.

#### *4.2.3.1 Proposed Action.*

The housing areas are considered to be of medium visual sensitivity. Because the housing areas and the majority of the surrounding environment is developed and the presence of motorized vehicles is common, activities associated with the Proposed Action would not significantly degrade the aesthetic quality of the area. The long-term effect of construction of new housing units would result in a positive aesthetic effect on the MFH areas. The use of landscaping would enhance the aesthetic quality of the housing areas. Modern housing designs would be developed with the intent of creating an attractive appearance and a desirable community for residents in these areas. The Arnold Estates, Hamilton Court, and Mather Manor housing areas and a portion of the Norton Heights, Moffett Courtyard, and Onizuka Flats housing areas would become vacant land. The conversion of these areas from residential development to vacant, barren land would cause a slight decrease in the aesthetic quality of these areas; however, the decrease in aesthetic quality would not be expected to be significant and would be temporary. After these areas are redeveloped and landscaped as part of future development for recreational, administrative, and/or community uses, their aesthetic quality would be expected to become similar to their current visual environment as residential areas. No significant impacts are anticipated.

#### *4.2.3.2 Alternative 1.*

Impacts to aesthetics would be similar to those described under the Proposed Action. No significant impacts are anticipated.

#### *4.2.3.3 No-Action Alternative.*

Under the No-Action Alternative, the existing MFH areas would remain in their current condition. No changes in the current aesthetic quality of the MFH areas are anticipated under the No-Action Alternative.

### 4.2.4 Utilities

#### *4.2.4.1 Proposed Action.*

The MFH Revitalization Project would result in a decrease of 1,248 MFH units from the current 2,427 MFH units on base. Therefore, there would be a decrease in the demand on the base utility systems (water, wastewater, electricity, and

natural gas). The existing demographics (FY2005 Economic Analysis, Travis AFB) shows that military members are already living in adjacent communities off-base. Fore-shaping/restructuring by the Air Force starting in FY2007 will further reduce military personnel assigned to Travis AFB which will also reduce the number of military personnel living off-base. Consequently, usage of utilities on base and off-base will be correspondingly reduced.

**Solid Waste.** Under the Proposed Action, there would be a decrease in on-base population, and a resultant decrease in on-base solid waste generation after completion of the MFH Revitalization Project would be expected. However, building demolition and renovation activities would generate solid waste, including wood, drywall, cardboard, metals, concrete, and roofing material. Building materials would be separated and recycled to the extent possible. The types and estimated quantities of building materials expected as a result of the Proposed Action are presented in Table 4-1. Demolition and renovation debris that cannot be recycled would be disposed in an approved off-site landfill.

**Table 4-1. Estimated Construction & Demolition Debris in Tons – Proposed Action**

| Building Materials | Demolition Factor (tons per 1,000 sq ft) | Demolition Tonnage | Construction Tonnage | Total C&D Tonnage |
|---|---|---|---|---|
| Wood | 1.54 | 3,982 | 19 | 4,001 |
| Drywall | 0.12 | 300 | 12 | 312 |
| Cardboard | 0.045 | 113 | 4 | 117 |
| Metals | 0.053 | 137 | 1 | 138 |
| Concrete | 12.5 | 32,475 | - | 32,475 |
| Roofing Material | 0.9 | 2,330 | 8 | 2,338 |
| Sidewalk/roadway | 53.0[(a)] | 4,770 | - | 4,770 |
| Other | 0.265 | 680 | 8 | 688 |
| TOTAL | | 44,787 | 52 | 44,839 |

Note: Based on 1,651 MFH units being demolished totaling 2,598,306 square feet of building space.
(a) Sidewalk/roadway debris is estimated based on 53 pounds per cubic foot.
C&D = construction and demolition
sq ft = square feet

Source: Calculated from Peaks to Prairies, 2002.

Demolition of the 1,651 MFH units would create approximately 44,840 tons of solid waste (see Table 4-1). Approximately 80 percent of the material is expected to be concrete from building foundations, sidewalks, and asphalt from roadway demolition, which could be stockpiled for future use. The remaining 8,968 tons of solid waste would be drywall, wood, roofing material, metals, glass, and other building materials. Debris from construction activities is typically uncontaminated and is reused or recycled whenever possible; the remainder of the material would be taken to an approved off-site landfill. Debris from demolition activities is often contaminated with nails, rebar, or other building materials that make recycling more difficult. It is expected that over 50 percent of the building materials would be recycled. The wood material may be chipped and reused as mulch. Sheet metal, structural steel, and glass would be sold as scrap. Miscellaneous building materials such as electrical wire, outlet boxes, metallic tubing, light fixtures, pipe,

plumbing fixtures, and heating systems would be salvaged and reused or sold as scrap. Even though a recycling program would be used, it would be impractical to accomplish complete source separation, and approximately 50 percent, or 4,484 tons, of the building materials would require disposal in a landfill. Because the Potrero Hills Landfill has a permitted daily through put of 4,330 tons per day, disposal of the 4,484 tons of demolition debris over the duration that construction, demolition, and renovation activities would occur (i.e., 5 years) is not expected to significantly affect the service life of the landfill.

Buildings with the potential to contain ACM and/or lead-based paint would be sampled prior to demolition activities to ensure proper disposal and abatement of these materials. The construction contractor would be required to dispose of construction debris in accordance with applicable federal, state, and local regulations. No significant impacts are anticipated.

#### *4.2.4.2 Alternative 1.*

Impacts to the utility systems, including water, wastewater, electricity, natural gas, and solid waste, would be similar to those described under the Proposed Action.

#### *4.2.4.3 No-Action Alternative.*

No changes to utilities usage or solid waste generation are expected under the No-Action Alternative; therefore, no significant impacts are anticipated.

## 4.3 HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

This section provides a discussion of the hazardous materials, hazardous waste, ERP/AOC sites, storage tanks, pesticide usage, ACM, lead-based paint, and PCBs associated with the Proposed Action and alternatives.

### 4.3.1 Hazardous Materials Management

#### *4.3.1.1 Proposed Action.*

During demolition, construction, and renovation activities, small amounts of hazardous materials are expected to be utilized by the development contractor; therefore, the potential for spills would exist. Hazardous materials likely to be utilized during project activities could include adhesives, motor fuels, paints, thinners, solvents, and petroleum, oil, and lubricants. Storage, handling, and transportation of hazardous materials would be conducted in accordance with applicable regulations and established procedures. Any spills or releases of hazardous materials would be cleaned up by the contractor.

Hazardous materials utilized and stored at the housing maintenance facility would be stored and used in accordance with applicable regulations. Occupants of the family housing areas would primarily use paints and household cleaning products. Because hazardous materials would be managed in accordance with applicable regulations, no significant impacts are anticipated.

#### *4.3.1.2 Alternative 1.*

Management of hazardous materials would be similar to that described under the Proposed Action. Because hazardous materials would be managed in accordance with applicable regulations, no significant impacts are anticipated.

#### *4.3.1.3 No-Action Alternative.*

Under the No-Action Alternative, small quantities of hazardous materials would continue to be stored and utilized by residents in the housing areas. Management of hazardous materials at the housing maintenance facility would continue in accordance with applicable regulations. No significant impacts are anticipated.

### 4.3.2 Hazardous Waste Management

#### *4.3.2.1 Proposed Action.*

Small quantities of hazardous waste would be generated during demolition, construction, and renovation activities. The development contractor would be responsible for following applicable regulations for management of any hazardous waste generated. Any spills or releases of fuel or oil from construction equipment would be cleaned up by the contractor. The contractor would be responsible for the off-site disposal of any hazardous waste (including renovation and demolition debris) generated on the property in accordance with applicable regulations. Minimal quantities of hazardous waste generated by housing residents are exempt from storage or disposal regulations and reporting requirements. Because hazardous waste would be managed in accordance with applicable regulations, no significant impacts are anticipated.

#### *4.3.2.2 Alternative 1.*

Management of hazardous waste would be similar to that described under the Proposed Action. Because hazardous waste would be managed in accordance with applicable regulations, no significant impacts are anticipated.

