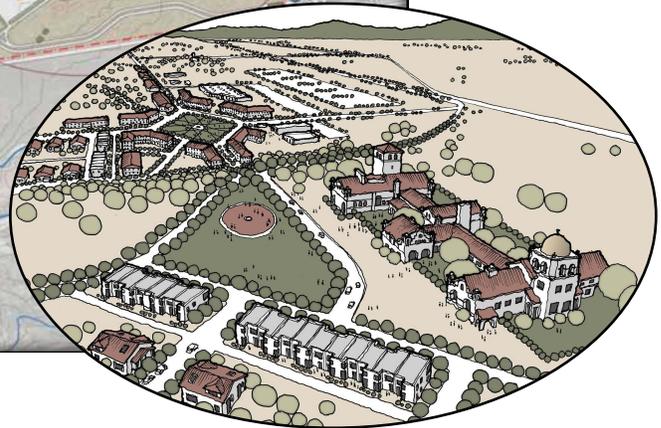
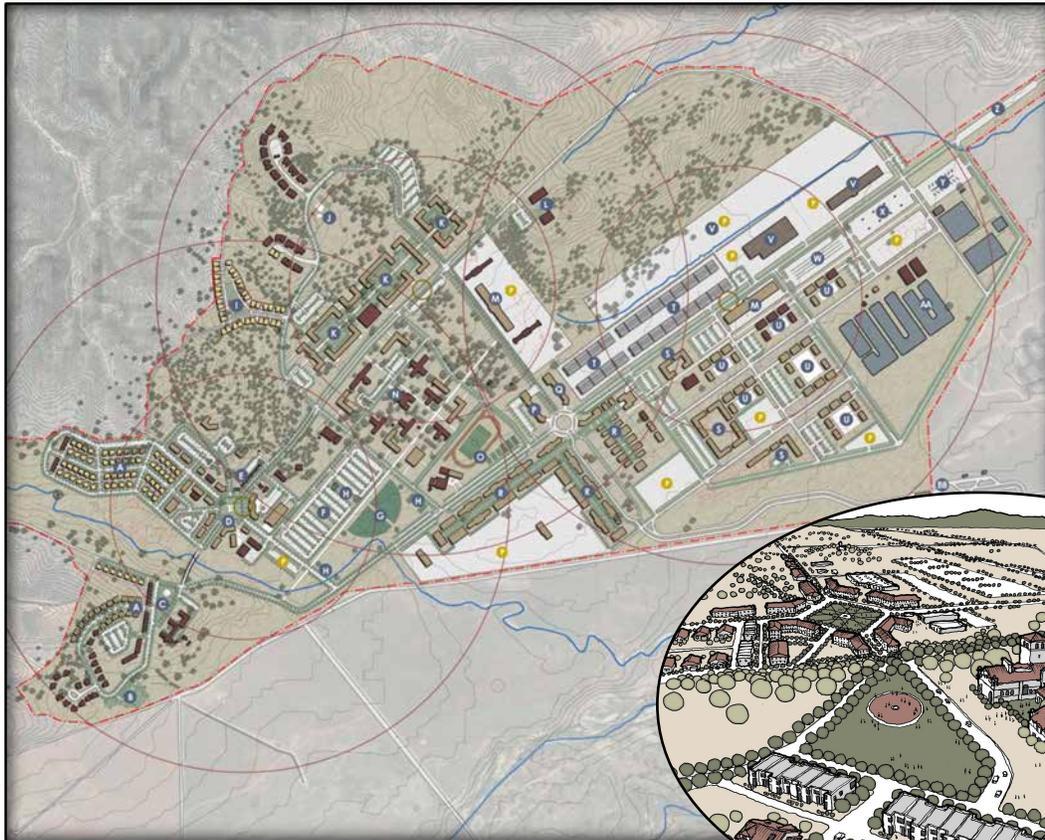


# ENVIRONMENTAL ASSESSMENT ADDRESSING CANTONMENT AREA MASTER PLANNING AT FORT HUNTER LIGGETT, CALIFORNIA



AUGUST 2013



# Staff Coordination, Approval and Routing Sheet

For use of this form see USAG-FHL Administrative Procedures Manual, Jan 11; the proponent is the Dep Garrison Commander

1. SUSPENSE DATE:

2. SUBJECT:

FONSI & Master Plan Environmental Assessment (EA)

3. DATE PREPARED:

6 Aug 2013

4. ACTION OFFICER:

Michael B. Moeller

5. OFFICE NAME:

DPW-E

6. STAFF TRACKING #:

7. ACTION REQUIRED:

a. Signature  b. Approval  c. Decision  d. Information  e. Other

8. IMCOM-C TASKER#:

9. REMARKS : (Describe briefly the Issue, Background and Recommendation)

ISSUE:

Finding Of No Significant Impact (FONSI) & Master Plan EA Approval for Public Review Phase

BACKGROUND:

Fort Hunter Liggett proposes to implement the Fort Hunter Liggett Real Property Master Plan (RPMP), a master planning document that provides a strategy for guiding future development of the installation's cantonment area through siting and design of future projects. The Fort Hunter Liggett RPMP includes the Installation Design Guide, Installation Development Plan (based on three Area Development Plans), Capital Investment Strategy, and RPMP Digest.

Approval of the attached documents initiates the required publishing and 30 day public review period prior to finalization of the EA.

No signature on the FONSI or the EA is required at this time. After any public comments are addressed, both documents will become final.

RECOMMENDATION:

Approve documents to be released for public review by signature on this SCARS.

10. COORDINATION & ROUTING: (DIRECTORS- Print name, select date & INITIAL under Concur or Nonconcur. \*(Noncon requires written justification)

Office	Printed Name	Date	Concur	Nonconcur	Office	Printed Name	Date	Concur	Nonconcur
DPW	Gary Houston	8/6/13	MBM		---				
DPW	Cyndi Skinner	8/6/13	CSA		---				
ILO	LTC McBride	8/8/13							
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*- Legal opinion attached*

11. ROUTING AND APPROVALS: (The Commander's Executive Assistant will route within the Command Group as required)

Deputy Commander	Date	Concur	Nonconcur	Deputy Garrison Commander	Date	Concur	Nonconcur	
LTC Dan Everett				Mr Mark Hamelin				
Command Sergeant Major	Date	Concur	Nonconcur	Commander	Date	Approved	Disapproved	See Me
CSM Tracy Barlogio				COL Donna Williams	12 Aug 13	X	<input type="checkbox"/>	<input type="checkbox"/>

12. Comments  
(CMD Grp Use Only)



**COVER SHEET**  
**ENVIRONMENTAL ASSESSMENT**  
**ADDRESSING CANTONMENT AREA MASTER PLANNING AT**  
**FORT HUNTER LIGGETT, CALIFORNIA**

**Responsible Agencies:** U.S. Army Reserve Command, U.S. Army Garrison Fort Hunter Liggett, California, and U.S. Army Corps of Engineers, Mobile District.

**Affected Location:** U.S. Army Garrison Fort Hunter Liggett, California.

**Proposed Action:** Fort Hunter Liggett (FHL) proposes to implement the FHL Real Property Master Plan (RPMP) for the cantonment area.

**Report Designation:** Environmental Assessment (EA) Addressing Cantonment Area Master Planning at Fort Hunter Liggett, California.

**Abstract:** FHL proposes to implement the FHL RPMP, a master planning document that provides a strategy for guiding future development of the installation's cantonment area as projects are identified and designed. The FHL RPMP includes the Installation Design Guide, Installation Development Plan (based on three Area Development Plans), Capital Investment Strategy, and RPMP Digest.

This EA analyzes the potential impacts of implementing the FHL RPMP, which would guide the siting and design of future projects. Environmental impacts of individual projects and overall development areas were addressed in the *Final Environmental Assessment Addressing Installation Development and Training (IDTEA) at Fort Hunter Liggett, California* (FHL 2010a). Future projects not addressed in the 2010 IDTEA were addressed in associated supplemental documents or will be addressed in separate National Environmental Policy Act documentation as those projects are identified.

This EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Areas that are considered in the impacts analyses include noise, land use, air quality, geological resources, water resources, biological resources, threatened and endangered species, cultural resources, infrastructure, traffic and transportation, hazardous materials and waste, and health and safety.

**PRIVACY ADVISORY**

Your comments on this document are welcome. Letters or other written comments provided to the proponent concerning this document may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.



**ENVIRONMENTAL ASSESSMENT**  
**ADDRESSING CANTONMENT AREA MASTER PLANNING**  
**AT**  
**FORT HUNTER LIGGETT, CALIFORNIA**

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**AUGUST 2013**



**ENVIRONMENTAL ASSESSMENT  
ADDRESSING CANTONMENT AREA MASTER PLANNING AT  
FORT HUNTER LIGGETT, CALIFORNIA**

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## EXECUTIVE SUMMARY

The Headquarters Command of U.S. Army Garrison Fort Hunter Liggett (FHL) believes a comprehensive National Environmental Policy Act (NEPA) document would improve the continuing activity of installation development and training and facilitate the NEPA compliance process. As a result, FHL has prepared an Environmental Assessment (EA) that addresses a proposal to implement the FHL Real Property Master Plan (RPMP), a master planning document that would provide a strategy for guiding future development of the installation's cantonment area.

This EA analyzes the potential impacts of implementing the FHL RPMP, which would guide the siting and design of future projects. Environmental impacts of individual projects and overall development areas were addressed in the *Final Environmental Assessment Addressing Installation Development and Training (IDTEA) at Fort Hunter Liggett, California* (FHL 2010a) (see **Appendix A** for list of projects addressed in the 2010 IDTEA). Future projects not addressed in the 2010 IDTEA were addressed in associated supplemental documents or will be addressed in separate NEPA documentation as those projects are identified.

### Purpose and Need

The purpose of the Proposed Action is to implement the FHL RPMP. The RPMP serves as a technical manual describing the planning process for guiding development at the FHL cantonment area. The planning process establishes a strategy for executing FHL's planning vision and illustrates how implementation of the various planning principles would look, aesthetically and pragmatically.

The need for the Proposed Action is to continue to meet FHL's current and future mission requirements and national security objectives while also satisfying the FHL vision to create a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families enjoy living and working.

### Summary of Proposed Action

The Proposed Action is to implement the FHL RPMP for the cantonment area. The FHL RPMP includes the Installation Design Guide; Installation Development Plan based on three Area Development Plans for Hacienda Heights, Blackhawk Hills, and Mission Valley; Capital Investment Strategy; and RPMP Digest.

FHL used guidance in Draft United Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*, and applicable U.S. Army regulations to conduct the master planning process to develop the RPMP for the cantonment area. FHL stakeholders collaborated to develop a planning vision, goals, and principles to address FHL's major planning issues. During this visioning process, FHL analyzed constraints and opportunities of the cantonment area based on topography, functional districts, land use, landmarks, important points of access, and other features affecting development. The result of this analysis was the Framework Plan that organized and divided the cantonment area into three distinct districts (i.e., Hacienda Heights, Blackhawk Hills, and Mission Valley).

Upon completion of the Framework Plan, FHL began work on the Installation Development Plan by completing network plans (i.e., regulating plans, illustrative plans, and implementation plans) for each district's Area Development Plan. The combination of each district's individual Area Development Plans created overall cantonment area network plans (i.e., Regulating Plan, Illustrative Plan, Transportation Network Plan, Tactical Vehicle Route Plan, Commercial Vehicle Route Plan, Street Tree Plan, Emergency Access Plan, Parking Plan, and Parks and Quads Plan) to be included in the Installation Development

Plan. As part of the master planning process, FHL developed cantonment area planning standards for buildings, transportation, landscapes, and interior spaces that are presented in the FHL Installation Design Guide. All new projects in the cantonment area would be developed in accordance with the Regulating Plan and building envelope standards as presented in the Installation Design Guide. The Capital Investment Strategy was developed as the prioritized, phased plan that identifies the strategy to meet future facility allowances and to support mission requirements. The RPMP Digest is a summary of the FHL RPMP and the entire master planning process.

## Summary of Environmental Consequences and Mitigation Measures

This EA contains a comprehensive evaluation of the existing conditions and potential environmental consequences of the Proposed Action and the No Action Alternative. Implementation of the Proposed Action would not affect cultural resources (archaeological resources or resources of traditional, religious, or cultural significance to Native American Tribes). Long-term, beneficial effects on noise, land use, air quality, water resources, biological resources, threatened and endangered species, infrastructure, traffic and transportation, hazardous materials and waste, and health and safety would be expected. Resources that could be adversely affected by the Proposed Action include geological resources, water resources, biological resources, threatened and endangered species, cultural resources (historic buildings), infrastructure, and hazardous materials and waste. In all instances, effects on these resources are expected to be negligible to minor in significance. Siting of new facilities in the cantonment area could result in adverse impacts on arroyo toad and vernal pool fairy shrimp. Common BMPs and minimization measures are included as part of the action of implementing the FHL RPMP as project design features. Use of these design features and selective siting identified in the RPMP, along with other BMPs identified in FHL's SWPPP, SPCC Plan, and other management plans, would help minimize effects on surface and groundwater resources, including wetlands and vernal pools. Implementation of the No Action Alternative would not result in a change in how the cantonment area is developed; therefore, development would occur in an ad hoc fashion and specific projects would not be sited and designed to reduce adverse effects associated with their construction and operation as was analyzed in the 2010 IDTEA. While the No Action Alternative would result in associated adverse effects, no significant direct or indirect effects would occur.

The potential for cumulative effects on the environment was evaluated by reviewing other projects in the vicinity of the FHL that could affect the same environmental resources as the Proposed Action. Although some cumulative effects could occur, they are expected to be negligible to minor in significance. Implementation of the No Action Alternative would not result in a change in how the cantonment area is developed; therefore, continued ad hoc development of the cantonment area could result in long-term, adverse cumulative effects on the quality of the human or natural environment when compared to the Proposed Action.

**Table ES-1** summarizes the potential effects of the Proposed Action and the activities that could be conducted during implementation to avoid or minimize these effects. Identified effects were determined to be insignificant based on evaluation criteria presented for significant effects. Some practices to minimize effects would be required by Federal or state regulations. Most of these requirements are currently followed at the installation.

**Table ES-1. Summary of Potential Environmental Consequences Associated with the Proposed Action**

<b>Resource Area</b>	<b>Proposed Action</b>	<b>No Action</b>
<b>Noise</b>	Long-term, minor, beneficial effects would be anticipated from consolidation of industrial uses farther from noise-sensitive uses, facilitation of decreased vehicle use, shifting traffic to the exterior of the cantonment area, and use of trees and other vegetation as buffers to dampen noise along roads and surrounding industrial uses.	No new adverse effects would be anticipated.
<b>Land Use</b>	Long-term, minor to moderate, beneficial effects would be anticipated from siting and design of proposed facilities in a manner that fully considers the existing conditions and constraints at FHL through the use of spatial design standards in the Regulation Plan and by collocating or relocating uses. Land uses are sited to strengthen the specific vision of each district through the addition or removal of uses and planning features.	Long-term, adverse effects would be anticipated.
<b>Air Quality</b>	Long-term, minor, beneficial effects would be anticipated from indirectly reducing air emissions through design of a walkable cantonment area that would decrease vehicle operations, and through the replacement of old, less energy-efficient buildings with newer, more energy-efficient buildings. The Proposed Action would not result in the direct production of air emissions.	Long-term, adverse effects would be anticipated.
<b>Geological Resources</b>	Long-term, negligible, adverse effects on topography would be anticipated due to siting facilities on slopes that could require grading or other alteration to accommodate development. Long-term, minor, adverse effects on soils would be anticipated from siting of development on soils with limited load-bearing capabilities and from overall increased impervious surfaces at full implementation of the RPMP that could increase runoff and erosion. Special project design can minimize soil limitations and effects from erosion.	No adverse effects would be anticipated.
<b>Water Resources</b>	Short- and long-term, minor, adverse effects could occur from full implementation of the specific project siting and design in the RPMP that would result in increased impervious surfaces and storm water runoff. Effects on groundwater recharge and water quality from increased impervious surfaces could result from increased erosion and sedimentation, and possible contamination of runoff. Use of specific project designs that are identified in the RPMP, including LID features, and other BMPs in the installation's SPCC Plan and SWPPP and other plans, would minimize effects. Long-term, beneficial effects would be anticipated from not siting new facilities in and removal of existing structures from the 100-year floodplain.	No new effects would be anticipated.

Resource Area	Proposed Action	No Action
<b>Biological Resources</b>	Short- and long-term, minor, adverse effects on vegetation and wildlife would be anticipated from siting projects in undeveloped portions of the cantonment area. However, beneficial effects would be anticipated from projects that would be designed to minimize vegetation clearing, and replace and add native vegetation in accordance with Street Tree Plan and the Landscape Design Standards. Potential for damaging wetlands could occur due to siting new facilities in the cantonment area, but all projects would be sited to maintain an appropriate buffer from wetlands. Indirect effects on vernal pools could occur due to siting new facilities near vernal pools. Natural resources management practices would be implemented and coordination with regulatory agencies would be conducted to avoid or minimize impacts, as appropriate.	No new effects would be anticipated.
<b>Threatened and Endangered Species</b>	Siting of facilities in the cantonment area near arroyo toad and vernal pool fairy shrimp habitat could result in minor, adverse impacts on Federal-listed species. Beneficial impacts on threatened and endangered species could occur due to specifically siting facilities to avoid purple amole habitat, and implementing facility design that would comply with Energy Independence and Security Act requirements, including LID.	No new effects would be anticipated.
<b>Cultural Resources</b>	No effects on archaeological resources or resources of traditional, religious, or cultural significance to Native American Tribes would be anticipated. Minor, long-term, indirect, adverse effects on historic buildings, structures, landscapes, or viewsheds would be anticipated from the siting of facilities where they could have the potential to alter the viewshed of cultural resources or introduce noise and vibration. Mitigation to avoid adverse effects on historic buildings and viewsheds could include relocating buildings, reducing building heights, planting of trees, use of neutral colors, and incorporation of compatible architectural design, as determined through consultation with SHPO.	Adverse effects similar to the Proposed Action would be anticipated.
<b>Infrastructure</b>	Long-term, negligible, adverse effects on electrical systems, liquid fuel, water supply systems, sanitary sewer/wastewater systems, communications, and solid waste management would be anticipated from increased demand on the systems from siting of an additional 2 to 3 million square feet (ft <sup>2</sup> ) of structures at full implementation of the FHL RPMP. Long-term, negligible to minor, beneficial effects on propane systems, sanitary sewer/wastewater systems, and storm water systems would be anticipated due to use of more efficient or sustainable systems, graywater recycling, incorporation of vegetation buffers, and preparation of a storm water master plan that would offset increased demand.	No new effects would be anticipated.
<b>Traffic and Transportation</b>	Long-term, moderate, beneficial effects due to realignment of cantonment area roadways, increased parking, and promotion of a walkable cantonment area that would reduce vehicle trips and traffic congestion.	Long-term, minor, adverse effects would be anticipated.