#### *4.3.2.3 No-Action Alternative.*

Under the No-Action Alternative, small quantities of household hazardous waste (not subject to regulations) would continue to be generated by housing residents. Management of hazardous wastes generated during housing maintenance activities would continue in accordance with applicable regulations. No significant impacts are anticipated.

### 4.3.3 Storage Tanks

#### *4.3.3.1 Proposed Action.*

Under the Proposed Action, the AST associated with a back-up generator at Building 8499 (water pump station) would continue to be used. This AST would

continue to be managed in accordance with applicable regulations and would remain in the Travis AFB Spill Prevention, Control, and Countermeasures Plan which establishes responsibilities, requirements, and contingency plans in the event a release occurs. Management of this AST in accordance with applicable regulations would minimize the potential for impacts; therefore, no significant impacts are anticipated.

#### *4.3.3.2 Alternative 1.*

Management of storage tanks would be the same as those described under the Proposed Action. No significant impacts are anticipated.

#### *4.3.3.3 No-Action Alternative.*

Under the No-Action Alternative, the AST at Building 8499 would continue to be utilized for the back-up generator at the water pump station. Management of the AST would continue to be the responsibility of the Air Force. Proper management of this tank would minimize the potential for impacts. No significant impacts are anticipated.

### 4.3.4 Pesticide Usage

#### *4.3.4.1 Proposed Action.*

Under the Proposed Action there would be a reduction in pesticide usage at the Travis AFB housing areas due to the reduction in the number of homes and the undeveloped areas being left for future base development. Pesticide application practices and types of pesticides applied are not expected to change. Pesticide application would be conducted in accordance with applicable laws and label instructions to minimize impacts.

It is likely that chlordane was applied within the MFH areas (with the exception of the recently constructed Castle Terrace Housing Area). Standard procedures for chlordane treatment of buildings entailed direct application of chlordane to the soils surrounding building foundations. Because chlordane is a persistent chemical, it may still be present in the soils in the MFH areas. Testing for the presence of chlordane has not been conducted; therefore, the presence of chlordane in the soils and its concentrations, if present, are not known. The Proposed Action would involve disturbance of the soils in the MFH areas. If chlordane is present in disturbed soils, there is a potential for construction workers and residents to be exposed to chlordane through contaminated soil and dust.

The development contractor would sample soils in the MFH areas for the presence of chlordane prior to disturbing the soil. If the results of the sampling indicate that chlordane is present at concentrations that exceed U.S. EPA Region IX preliminary remediation goals (PRGs) for soils in residential areas, the development contractor would be required to prepare a health and safety plan in accordance with OSHA requirements that would address potential hazards to workers and residents from contaminated soil during demolition and construction

activities. If soils where pesticides are detected are to be excavated, the contractor/developer would be responsible for conducting any additional sampling and health screening to determine levels of worker safety, potential exposure levels of excavated soils retained on site, and to properly characterize and manage the soil in accordance with federal and state regulations. After construction activities are completed, the contractor/developer would retest soils in areas not covered by paved surfaces or building foundations for the presence of pesticides. Pesticide concentrations would be required to be less than their respective residential PRGs. It is not anticipated that soils would be removed off site as part of the MFH revitalization activities; however, should any soils containing pesticide concentrations greater than RCRA hazardous waste levels need to be disposed of off site, they would be handled and treated as hazardous waste. No significant impacts are anticipated.

#### *4.3.4.2 Alternative 1.*

Potential impacts from pesticide usage would be the same as those described under the Proposed Action. No significant impacts are anticipated.

#### *4.3.4.3 No-Action Alternative.*

Under the No-Action Alternative, pesticides would continue to be applied in the MFH areas, as necessary. Potential chlordane-contaminated soils would not be disturbed by activities associated with the demolition and construction of MFH units. No changes in pesticides usage would occur. No significant impacts are anticipated.

### 4.3.5 Polychlorinated Biphenyls.

#### *4.3.5.1 Proposed Action.*

Transformers containing oil with concentrations of PCBs less than 50 ppm and light ballasts of older light fixtures containing PCBs may be present in the MFH areas. Travis AFB is currently compiling an inventory of transformers and associated PCB sample results; a copy of this inventory (for transformers within the housing areas) will be provided to the development contractor. Demolition or renovation activities could result in the removal and disposal of PCB-containing light ballasts. The development contractor would be notified of the potential presence of PCBs in the transformers and the light ballasts in the MFH areas and would be responsible for managing any items containing PCBs, including maintenance, removal, and disposal, in accordance with applicable regulations. Management of PCBs in accordance with applicable regulations would preclude any significant impacts.

#### *4.3.5.2 Alternative 1.*

Potential impacts from PCBs would be the same as those discussed under the Proposed Action. No significant impacts are anticipated.

#### *4.3.5.3 No-Action Alternative.*

Under the No-Action Alternative, the Air Force would continue to be responsible for the management of PCBs within the housing areas. The Air Force would continue to manage PCBs in accordance with current Air Force policy and applicable regulations. Appropriate management of PCBs in accordance with applicable regulations would preclude any significant impacts.

### 4.3.6 Asbestos-Containing Material.

#### *4.3.6.1 Proposed Action.*

Under the Proposed Action, ACM would likely be encountered during demolition and renovation activities associated with project activities. In addition to ACM being encountered in housing units, ACM could be encountered within some utility systems during any work performed on piping within these systems. Demolition and renovation activities would be subject to applicable federal, state, and local regulations to minimize the potential risk to human health and the environment. ACM waste generated as a result of demolition or renovation activities would be disposed of in accordance with applicable regulations. Management of ACM and ACM waste in accordance with applicable regulations would preclude any significant impacts. The development contractor would be responsible for ensuring the proper management of asbestos and maintaining continued regulatory compliance. Additionally, the development contractor would be advised, to the extent known, of the type, condition, and amount of ACM present within housing units conveyed. No significant impacts are anticipated.

#### *4.3.6.2 Alternative 1.*

Potential impacts from ACM would be the same as those described under the Proposed Action. No significant impacts are anticipated.

#### *4.3.6.3 No-Action Alternative.*

Under the No-Action Alternative, the Air Force would continue to be responsible for the management of structures containing ACM within the MFH areas. The Air Force would continue to manage ACM in accordance with current Air Force policy and applicable regulations. Management of ACM and ACM waste in accordance with applicable regulations would preclude any significant impacts.

### 4.3.7 Lead-Based Paint

#### *4.3.7.1 Proposed Action.*

Under the Proposed Action, lead-based paint would likely be encountered during demolition, excavation and renovation activities associated with project activities. Demolition, excavation and renovation activities would be conducted in accordance with applicable federal, state, and local regulations to minimize potential risks to human health and the environment. Although lead-based paint is not considered a hazardous waste, materials containing lead-based paint

would have to be disposed of at a facility that will accept solid waste containing lead-based paint. Management of lead-based paint and lead-based paint waste in accordance with applicable regulations would preclude any significant impacts. The development contractor would be responsible for ensuring the proper management of lead-based paint from the structures and excavated soil. If lead levels exceed 400 parts per million in the proposed yard or play areas of the housing units, the housing contractor shall remove lead-contaminated soil and disposed of it properly at a duly licensed facility. The development contractor shall maintain continued regulatory compliance. No significant impacts are anticipated.

#### *4.3.7.2 Alternative 1.*

Potential impacts from lead-based paint would be the same as those discussed under the Proposed Action. No significant impacts are anticipated.

#### *4.3.7.3 No-Action Alternative.*

Under the No-Action Alternative, the Air Force would continue to be responsible for the management of lead-based paint within the housing areas. The Air Force would continue to manage lead-based paint in accordance with current Air Force policy and applicable regulations. Appropriate management of lead-based paint and lead-based paint waste in accordance with applicable regulations would preclude any significant impacts.

## 4.4 NATURAL ENVIRONMENT

### 4.4.1 Geology

#### *4.4.1.1 Proposed Action.*

The Proposed Action is unlikely to affect the local geology of the Travis AFB area. No sedimentation patterns would be significantly altered, and no structural movements or changes in seismicity would result. No significant impacts are anticipated.