Resource Area	Proposed Action	No Action
<b>Hazardous Materials and Waste</b>	Long-term, beneficial effects would be anticipated from consolidating and relocating industrial uses, which use hazardous materials and generate hazardous wastes, away from other land uses. Old structures that would be removed due to siting of new facilities could contain asbestos-containing material (ACM) or lead-based paint (LBP) and would need to be performed in accordance with appropriate regulations. No effects on pollution prevention, Defense Environmental Restoration Program (DERP), polychlorinated biphenyls (PCBs), pesticides, and radon would be anticipated. Projects would be sited at and adjacent to contaminated groundwater plumes; however, design of these projects would prevent disturbance of the plumes.	Long-term, minor, adverse effects on hazardous materials and waste would be anticipated. No other new adverse effects.
<b>Health and Safety</b>	No effects on contractor safety would occur as no contractors would be involved in the Proposed Action. Long-term, minor, beneficial effects on military personnel and public safety from improved road network that separates commercial and tactical vehicles from other traffic and the relocation of industrial uses away from sensitive land uses.	No new effects would be anticipated.

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# 1. Purpose of and Need for the Proposed Action

This Environmental Assessment (EA) addresses the proposal by Fort Hunter Liggett (FHL) to implement the FHL Real Property Master Plan (RPMP), a master planning document that would provide a strategy for guiding future development of the installation's cantonment area.

This EA has been prepared to comply with the requirements of the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [U.S.C.] Section 4321–4347); the Council on Environmental Quality's (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508); and Department of Defense (DOD) Instruction 4715.9, *Environmental Planning and Analysis*.

## 1.1 Introduction

FHL is in Monterey County, California, approximately 25 miles southwest of King City and 86 miles south of old Fort Ord (see **Figure 1-1**). Generally, the installation is bounded on the north by Los Padres National Forest and private lands, on the east by the foothills of the Santa Lucia Mountains, on the south by the Monterey/San Luis Obispo county line, and on the west by approximately 55 miles of Los Padres National Forest. The installation encompasses approximately 162,000 acres and provides a vast array of training ranges and other facilities year-round for Combat Support and Combat Service Support units of the U.S. Army Reserve (USAR), and training opportunities for other branches of the U.S. military and government agencies.

FHL's mission is to maintain and allocate training areas, airspace, facilities, and ranges to support field maneuvers, live-fire exercises, testing, and institutional training. Additionally, the installation provides quality-of-life assets and logistical support to training units. To meet its mission requirements and provide an overall quality environment and force protection, FHL uses a master planning process to plan and program real property management, development, and associated services.

The real property master planning process is documented in a RPMP, which all Army installations are required to develop in accordance with Army Regulation (AR) 210-20, *Master Planning for Army Installations*. The RPMP is a commander's plan for orderly management and development of installation real property assets, including land, facilities, and infrastructure (U.S. Army 2005a). The FHL RPMP includes the Installation Design Guide, Installation Development Plan (based on three Area Development Plans), Capital Investment Strategy, and RPMP Digest.

Using guidance in Draft United Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*, and applicable U.S. Army regulations, FHL began the master planning process to develop the RPMP for the cantonment area in 2010. FHL stakeholders collaborated to develop a planning vision, goals, and principles to address FHL's major planning issues. During this visioning process, FHL analyzed constraints and opportunities of the cantonment area based on topography, functional districts, land use, landmarks, important points of access, and other features affecting development. The result of this analysis was the Framework Plan, which is a map that organized and divided the cantonment area into three distinct districts (i.e., Hacienda Heights, Blackhawk Hills, and Mission Valley) (see **Figure 1-2**).

Upon completion of the Framework Plan, FHL began work on the Installation Development Plan by completing network plans (i.e., regulating plans, illustrative plans, and implementation plans) for each district's Area Development Plan. Combination of each district's Area Development Plans created overall cantonment area network plans (i.e., Regulating Plan, Illustrative Plan, Transportation Network

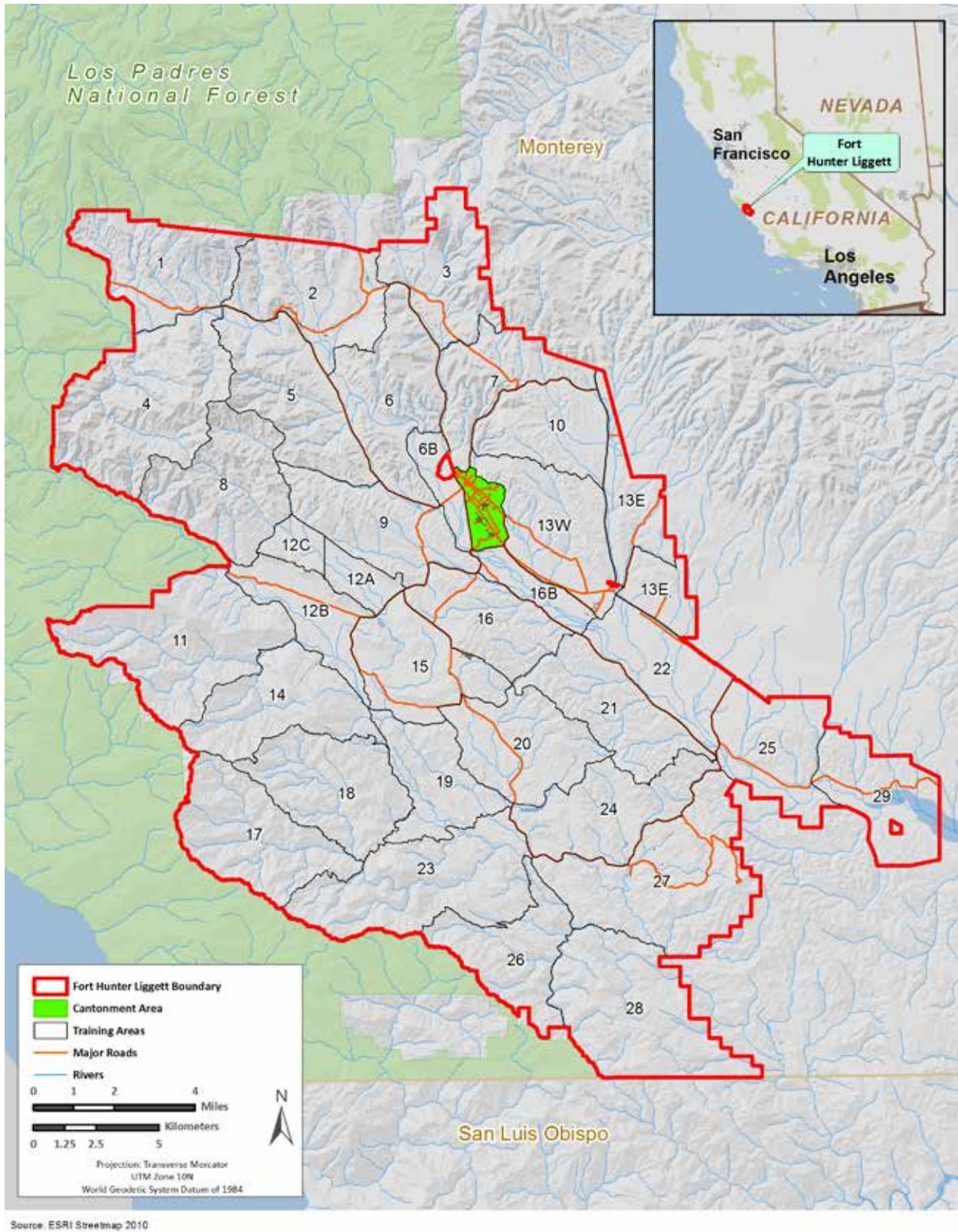
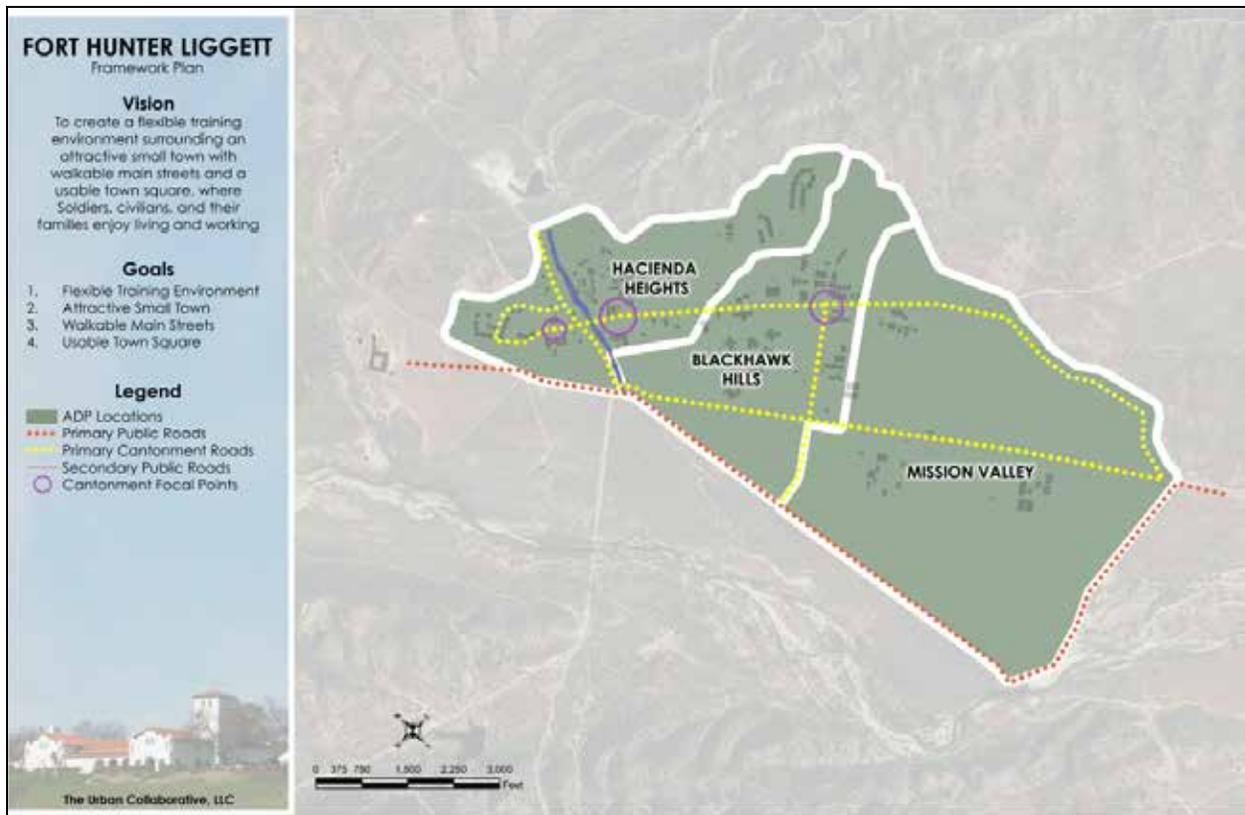


Figure 1-1. Location Map of Fort Hunter Liggett



**Figure 1-2. Fort Hunter Liggett Framework Plan**

Plan, Tactical Vehicle Route Plan, Commercial Vehicle Route Plan, Street Tree Plan, Emergency Access Plan, Parking Plan, and Parks and Quads Plan) to be included in the Installation Development Plan. As part of the master planning process, FHL developed cantonment area planning standards for buildings, transportation, landscapes, and interior spaces that is presented in the FHL Installation Design Guide. The Capital Investment Strategy was developed as the prioritized, phased plan that identifies the strategy to meet future facility allowances and to support mission requirements. Finally, the RPMP Digest is a summary of the FHL RPMP and the entire master planning process.

## 1.2 Purpose and Need

The purpose of the Proposed Action is to implement the FHL RPMP. The RPMP serves as a technical manual describing the planning process for guiding development at the FHL cantonment area. The planning process establishes a strategy for executing FHL's planning vision and illustrates how implementation of the various planning principles would look, aesthetically and pragmatically.

The need for the Proposed Action is to continue to meet FHL's current and future mission requirements and national security objectives while also satisfying the FHL vision to create a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families enjoy living and working.

## 1.3 Scope of the Analysis

The scope of the analysis consists of the range of actions, alternatives, and impacts to be considered. The scope of the Proposed Action and the range of alternatives considered in this EA are presented in detail in **Section 2**. In accordance with CEQ regulations, the No Action Alternative has been analyzed to provide the baseline against which the environmental impacts of implementing the action alternatives can be compared. This EA identifies appropriate best management practices (BMPs) that are not already included in the Proposed Action.

This EA analyzes the potential impacts of implementing the FHL RPMP, which would guide the siting and design of future projects. Environmental impacts of individual projects and overall development areas were addressed in the *Final Environmental Assessment Addressing Installation Development and Training (IDTEA) at Fort Hunter Liggett, California* (FHL 2010a) (see **Appendix A** for list of projects addressed in the 2010 IDTEA). Future projects not addressed in the 2010 IDTEA were addressed in associated supplemental documents or will be addressed in separate NEPA documentation as those projects are identified.

## 1.4 Summary of Key Environmental Compliance Requirements

### 1.4.1 National Environmental Policy Act

NEPA (42 U.S.C. Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken.

AR 200-1, *Environmental Protection and Enhancement*, states that the U.S. Army will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The U.S. Army's implementing regulation for NEPA is 32 CFR Part 651, *Environmental Analysis of Army Actions* (AR 200-2).

### 1.4.2 Integration of Other Environmental Statutes and Regulations

This EA examines potential effects of the Proposed Action and alternatives on 12 resource areas: noise, land use, air quality, geological resources, water resources, biological resources, threatened and endangered species, cultural resources, infrastructure, traffic and transportation, hazardous materials and waste, and health and safety. These were identified as being potentially affected by the Proposed Action and include applicable critical elements of the human environment that are mandated for review by Executive Order (EO), regulation, or policy. **Appendix B** contains examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis. Where useful to provide the reader with better understanding, key provisions of the statutes and EOs are discussed in more detail in the text of this EA.

### 1.4.3 Interagency Coordination and Public Involvement

Through a prescribed interagency coordination process, FHL has notified relevant Federal, state, and local agencies; and federally recognized tribes of the Proposed Action and provided them sufficient time to make known their environmental concerns specific to the action. FHL has coordinated with such agencies as the U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); State Historic Preservation Officer (SHPO); and other Federal, state, and local agencies. The coordination process also provides FHL the opportunity to cooperate with and consider state and local stakeholder views in implementing the Federal proposal. **Appendix C** includes all coordination letters.

A Notice of Availability (NOA) will be published in local newspapers, the EA and Draft Finding of No Significant Impact (FNSI) will be made available to the public for a 30-day review period, and two public open houses will be held. This is done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. Upon receipt, public and agency comments provided will be considered and included in the EA.

## 1.5 Organization of this Document

**Section 1** contains background information on FHL and the locations of the Proposed Action, the purpose of and the need for the Proposed Action, the scope of the EA analysis, a summary of applicable regulatory requirements, and an introduction to the organization of the EA. **Section 2** provides a detailed description of the Proposed Action, and **Section 3** describes alternatives to the Proposed Action. **Section 4** provides a general description of the environmental resources and baseline conditions that could be affected by the Proposed Action and the No Action Alternative. **Section 5** presents an analysis of the environmental consequences for the Proposed Action and No Action Alternative. **Section 6** includes an analysis of the potential cumulative effects. **Section 7** provides conclusions and recommendations. **Section 8** contains a list of the preparers of this EA. **Section 9** lists the references used in the preparation of the document. **Section 10** includes abbreviations and acronyms that are used throughout this document.

**Appendix A** contains a list of the projects analyzed in the 2010 IDTEA. **Appendix B** includes descriptions of applicable laws, regulations, policies, and planning criteria. **Appendix C** includes a copy of the coordination letter mailed to the agencies and other stakeholders for this action, the distribution list, and any responses to the letters that are received.

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## 2. Description of the Proposed Action

### 2.1 Detailed Description of the Proposed Action

The Proposed Action is to implement the FHL RPMP for the cantonment area. The FHL RPMP includes the Installation Design Guide, Installation Development Plan based on three Area Development Plans, Capital Investment Strategy, and RPMP Digest.

The total process for installation master planning, as presented in UFC 2-100-01, recommends the preparation of linked plans that can be implemented in total or incrementally based on the installation's needs and resources. While not entirely linear, the planning process consists of four primary phases, which in aggregate form the RPMP and master planning process. FHL has completed the first three of the following four phases of the master planning process that resulted in the development of the FHL RPMP:

- Identification of a *planning vision*, specific *goals* to support the vision, and measurable planning *objectives* and *development principles*
- Preparation and evaluation of *development alternatives* for all scales of planning from individual districts to the overall installation
- Preparation of a *preferred alternative* that implements the vision and accompanying detailed documents to guide installation development and implement the RPMP
- Ongoing, regular review, and updating (if necessary) of the RPMP to reflect changes due to resource constraints; mission changes; or changes in environmental, social, or political conditions.

FHL stakeholders developed a planning vision, goals, and accompanying design principles to address FHL's major planning issues for the cantonment area. Following are the FHL planning vision, goals, and principles that were used to develop the FHL RPMP.

**Planning Vision:** To create a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families enjoy living and working.

**Goals:** Four design goals were developed from the planning vision to guide the alternative development process.

- *Goal 1: Flexible Training Environment.* Create a sustainable plan for development that maximizes opportunities for flexible use and provides room for growth to meet future needs.
- *Goal 2: Attractive Small Town.* Create places that contribute to a vibrant small-town feel and enhance community cohesion.
- *Goal 3: Walkable Main Streets.* Create streets that provide safe, convenient, and comfortable walks in a pedestrian-centric environment.
- *Goal 4: Usable Town Square.* Provide an area where soldiers, civilians, and families can gather to live, work, shop, and play.

**Principles:** Using the design goals, stakeholders collaboratively developed a list of principles, or design objectives, to form a common language to guide area development planning throughout the FHL

cantonment area. The design principles were grouped into five categories (i.e., district, buildings, streets, parking, and open space) (see **Table 2-1**). District-level design principles include ideas common to all development throughout the FHL cantonment area. Principles were then grouped according to their impact on the built environment (i.e., buildings, streets, parking, and open spaces).

**Table 2-1. Fort Hunter Liggett Cantonment Area Master Planning Design Principles**

District Principles			
<ul style="list-style-type: none"> <li>• Buildings Closer to the Road</li> <li>• Central Food Court</li> <li>• Expanded Perimeter</li> <li>• Organized Development</li> <li>• Solar Walks</li> <li>• People by the Road, Vehicles in Back</li> </ul>	<ul style="list-style-type: none"> <li>• Walkable</li> <li>• Transit-Oriented Development</li> <li>• 10-Minute Walk</li> <li>• Town Center</li> <li>• Town Square</li> <li>• Storefronts</li> </ul>	<ul style="list-style-type: none"> <li>• Horizontal Mixed-Use</li> <li>• Compact Development</li> <li>• Clear Wayfinding</li> <li>• Places to Gather</li> <li>• Campus Quads</li> <li>• Xeriscaping</li> <li>• Maintain Existing Trees</li> </ul>	
Building Principles	Street Principles	Parking Principles	Open Space Principles
<ul style="list-style-type: none"> <li>• Narrow Buildings</li> <li>• Vertical Mixed-Use</li> <li>• Multi-Story Buildings</li> <li>• Visible Entries/ Identifiable Entries</li> <li>• Phaseability</li> <li>• Permanent Buildings</li> <li>• Solar Walls</li> <li>• Anti-terrorism Force Protection (AT/FP)</li> <li>• Secure Warehouses</li> <li>• Compatible Development</li> <li>• Infill Buildings</li> <li>• Historic Buildings</li> <li>• Adaptable Buildings</li> <li>• Arcades</li> <li>• Graywater Reuse</li> </ul>	<ul style="list-style-type: none"> <li>• Tactical Vehicle Entry</li> <li>• Commercial/ Privately Owned Vehicle Entry</li> <li>• Wide Roads</li> <li>• Street Grids</li> <li>• Medians</li> <li>• Planting Strips</li> <li>• Street Trees</li> <li>• Connected Sidewalks</li> <li>• Connected Road Network</li> <li>• Clear Signage</li> <li>• Grid Layout</li> <li>• Security Lighting</li> <li>• Traffic Circles</li> </ul>	<ul style="list-style-type: none"> <li>• On-Street Parking</li> <li>• Parking Behind/ Hidden Parking</li> <li>• Car Parks</li> <li>• Perimeter Parking</li> <li>• Parking Covered by Solar Panels</li> </ul>	<ul style="list-style-type: none"> <li>• Central Work Area</li> <li>• Courtyards</li> <li>• Viewshed</li> <li>• Adequate Hardscape</li> <li>• Preserve Natural Resources</li> <li>• Landscape Screening</li> <li>• Axes and Focal Points</li> <li>• Traffic Circles</li> <li>• Courtyards</li> </ul>

Source: FHL 2012a

These design principles contributed to the creation of a form-based code composed of the Regulating Plan and planning standards such as street, building, and landscape standards, which together form the Installation Design Guide. The Installation Design Guide established a framework for the infrastructure, facilities, and landscape of FHL that would guide cantonment area development. The use of a form-based code would provide flexibility to the master planning process and allow the FHL RPMP to accommodate FHL’s changing mission requirements. The Regulating Plan would be the controlling and principal tool for implementing the form-based code, and would identify the planning standards for the cantonment area (see **Figure 2-1**). All new projects in the cantonment area would be developed in accordance with the Regulating Plan and building envelope standards as presented in the Installation Design Guide.

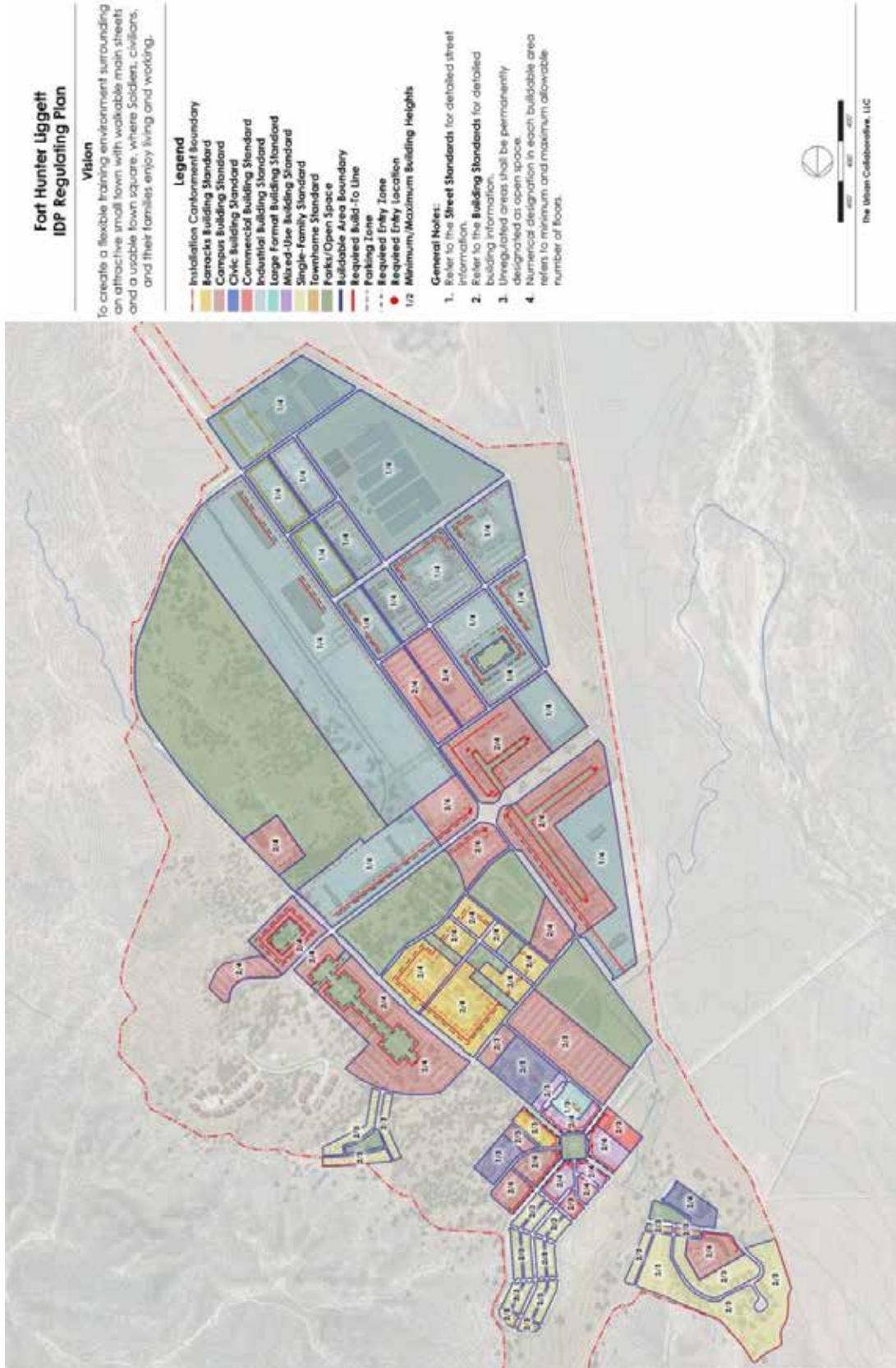


Figure 2-1. Fort Hunter Liggett Installation Regulating Plan

The cantonmentwide plans in the FHL Installation Development Plan are the Installation Illustrative Plan, Regulating Plan, Parks and Quads Plan, Transportation Network Plan, Tactical Vehicle Route Plan, Commercial Vehicle Route Plan, Street Tree Plan, Emergency Access Plan, and Parking Plan. The Installation Illustrative Plan is a plan that graphically displays the overall potential development of the cantonment area based on the preferred alternatives developed from each Area Development Plan (see **Figure 2-2**). **Figures 2-3** through **2-5** display the Illustrative Plans for the Hacienda Heights, Blackhawk Hills, and Mission Valley Area Development Plans.

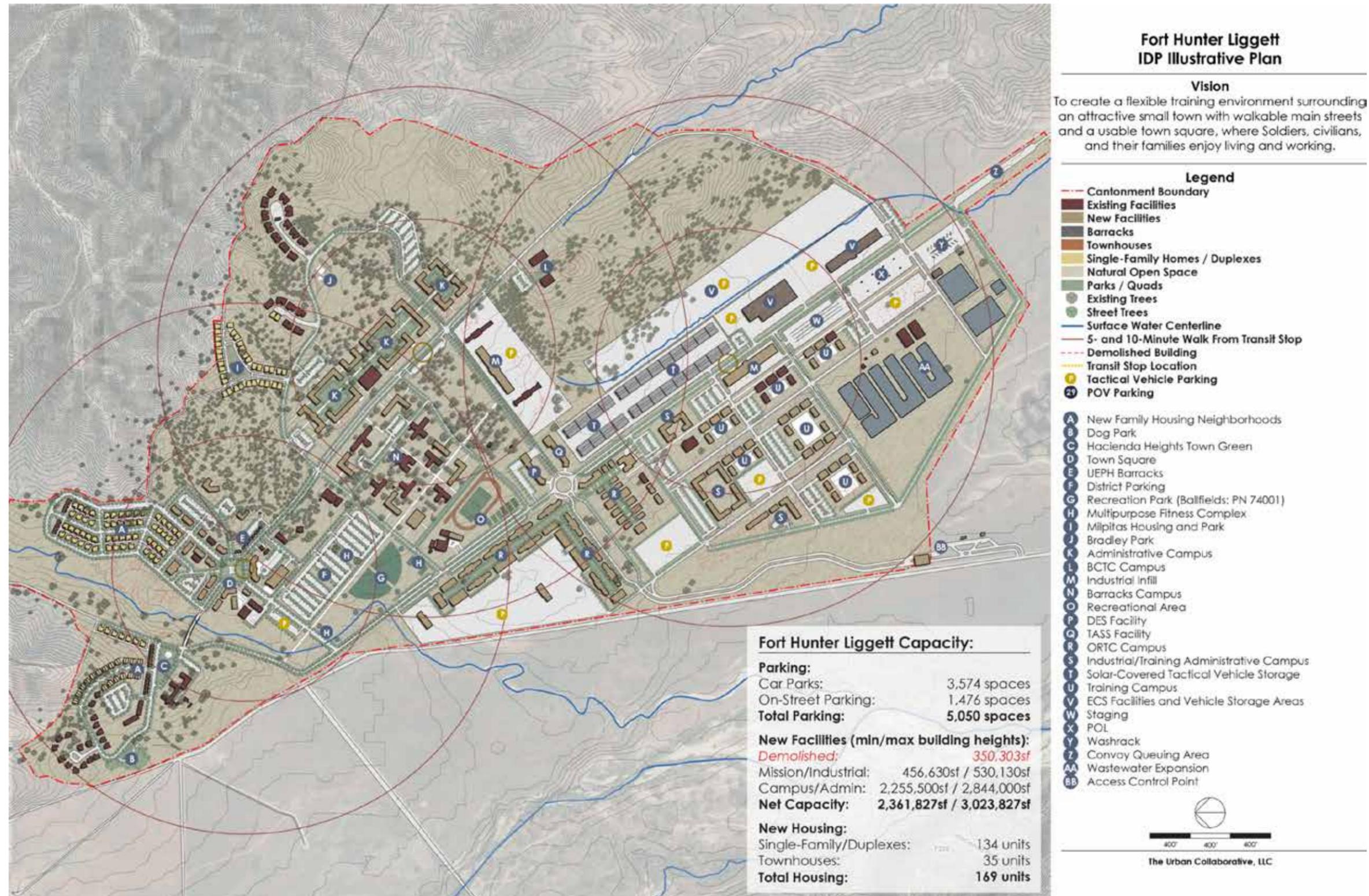
Prior to beginning the actual design of the Area Development Plans, FHL stakeholders conducted a thorough analysis of each of the three cantonment area districts. Generally, the analyses included evaluation of existing conditions; a study of the existing program requirements; and a review of FHL's previously developed planning vision, goals, objectives, and planning standards. Existing conditions included existing natural and built conditions and environmental constraints. This information was obtained by conducting a building condition assessment; site analysis to identify environmental and operational constraints; and identifying strengths/weaknesses and opportunities/threats for the Hacienda Heights, Blackhawk Hills, and Mission Valley districts. Based on the results, several development alternatives for each Area Development Plan (i.e., district) were created. The alternatives were analyzed, discussed, and compared to the previously developed design principles to identify a preferred alternative for each district. Each preferred alternative provides areas needed to accommodate future mission requirements and growth. The combination of the preferred alternatives from the Hacienda Heights, Blackhawk Hills, and Mission Valley Area Development Plans is the proposed Installation Development Plan.

Each Area Development Plan includes detailed constraints and opportunities maps, illustrative plans, regulating plans, implementation plans, capacity analysis, planning standards, and supporting sketches and renderings. The following sections provide a summary of three cantonment area districts as identified in the FHL RPMP.

### 2.1.1 Hacienda Heights District

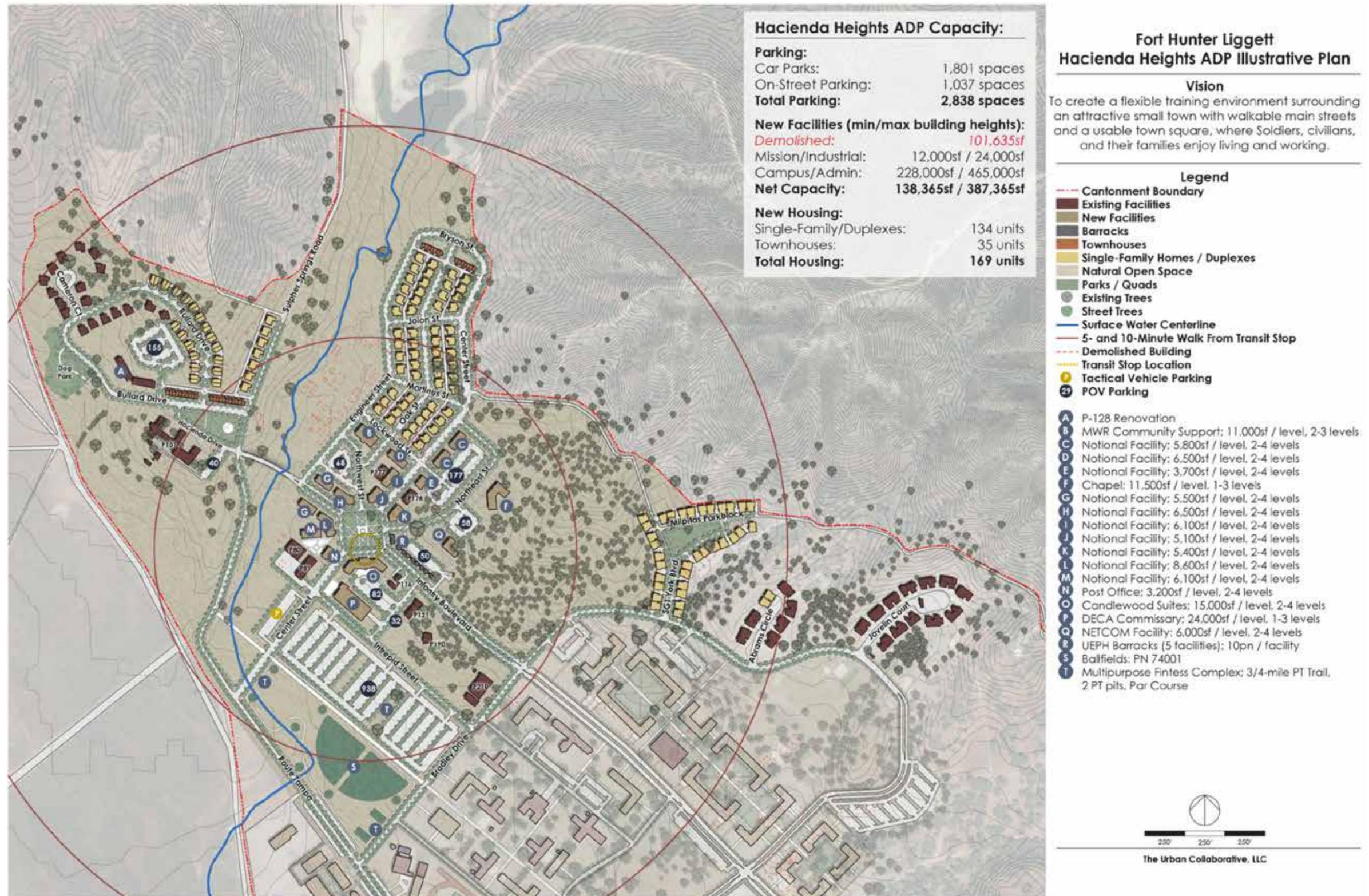
Hacienda Heights is in the northern portion of the cantonment area, and contains housing and public facilities. Currently, Hacienda Heights consists largely of outdated temporary facilities. Newer, permanent buildings would replace metal buildings and warehouses in poor condition. Historic facilities, such as the Hacienda, and permanent facilities, such as the chapel, would be maintained and their architectural style replicated in new structures throughout Hacienda Heights. The preferred alternative of the Hacienda Heights district would provide areas to accommodate quality of life facilities, and an administration center of operations.