#### *4.4.1.2 Alternative 1.*

Potential impacts would be similar to those described under the Proposed Action. No significant impacts are anticipated.

#### *4.4.1.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, or construction would occur in the housing areas. Therefore, no significant impacts to geology are anticipated.

### 4.4.2 Soils

#### *4.4.2.1 Proposed Action.*

Impacts to soil within Travis AFB from the Proposed Action would be minimal and would result primarily from ground disturbance associated with the demolition of existing structures and the construction of new buildings or infrastructure. These activities could alter soil profiles and local topography, as grading is required for both the demolition and construction activities.

The construction contractor would be required to obtain a Construction Site Storm Water NPDES permit before initiating any construction activity. The contractor would also be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) for the construction activity. The Construction Site Storm Water NPDES permit, together with the required SWPPP, would outline strict construction site management practices designed to protect the quality of the surface water, groundwater, and natural environment through which they flow. The SWPPP would identify specific areas of existing and potential soil erosion, location of structural measures for sediment control, and management practices and controls. Use of these management practices and controls would reduce the potential for erosion of disturbed soils.

Under the Proposed Action, demolition and construction activities would disturb approximately 380 acres within the Travis AFB housing areas.

Short-term erosion impacts could occur during ground-disturbing activities, such as demolition of existing facilities, removal of vegetative cover, or grading. Potential impacts would be minimized through proper management practices defined within the approved SWPPP. Standard construction practices that could be implemented to minimize soil erosion include:

- Use of protective cover, such as mulch, straw, plastic netting, or a combination of these protective coverings
- Implementation of site grading procedures to limit the time soils are exposed prior to being covered by impermeable surfaces or vegetation
- Implementation of storm water diversions to reduce water flow through exposed sites
- Maintenance of a buffer strip of vegetation around a pond or drainage, where possible, to filter sediments
- Retention of as many trees and shrubs as possible adjacent to exposed ground areas for use as natural windbreaks.

Once disturbed areas have been covered with pavement, buildings, or vegetation, their susceptibility to erosion would be significantly reduced. Upon completion of the construction phase, maintenance of a vegetative cover or covering

undeveloped areas with gravel would serve as effective, long-term erosion control strategies for areas not covered with impervious surfaces. Soils underlying facilities and pavements are not subject to erosion.

Because management practices required by the developer's Construction Site Storm Water NPDES permit and SWPPP would be implemented during demolition and construction activities, no significant impacts to soils are anticipated.

#### *4.4.2.2 Alternative 1.*

Potential impacts would be similar to those described under the Proposed Action except that approximately 10 additional acres (total of 390 acres) would be disturbed during construction activities as a result of more units being constructed. Because standard construction practices, as discussed under the Proposed Action, would be implemented, no significant impacts to soils are anticipated.

#### *4.4.2.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, construction, or renovation activities would occur in the housing areas. Therefore, no significant impacts to soils are anticipated.

### 4.4.3 Surface Water

#### *4.4.3.1 Proposed Action.*

Construction of fewer new housing units than currently exist at Travis AFB would decrease the amount of impervious surfaces and result in a slight decrease in storm water runoff. The construction of replacement housing units in currently developed MFH areas is not expected to substantially alter the surface runoff from these areas.

As discussed in Section 4.4.1, Geology, and 4.4.2, Soils, the proposed activities would be subject to Construction Site Storm Water NPDES permit requirements for storm water discharge during the construction period. Issuance of a Construction Site Storm Water NPDES permit is contingent on the development of an SWPPP by the permitee, which would then be subject to approval by the regional water authority. SWPPP requirements under the Construction Site Storm Water NPDES permit include an outline of the storm water drainage system for each discharge point, actual and potential pollutant contact, and surface water locations. The SWPPP would also incorporate storm water management controls and preventive maintenance for buildings. Compliance with the Construction Site Storm Water NPDES permit and the SWPPP would minimize potential impacts to surface water quantity and quality.

Because incidents of flooding are known to occur within the Onizuka Flats MFH area, the surface water drainage is known to be inadequate. Under the Proposed Action, these incidents of flooding would no longer occur because proper surface

water drainage structures and/or appropriate grading would be incorporated into the design of any new development within this area to prevent incidents of flooding. Therefore, the existing deficiency in surface water drainage in the Onizuka Flats MFH area would no longer be of concern. No significant impacts to surface water are anticipated.

#### *4.4.3.2 Alternative 1.*

Potential impacts would be similar to those described under the Proposed Action. No significant impacts to surface water are anticipated.

#### *4.4.3.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition or construction activities would occur in the MFH areas. Therefore, no significant impacts to surface water are anticipated.

### 4.4.4 Groundwater

#### *4.4.4.1 Proposed Action.*

Under the Proposed Action, there is no potential for direct contamination of groundwater. There are no major sources of potential contamination within the MFH areas. Activities associated with the demolition, construction, and renovation activities would not introduce any contaminants with the potential to affect groundwater. No significant impacts to groundwater are anticipated.

#### *4.4.4.2 Alternative 1.*

Potential impacts would be similar to those described under the Proposed Action. No significant impacts to groundwater are anticipated.

#### *4.4.4.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, construction, or renovation activities would occur in the housing areas. Therefore, no significant impacts to groundwater are anticipated.

### 4.4.5 Air Quality

#### *4.4.5.1 Proposed Action.*

Activities associated with the Proposed Action, including demolition, construction, and renovation would not result in significant air quality impacts.

Demolition activities associated with the Proposed Action would result in short-term impacts to air quality from emissions generated by demolition of 1,651 existing MFH units. Following demolition activities, construction of more than 400 MFH units would occur. Impacts are expected to be primarily from fugitive dust associated with building demolition, clearing and grading of the land for new

building construction, and construction vehicles traveling on unpaved surfaces at the site. Dust emissions would also be generated by removal and replacement of roads and utilities, and through construction of new vehicle parking and common areas, driveways, sidewalks, and recreational areas.

Emissions of $PM_{10}$ generated by building demolition and construction, grading, and landscaping were calculated using emission factors and methodology from the U.S. EPA's AP-42 document (U.S. Environmental Protection Agency, 1995) and the URBEMIS model (URBEMIS7G for Windows, Version 5.1.0, 2000), which uses emission factors listed in the South Coast Air Quality Management District's (SCAQMD's) California Environmental Quality Act (CEQA) Air Quality Handbook. These emission factors are representative for the Solano County area. For mobile construction equipment, the Sacramento Metropolitan Air Quality Management District (SMAQMD) Air Quality Thresholds of Significance (1994) was used to calculate emissions of CO, $NO_x$, and VOCs. Emissions of CO, $NO_x$, and VOCs would be produced in exhaust from both on-site construction equipment and workers' vehicles traveling to and from the work site.

In order to calculate the potential annual air emissions from the Proposed Action, a schedule for demolition and construction was developed. This schedule, presented in Table 4-2, was developed for purposes of analysis only and does not represent an actual construction timetable. Table 4-3 presents the total construction emissions calculated for each year of the Proposed Action.