Hacienda Heights is separated into three nodes of development: Hilltop, Town Center, and Milpitas Housing (FHL 2012b). The Hilltop node is in the western portion of Hacienda Heights on a hilltop, and contains an existing residential neighborhood master plan to accommodate an expansion of on-installation housing. The Town Center node, which is currently an industrial area, would consist of a centrally located town square envisioned to become the installation's most densely developed area. All industrial uses would be relocated to the Mission Valley district (see **Section 2.1.3**). To the east is the Milpitas Housing node, master planned to accommodate a new housing neighborhood to replace the existing Navy yard. Sidewalks and parks would connect the three nodes, and each node would have a centrally located green space with a town center as the focal point. Development would occur outside of a 150-foot buffer surrounding a stream traversing through the center of Hacienda Heights.



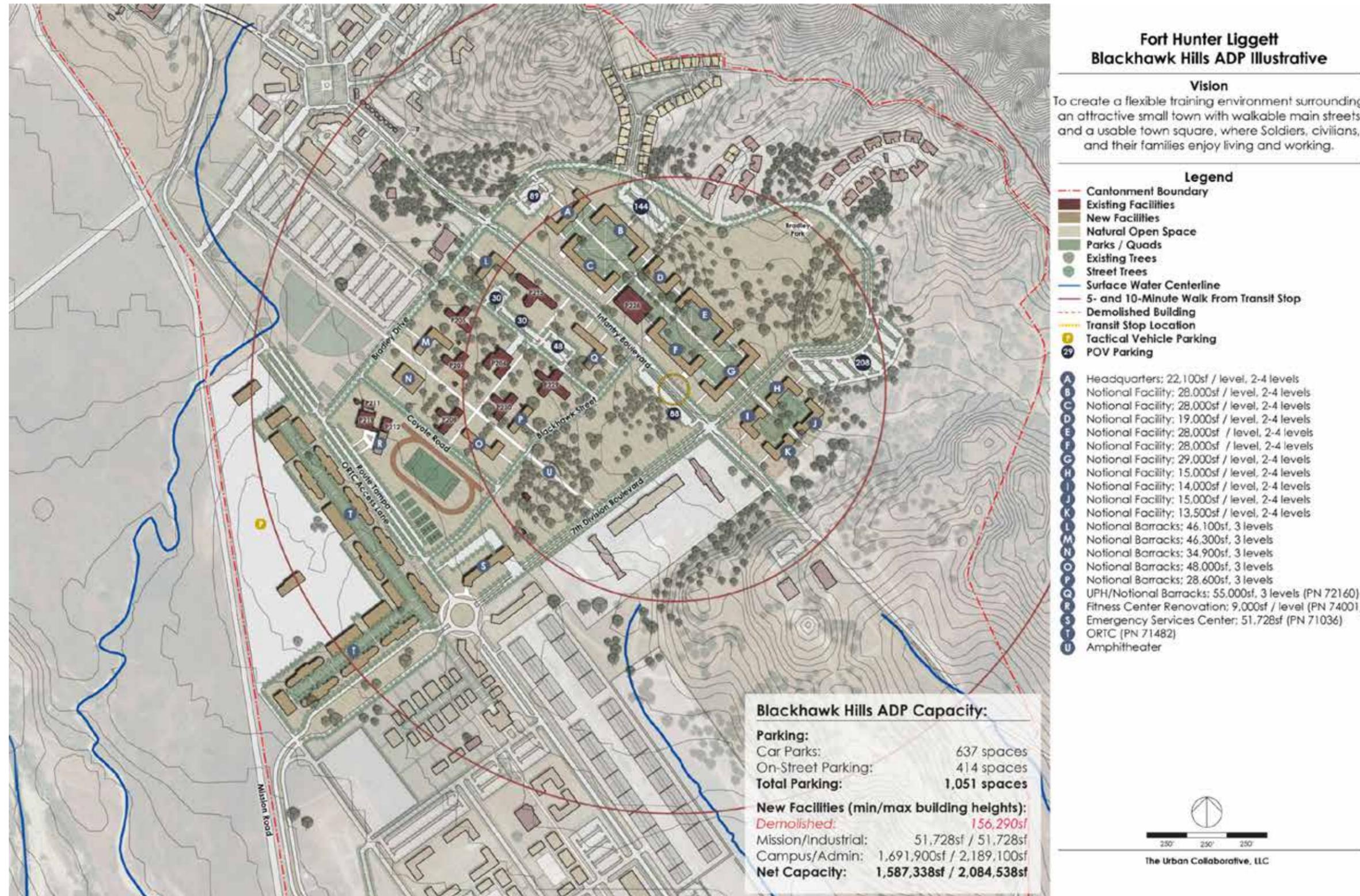
Source: FHL 2012a

Figure 2-2. Fort Hunter Liggett Installation Illustrative Plan



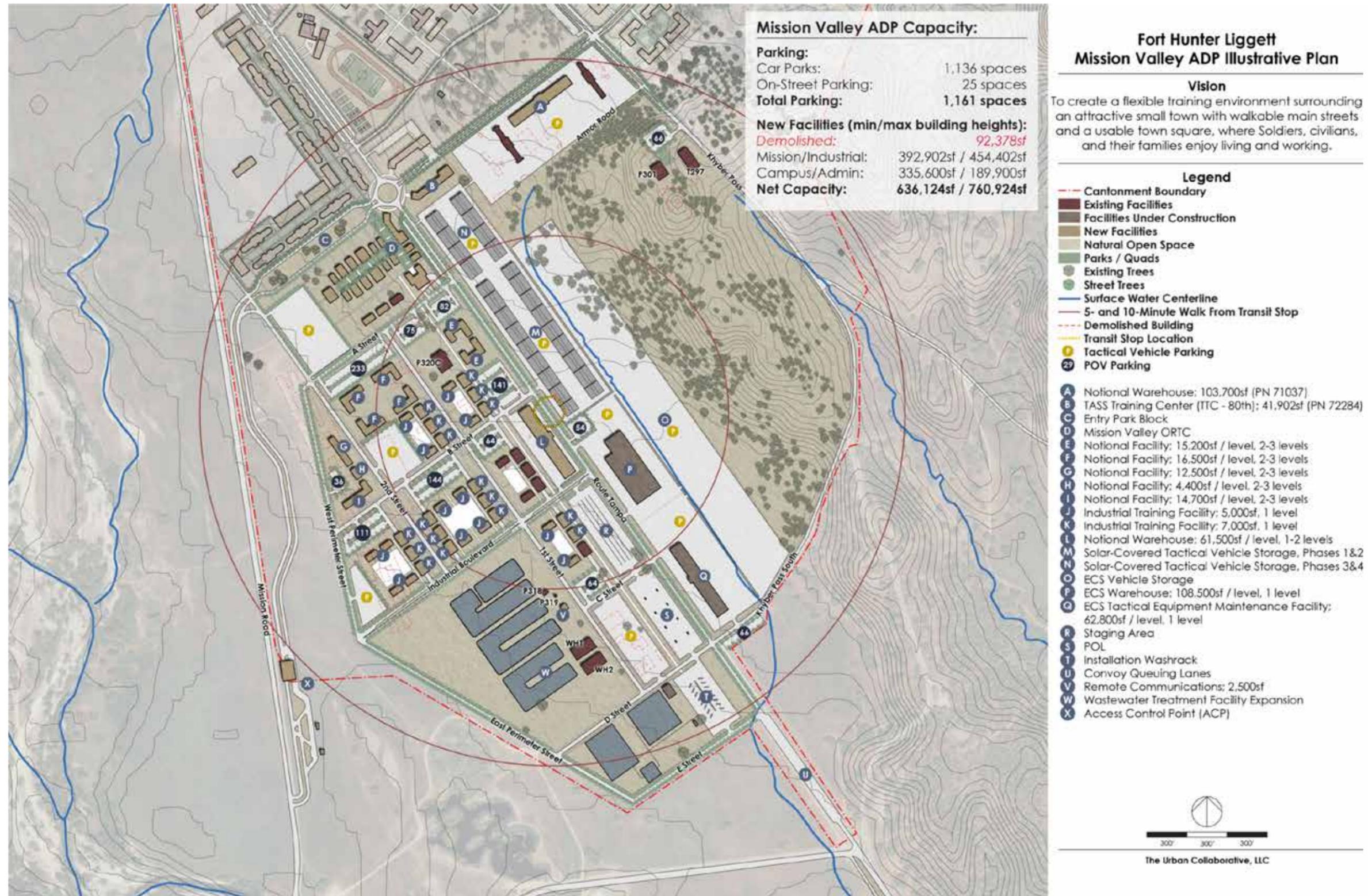
Source: FHL 2012a

Figure 2-3. Fort Hunter Liggett Hacienda Heights Area Development Plan Illustrative Plan



Source: FHL 2012a

Figure 2-4. Fort Hunter Liggett Blackhawk Hills Area Development Plan Illustrative Plan



Source: FHL 2012a

Figure 2-5. Fort Hunter Liggett Mission Valley Area Development Plan Illustrative Plan

The Hacienda Heights district (see **Figure 2-3**) was master planned to accommodate the following potential future development:

- Up to approximately 390,000 square feet (ft<sup>2</sup>) of net capacity in new facilities
  - Construction of approximately 25,000 ft<sup>2</sup> of mission/industrial facilities
  - Construction of approximately 465,000 ft<sup>2</sup> of campus/administrative facilities
  - Demolition of approximately 100,000 ft<sup>2</sup> (60,000 ft<sup>2</sup> of mission support facilities and 40,000 ft<sup>2</sup> of community support facilities)
- Approximately 170 new housing units (135 single-family/duplexes and 35 townhouses)
- Approximately 2,800 parking spaces (1,800 spaces in car parks and 1,000 spaces in street parking).

### 2.1.2 Blackhawk Hills District

Blackhawk Hills is in the central portion of the cantonment area, and is identified as a training campus with barracks and classroom facilities. Approximately half of the existing facilities, especially those in the eastern portion of the district used for instruction and general purpose administration and storage, are expected to be demolished within 20 years (FHL 2010b). The various scattered locations of industrial areas have been generally identified as a detriment to the district, and would be relocated to the Mission Valley district (see **Section 2.1.3**). The existing barracks area is characterized as a benefit and would be preserved and expanded. Development in the eastern portion of Blackhawk Hills is limited due to steep slopes, dense vegetation, and scattered occurrences of the federally threatened plant, purple amole; however, vacant land in the western portion of the district would provide ample room for growth. The preferred alternative of the Blackhawk Hills district would provide additional administrative, storage, and parking facilities.

Blackhawk Hills has two main planning areas consisting of the administrative campus and an area for the Operational Readiness Training Complex (ORTC) and Regional Training Center (RTC). The ORTC and RTC area would be in the southwestern portion of Blackhawk Hills, separated from the remainder of the district by Route Tampa. The administrative campus, which would house many of the administrative training functions, would occupy most of the remainder of the district. The FHL RPMP proposes new parking located at the perimeter of the campus area, an outdoor amphitheater, improvement of the street and sidewalk networks, and collocating facilities. Pedestrian and vehicle mobility would be enhanced by adding sidewalks and bike lanes, medians, planting strips, turn lanes, and on-street parking to many streets through the incorporation of street standards. As many existing trees as possible, including mature oaks, would be preserved; however, development would require the removal of some trees.

The Blackhawk Hills district (see **Figure 2-4**) was master planned to accommodate the following potential future development:

- Up to approximately 2 million ft<sup>2</sup> of net capacity in new facilities
  - Construction of approximately 50,000 ft<sup>2</sup> of mission/industrial facilities
  - Construction of approximately 2.1 million ft<sup>2</sup> of campus/administrative facilities, including up to 260,000 ft<sup>2</sup> of barracks
  - Demolition of approximately 150,000 ft<sup>2</sup>
- Approximately 1,050 parking spaces (640 spaces in car parks and 410 spaces in street parking).

### 2.1.3 Mission Valley District

Mission Valley, the southernmost district in the cantonment area, is the industrial area with some training facilities. Currently, the district consists largely of temporary facilities used for industrial and training activities. It is proposed that newer, permanent buildings would replace metal buildings and warehouses in poor condition. The Tusi Army Heliport (AHP) and wastewater treatment plant for the cantonment area are also in Mission Valley. The wastewater treatment plant would be maintained at its existing location, and additional space would be provided for potential expansion. Tusi AHP would be relocated to provide additional room for development. The evaluation of the relocation of Tusi AHP will not occur in this EA; this project will be analyzed in a separate, future NEPA document.

Mission Valley is divided into two topographical areas; the northeastern portion of the district contains steep slopes with many mature oak trees while the southwestern portion consists of a large, flat valley with minimal vegetation. The FHL RPMP proposes that the southwestern portion of Mission Valley be reorganized with a street grid that breaks the district into large, flexible parcels that can support training functions, warehouses, or vehicle storage. New buildings would be sited to accommodate future known and unanticipated growth. Both smaller training buildings and large warehouses fit into the block structure to support soldiers' training needs. Several previously proposed projects, including the Equipment Concentration Site (ECS) and several metal training buildings, were incorporated into Mission Valley, and in some cases would be relocated to contribute better to the overall organization of the district (FHL 2011a). The FHL RPMP also proposes a new access control point (ACP) facility off of Mission Road. While this facility is included in the Area Development Plan, it will not be evaluated within this EA but rather in a separate NEPA document.

The proposed street grid concept would connect most streets, providing accessibility for each parcel and options for vehicle traffic. Route Tampa is maintained as a primary thoroughfare; however, a parallel access road would be constructed to allow convoys to access the washrack; petroleum, oil, and lubricant (POL) area; and staging areas. The addition of the access road would facilitate mission flow, support convoy reentry sequences, and limit convoy traffic on Route Tampa and Mission Road. Perimeter roads would encircle Mission Valley and take traffic off of secondary roads. Street trees and other vegetation would be incorporated along Route Tampa, a major industrial boulevard, and along the perimeter roads, including Mission Road. The placement of street trees is intended to screen the industrial area from the ACPs and the barracks area in Blackhawk Hills, thereby enhancing the San Antonio Mission viewshed. The vegetated buffer would also support anti-terrorism force protection (AT/FP) offsets, increase pavement life, provide shade, reduce erosion, and help mitigate storm water.

Where appropriate, the land uses in Mission Valley also consider the uses within Blackhawk Hills due to the physical and functional connections between the districts. Access between the districts are considered and enhanced in the FHL RPMP, and incompatible uses, such as the barracks area in Blackhawk Hills and industrial facilities in Mission Valley, would be kept separated.

The Blackhawk Hills district (see **Figure 2-5**) was master planned to accommodate the following potential future development:

- Up to approximately 761,000 ft<sup>2</sup> of net capacity in new facilities
  - Construction of approximately 455,00 ft<sup>2</sup> of mission/industrial facilities
  - Construction of approximately 190,000 ft<sup>2</sup> of campus/administrative facilities
  - Demolition of approximately 92,000 ft<sup>2</sup>
- Approximately 1,165 parking spaces (1,140 spaces in car parks and 25 spaces in street parking).

### 3. Alternatives to the Proposed Action

Under NEPA, reasonable alternatives to the Proposed Action must be considered in an EA. Considering alternatives helps to avoid unnecessary impacts and allows analyses of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must also be “ripe” for decisionmaking (i.e., any necessary preceding events having taken place), affordable, capable of implementation, and satisfactory with respect to meeting the purpose of and the need for the action. The following discussion identifies alternatives considered by the U.S. Army and identifies whether they are reasonable and, hence, subject to further detailed evaluation in this EA.

#### 3.1 Screening Criteria

The following screening criteria were used to develop the Proposed Action and evaluate potential alternatives:

- Flexible training environment. Create a sustainable plan for development that maximizes opportunities for flexible use and provides room for growth to meet future needs.
- Attractive small town. Create places that contribute to a vibrant small-town feel and enhance community cohesion.
- Walkable main streets. Create streets that provide safe, convenient, and comfortable walks in a pedestrian-centric environment.
- Usable town square. Provide an area where soldiers, civilians, and families can gather to live, work, shop, and play.

#### 3.2 Alternatives Considered for Further Detailed Analysis

The alternatives considered for detailed analysis in the EA include the Proposed Action and the No Action Alternative. The Proposed Action is to implement the FHL RPMP.

##### 3.2.1 Proposed Action

The Proposed Action would consist of implementation of the master planning documents described in **Section 2**, and the configuration of the FHL cantonment area, including Hacienda Heights, Blackhawk Hills, and Mission Valley would occur as shown in **Figures 2-2** through **2-5**.

##### 3.2.2 No Action Alternative

CEQ regulations specify the inclusion of the No Action Alternative in the alternatives analysis (40 CFR 1502.14). The No Action Alternative can also provide a baseline of the existing conditions against which potential environmental and socioeconomic impacts of the Proposed Action and alternative actions can be compared.

Under the No Action Alternative, FHL would not implement the Proposed Action and thereby would not implement the FHL RPMP. Taking no action would not comply with the need for the action, which is to meet FHL’s current and future mission requirements and national security objectives while also satisfying the FHL planning vision to create a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families can

enjoy living and working. The No Action Alternative would preclude the use of the installation master planning process to identify, site, and prioritize projects in a manner that would rectify and prevent FHL planning issues in the cantonment area. FHL would continue to implement projects on an individual, immediate needs basis that does not consider the project's contribution to meeting the planning goals of the cantonment area, or its effect on future, long-term planning. Under the No Action Alternative, an ad hoc approach to development of the cantonment area would continue.

### 3.3 Alternatives Considered but Eliminated from Detailed Analysis

The FHL RPMP development process entailed a rigorous exercise in alternatives analysis during preparation of the Area Development Plans during which several alternatives were developed for each district. Each alternative represented a different scenario of future growth within each district at the FHL cantonment area. As discussed in **Section 2.1**, the preferred alternative for each Area Development Plan (i.e., district) was developed using key design attributes from the alternatives for each district, and was not an exact replica of one of the identified development alternatives. Therefore, several alternatives were dismissed during the plan development stage. These alternatives, which have been eliminated from further detailed analysis in this EA, are discussed in the following sections.

#### 3.3.1 Hacienda Heights Area Development Plan Alternatives

- **Alternative 1.** This alternative proposes open space in all three nodes of development (i.e., Hilltop, Town Center, and Milpitas Housing). The proposed installation headquarters would be relocated to the Hilltop, and an administrative quad would connect the headquarters with the Hacienda. New townhouses in the Milpitas Housing node would allow for the accommodation of additional families on-installation. Community amenities would be sited in the southern portion of the district to serve Hacienda Heights and Blackhawk Hills to the south.

This alternative was eliminated from further detailed analysis because it would not provide the envisioned level of growth and development in Hacienda Heights, including insufficient parking and limited development in the Town Center node, including no housing.

- **Alternative 2.** This alternative proposes a town square in the southern portion of the district near the existing post-exchange and theater, thereby providing a focal point of the development node that focuses on community amenities and socializing. New family housing, a neighborhood park, a new chapel, open space for the Hacienda, and a parking lot would be sited on the Hilltop. Large parking lots would be sited in the southern portion of the district to serve both Hacienda Heights and Blackhawk Hills.

This alternative was eliminated from further detailed analysis because it would not allow for growth in the Milpitas Housing node, and the street grid road network would be limited.

- **Alternative 3.** This alternative proposes a town square north of Infantry Boulevard, which would be accessible to family housing and Blackhawk Hills. New development surrounding the town square would include parking lots and other facilities providing community amenities. New single-family houses and additional administrative space are sited on the Hilltop and a new chapel is sited on a hill south of the town square.

This alternative was eliminated from further detailed analysis because it would not provide the appropriate density and location of housing and transportation-related development.

### 3.3.2 Blackhawk Hills Area Development Plan Alternatives

The Blackhawk Hills alternatives incorporate common themes including siting car parks on the perimeter of the campus area, addition of an outdoor amphitheater, improvement of the street and sidewalk network, and collocating facilities.

- **Alternative A.** This alternative focuses on maintaining existing facilities and consolidating facilities soldiers use most often. Development would be primarily sited within the barracks area and the adjacent parcels. Infill buildings would be proposed between existing barracks to create well-defined outdoor spaces. A new recreation center would be sited near existing barracks and the proposed ORTC, and additional athletic facilities would be collocated near the existing fitness center. A pedestrian quad that serves as a focal point would be sited on the exterior (southeastern portion) of the district and paths would be added to natural zones to provide recreational opportunities and oak habitat preservation. Potential ORTC locations would be sited within undeveloped areas in the northern and western portions of the district.

This alternative was eliminated from further detailed analysis because it would not provide a town square for the district and has limited gathering places.

- **Alternative B.** This alternative provides the maximum development of the three proposed Blackhawk Hills alternatives. Proposed new development would be sited to shape quads and maximize existing infrastructure in the barracks area. An administrative campus would be formed by siting administrative and education buildings around an open space quad. A school would be sited in the eastern portion of the district near the Milpitas housing node. A new helipad would be sited along Bradley Street, and warehouses would be sited along 7th Division Boulevard to create a streetscape. Parking would be sited on the perimeter of the district, and several ORTC locations would be sited in the northern portion of the district.

This alternative was eliminated from further detailed analysis because it would not provide a focal point or town square for the district and has limited mixed-use buildings.

- **Alternative C.** This alternative proposed three ORTCs and an RTC, additional single-family housing, and a well-developed street and pedestrian grid to explore options for building placement to ensure mission success. Possible ORTC locations would be sited in the northern and southern portions of the district, and an RTC would be sited in the southwestern portion of the district. Additional barracks would be added to the perimeter of the barracks area. Similar to other Blackhawk Hills alternatives, a new EDC and helipad would be sited along Bradley Street, a pedestrian quad would be sited in the southeastern portion of the district, and new recreational facilities would be provided. Parking would be at the perimeter of the district. The headquarters would be relocated outside to Mission Valley.

This alternative was eliminated from further detailed analysis because the AT/FP protection, constructability, and its ability to be completed in phases would be less than those provided by Alternatives A and B.

### 3.3.3 Mission Valley Area Development Plan Alternatives

The Mission Valley alternatives incorporate common themes such as car parks, improvement of the street and sidewalk networks, and collocating facilities. Subsequent to development of alternatives for the Mission Valley Area Development Plan, it was determined that relocation of the wastewater treatment plant was not feasible from infrastructure, energy demand, and economic perspectives.

- **Alternative A.** This alternative would provide the maximum development of all three proposed Mission Valley development alternatives. Alternative A would expand the cantonment area boundary on the western side for development of solar panel array and ECS expansion. A strong street grid would be incorporated into this alternative to guide future growth. A training campus, washrack, and Battle Command Training Center (BCTC) location would be sited in the northern, southern, and eastern portions of the district, respectively. Both the wastewater treatment plant and Tusi AHP would be relocated to gain additional land for development.

This alternative was eliminated from further detailed analysis primarily because relocation of the wastewater treatment plant would not be feasible. Additional reasons for elimination include that the alternative would not include a food court, and would provide less accessibility (parking and connected sidewalks) and less organized development as compared to Alternatives A and C.

- **Alternative B.** This alternative would focus on maintaining existing civic infrastructure and aerial capability. A flexible and less-developed street grid would be used to support buildings and yards. Similar to Alternative A, development of solar panel array, ECS expansion, and vehicle storage would occur in the western portion of the district. A training campus would be sited in the north, a BCTC location would be sited in the east, and a washrack would be sited in the south. New Directorate of Public Works facilities would be sited within the street grid.

This alternative was eliminated from further detailed analysis because the AT/FP protection, viewshed, and accessibility (tactical vehicle entry and ACPs) would be less than those provided by Alternatives A and C.

- **Alternative C.** This alternative explored moderate development through the proposed development of a street grid and relocation of the wastewater treatment plant to provide additional options for building placement to ensure mission success. Similar to Alternatives A and B, a solar panel array and ECS expansion would be sited along Route Tampa, a training campus would be sited in the central portion of the district, a BCTC location would be sited in the east, and a washrack would be sited in the south.

This alternative was eliminated from further detailed analysis because relocation of the wastewater treatment facilities would not be feasible from infrastructure, energy demand, and economic perspectives.

## 4. Affected Environment

This section describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate potential environmental consequences from implementation of the Proposed Action. Baseline conditions represent current conditions. In compliance with NEPA, CEQ guidelines, and 32 CFR Part 651, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts.

The 2010 IDTEA and supplemental documents addressed construction and operation of projects in the cantonment area. Two of these projects, including Project C2 (Consolidated Vehicle Washrack) (identified in **Appendix A**) and several warehouses supporting the Directorate of Plans, Training, Mobilization and Security, have been completed. These projects are depicted in **Figure 2-2** as the projects labeled W (Washrack) and U (Training Campus) (see existing facilities), respectively. The completed statuses of these projects have been considered in **Section 4**. One project, Project C1 (ECS) as identified in **Appendix A**, consists of a warehouse, maintenance facility (Tactical Equipment Maintenance Facility [TEMF]), and ECS yard. The warehouse and TEMF, which are sited within the existing ECS area, are currently under construction and nearing completion. The ECS yard expansion is currently under design, but for purposes of presenting existing conditions in **Section 4**, all portions of this project were assumed to be complete. Project C1 at completion is depicted in **Figure 2-2** as the project labeled V (ECS Facilities and Vehicle Storage Area).

Some environmental resource areas have been omitted from detailed analysis in this EA. The bases for exclusion of these resource areas are outlined in the following paragraphs.

***Airspace Management and Safety.*** None of the activities associated with the Proposed Action are within designated airspace, nor would implementation of the FHL RPMP involve activities that would impact designated airspace or military aircraft operations conducted within designated airspace. As discussed in **Section 2.1.3**, Tusi AHP would be relocated to provide additional room for development; however, the evaluation of this action will not occur in this EA but will be analyzed in a separate NEPA document. Accordingly, airspace management and safety has been omitted from detailed analysis in this EA.

***Socioeconomics and Environmental Justice.*** The Proposed Action does not involve activities that would directly affect activities outside of FHL. Implementation of the FHL RPMP would not include hiring workers in the local labor force, and would not result in any outside workers and their dependents moving to the area. There would be no change in the number of personnel assigned to FHL and no changes in area population or associated changes in the demand for housing and public/social services. The Proposed Action does not involve activities that would affect minority or low-income populations because implementation of the RPMP would be limited to the FHL cantonment area, and would not impact adjacent communities.

### 4.1 Noise

#### 4.1.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on a rooftop. Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and

frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is viewed as music to one's ears or as annoying noise. Affected receptors are specific (e.g., schools, churches, hospitals, or residences) or broad (e.g., nature preserves or designated districts) areas in which occasional or persistent sensitivity to noise above ambient levels exists.

**Noise Metrics and Regulations.** Although human response to noise varies, measurements can be calculated with instruments that record instantaneous sound levels in decibels. A-weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The nominal threshold of hearing varies with frequency but corresponds to 0 decibels, but the actual average threshold is about 4 decibels. The threshold of pain occurs at the upper boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981a), but depends on the individual. Generally younger people are more tolerant of loud sounds than older people. **Table 4-1** compares common sounds and shows how they rank in terms of the effects on hearing. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each 10 dBA increase seems twice as loud (USEPA 1981b).

**Table 4-1. Sound Levels and Human Response**

Noise Level (dBA)	Common Sounds	Effect
10	Just audible	Negligible*
30	Soft whisper (15 feet)	Very quiet
50	Light auto traffic (100 feet)	Quiet
60	Air conditioning unit (20 feet)	Intrusive
70	Noisy restaurant or freeway traffic	Telephone use difficult
80	Alarm clock (2 feet)	Annoying
90	Heavy truck (50 feet) or city traffic	Very annoying Hearing damage (8 hours)
100	Garbage truck	Very annoying*
110	Pile drivers	Strained vocal effort*
120	Jet takeoff (200 feet) or auto horn (3 feet)	Maximum vocal effort
140	Carrier deck jet operation	Painfully loud

Source: USEPA 1981b and \*HDR extrapolation

**Federal Regulations.** Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed to is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits.

Sound levels, resulting from multiple single events, are used to characterize noise effects from aircraft or vehicle activity and are measured in day-night average sound level (DNL). The DNL noise metric incorporates a “penalty” for nighttime noise events to account for increased annoyance. DNL is the energy-averaged sound level measured over a 24-hour period, with a 10-dBA penalty assigned to noise events occurring between 10:00 p.m. and 7:00 a.m. DNL values are obtained by averaging sound exposure levels over a given 24-hour period.

DNL is the metric recognized by the U.S. government for measuring noise and its impacts on humans. According to the U.S. Air Force, the Federal Aviation Administration, and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the noise exposure exceeds 75 dBA DNL, “normally unacceptable” in regions exposed to noise between 65 and 75 dBA DNL, and “normally acceptable” in areas exposed to noise of 65 dBA DNL or under. The Federal Interagency Committee on Noise developed land use compatibility guidelines for noise in terms of a DNL sound level (FICON 1992). For outdoor activities, the USEPA recommends 55 dBA DNL as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974). Construction projects should comply with noise reduction criteria identified in DOD Instruction 4165.57, *Air Installations Compatible Use Zones (AICUZ)*, as necessary.

Chapter 14 of AR 200-1, *Environmental Protection and Enhancement*, implements Federal laws concerning environmental noise from Department of the Army activities, and identifies U.S. Army operational noise policy. AR 200-1 states that DNL is the primary descriptor for military noise and DNL sound levels are used by the U.S. Army to analyze land use compatibility (U.S. Army 2007).

**Noise Zones.** Noise exposure levels are depicted visually for analytical purposes as noise contours that connect points of equal value. These noise contours are overlaid on a map of an airfield or range vicinity. The area encompassed by a noise contour is a noise exposure zone, also referred to as a “noise zone.” Under U.S. Army regulations such as AR 200-1, there are four noise zones: the land use planning zone (LUPZ), Noise Zone I, Noise Zone II, and Noise Zone III. The impact of the noise exposure levels from aircraft operations, weapons firing, and other military activities at specific sites are analyzed using noise zones.

The LUPZ can provide the installation with an adequate buffer for land use planning and can reduce conflicts between the installation’s noise-producing activities and the civilian community. This area is acceptable for noise-sensitive land uses. Noise Zone I is usually acceptable for all types of land use activities. Land within Noise Zone II should normally be limited to activities such as industrial, manufacturing, transportation, and resource production. However, if the community determines that land in Noise Zone II must be used for residential purposes, then noise level reduction features of 25 to 30 dB should be incorporated into the design and construction of new buildings. The noise levels within Noise Zone III are considered so severe that noise-sensitive land uses should not be considered therein.

#### 4.1.2 Existing Conditions

The primary noise sources at FHL are air and ground military training, including activities at firing ranges, convoy live-fire areas, explosive ordnance disposal range, drop zones and landing zones, Tusi AHP, and Schoonover Airfield. The closest primary noise source to the cantonment area is Schoonover Airfield located approximately 1.7 miles to the southeast. The acreage within the Community Noise Equivalent Level noise zones from aircraft operations at Schoonover Airfield only includes land immediately adjacent to the runway and consists entirely of installation property (FHL 2010a).

The cantonment area is moderately developed with residential and administrative facilities; therefore, the average ambient noise level is expected to be similar to suburban or urban residential areas. Existing sources of ambient noise at the cantonment area include vehicle traffic (military and privately owned vehicles [POVs]), construction activities, and helicopter operations at Tusi AHP. Operations at Tusi AHP by themselves do not generate enough noise to produce a 60 dBA DNL, which has been established by the U.S. Army as a land use planning threshold. In effect, when modeled alone, helicopter operations at Tusi AHP do not produce a level of even 55 dBA DNL. Consequently, noise levels associated with helicopter operations at Tusi AHP are considerably lower than the ambient noise environment surrounding the cantonment area (FHL 2012c).

Several sensitive noise receptors are located in the northern and central portions of the cantonment area. The child development center, residential uses (family housing and temporary lodging), and the auditorium/theater are in the northern portion of the cantonment area. Additional residential uses (family housing and barracks), the chapel, medical/dental clinic, and dining facility are located in the central portion of the cantonment area.

## 4.2 Land Use

### 4.2.1 Definition of the Resource

Land use refers to the planned development of property to achieve its highest and best use. Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent areas. Tools supporting land use planning include written master plans, management plans, and zoning regulations. These concepts apply to U.S. Army land use planning whose purpose is to identify the principal kinds of facilities and activities to be found in particular areas on installations (Canter et al. 2007).

The location (i.e., siting) and extent of a proposed action require evaluation of their potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include historical and existing land use at the project site, land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its permanence.

This section focuses on land uses in the FHL cantonment area and the immediately surrounding areas because the FHL RPMP would guide development only in the cantonment area.

### 4.2.2 Existing Conditions

The FHL cantonment area is in the east-central portion of the installation and occupies slightly more than 1,000 acres. There are multiple land uses present in the cantonment area, including mission-related uses and support functions. The existing, disjointed land use patterns at FHL are a result of its past use by the active Army, subsequent transfer to the USAR, and current transformation into a USAR national training site. There are several existing family housing areas that support full-time residents of the installation. Lodging for short-term residents is also provided in the form of transient training barracks and senior enlisted and officers' quarters (FHL 2007a). There is a wide range of building types, ages, and conditions in the cantonment area.

Most development in the FHL cantonment area is concentrated in the northern, central, and southwestern portions of the cantonment area. Large areas of the southern and eastern portions of the cantonment area are undeveloped and are not actively used.

The FHL cantonment area is currently categorized into 12 common land use categories (i.e., primary functional uses): administration, airfield, community, family housing, unaccompanied housing, maintenance, medical, outdoor recreation, supply/logistics, classroom training, outdoor training, and utility (FHL 2007a). Most of the western portion of the cantonment area is currently designated in outdoor training land use category. Family housing, unaccompanied housing, and community land uses are adjacent to outdoor training areas in the north, while community, unaccompanied housing, medical, outdoor recreation, and maintenance uses are adjacent to training areas in the central cantonment area. Classroom training occupies two small areas in the central portion of the cantonment area. Administration uses are also located in two geographically separate areas, including one area on Infantry Road collocated with classroom training and supply/logistics uses and another area along Route Tampa between Tusi AHP to the west and maintenance uses to the east. Maintenance uses are scattered throughout the northern, central, and southern portions of the cantonment area, including a large area extending on both sides of Route Tampa (i.e., ECS). Supply/logistics uses occupy a small area on the east-central side of the cantonment area adjacent to a family housing area that is collocated with outdoor recreation uses.

All land at FHL, except for the cantonment area and Mission San Antonio de Padua, is considered part of a training area. FHL contains 34 training areas with 4 training areas (6B, 7, 13W, and 16B) adjacent to the cantonment area (see **Figure 1-1**). FHL also has several aviation training areas, including Tusi AHP in the southwestern portion of the cantonment area, and Schoonover Airfield, which is approximately 1.5 miles southeast of the cantonment area. Tusi AHP has 36 parking pads and a 570-foot-long, 50-foot-wide, lighted runway. In addition, the Medivac Airfield, a small, infrequently used landing pad for helicopters, is in the west-central portion of the cantonment area. Jackhammer landing zone is a helicopter tactical landing zone southeast of the cantonment area that also serves as a personnel and equipment drop zone.

Hunting and fishing are permitted in various areas of FHL. Hunting is prohibited in and around the cantonment area, but fishing is permitted in Gravel Pit Pond, which is the southern portion of the cantonment area (FHL 2012d).