**Table 4-2. Assumed Project Demolition and Construction Schedule (Proposed Action)**

| Year(s) | MFH Units Demolished per Year | MFH Units Constructed per Year | Acres Disturbed |
|---|---|---|---|
| 2006 | 300 | 0 | 40 |
| 2007 | 300 | 123 | 100 |
| 2008 | 350 | 140 | 80 |
| 2009 | 350 | 140 | 80 |
| 2010 | 351 | 0 | 80 |
| Total | 1,651 | 403 | 380 |

MFH = military family housing

**Table 4-3. Proposed Action Construction Emissions for Criteria Pollutants (tons per year)**

| Year | $PM_{10}$ | CO | $NO_x$ | VOC | $SO_2$ |
|---|---|---|---|---|---|
| 2006 | 75.3 | neg. | 7.3 | 1.1 | neg. |
| 2007 | 188.9 | 7.3 | 51.9 | 5.1 | neg. |
| 2008 | 152.3 | 8.3 | 52.9 | 4.9 | neg. |
| 2009 | 152.3 | 8.3 | 52.9 | 4.9 | neg. |
| 2010 | 149.6 | neg. | 14.6 | 2.3 | neg. |
| De minimis threshold | NA | NA | 100 | 100 | NA |
| 10-percent of BAAQMD Inventory | 7,163 | 90,163 | 22,695 | 16,665 | 2,337 |

Notes: (a) $PM_{10}$ emissions include combustion and fugitive emissions.
CO = carbon monoxide
NA = not applicable
neg. = negligible
$NO_x$ = nitrogen oxides
$PM_{10}$ = particulate matter equal to or less than 10 microns in diameter
$SO_2$ = sulfur dioxide
VOC = volatile organic compound

The emissions for the Proposed Action shown in Table 4-3 assume use of standard construction mitigation practices, such as watering exposed surfaces twice per day or frequently enough to keep the surface moist at all times, and watering haul roads three times per day to reduce dust and particulate emissions. According to the CEQA Handbook, regular watering of construction and demolition areas decreases $PM_{10}$ emissions by up to 75 percent. Proper vehicle maintenance is also assumed, which would reduce emissions of $NO_x$, $PM_{10}$, and VOCs by 5 percent. Construction emissions would cause an elevated, short-term increase in emissions at receptors close to the construction areas. However, the Federal Register (40 CFR Part 70) considers fugitive (associated with construction activities) and mobile sources exempt from a facility's emissions inventory.

The increase in emissions from the Proposed Action is considered minimal when compared to the total emissions for the Bay Area Air Quality Management District (BAAQMD) (see Table 3-4). The emissions associated with the Proposed Action would increase air basin emissions by less than 3 percent annually and would not hinder maintenance of the NAAQS within the ROI. Based on these findings, no significant impacts to air quality would occur from construction or demolition activities associated with the Proposed Action.

Because Travis AFB is in a nonattainment area of the NAAQS for ozone, an air conformity applicability analysis was conducted for the Proposed Action. Based on the moderate nonattainment status for ozone, the threshold for significant air pollutants is 100 tons/year for each of the ozone precursors NOx and VOCs. As shown in Table 4-3, emissions generated by the Proposed Action would not exceed these thresholds in any year. These emissions also do not exceed 10 percent of the BAAQMD air emission inventory for these pollutants and therefore would not be regionally significant. Because these emissions would be de minimis and would not be regionally significant, a conformity determination is not required.

#### *4.4.5.2 Alternative 1.*

Impacts to air quality would be similar to those described under the Proposed Action except that additional air emissions would be produced by construction of 400 additional units.

In order to calculate the potential annual air emissions from Alternative 1, a schedule for demolition and construction was developed. This schedule, presented in Table 4-4, was developed for purposes of analysis only and does not

**Table 4-4. Assumed Project Demolition and Construction Schedule (Alternative 1)**

| Year(s) | MFH Units Demolished per Year | MFH Units Constructed per Year | Acres Disturbed |
|---|---|---|---|
| 2006 | 300 | 0 | 40 |
| 2007 | 300 | 170 | 100 |
| 2008 | 350 | 240 | 80 |
| 2009 | 350 | 240 | 80 |
| 2010 | 351 | 150 | 80 |
| Total | 1,651 | 800 | 380 |

MFH = military family housing

represent an actual construction timetable. Table 4-5 presents the total construction emissions calculated for each year of Alternative 1.

**Table 4-5. Alternative 1 Construction Emissions for Criteria Pollutants (tons per year)**

| Year | $PM_{10}$ | CO | $NO_x$ | VOC | $SO_2$ |
|---|---|---|---|---|---|
| 2006 | 75.3 | neg. | 7.3 | 1.1 | neg. |
| 2007 | 189.8 | 10.1 | 64.8 | 6.0 | neg. |
| 2008 | 154.3 | 14.3 | 80.3 | 6.7 | neg. |
| 2009 | 154.3 | 14.3 | 80.3 | 6.7 | neg. |
| 2010 | 152.5 | neg. | 55.6 | 5.1 | neg. |
| De minimis threshold | NA | NA | 100 | 100 | NA |
| 10-percent of BAAQMD Inventory | 7,163 | 90,163 | 22,695 | 16,665 | 2,337 |

Notes: (a) $PM_{10}$ emissions include combustion and fugitive emissions.
CO = carbon monoxide
NA = not applicable
neg. = negligible
$NO_x$ = nitrogen oxides
$PM_{10}$ = particulate matter equal to or less than 10 microns in diameter
$SO_2$ = sulfur dioxide
VOC = volatile organic compound

The emissions for Alternative 1 shown in Table 4-5 assume use of standard construction mitigation practices, such as watering exposed surfaces twice per day or frequently enough to keep the surface moist at all times, and watering haul roads three times per day to reduce dust and particulate emissions.

The increase in emissions from Alternative 1 is considered minimal when compared to the total emissions for the BAAQMD (see Table 3-4). The emissions associated with Alternative 1 would increase air basin emissions by less than 3 percent annually and would not hinder maintenance of the NAAQS within the ROI. Based on these findings, no significant impacts to air quality would occur from construction or demolition activities associated with Alternative 1.

#### *4.4.5.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, construction, or construction activities associated with the MFH Revitalization Project would occur on Travis AFB. No significant impacts to air quality are anticipated.

### 4.4.6 Noise

#### *4.4.6.1 Proposed Action.*

The southern and eastern portion of the Travis AFB MFH property (all of Arnold Estates, and Moffett Courtyard and portions of Norton Heights, March Landing, McClellan Corridor, Onizuka Flats, and Mather Manor) is situated above the 60 dB noise contour zone. Residential uses are not considered a compatible land use within this noise level unless measures to achieve outdoor to indoor NLR are incorporated into building construction.

Under the Proposed Action, the MFH units within the Norton Heights, Moffett Courtyard, and Onizuka Flats housing areas would be demolished and reconstructed with appropriate NLR features to achieve an outdoor to indoor NLR of 20 to 25 dB; therefore, these residential areas would be compatible with their location above the 60 dB noise contour. The housing units within the March Landing and McClellan Corridor housing areas have been recently constructed (between 1997 and 2004) and incorporate features to achieve an outdoor to indoor NLR of 20 to 25 dB; therefore, these residential area are compatible with the above 60 dB noise contour. Because normal construction can be expected to provide an NLR of 20 dB, the requirement would be to achieve an NLR of 5 dB over standard construction. However, use of NLR would not eliminate any outdoor noise problems.

Temporary impacts from construction noise could occur during renovations and construction within the housing areas. Noise generated by construction equipment could produce localized noise events of 100 dBA or higher at the construction site, with noise levels decreasing with distance from the site. According to OSHA, a recent study of construction noise found noise levels ranging from 93 dBA to 107 dBA at construction sites. Typical noise levels generated by construction tools range from 65 dBA to 110 dBA. A heavy truck would typically create a noise level of approximately 90 dBA at a distance of 50 feet, and a “backup” alarm on a truck could range from 90 to 95 dBA. These noise levels are not comparable to the noise levels discussed for aircraft noise. Within this document, aircraft noise has been discussed in terms of an average sound level that evaluates the total daily community noise environment, while the construction noise is discussed in terms of the noise level of the equipment while in operation or the activity at a certain distance. As these noises are temporary, and only affect areas close to the construction area, they are not averaged as part of the DNL.

Enforcement of OSHA guidelines for hearing protection for workers on the construction site would be the responsibility of the construction contractor. Noise from construction activities would decrease with distance through divergence, atmospheric absorption, shielding by intervening structures, and absorption and shielding by ground cover. Signs warning residents of high noise levels would be posted at the construction site by the construction contractor, if construction noise levels warrant this measure. While noise may be a temporary source of annoyance for residents, it would not be at levels that would require hearing protection measures.

Noise generated from proposed demolition, construction, and renovation activities would be intermittent and short term, and would primarily occur at the construction site. Once development activities are completed, proposed activities (i.e., residential) are not expected to generate a substantial amount of noise. Therefore, no significant impacts are anticipated.