The current master planning process for the Proposed Action revealed several land use planning weaknesses in the cantonment area. The weaknesses identified in Hacienda Heights include inadequate structures, outdated infrastructure, unorganized development, poor pedestrian environment, and difficult expansion opportunities due to the presence of historic buildings and a floodplain (FHL 2012b). Common weaknesses identified in Blackhawk Hills include the scattered presence of industrial areas among other uses; the presence of old, outdated buildings, and sprawling development with no distinct traffic patterns (FHL 2010b). Weaknesses in Mission Valley consist of unplanned, haphazard building and discontinuous land uses due to lack of a master plan; presence of many temporary, aesthetically poor structures; and scattered development with a poor road network and difficulty moving throughout the district (FHL 2011a).

The existing FHL RPMP was prepared in 2007 to provide a method to accommodate the Combat Support Training Center at FHL effectively and efficiently. The vision of the proposed FHL RPMP is create a flexible training environment surrounding an attractive, walkable small town with a functional town square where soldiers, civilians, and their families enjoy living and working.

## 4.3 Air Quality

### 4.3.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

***Ambient Air Quality Standards.*** Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM<sub>10</sub>] and particulate matter equal to or less than 2.5 microns in diameter [PM<sub>2.5</sub>]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of California has adopted the NAAQS for federally listed criteria pollutants and promulgated additional state ambient air quality standards. **Table 4-2** presents the most recent national and state ambient air quality standards.

***Attainment Versus Nonattainment and General Conformity.*** The USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an area is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to classify an area appropriately, so the area is considered attainment. The USEPA has delegated the authority for ensuring compliance with the NAAQS in the State of California to the California Environmental Protection Agency Air Resources Board. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule applies only to significant Federal actions in nonattainment or maintenance areas. This rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

***Federal Prevention of Significant Deterioration.*** Federal Prevention of Significant Deterioration (PSD) regulations apply in attainment areas to a major stationary source (i.e., source with the potential to emit 250 tons per year [tpy] of any regulated pollutant), and a significant modification to a major stationary source (i.e., change that adds 10 to 40 tpy to the major stationary source’s potential to emit depending on the pollutant). Additional PSD major source and significant modification thresholds apply for greenhouse gases (GHGs), as discussed in the GHG Emissions subsection. PSD permitting can also apply to a proposed project if all three of the following conditions exist: (1) the proposed project is a modification with a net emissions increase to an existing PSD major source, and (2) the proposed project is within

**Table 4-2. National and State Ambient Air Quality Standards**

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	State	
CO	8-hour <sup>(1)</sup>	9 ppm (10 mg/m <sup>3</sup> )	Same as Federal	None
	1-hour <sup>(1)</sup>	35 ppm (40 mg/m <sup>3</sup> )	20 ppm	None
Pb	Rolling 3-Month Average <sup>(2)</sup>	0.15 µg/m <sup>3</sup> <sup>(3)</sup>	None	Same as Primary
	30 Days	None	1.5 µg/m <sup>3</sup>	None
NO <sub>2</sub>	Annual <sup>(4)</sup>	53 ppb <sup>(5)</sup>	30 ppb	Same as Primary
	1-hour <sup>(6)</sup>	100 ppb	180 ppb	None
PM <sub>10</sub>	24-hour <sup>(7)</sup>	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	Same as Primary
	Annual	None	20 µg/m <sup>3</sup>	None
PM <sub>2.5</sub>	Annual <sup>(8)</sup>	12 µg/m <sup>3</sup>	Same as Federal	15 µg/m <sup>3</sup>
	24-hour <sup>(6)</sup>	35 µg/m <sup>3</sup>	None	Same as Primary
O <sub>3</sub>	8-hour <sup>(9)</sup>	0.075 ppm <sup>(10)</sup>	0.070 ppm	Same as Primary
	1-hour	None	0.09 ppm	None
SO <sub>2</sub>	1-hour <sup>(11)</sup>	75 ppb <sup>(12)</sup>	225 ppm	None
	3-hour <sup>(1)</sup>	None	None	0.5 ppm
	24-hour block	None	0.04 ppm	None
Hydrogen Sulfide	1-hour	None	0.03 ppm	None
Sulfates	24 Hour	None	25 µg/m <sup>3</sup>	None
Visibility Reducing Particles	8 Hour	None	0.23 per kilometer <sup>(13)</sup>	None
Vinyl Chloride	24 Hour	None	0.01 ppm	None

Sources: USEPA 2011 and CARB 2012a

Notes: Parenthetical values are approximate equivalent concentrations.

- Not to be exceeded more than once per year.
- Not to be exceeded.
- Final rule signed 15 October 2008. The 1978 standard for Pb (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. The USEPA designated areas for the new 2008 standard on 8 November 2011.
- Annual mean.
- The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
- 98th percentile, averaged over 3 years.
- Not to be exceeded more than once per year on average over 3 years.
- Annual mean, averaged over 3 years.
- Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
- Final rule signed 12 March 2008. The 1997 O<sub>3</sub> standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour O<sub>3</sub> standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour O<sub>3</sub> standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
- 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
- Final rule signed 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO<sub>2</sub> standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.
- Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

Key: ppm = parts per million; ppb = parts per billion; mg/m<sup>3</sup> = milligrams per cubic meter; µg/m<sup>3</sup> = micrograms per cubic meter

10 kilometers of national parks or wilderness areas (i.e., Class I Areas), and (3) regulated stationary source pollutant emissions would cause an increase in the 24 hour average concentration of any regulated pollutant in the Class I area of 1 milligram per cubic meter (mg/m<sup>3</sup>) or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR 52.21[c]).

**Title V Requirements.** Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A Title V major stationary source has the potential to emit regulated air pollutants and hazardous air pollutants (HAPs) at levels equal to or greater than Major Source Thresholds. Major Source Thresholds vary depending on the attainment status of an AQCR. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA lists HAPs and identifies stationary source categories that are subject to emissions control and work practice requirements.

**Greenhouse Gas Emissions.** GHGs are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. Human-caused GHGs are produced primarily by the burning of fossil fuels and through industrial and biological processes. On 22 September 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the United States. The purpose of the rule is to collect comprehensive and accurate data on CO<sub>2</sub> and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO<sub>2</sub> equivalent emissions per year but excludes mobile source emissions. The regulation of GHG emissions under the PSD and Title V permitting programs was initiated by a USEPA rulemaking issued on 3 June 2010 known as the GHG Tailoring Rule (75 Federal Register 31514). GHG emissions thresholds for the permitting of stationary sources are an increase of 75,000 tpy of CO<sub>2</sub> at existing major sources and facilitywide emissions of 100,000 tpy of CO<sub>2</sub> for a new source or a modification of an existing minor source. The 100,000 tpy of CO<sub>2</sub> threshold defines a major GHG source for both construction (PSD) and operating (Title V) permitting, respectively.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, was signed in October 2009 and requires agencies to set goals for reducing GHG emissions. One requirement within EO 13514 is the development and implementation of an agency Strategic Sustainability Performance Plan (SSPP) that prioritizes agency actions based on lifecycle return on investment. Each SSPP is required to identify, among other things, "agency activities, policies, plans, procedures, and practices" and "specific agency goals, a schedule, milestones, and approaches for achieving results, and quantifiable metrics" relevant to the implementation of EO 13514. The DOD's SSPP was originally released to the public on 26 August 2010; it has been updated annually since 2010. This implementation plan describes specific actions that the DOD will take to achieve its individual GHG reduction targets, reduce long-term costs, and meet the full range of goals of the EO. All SSPPs segregate GHG emissions into three categories: Scope 1, Scope 2, and Scope 3 emissions. Scope 1 GHG emissions are those directly occurring from sources that are owned or controlled by the agency. Scope 2 emissions are indirect emissions generated in the production of electricity, heat, or steam purchased by the agency. Scope 3 emissions are other indirect GHG emissions that result from agency activities but from sources that are not owned or directly controlled by the agency. The GHG goals in the DOD SSPP include reducing Scope 1 and Scope 2 GHG emissions by 34 percent by 2020, relative to Fiscal Year (FY) 2008 emissions, and reducing Scope 3 GHG emissions by 13.5 percent by 2020, relative to FY 2008 emissions.

### 4.3.2 Existing Conditions

The climate at FHL is Mediterranean and generally semiarid with warm, dry summers and mild, wet winters. Summer months can frequently reach 90 to 100 degrees Fahrenheit and higher, while winter months can reach 32 degrees Fahrenheit and lower. FHL lies in the rain shadow of the Santa Lucia Range in which precipitation is higher in the western portion of the installation and at higher elevations. Average annual precipitation in the cantonment area is approximately 19 inches. Most rain falls December through March with rain concluding in April or May followed by a dry period lasting 6 to 7 months (NPS 2007).

FHL is in Monterey County, California, which is within the North Central Coast Intrastate AQCR (40 CFR 81.160). FHL is in the Monterey Bay Unified Air Pollution Control District and is subject to its rules and regulations. The air quality in Monterey County has been characterized by the USEPA as unclassified/attainment for all criteria pollutants (USEPA 2012). However, the CARB has designated the North Central Coast Intrastate AQCR as a nonattainment area for O<sub>3</sub> and PM<sub>10</sub> (CARB 2012b).

In August 2012, FHL estimated their potential to emit for criteria air pollutants and GHGs from regulated stationary sources. The installation's current potential to emit is less than half of the 100 tpy Title V major source threshold for all criteria air pollutants and approximately 13 percent of the 100,000 tpy threshold for CO<sub>2</sub> equivalents (FHL 2012f). **Table 4-3** summarizes the installation's most recent potential to emit.

**Table 4-3. Potential to Emit for Fort Hunter Liggett**

	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>x</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)	CO <sub>2</sub> * (tpy)
Potential to Emit	44.81	38.30	21.99	4.30	12.91	12.91	12,649

Source: FHL 2012f

Key: NO<sub>x</sub> = nitrogen oxides; VOC = volatile organic compound; SO<sub>x</sub> = Sulfur Oxides

Note: \* = Expressed as CO<sub>2</sub> equivalents.

FHL has air quality sensitive receptors in the cantonment area, including several residential areas, a child development center, playground, and religious facilities such as the chapel and Mission San Antonio de Padua.

## 4.4 Geological Resources

### 4.4.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology.

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and

erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. FPPA requires Federal agencies to examine the effect of their actions on any activity that would result in the conversion or loss of farmland. The implementing procedures of the FPPA and Natural Resources Conservation Service require Federal agencies to evaluate the adverse effects of their activities on prime and unique farmland and to consider alternative actions that could avoid adverse effects.

Geologic hazards are natural geologic events that can endanger human lives and threaten property. Examples of geologic hazards include earthquakes, landslides, sinkholes, tsunamis, and volcanoes.

#### 4.4.2 Existing Conditions

**Regional Geology.** FHL is situated between the northwest-trending Santa Lucia Range to the southwest and the Gabilan Range to the northeast in the Coast Ranges geologic province. The regional geology is composed of three groups of rocks all dating prior to the Quaternary period (2.6 million years ago to the present). These include the Salinian Block, the Franciscan complex, and sediments deposited in marine and nonmarine basins. The Salinian Block is composed of crystalline intrusive rocks and metamorphic rocks, ranging in age from the Mesozoic Era (248 to 65 million years ago) to the Precambrian Eon (4.5 billion to 543 million years ago). The Franciscan complex formed during the Mesozoic Era along a subduction zone, with associated ophiolitic rocks, greywacke, chert, greenstone, peridotite, and serpentinite. These rocks have undergone multiple metamorphic episodes resulting in the folding and faulting of beds. The Franciscan complex underlies the southwestern corner of FHL along the Santa Lucia Range. Sedimentary rocks overlying the Franciscan complex are composed of sandstone, shale, and conglomerates and underlie the eastern two-thirds of the installation, including the cantonment area (NPS 2007).

Mining of gold, silver, copper, asbestos, and chromite and small-scale mining for cinnabar, serpentine, and lime deposits played an important role in the settlement of areas around the Santa Lucia Range and FHL (NPS 2007). There are no mines in the FHL cantonment area.

**Topography.** FHL is midway between the Pacific Ocean and the Salinas Valley, with elevations ranging from approximately 3,740 feet above mean sea level (MSL) at Alder Peak to the west to approximately 760 feet above MSL towards the upper end of the San Antonio Reservoir. The elevation for the cantonment area ranges from approximately 1,000 feet above MSL in the south to 1,200 feet above MSL in the east. The cantonment area slowly rises in elevation from west to east, with foothills in the northeast (NRCS 2013).

**Soils.** The soil types in the cantonment area mainly consist of the soil series Arroyo Seco gravelly sandy loam, which exists in the north, central, and southern areas of the cantonment area. The eastern portion of the cantonment area contains a variety of soil types, largely consisting of Chamise shaly loam and San Andreas fine sandy loam (NRCS 2013). **Figure 4-1** shows the soil types within the cantonment area and **Table 4-4** identifies the distribution of soil types within each district of the cantonment area.

Within Hacienda Heights, 11 soil types are present. The majority of the soil in this district is composed of Arroyo Seco gravelly sandy loam 2 to 5 percent slopes (33.3 percent), San Andreas fine sandy loam 15 to 30 percent slopes (14.1 percent), and Xerorthents, sandy (11.3 percent). Slopes range from 0 to 50 percent slopes and are well-drained (NRCS 2013).

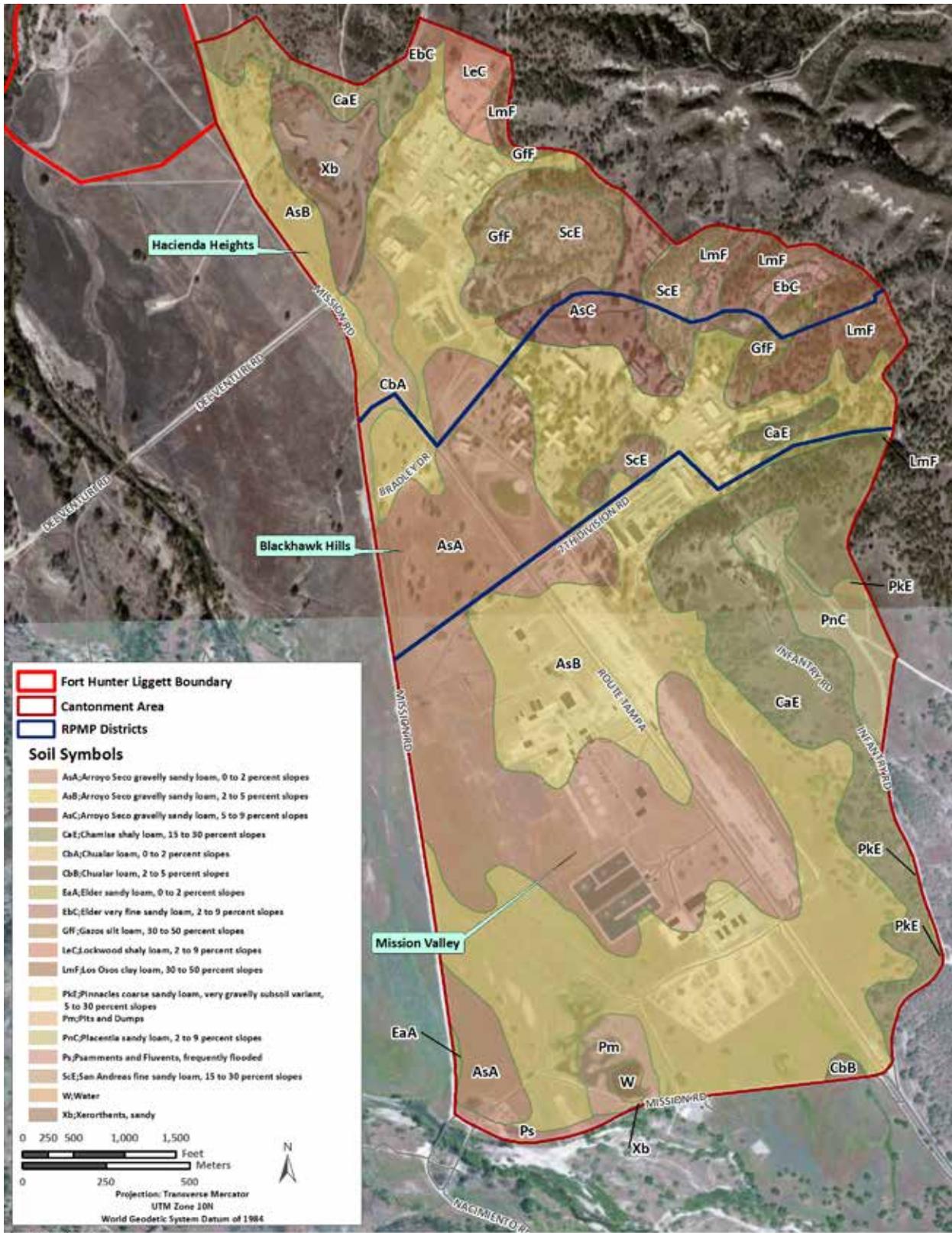


Figure 4-1. Soil Map of Fort Hunter Liggett Cantonment Area

**Table 4-4. Soil Types within the Cantonment Area by District**

Soil Type	Percent of Land Cover		
	Hacienda Heights	Blackhawk Hills	Mission Valley
Arroyo Seco gravelly sandy loam, 2 to 5 percent slopes	33.3	39.8	46.4
San Andreas fine sandy loam, 15 to 30 percent slopes	14.0	5.7	<0.1
Xerorthents, sandy	11.3	-	<0.1
Los Osos clay loam, 30 to 50 percent slopes	6.7	7.9	-
Chamise shaly loam, 15 to 30 percent slopes	6.3	2.5	17.6
Gazos silt loam, 30 to 50 percent slopes	6.0	2.9	-
Elder very fine sandy loam, 2 to 9 percent slopes	5.7	1.2	-
Chualar loam, 0 to 2 percent slopes	4.7	1.5	-
Arroyo Seco gravelly sandy loam, 5 to 9 percent slopes	4.4	7.8	-
Lockwood shaly loam, 2 to 9 percent slopes	4.1	-	-
Arroyo Seco gravelly sandy loam, 0 to 2 percent slopes	3.5	30.7	28.5
Placentia sandy loam, 2 to 9 percent slopes	-	-	3.8
Pits and Dumps	-	-	1.9
Psamments and Fluvents, frequently flooded	-	-	0.6
Water	-	-	0.4
Chualar loam, 2 to 5 percent slopes	-	-	0.3
Pinnacles coarse sandy loam, very gravelly subsoil variant, 5 to 30 percent slopes	-	-	0.3
Elder sandy loam, 0 to 2 percent slopes	-	-	0.1
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: NRCS 2013

Within the Blackhawk Hills district, 9 soil types are present. The majority of the soil in this district is composed of Arroyo Seco gravelly sandy loam 2 to 5 percent slopes (39.8 percent) and Arroyo Seco gravelly sandy loam 0 to 2 percent slopes (30.7 percent). Soil slopes range from 0 to 50 percent and are well drained (NRCS 2013).

Within the Mission Valley district, 11 soil types are present. The majority of the soil in this district is composed of Arroyo Seco gravelly sandy loam 2 to 5 percent slopes (46.4 percent) and Arroyo Seco gravelly sandy loam 0 to 2 percent slopes (25.9 percent). Soil slopes range from 0 to 30 percent and are well-drained (NRCS 2013).

Based on soil erosion factor K, slope, and content of rock fragments, the soils in the northwestern, central, and southern areas of the cantonment area have a “Slight” erosion rating indicating that little or no erosion is likely. Due to the mountainous terrain and rising slopes, the soils in the eastern portion of the cantonment area have “Moderate” and “Severe” erosion ratings. Moderate and Severe soil erosion ratings indicate that some erosion is likely or significant erosion is expected, respectively, and that roads or trails would need to be maintained and erosion-control measures are needed. Based on soil properties that affect the capacity of the soil to support a load without movement and on excavation, most of the soils in the cantonment area have no building limitations. However, soils in the northern and eastern portions of Hacienda Heights and the eastern portion of Mission Valley have building limitations due to shrink-swell potential, bedrock depth, slopes, and saturation (USGS 2013a).

Currently, no prime farmland is present on FHL or in the cantonment area. Prime farmland requires that an area be available for farming purposes; however, the cantonment area is dedicated for military purposes and is not available for farming. No unique farmland is present. Two soil types in the cantonment area, Lockwood shaly loam in the north and Placentia sandy loam in the east, are considered farmland of statewide importance (USGS 2013a).

**Geologic Hazards.** Numerous faults underlie FHL, including the Jolon and Nacimiento faults and several smaller faults. These faults trend subparallel to the San Andreas Fault. The Riconda Fault and the Nacimiento Fault control the geomorphology and hydrology of the installation, specifically the northwestern trend of the San Antonio River and the Nacimiento River (NPS 2007). The Jolon fault lies on the southeastern border of the cantonment area (USGS 2013b).

The U.S. Geological Survey has produced seismic hazard maps based on current information about the rate at which earthquakes occur in different areas and how far strong shaking extends from quake sources. The hazard maps show the levels of horizontal shaking that have a 2 in 100 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of the force of gravity (percent g) and is proportional to the hazard faced by a particular type of building. In general, little or no damage is expected at values less than 10 percent g, moderate damage at values of 10 to 20 percent g, and major damage at values greater than 20 percent g. FHL is in an area with a 32 to 48 percent g interval (USGS 2008). Therefore, major damage to buildings could occur as a result of seismic activity.

## 4.5 Water Resources

### 4.5.1 Definition of the Resource

In general, hydrology consists of the redistribution of water through the processes of evapotranspiration, surface runoff, and subsurface flow. Hydrology results primarily from temperature and total precipitation that determine evapotranspiration rates, topography that determines rate and direction of surface flow, and soil and geologic properties that determine rate of subsurface flow and recharge to the groundwater reservoir. The hydrology of a region can be refined to include groundwater, storm water, wetlands, and flood zones. Wetlands are discussed in **Section 4.6**.

The Porter-Cologne Water Quality Control Act is the principal law governing water quality compliance in California. The Act applies to surface waters, wetlands, groundwater, and point and nonpoint sources, and incorporates many provisions of the Federal Clean Water Act (CWA), such as delegation of the National Pollutant Discharge Elimination System (NPDES) permitting program to the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs). The Act also requires waste dischargers to notify the RWQCB through the filing of a Report of Waste Discharge, and it authorizes the SWRCB and RWQCB to issue waste discharge requirements (WDRs), CWA Section

401 water quality certifications, and other approvals. FHL is within the Central Coast RWQCB (Region 3).

Groundwater consists of subsurface hydrologic resources. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Surface water resources generally consist of wetlands, lakes, rivers, and streams and are important for its contributions to the economic, ecological, recreational, and human health of a community or locale. **Section 4.6** provides a discussion of wetlands at or near the FHL cantonment area.

Storm water systems help to direct and manage untreated water resources. The NPDES Stormwater Program regulates storm water discharges from three potential sources: municipal separate storm sewer systems (MS4s), construction activities, and industrial activities. In California, the NPDES program is administered by the SWRCB, and NPDES permits are authorized by Section 402 of the CWA and Section 13370 of the California Porter-Cologne Water Quality Control Act.

- **MS4:** FHL has an MS4, and has been designated a non-traditional Phase II small MS4 under the Phase II Small MS4 General Permit No. S000004 (SWRCB Order No. 2013-0001-DWQ) that will become effective July 1, 2013. Each regulated MS4 is required to develop and implement a storm water management program (SWMP) to reduce the contamination of storm water runoff and prohibit illicit discharges. The SWMP should describe the proposed structural (e.g., infiltration devices, detention and retention basins, vegetated swales, water quality inlets, screens and filters, and channel stabilization) and source control measures (e.g., pollution prevention and good housekeeping practices, land use planning, and community/public education) to reduce pollutants from commercial and residential areas from reaching receiving water bodies.
- **Construction Activity:** Although not applicable to the Proposed Action because it does not include construction activity, storm water discharges from all construction activity at FHL greater than 1 acre (43,559 ft<sup>2</sup>) are regulated under Construction General Permit No. CAS000002 (SWRCB Order No. 2009-0009-DWQ amended by 2010-0014-DWQ and 2012-0006-DWQ). The Construction General Permit requires construction site owners and operators that disturb one or more acres of land to use BMPs to ensure that soil disturbed during construction activities does not pollute nearby water bodies.
- **Industrial Activity:** Discharges associated with 10 broad categories of industrial activities at FHL are regulated under Industrial Storm Water General Permit No. CAS000001 (SWRCB Order No. 97-03-DWQ). The Industrial General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for certain industrial activities, and specific visual and chemical monitoring. The FHL SWPPP contains BMPs for controlling and reducing the sources of potential contamination. Most of the BMPs developed for FHL are of a nonstructural nature, such as good housekeeping, scheduling to minimize outdoor storage of materials, and effective use of dry sweep and drip pans. FHL also has a Storm Water Monitoring Plan.

Section 438 of the Energy Independence and Security Act (EISA) (42 U.S.C. Section 17094) establishes into law new storm water design requirements for Federal projects with a footprint greater than 0.1 acre (5,000 ft<sup>2</sup>). The project footprint consists of all horizontal hard surfaces and disturbed areas associated with the project development, including both building area and pavements such as roads, parking lots, and sidewalks. Under these EISA design requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and

duration of flow. The requirements do not apply to resurfacing of existing pavements. Siting and project design will incorporate storm water retention and reuse technologies such as bioretention areas, permeable pavements, cisterns/recycling, and green roofs to the maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the effectiveness of the as-built storm water reduction features. U.S. Army projects incorporate these requirements in accordance with DOD and U.S. Army policy memorandums and UFC 3-210-10, *Low Impact Development* (DOD 2010a, U.S. Army 2010, DOD 2010b). Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects (under Section 438 of the EISA)* and American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 189.1, *Standard for the Design of High-Performance Green Buildings*.

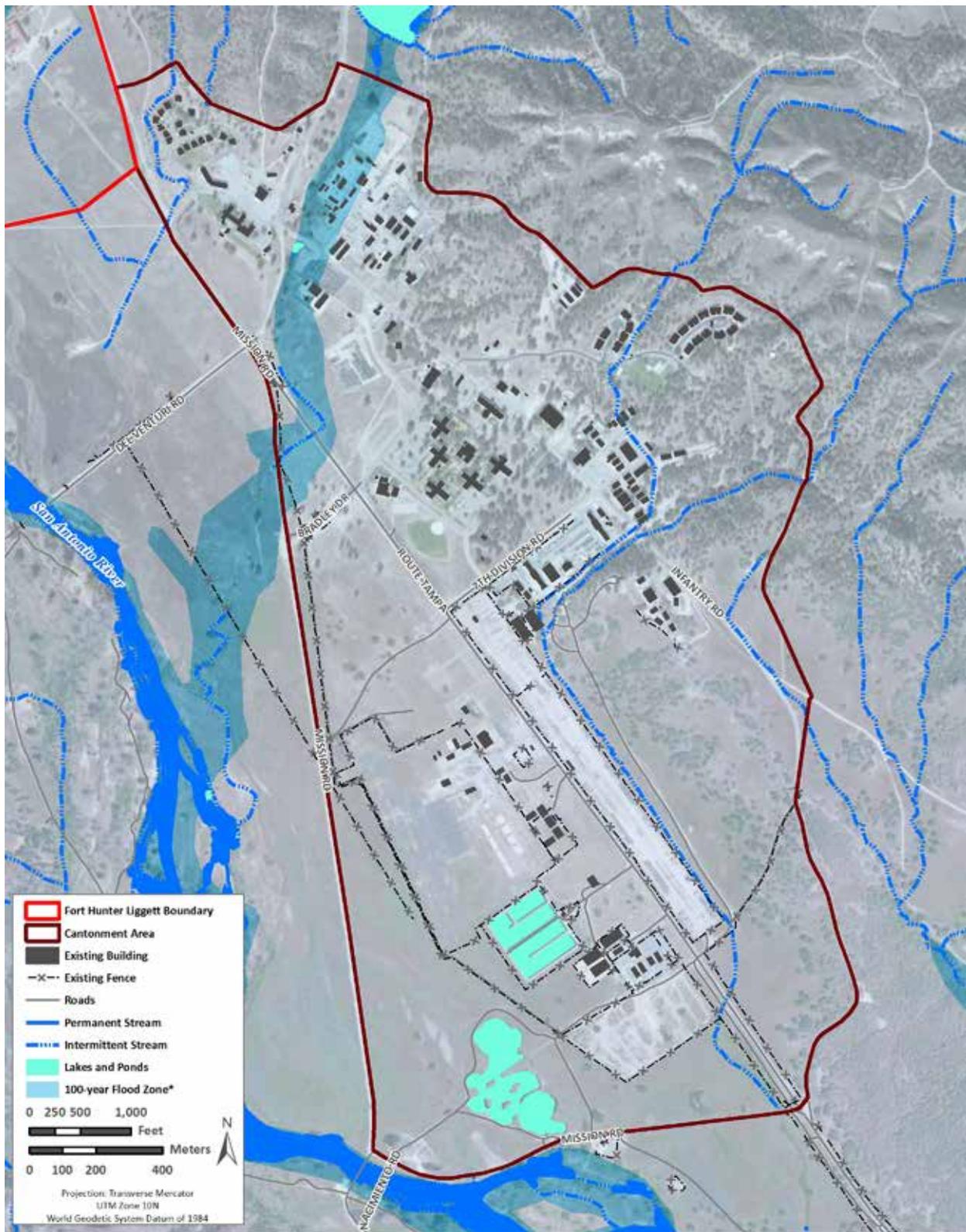
Flood zones are areas of low-level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation due to rain or melting snow. Flood zone ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, and water quality maintenance and support of a diversity of plants and animals. Flood zones provide a broad area to spread out and temporarily store floodwaters, thereby reducing flood peaks and velocities and the potential for erosion (FEMA 1986). Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the flood zone. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year flood zone, the area that has a 1 percent chance of inundation by a flood event in a given year. Federal, state, and local regulations often limit flood zone development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Flood Zone Management*, requires Federal agencies to determine whether a proposed action would occur within a flood zone. This determination typically involves consultation of FEMA Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby flood zones. EO 11988 directs Federal agencies to avoid flood zones unless the agency determines that there is no practicable alternative.

## 4.5.2 Existing Conditions

**Surface Water.** FHL is within the Salinas River watershed, which covers 4,600 square miles with tributaries including the Arroyo Seco, Nacimiento, San Antonio, and Estrella rivers (Worcester et al. 2000). The two major watercourses flowing through FHL are the San Antonio River and the Nacimiento River, which are linear subparallel drainages that flow approximately 5 miles apart from the northwest to the southeast. The FHL cantonment area is outside the Nacimiento River watershed; however, the San Antonio River watershed includes all or a major portion of the cantonment area and the eastern half of the installation. The headwaters for the San Antonio River are in the Cone and Junipero Serra Peaks (FHL 2011b, NPS 2007). FHL flow regimes are seasonal; the upper San Antonio River is fed by springs, while the lower portion has an intermittent flow. The San Antonio River watershed drains into the northwest-flowing Salinas River, which eventually empties into Monterey Bay. The San Antonio River runs parallel to the cantonment area to the west, and at its closest is directly adjacent to the southwest boundary of the cantonment area (see **Figure 4-2**). Three San Antonio tributary rivers flow within the cantonment area. According to the FHL Integrated Natural Resources Management Plan (INRMP), almost no water flows through the cantonment area to the San Antonio River in the summer (FHL 2011b).

In addition to natural surface water features, the oxidation lagoons for the FHL wastewater treatment plant are located in the southeast portion of the cantonment area between Mission Road and the San Antonio River (see **Figure 4-2**).



Source of Water Resources: FHL 2012  
 \* FEMA map service represents Flood Insurance Rate Map (FIRM) data for the National Flood Insurance Program (NFIP)

**Figure 4-2. Water Resources in the Fort Hunter Liggett Cantonment Area**

**Groundwater.** Two aquifers underlie FHL, flowing to the southeast following the geologic structure of the Coast Ranges. The Jolon Fault separates the Jolon-Lockwood groundwater basin to the east from the Mission-San Antonio Basin to the west and prevents mixing of the two basins (NPS 2007). Groundwater for domestic consumption is derived from three wells tapped into the basins that are located on FHL outside of the cantonment area. The 12-year average well water consumption is 85 million gallons per day (MGD) or 260 acre-feet (32 hectare-meters) per year.

A hydrocarbon-contaminated groundwater plume associated with a building adjacent to 7th Division Road (Building 258) extends approximately 2,200 feet to the south and southwest. Groundwater in the vicinity of the plume has been encountered at depths of 12 to 45 feet below ground surface (USACE 2011a). The contamination associated with the groundwater plume could affect drinking water supplies which are drawn from groundwater (FHL 2011c). A second hydrocarbon-contaminated groundwater plume is located in the vicinity of Building 194 (FHL 2011c). See **Section 4.11** for discussion of hazardous wastes.

**Storm Water.** FHL's cantonment area can be characterized as sloping terrain including mildly sloping hills. Storm water runoff generally discharges to natural earthen drainage channels that flow to the southwest until it reaches the San Antonio River outside the cantonment area.

The storm water infrastructure is government-owned and it is estimated that there are approximately 38,000 linear feet of earthen and lined channels for storm water drainage in the cantonment area (FHL 2012g). The remainder of the storm water drains via surface sheet flow to various earthen natural drainage areas throughout FHL. These creeks are natural drainageways and are dry almost all of the time except during rain events and briefly after rain events. The existing buildings and roadway facilities were constructed around these existing natural drainage areas, and culverts were installed where the roadways crossed these natural drainage channels. There is no pretreatment of storm water discharge.

**Floodplains.** Flood zones at FHL occur adjacent to rivers and major creeks (see **Figure 4-2**). The FEMA FIRMs for Monterey County, California, classify the majority of the cantonment area as within Zone X (minimal flooding). The northern portion of the cantonment area is primarily within Zone X, but is divided by a small area classified as Zone A, which corresponds to the Sulphur Spring Canyon Creek. The areas surrounding the San Antonio River to the south and west are also Zone A. Zone A surrounds streams and rivers and is likely to flood occasionally with prolonged or sufficient precipitation (FEMA 2009a, FEMA 2009b, FEMA 2009c).

## 4.6 Biological Resources

### 4.6.1 Definition of the Resource

This section describes the existing conditions of biological resources potentially affected by the Proposed Action. It provides a description of the vegetation, wetlands, wildlife, and habitats anticipated to occur in the FHL cantonment area. Species addressed in this section include those that are not listed as threatened or endangered by the Federal government or a California agency. Federal and state threatened and endangered species are addressed in **Section 4.7**. This section assumes that construction/expansion of the ECS is complete.

### 4.6.2 Existing Conditions

**Vegetation.** In general, plant communities at FHL include chaparral, oak woodlands, oak savannas, grasslands, riparian areas, and seasonal and perennial wetlands. Rare vegetation communities occurring on FHL as described by the California Natural Diversity Data Base (CNDDB) include sycamore alluvial

woodland, valley needlegrass grassland, and valley oak woodlands (CDFG 2013). The cantonment area is highly disturbed with nonnative grasslands and developed areas covering approximately 71.6 percent of the cantonment area (see **Table 4-5** and **Figure 4-3**). Sensitive vegetation communities (e.g., riparian areas, and oak woodlands and savannas) occur within approximately 28.4 percent of the cantonment area. A summary of vegetation types and their approximate acreage in the cantonment area is presented in **Table 4-5**. **Figure 4-3** identifies the vegetation types in the cantonment area.