#### *4.4.6.2 Alternative 1.*

Potential noise impacts under Alternative 1 would be similar to those described under the Proposed Action. No significant impacts are anticipated.

#### *4.4.6.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, construction, or renovation would occur in the MFH areas. No changes to the noise environment would occur. No impacts from noise are anticipated under the No-Action Alternative.

### 4.4.7 Biological Resources

#### *4.4.7.1 Proposed Action*

**Vegetation.** Vegetation would be disturbed during demolition and construction activities associated with the Proposed Action. Within the MFH areas, the majority of the vegetation consists of landscaped areas containing nonnative grasses, ornamental shrubs, and shade trees associated with residential development. Impacts to such highly disturbed, human-created habitats are considered to be insignificant. Existing landscaping would be retained during demolition and construction activities to the extent possible, and the MFH areas would be landscaped upon completion of construction activities. Demolition and construction activities would not occur within the Castle Terrace Housing Area where vernal pool habitat is present. Potential impacts to the vernal pool habitat are discussed in more detail below under Sensitive Habitats. No significant impacts to vegetation are anticipated.

**Wildlife.** Under the Proposed Action, demolition, construction, and renovation activities within the MFH areas could temporarily affect some individual wildlife species. However, because most of the land associated with the housing areas has been developed, these areas and adjacent areas lack suitable wildlife habitat. Most of the species known to inhabit the MFH areas are common and/or disturbance tolerant. Potential impacts to wildlife include displacement of individuals to adjacent areas and direct mortality to burrowing species (e.g., mice, rats, and lizards) or individuals that are less mobile. These impacts to the common wildlife species are not expected to be significant.

**Threatened and Endangered Species.** The Contra Costa goldfields (federally endangered), vernal pool fairy shrimp (federally threatened), California tiger salamander (federally proposed threatened), and alkali milk-vetch and San Joaquin spearscale (federal species-of-concern) are found in the Castle Terrace Housing Area where vernal pools are present. Demolition and construction activities would not occur within the Castle Terrace Housing Area where vernal pool and other aquatic habitats are present. The base would consult with the USFWS to ensure no impacts would occur in these areas. No significant impacts are anticipated.

**Sensitive Habitat.** The only sensitive habitat within the MFH areas that could be affected by the Proposed Action is the vernal pool habitat situated adjacent to the Castle Terrace Housing Area. Demolition and construction activities would not occur within the Castle Terrace Housing Area. The base would consult with the USFWS to ensure no impacts would occur in these areas. No significant impacts are anticipated.

#### *4.4.7.2 Alternative 1*

**Vegetation.** Potential impacts to vegetation would be similar to those described under the Proposed Action. No significant impacts are anticipated.

**Wildlife.** Potential impacts to wildlife would be similar to those described under the Proposed Action. No significant impacts are anticipated.

**Threatened and Endangered Species.** Potential impacts to threatened and endangered species would be similar to those described under the Proposed Action. No significant impacts anticipated.

**Sensitive Habitat.** Potential impacts to sensitive habitats would be similar to those described under the Proposed Action. No significant impacts anticipated.

#### *4.4.7.3 No-Action Alternative*

**Vegetation.** Under the No-Action Alternative, no demolition, construction, or renovation activities would occur in the MFH areas. No changes to vegetation would occur. No significant impacts are anticipated.

**Wildlife.** Under the No-Action Alternative, the displacement of local wildlife to adjacent areas and direct mortality to burrowing species (e.g., mice, rats, and lizards) or individuals that are less mobile would not occur. No significant impacts are anticipated.

**Threatened and Endangered Species.** Under the No-Action Alternative, no demolition, construction, or renovation activities would occur in the MFH areas. No changes to sensitive habitats where threatened and endangered spies are present would occur. No significant impacts are anticipated.

**Sensitive Habitat.** Under the No-Action Alternative, no demolition, construction, or renovation activities would occur in the MFH areas. No changes to sensitive habitats would occur. No significant impacts are anticipated.

### 4.4.8 Cultural Resources

#### *4.4.8.1 Proposed Action*

**Prehistoric and Historic Archaeological Resources.** There are no prehistoric or historic archaeological properties within the MFH areas affected by project activities, and there is little likelihood for them to occur. No prehistoric or historic archaeological resources are expected to be affected under the Proposed Action.

In the event that archaeological resources are unexpectedly uncovered during the course of demolition or construction activities, the Travis AFB Cultural Resources Manager would be notified and appropriate actions would be taken in accordance with the procedures outlined in the Travis Air Force Base Integrated Cultural

Resources Management Plan (U.S. Air Force, 2003a). No significant impacts are anticipated.

**Historic Buildings and Structures.** There are no historic buildings or structures within the Travis AFB MFH areas; therefore no historic buildings or structures are expected to be affected under the Proposed Action. No significant impacts are anticipated.

**Traditional Resources.** No traditional cultural resources, sacred areas, or traditional use areas have been identified within the Travis AFB MFH areas. The base continues to work with Native American groups to further identify these resources. Because traditional cultural resources have not been identified within the MFH areas, no significant impacts are anticipated.

#### *4.4.8.2 Alternative 1*

**Prehistoric and Historic Archaeological Resources.** Potential impacts to prehistoric and historic archaeological resources would be the same as those described under the Proposed Action.

**Historic Buildings and Structures.** Potential impacts to historic buildings and structures would be the same as those described under the Proposed Action.

**Traditional Resources.** Potential impacts to traditional resources would be the same as those described under the Proposed Action.

#### *4.4.8.3 No-Action Alternative.*

Under the No-Action Alternative, no demolition, construction, or renovation activities associated with the MFH Revitalization Project would occur on Travis AFB. Cultural resources would continue to be managed in accordance with the Travis AFB Integrated Cultural Resources Management Plan; no impacts are anticipated.

### 4.4.9 Environmental Justice

Environmental justice impacts could occur if minority and/or low-income communities are subjected to disproportionately high and adverse environmental impacts. Based upon the analysis conducted for this EA, it was determined that activities associated with the Proposed Action and alternatives would not have a significant impact on any of the resources analyzed in this EA (hazardous materials management, hazardous waste management, storage tanks, pesticide usage, PCBs, asbestos, lead-based paint, geology and soils, water resources, air quality, noise, biological resources, and cultural resources). Therefore, no disproportionately high and adverse impacts to low-income and minority populations would be expected.

## 4.5 COMPATIBILITY OF THE PROPOSED ACTION WITH OBJECTIVES OF FEDERAL, STATE, REGIONAL, AND LOCAL LAND USE PLANS AND POLICIES

The Proposed Action and alternatives promote the Air Force's intention to improve MFH at Travis AFB. The Proposed Action and alternatives would not adversely affect federal, state, regional, or local land use plans and policies.

## 4.6 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

The Proposed Action and alternatives would not affect the long-term productivity of the environment because no significant environmental impacts are anticipated. Standard construction practices identified in this EA would be implemented, and natural resources would not be depleted.

## 4.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The Proposed Action would result in a net decrease of 1,248 housing units on Travis AFB. However, the HRMA prepared for Travis AFB has identified a requirement of only 1,179 units resulting in this decrease. The analysis provided in the HRMA indicates that the removal of these housing units will not adversely affect the housing availability for Travis AFB personnel or the local community. The only other irreversible or irretrievable commitment of resources would be for labor, fuel, and construction materials.

## 4.8 CUMULATIVE ENVIRONMENTAL CONSEQUENCES

Cumulative impacts result from "the incremental impact of actions when added to other past, present, and reasonably foreseeable future actions, regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (Council on Environmental Quality, 1978).

Residential, commercial, and industrial development and population growth would occur in Solano County and the vicinity of Travis AFB, and various MILCON projects may also occur on Travis AFB during the 5-year time frame for the MFH Revitalization Project. Impacts from other development projects and population growth in the region in conjunction with the impacts from the MFH Revitalization Project present the potential for cumulative impacts. With the implementation of standard construction practices identified in this EA, no significant impacts would occur from the MFH Revitalization Project. However for some resources, the impact of the MFH Revitalization Project when combined with other projects may be cumulatively significant. For other resource areas, either no impacts were identified (e.g., ERP sites), and/or potential impacts are limited to the project site (e.g., cultural resources); therefore, no cumulative impacts would occur to these resources. Air quality is the only resource area for which potential cumulative impacts could occur; however, based on the emission levels from proposed revitalization activities, potential cumulative impacts to regional air quality (when combined with other activities in the region) are not anticipated.

The BAAQMD would review emissions generated by development projects and implement control measures required for the region to demonstrate attainment of the NAAQS.

# 5.0 AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED

The following individuals were contacted during the preparation of this EA.

| | |
|---|---|
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| MSgt. Wilmer Cristobal | 60 CES/CEOHB |
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**State Agencies**

State of California Clearinghouse
Governors Office
1400 Tenth Street, Room 121
Sacramento, CA 95814

**Department of Defense**

Department of the Air Force
60 CES/CEVN
411 Airmen Drive
Building 570
Travis AFB, CA 94535-2176

Department of the Air Force
HQ AFCEE/ECE
3300 Sydney Brooks
Brooks City-Base, TX 78235-5112

Department of the Air Force
HQ AMC/A7PC
507 Symington Drive
Scott AFB, IL 62225-5022

**Libraries**

Fairfield Civic Center Library
1150 Kentucky Street
Fairfield, CA 94533

Mitchell Memorial Library
510 Travis Avenue
Travis AFB, CA 94535

Vacaville Public Library
1020 Ulatis Drive
Vacaville, CA 95687

**Other Organizations/Agencies**

Travis Unified School District
2751 DeRonde Drive
Fairfield, CA  94533

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# APPENDIX A
# PUBLIC COMMENTS AND RESPONSES

# TRAVIS AFB, DRAFT ENVIRONMENTAL ASSESSMENT
# RESPONSE TO COMMENTS

California Regional Water Quality Control Board, Central Valley Region
Dannas J. Berchtold
January 3, 2006

| Comment No. | Comment | Response |
|---|---|---|
| 1 | <u>Construction Storm Water</u><br>A NPDES General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002, Order No. 99-08-DWQ is required when a site involves clearing, grading, disturbances to the ground, such as stockpiling, or excavation that results in soil disturbances of one acre or more of total land area. Construction activity that involves soil disturbances on construction sites of less than one acre and is part of a larger common plan of development or sale, also requires permit coverage. Coverage under the General Permit must be obtained prior to construction. | As discussed in Section 4.4.2 (Soils) of the EA and referenced in Section 4.4.3 (Surface Water), the construction contractor would be required to obtain a Construction Site Storm Water NPDES permit before initiating any construction activity. The contractor would also be required to prepare a Storm Water Pollution Prevention Plan (SWPPP) for the construction activity. The Construction Site Storm Water NPDES permit, together with the required SWPPP, would outline strict construction site management practices designed to protect the quality of the surface water, groundwater, and natural environment through which they flow. |
| 2 | <u>Post-Construction Storm Water Management</u><br>Manage storm water to retain the natural flow regime and water quality, including not altering baseline flows in receiving waters, not allowing untreated discharges to occur into existing aquatic resources, not using aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All storm water flows generated on-site during and after construction and entering surface waters should be pre-treated to reduce oil, sediment, and other contaminants. The local municipality where the proposed project is located may now require post construction storm water Best Management Practices (BMPs) pursuant to the Phase II, SWRCB, Water Quality Order No. 2003-0005-DWQ, NPDES General Permit No. CAS000004, WDRS for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4). The local municipality may require long-term post-construction BMPs to be incorporated into development and significant redevelopment projects to protect water quality and control runoff flow. | As discussed in Section 4.4.3 of the EA (Surface Water), construction of fewer new housing units than currently exist at Travis AFB would decrease the amount of impervious surfaces and result in a slight decrease in storm water runoff. The construction of replacement housing units in currently developed MFH areas is not expected to alter the surface runoff from these areas.<br><br>Existing storm water systems within the military family housing areas would continue to service new housing development. |

| Comment No. | Comment | Response |
|---|---|---|
| 3 | <u>Wetlands and/or Stream Course Alteration</u><br>Section 401 of the federal Clean Water Act requires any project that impacts waters of the United States (such as streams and wetlands) to file a 401 Water Quality Certification application with this office. The project proponent must certify the project will not violate state water quality standards. Projects include, but are not limited to, stream crossings, modification of stream banks or stream courses, and the filling or modification of wetlands. If a US Army Corps of Engineers (ACOE) permit is required for the project, then Water Quality Certification must be obtained prior to initiation of project activities. The proponent must follow the ACOE 404(b)(1) Guidance to assure approval of their 401 Water Quality Certification application. | Demolition and construction activities would not occur within the Castle Terrace Housing Area where vernal pool habitat is present and the area where North Gate Park Pond and Union Creek are situated are specifically excluded from privatization activities. Stream channels in the vicinity of the housing areas would not be modified during or after construction activities. |
| 4 | <u>Dewatering Permit</u><br>The proponent may be required to file a Dewatering Permit covered under Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit, Order No. 5-00-175 (NPDES CAG995001) provided they do not contain significant quantities of pollutants and are either (1) four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd:<br>a. Well development water<br>b. Construction dewatering<br>c. Pump/well testing<br>d. Pipeline/tank pressure testing<br>e. Pipeline/tank flushing or dewatering<br>f. Condensate discharges<br>g. Water supply system discharges<br>h. Miscellaneous dewatering/low threat discharges. | Based on the proposed military family housing development activities, a dewatering permit is not anticipated; however, if proposed construction activities result in the requirement, a Dewatering Permit would be filed. |

California Integrated Waste Management Board
John Loane
January 13, 2006

| Comment No. | Comment | Response |
|---|---|---|
| 1 | Please clarify in the final EA exactly what constitutes “building materials”, as well as “bulk material” from the project proposal. Also, please characterize the difference between the demolition waste material for recycling and disposal, as well as, the construction waste materials for recycling and disposal. | “Bulk” material was incorrectly used to refer to building materials. Text has been corrected.<br>Separation of demolition waste material vs. construction waste material for recycling was not calculated. Recycling estimates are calculated based on overall square footage for demolition and construction activities. |
| 2 | What is the estimated reduction in municipal solid waste (MSW) generation from the families that will occupy the newly constructed MFH units that is anticipated upon project completion? | The 1,179 units that would remain after demolition and construction activities are completed are anticipated to generate approximately 22.1 tons/day (8,066 tons/year) of MSW. This would be a reduction of approximately 23.4 tons/day (8,540 tons/year) compared to MSW generated in 2001 (i.e., 45.5 tons/day [16,604 tons/year]). |
| 3 | Please indicate in the EA the estimated quantities of demolition waste and construction waste (separately) that will require disposal. | Table 4-1 has been revised to indicate the estimated quantities of demolition and construction waste (separately) that would require disposal. |
| 4 | Please identify in the final EA an approved alternative off-site landfill that can accept the proposed project’s discarded waste building materials and construction materials without significantly impacting that approved alternative off-site landfill’s permitted peak daily tonnage. | Information from the CIWMB indicated that capacity at the Potrero Hills Landfill was more than adequate for anticipated disposal from MFH demolition and construction activities. (Average of about 2.5 tons/day over 5 years)<br>An alternative landfill that could support debris disposal is the Hay Road Landfill in Vacaville. Permitted capacity of 28,240,000 cubic yards and a remaining capacity of 22,815,505 cubic yards. Permitted throughput is 2,400 tons/day. |
| 5 | Will the proposed chipping operation be located at the Travis AFB Composting Facility? | Details of possible chipping operations have not yet been defined. |
| 6 | Is the proposed C&D chipping operation to be located on the proposed project site? | Details of possible chipping operations have not yet been defined. |
| 7 | Will the proposed wood material planned to be used for mulch on-site? | Details of possible chipping operations have not yet been defined. |
| 8 | Will the wood waste or mulch be stockpiled on site? | Details of possible chipping operations have not yet been defined. |

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# California Regional Water Quality Control Board

**Central Valley Region**

**Robert Schneider, Chair**

**Alan C. Lloyd, Ph.D.**
*Agency Secretary*

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**Arnold Schwarzenegger**
*Governor*



**RECEIVED**
JAN 09 2006


3 January 2006

Rudy Pontemayor
Air Force
411 Airmen Drive
Travis Air Force Base, CA 94535

***PROPOSED PROJECT REVIEW, CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA), DRAFT ENVIRONMENTAL ASSESSMENT FOR MILITARY FAMILY HOUSING REVITILIZATION, STATE CLEARINGHOUSE #2005124003, FAIRFIELD, SOLANO COUNTY***

As a Responsible Agency, as defined by CEQA, we have reviewed the Draft Environmental Assessment for Military Family Housing Revitalization. Based on our review, we have the following comments regarding the proposed project.

Construction Storm Water

A NPDES General Permit for Storm Water Discharges Associated with Construction Activities, NPDES No. CAS000002, Order No. 99-08-DWQ is required when a site involves clearing, grading, disturbances to the ground, such as stockpiling, or excavation that results in soil disturbances of one acre or more of total land area. Construction activity that involves soil disturbances on construction sites of less than one acres and is part of a larger common plan of development or sale, also requires permit coverage. Coverage under the General Permit must be obtained prior to construction. More information may be found at http://www.swrcb.ca.gov/stormwtr/construction.html

Post-Construction Storm Water Management

Manage storm water to retain the natural flow regime and water quality, including not altering baseline flows in receiving waters, not allowing untreated discharges to occur into existing aquatic resources, not using aquatic resources for detention or transport of flows above current hydrology, duration, and frequency. All storm water flows generated on-site during and after construction and entering surface waters should be pre-treated to reduce oil, sediment, and other contaminants. The local municipality where the proposed project is located may now require post construction storm water Best Management Practices (BMPs) pursuant to the Phase II, SWRCB, Water Quality Order No. 2003 – 0005 – DWQ, NPDES General Permit No. CAS000004, WDRS for Storm Water Discharges from Small Municipal Separate Storm Sewers Systems (MS4). The local municipality may require long-term post-construction BMPs to be incorporated into development and significant redevelopment projects to protect water quality and control runoff flow.

Wetlands and/or stream course alteration

Section 401 of the federal Clean Water Act requires any project that impacts waters of the United States (such as streams and wetlands) to file a 401 Water Quality Certification application with this office. The project proponent must certify the project will not violate state water quality standards. Projects include, but are not limited to, stream crossings, modification of stream banks or stream courses, and the filling or modification of wetlands. If a U.S. Army Corp of Engineers (ACOE) permit is required for the project, then Water Quality Certification must be obtained prior to initiation of project activities. The proponent must follow the ACOE 404(b)(1) Guidance to assure approval of their 401 Water Quality Certification application. The guidelines are as follows:

1. **Avoidance** (Is the project the least environmentally damaging *practicable* alternative?)
2. **Minimization** (Does the project minimize any adverse effects to the impacted wetlands?)
3. **Mitigation** (Does the project mitigate to assure a no net loss of functional values?)

If, after avoidance and minimization guidelines are considered and wetland impacts are still anticipated:

- determine functional losses and gains (both permanent and temporal; both direct and indirect)
- conduct adequate baselines of wetland functions including vegetation, wildlife, hydrology, soils, and water quality
- attempt to create/restore the same wetland type that is impacted, in the same watershed
- work with a regional context to maximize benefits for native fish, wildlife, vegetation, as well as for water quality, and hydrology
- use native species and materials whenever possible
- document all efforts made to avoid the minimize adverse wetland impacts
- be prepared to develop performance criteria and to track those for between 5 to 20 years
- be prepared to show project success based on achieving wetland functions
- if the project fails, be prepared to repeat the same process (via financial assurance), with additional acreage added for temporal losses
- specify how the mitigation project will be maintained in perpetuity and who will be responsible for the maintenance

For more information regarding Water Quality Certification may be found at
http://www.waterboards.ca.gov/centralvalley/available_documents/wq_cert/application.pdf

Dewatering Permit

The proponent may be required to file a Dewatering Permit covered under Waste Discharge Requirements General Order for Dewatering and Other Low Threat Discharges to Surface Waters Permit, Order No. 5-00-175 (NPDES CAG995001) provided they do not contain significant quantities of pollutants and are either (1) four months or less in duration, or (2) the average dry weather discharge does not exceed 0.25 mgd:

a. Well development water
b. Construction dewatering
c. Pump/well testing
d. Pipeline/tank pressure testing
e. Pipeline/tank flushing or dewatering
f. Condensate discharges
g. Water Supply system discharges
h. Miscellaneous dewatering/low threat discharges

For more information, please visit the Regional Boards website at http://www.waterboards.ca.gov/centralvalley/ or contact me at 916.464.4683 or by e-mail at berchtd@waterboards.ca.gov.

DANNAS J. BERCHTOLD
Storm Water Unit
916.464.4683

cc: State Clearinghouse, Sacramento

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# California Integrated Waste Management Board

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*Governor*


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|---|---|---|
| To Capt. Frost & Mr. Pontemayor | From John Loane | |
| Co./Dept. U.S. Air Force | Co. CIWMB | |
| Phone # 707.424.8354 | Phone # 916.341.6327 | |
| Fax # 707.424.5105 | Fax # 916.319.7213 | |

January 13, 2006

Captain Jeremiah Frost
Mr. Rudy Pontemayor
U.S. Department of the Air Force
60 CES/CEVP
411 Airman Drive, Building 570
Travis Air Force Base, California 94535-2176

**Subject:** **State Clearinghouse (SCH) No. 2005124003** – Draft Environmental Assessment (EA) for the demolition of 1,651 military family housing (MFH) units creating approximately 44,840 tons of solid waste over the five year duration that construction, demolition, and renovation activities would occur at the Travis Air Force Base in Solano County.

Dear Sirs:

Permitting and Inspection (P&I) Branch staff of the California Integrated Waste Management Board (CIWMB or Board) have reviewed the draft EA for the proposed project cited above. P&I Branch staff offer the following comments that are germane to the CIWMB's statutory authority or within the Board's expertise for the proposed project. Comments will focus on the generation of construction and demolition (C&D) debris that would result upon implementation of the proposed project.

## PROJECT PROPOSAL'S WASTE GENERATION DESCRIPTION IN THE DRAFT EA

Page 4-4 and 4-5 in the draft EA states that "Under the Proposed Action, there would be a decrease in on-base population, and a resultant decrease in on-base solid waste generation after completion of the MFH Revitalization Project would be expected. However, building demolition and renovation activities would generate solid waste, including wood, drywall, cardboard, metals, concrete [and asphalt], and roofing material. Building materials would be separated and recycled to the extent possible...Demolition and renovation debris that cannot be recycled would be disposed in an approved off-site landfill...

Demolition of the 1,651 MFH units would create approximately 44,840 tons of solid waste. Approximately 80 percent of the material is expected to be concrete from building foundations, sidewalks, and asphalt from roadway demolition, which could be stockpiled for future use. The

remaining 7,600 tons of solid waste would be drywall, wood, roofing material, metals, glass, and other building materials. Debris from construction activities is typically uncontaminated and is reused or recycled whenever possible; the remainder of the material would be taken to an approved off-site landfill. Debris from demolition activities is often contaminated with nails, rebar, or other building materials that make recycling more difficult. It is expected that over 50 percent of the bulk materials would be recycled. The wood material may be chipped and reused as mulch. Sheet metal, structured steel, and glass would be sold as scrap. Miscellaneous building materials such as electrical wire, outlet boxes, metallic tubing, light fixtures, pipe, plumbing fixtures, and heating systems would be salvaged and reused or sold as scrap. Even through a recycling program would be used, it would be impractical to accomplish complete source separation, and approximately 50 percent, or 3,800 tons, of building materials would require disposal in a landfill. Because the Potrero Hills Landfill has a permitted daily through put of 4,300 tons per day, disposal of the 3,800 tons of demolition debris over the duration that construction, demolition, and renovation activities would occur (i.e. 5 years) is not expected to significantly affect the service of the landfill.

Buildings with the potential to contain [asbestos containing waste] and/or lead-based paint would be sampled prior to demolition activities to ensure proper disposal and abatement of these materials. The construction contractor would be required to dispose of construction debris in accordance with applicable federal, state, and local regulations."

## AGENCY BACKGROUND INFORMATION

### Criteria for California Environmental Quality Act (CEQA) Compliance Disclosure

CEQA compliance is required by the Board for the establishment, expansion, or change in operation(s) of a solid waste facility (SWF) requiring the issuance or revision of a Solid Waste Facility Permit (SWFP). P&I Branch staff's review of the proposed environmental document (ED) is to help decision-makers: (1) identify potential impacts from proposed projects, (2) determine whether any such impacts are significant, and (3) ascertain whether significant impacts can be mitigated to a level of insignificance in compliance with the CEQA statute and guidelines. In order for the CIWMB to ascertain that a proposed ED is complete and adequate for our use in the SWF permitting process, the SWF project proposal should be described in sufficient detail and the potential environmental impacts must be identified clearly in the environmental assessment and analysis. Mitigation to reduce potentially significant environmental impacts should be incorporated into the project, when feasible, in order to avoid potentially significant effects from SWF design and operations.

### CIWMB Role as a Responsible Agency

The CIWMB operates in cooperation with local government to assure protection of the public health and safety and the environment from the potentially detrimental effects of improper solid waste management. The CIWMB concurs in the issuance of new or revised SWFPs with Local Enforcement Agencies (LEAs) to assure that SWFs operate in a manner consistent with all applicable solid waste laws and regulations. If a SWF is anticipated or proposed for the issuance or revision of a SWFP, the CIWMB would be a responsible agency [CEQA Guidelines, Title 14,

California Code of Regulations (CCR), Section (§)15096]. P&I Branch staff have reviewed this daft EA as a commenting agency.

## P&I BRANCH STAFF'S QUESTIONS and COMMENTS

### Draft EA Terminology and Waste Characterization

Please clarify in the final EA exactly what constitutes "building materials", as well as, "bulk materials" for the project proposal. Also, please characterize the differences between the demolition waste materials for recycling and disposal, as well as, the construction waste materials (e.g. tonnage disposed, tonnage recycled, and tonnage stockpiled for each waste type) for recycling and disposal in Section 4.2.4.1 on page 4-4 of the final EA.

### Municipal Solid Waste Generation

Section 3.2.3.1 on page 3-4 of the draft EA states that "Nonhazardous solid waste generation on Travis AFB totaled 45.5 tons per day (16,604 tons for the year) in FY 2001. An average of 20.5 tons per day, (7,468 tons for the year) were diverted from being sent to a solid waste disposal facility by means including recycling, reuse, composting, and mulching. The remaining solid waste, an average of 25 tons per day (9,136 tons for the year), was sent to the Potrero Hills Landfill." Table 4-2 on page 4-14 of the draft EA delineates the "MFH Units per Year", "MFH Units Constructed per Year", and the "Acres Disturbed". The "Total" for the "MFH Units Demolished" is "1,651", the "Total" for the "MFH Units Constructed" is "403", and the "Total" "Acres Disturbed" is "380". The "MFH Units Constructed" is approximately one-fourth the number of existing "MFH Units Demolished"; what is the estimated reduction in MSW generation from the families that will occupy the newly constructed MFH Units that is anticipated upon project completion ?

### Recyclable C&D Material

Page 4-4 of the draft EA states that "Building materials would be separated and recycled to the extent possible."..."Demolition of the 1,651 MFH units would create approximately 44,840 tons of solid waste. Approximately 80 percent of the material is expected to be concrete from building foundations, sidewalks, and asphalt from roadway demolition, which could be stockpiled for future use. The remaining 7,600 tons of solid waste would be drywall, wood, roofing material, metals, glass, and other building materials." Twenty percent of 44,840 tons is 8,968 tons, not 7,600. Please indicate in the final EA the estimated quantities of demolition waste and construction waste (separately) that will require disposal "...in an approved off-site landfill."

Page 4-4 of the draft EA further states that "Even through a recycling program would be used, it would be impractical to accomplish complete source separation, and approximately 50 percent, or 3,800 tons [or 4,484 tons], of building materials would require disposal in a landfill. Because the Potrero Hills Landfill [Solid Waste Facility Permit No. 48-AA-0075] has a permitted daily through put of 4,330 tons per day, disposal of the 3,800 tons [or 4,484 tons] of demolition debris over the duration that construction, demolition, and renovation activities would occur (i.e., 5

years) is not expected to significantly affect the service life of the landfill." Table 4-2 on page 4-14 of the draft EA projects the approximate amounts of MFH Units that will be demolished and constructed from 2006 through 2010. Potrero Hills Landfill is at or near the permitted peak daily tonnage of 4,430, therefore, the disposal of the proposed project's discarded building materials that would require landfilling may be significantly affecting the service life of the Potrero Hills Landfill. Please identify in the final EA an approved alternative off-site landfill that can accept the proposed project's discarded waste building materials and construction materials without significantly impacting that approved alternative off-site landfill's permitted peak daily tonnage.

Please note that Title 14, Division 7, Chapter 3, Article 5.9 of the California Code of Regulations (CCR), §17380 through §17390 reflects the recently promulgated *Construction and Demolition and Inert Debris Transfer/Processing Regulatory Requirements* and the *Construction and Demolition Waste and Inert Debris Disposal Regulatory Requirements* at the following internet link: http://www.ciwmb.ca.gov/Regulations/Title14/ch3a595a.htm. The approximately 3,800 to 4,484 tons of discarded building materials [and construction materials] generated by the proposed project, may be accepted at a C&D and Inert Debris (CDI) Recycling Facility where materials may be extracted from the municipal solid waste (MSW). Please contact the LEA for Solano County, Mr. Terry Schmidtbauer or Mr. Ricardo Serrano at (707) 784-6765, for information on CDI facilities permitted to accept the material expected to be discarded as a result of project implementation.

**Woodwaste Planned for Beneficial Reuse**

Page 4-4 of the draft EA states that "The wood material may be chipped and reused as mulch." Please clarify in the final EA the following questions in relation to this statement in the draft EA:

- Will the proposed chipping operation be located at the Travis Air Force Base Composting Facility (TAFBCF), Solid Waste Information System No. 48-AA-0085? If this woodwaste material is handled and/or processed at the TAFBCF, please notify the LEA cited above of this new development as a Report of Composting Site Information (RCSI) may need amending or an upgrade in the permit may be required.
- Is the proposed C&D chipping operation to be located on the proposed project site? Is the proposed chipping operation excluded under 14 CCR §17382? (http://www.ciwmb.ca.gov/regulations/title14/ch3a59b.htm)
- If the proposed chipping operation is to be located on-site what are the potential noise and air quality ($PM_{10}$ and wood chipper emissions) impacts that would result?
- Will the proposed "wood material" planned to be used for mulch on site? If not, where will the mulch be used?
- Will the woodwaste or mulch be stockpiled on site? If the woodwaste or mulch is stockpiled on-site for more than 48 hours there is a potential for this material to get wet and initiate the decomposition process. If this wood material decomposes and the temperature exceeds 122 degrees Fahrenheit (50 degrees Celsius) 14 CCR §17852(a)(1) defines this material as "Active Compost" (http://www.ciwmb.ca.gov/regulations/title14/ch31.htm). The LEA should be notified if woodwaste or mulch is to be stored on-site for longer than 48 hours.

**CONCLUSION**

P&I Branch staff have no further comments on the project proposal at this time. Thank you for the opportunity to comment on this draft EA. If you have any questions regarding these comments, please contact me at 916.341.6327, by facsimile at 916.319.7213, or e-mail me at jloane@ciwmb.ca.gov.

Sincerely,

John Loane, Integrated Waste Management Specialist (IWMS)
Permitting and Inspection Branch, North Central Region III
Permitting and Enforcement Division
**California Integrated Waste Management Board**

cc: State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Christine Karl, IWMS, P & I Branch Region 3
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