**Table 4-5. Vegetation Types in the Fort Hunter Liggett Cantonment Area**

Vegetation Type	Area (acres)	Percent of Cantonment Area
Willow Riparian	0.17	0.02
Mixed Riparian	0.64	0.06
Valley Oak Woodland	28.82	2.67
Valley Oak Savanna	127.13	11.76
Blue Oak Woodland	150.40	13.91
Non-Native Grassland	338.23	31.28
Developed	436.01	40.32
<b>Total</b>	<b>1081.40</b>	<b>100</b>

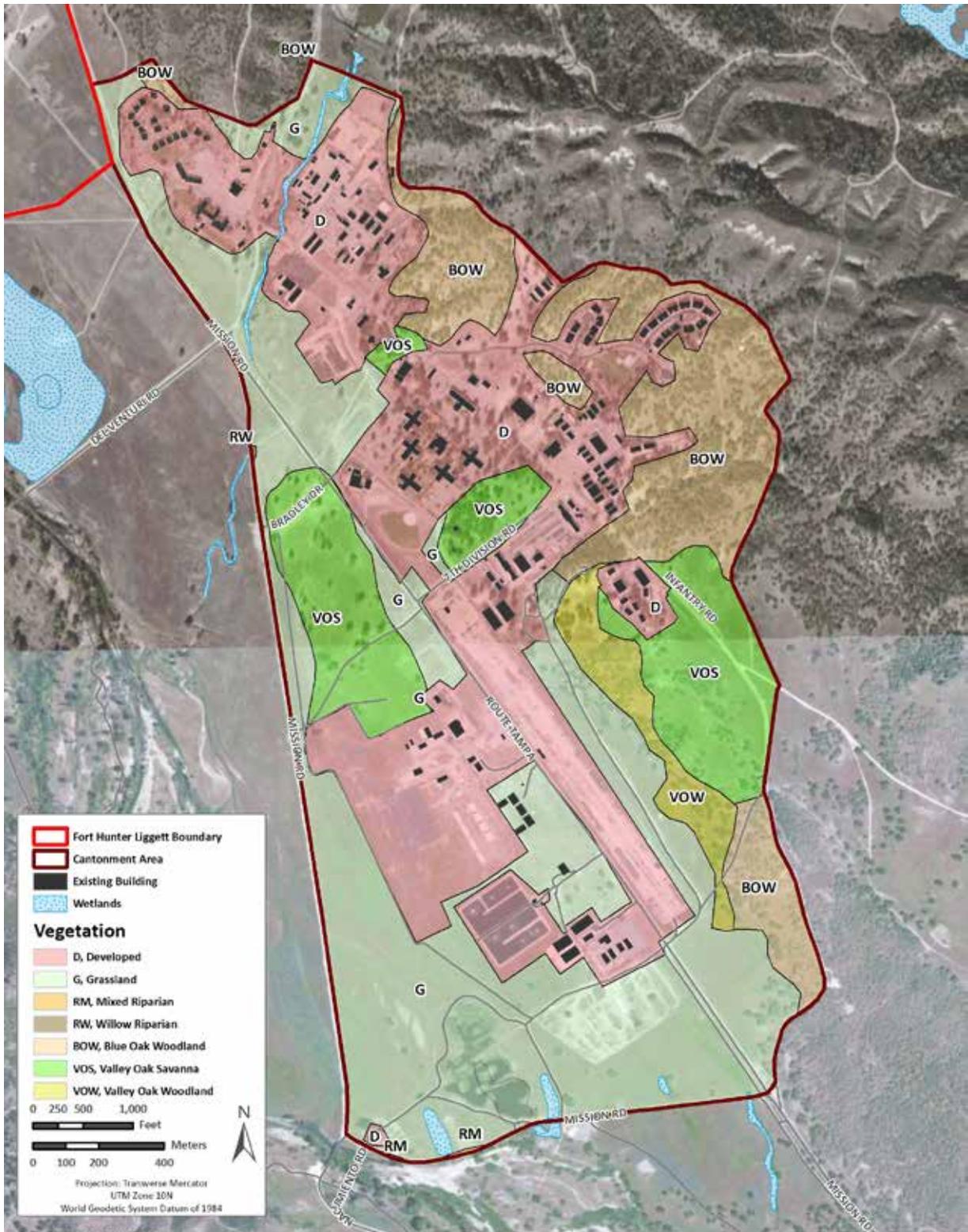
Source: FHL 2009a

Note: This table represents approximate existing conditions in the cantonment area, including development of projects that are not depicted in **Figure 4-3**, and assumption that construction/expansion of the ECS is complete.

Riparian communities at FHL consist of alluvial woodlands composed of sycamore (*Platanus racemosa*), cottonwood (*Populus fremontii*), and willow (*Salix* sp.) found along rivers and streams (FHL 2011b). Riparian communities cover an estimated 3 percent of FHL, and less than 1 percent of the cantonment area. The two riparian communities in the cantonment area are willow riparian and mixed riparian (see **Figure 4-3** and **Table 4-5**). Other common riparian vegetation species include mule fat (*Baccharis salicifolia*); willow species (*Salix laevigata*, *S. lasiolepis*, *S. gooddingii*, and *S. exigua*); and herbaceous understory species including rushes (*Juncus* spp.), spikerushes (*Eleocharis* spp.), sedges (*Carex* spp.), and nut sedges (*Cyperus* spp.).

Oak communities (woodlands, forests, and savannas) are the most widespread vegetation type on FHL, covering an estimated 46 percent of the installation (FHL 2011b) and approximately 28 percent of the cantonment area. Valley oak (*Quercus lobata*) woodland and savanna communities are the most common oak community in the cantonment area, covering approximately 14 percent of the cantonment area. Valley oaks are the largest of the California oak species and are frequently found growing in deep alluvial soils of valley bottoms, forming savannas with a grassland understory. Even though valley oaks cover a relatively large area in the cantonment area, they are considered a rare vegetation community by the CNDDDB (CDFG 2013). Blue oak (*Q. douglassii*) communities are the next most prevalent of the oak communities in the cantonment area, covering approximately 14 percent of the cantonment area. Blue oak can be found in pure stand woodlands to foothill woodlands where they mix with other oak species and foothill pines, or in more open blue oak savannas with a grassland understory. Other live oak communities occur at FHL, but are not known to occur in the cantonment area.

Approximately 31 percent of the cantonment area is covered by grasslands. Grasslands are typically found on open, level, or moderately sloped areas. Grasslands in the cantonment area are primarily nonnative annual grasses with potential for pockets of occasional native bunch grasses. These grasslands



Note: New projects have been developed in the cantonment area and are not depicted in this figure. However, **Table 4-5** presents the approximate area of each vegetation type under existing conditions.

**Figure 4-3. Vegetation Types and Wetlands in the Cantonment Area**

are dominated by nonnative grasses that thrive in Mediterranean climates and are more resilient to the heavy browsing pressure caused by domestic livestock. In general, native grasslands are estimated to compose approximately 2 to 5 percent of existing grasslands on FHL and include native species such as *Nassella pulchra*, *N. cernua*, *Deschampsia danthonioides*, *Melica imperfect*, and *Poa secunda*. Nonnative grasslands are dominated by *Bromus hordeaceus*, and include other species such as *B. diandrus*, *B. madritensis*, and two species of wild oat (*Avena* spp.). Yellow star-thistle (*Centaurea solstitialis*), a noxious exotic forb, is also found in nonnative grasslands and has spread to an estimated 20,000 acres of FHL (FHL 2011b). Yellow star-thistle is present in approximately 437 acres of the cantonment area, including two areas along the northern and western cantonment area boundary (FHL 2011b).

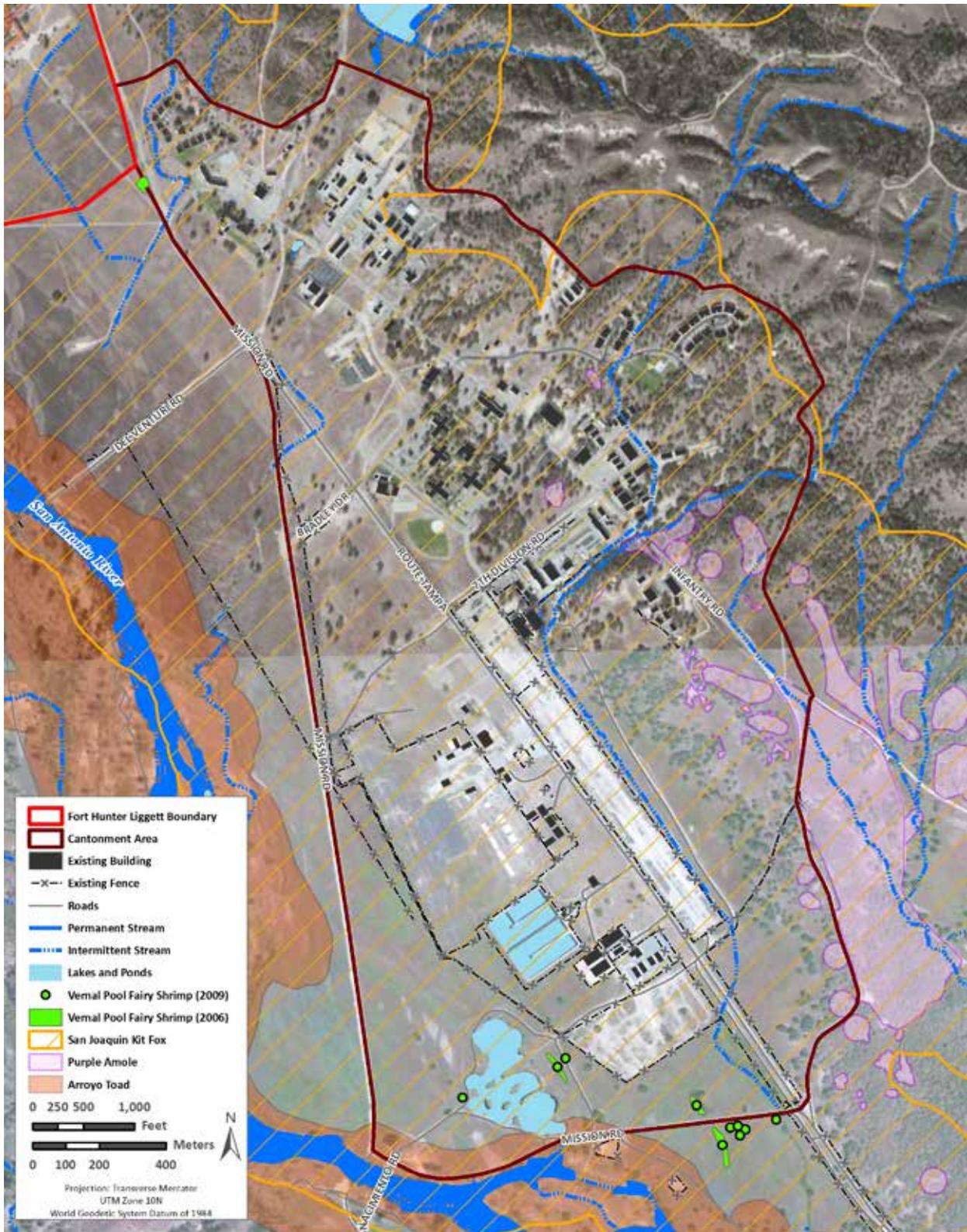
**Wetlands.** Wetlands are areas with moist or wet soils that over a period of time support adapted vegetation. Wetlands on FHL are generally found in landscape depressions and fall into two broad categories, ephemeral wetlands and perennial wetlands. Ephemeral wetlands (e.g., vernal pools, wet meadows, and vernal swales) have two phases, a wet season phase that is dependent on fall and winter rains to fill pools and depressions, and a dry season phase brought about by a lack of rain in the summer. Perennial wetlands maintain some level of saturation throughout the year, and on FHL include streams, reservoirs/lakes, and freshwater marshes.

There are approximately 800 acres of both jurisdictional and non-jurisdictional wetlands on FHL (FHL 2011b) of which approximately 44 acres (5.5 percent of wetlands on FHL) of wetlands are in the cantonment area. Two rivers, the San Antonio and Nacimiento, and a network of tributaries throughout their respective watersheds, compose the majority of the jurisdictional waters on the installation. A majority of the wetlands in the cantonment area are in Mission Valley (see **Figure 4-3**). Isolated wetlands, such as vernal pools, that have no hydrological connection to a river occur on the installation are generally not jurisdictional. However, if an isolated wetland supports threatened or endangered species habitat it may be regulated by the USFWS. A wetlands delineation has not occurred in this area.

Vernal pools are a special category of wetlands. These seasonal pools are difficult to detect because of their often small size and seasonal inundation, but they support zooplankton, phytoplankton, and macro-invertebrates. The Federal threatened vernal pool fairy shrimp (*Branchinecta lynchi*) was found in 65 vernal and seasonal pools on FHL in 2000 (FHL 2011b). See **Section 4.7** for more information on vernal pool fairy shrimp. Vernal pools and vernal swales (depressions that sometimes connect vernal pools) occur in the southern portion of the cantonment area (see **Figure 4-4**).

**Wildlife Resources.** Migratory birds are present in the cantonment area with nesting populations present in late spring and summer, overwintering populations in the late fall and winter, and migrating populations transiting the region in between those periods. Birds frequently observed in the cantonment area include the western meadow lark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), California quail (*Callipepla californica*), mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), Cooper's hawk (*Accipiter cooperii*), and red-tailed hawk (*Buteo jamaicensis*) (FHL 2007d).

Mammal species expected to be found in or near the cantonment area include the California ground squirrel (*Spermophilus beecheyi*), tule elk (*Cervus elaphus nannodes*), California mule deer (*Odocoileus hemionus californicus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), deer mouse (*Peromyscus maniculatus*), and kangaroo rat (*Dipodomys* spp.).



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Figure 4-4. Federal Listed Species Known to Occur in the Cantonment Area

## 4.7 Threatened and Endangered Species

### 4.7.1 Definition of the Resource

The Endangered Species Act (ESA) of 1973 established a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charged Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a threatened and endangered species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the USFWS maintains the endangered species list. States might also have their own laws for protecting plants and animals they consider threatened or endangered.

Federal endangered species are those identified by the USFWS as being in danger of extinction throughout all or a significant portion of their range. Federal threatened species are those identified by USFWS as likely to become endangered in the near future. State-listed species are those identified as threatened or endangered by the State of California.

Species listed as threatened or endangered under the ESA (Federal-listed species) and state-listed species that have potential to be affected by implementation of the Proposed Action are discussed in this section.

### 4.7.2 Existing Conditions

This analysis is based on a review of the FHL INRMP, data from the CNDDDB, FHL environmental documents, and other available data. The FHL INRMP outlines management actions taken to conserve natural resources for military training and ecosystem integrity. Management actions can include restoration efforts in degraded sites; control of noxious weeds; monitoring for presence, absence, or population trends of a resource; and implementation of land use regulations (FHL 2011b).

#### Federal Threatened or Endangered Species

Four Federal-listed endangered species and three Federal-listed threatened species have the potential to occur within or near FHL (see **Table 4-6**). Potential habitat for all of these Federal-listed species occurs at FHL. Species that potentially occur in or near the cantonment area include the arroyo toad, California condor, San Joaquin kit fox, vernal pool fairy shrimp, and purple amole. **Figure 4-4** identifies the occurrences (for vernal pool fairy shrimp only) and potential habitat of Federal-listed protected species that are in general vicinity of the cantonment area. California red-legged frog and least Bell's vireo are not known to occur at FHL and no impacts are expected; therefore they are not discussed further in this EA.

**Arroyo Toad.** The arroyo toad is a medium-sized toad species that inhabits seasonal pools and streams where water levels fluctuate and natural disturbance is common during flooding events (FHL 2011b, NPS 2007). These flooding events are essential to remove vegetation, maintain sandy stream terraces, and create suitable pools. Primary threats to this species include habitat loss due to urbanization, agriculture, and dam construction. Additional threats include water management and diversion activities; road construction, maintenance, and use; predation by exotic species; loss of habitat to exotic plants; livestock grazing; mining; and recreational activities.

**Table 4-6. Federal Threatened and Endangered Species Potentially Occurring at Fort Hunter Liggett**

Common Name	Scientific Name	Federal Status	State Status
Arroyo toad	<i>Bufo californicus</i>	E	N/A
California condor	<i>Gymnogyps californianus</i>	E	E
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	E	T
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	T	N/A
Purple amole	<i>Chlorogalum purpureum</i> var. <i>purpureum</i>	T	CEQA

Sources: FHL 2011b, NPS 2007

Key: E = Endangered; T = Threatened; CEQA = Meet the criteria for listing as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines; N/A = not applicable.

Arroyo toads breed, forage, and aestivate in sandy soils along the San Antonio River, and could be present in the sandy and non-sandy uplands areas in the cantonment area (U.S. Army 2005b). Arroyo toads can disperse into adjacent sandy or non-sandy upland areas as far as 1.2 miles away from breeding sites or water, which includes parts of the cantonment area (U.S. Army 2005b). Specific arroyo toad habitat primarily occurs outside of the cantonment area to the west and south, but there is a small area in the southwestern corner of the cantonment area that contains suitable habitat for arroyo toads (see **Figure 4-4**). Surveys are conducted annually and toads continue to be found in suitable habitat along the San Antonio River with minor and expected annual changes in abundance and distribution (USFWS 2010). Additionally, cantonment area storm water runoff drains to the San Antonio River and arroyo toad habitat (USFWS 2010).

**California Condor.** The California condor is the largest bird in North America, weighing approximately 22 pounds, with an average wing span of approximately 9.5 feet. Historically, California condors ranged along the West Coast from British Columbia, Canada, to Baja, Mexico, feeding on a diet consisting primarily of carrion (dead and putrefying flesh). California condors are wide ranging birds of prey. They roost and nest in tall trees and cliffs located in remote areas. Causes of mortality include lead poisoning, shooting, egg collection, live capture, powerline-related deaths, oil sump drowning, and eggshell thinning due to dichlorodiphenyltrichloroethane. California condor numbers declined to 14 individuals in 1987. These last remaining 14 individuals were captured to begin a captive breeding population. The reintroduction of captive bred individuals into the wild began in 1992 and continues to increase population numbers today (FHL 2011b).

Releases of captive young California condors continue in Los Padres National Forest and Pinnacles National Monument to the north and northeast of FHL, respectively. No nesting habitat is known on the installation, but the area continues to provide suitable foraging areas with a forage base of carcasses from deer, elk, coyote, and other medium to large animals (USFWS 2010). In May 2002, one California condor was observed foraging on an elk killed by a mountain lion in FHL training area 20, which is approximately 3.75 miles south of the cantonment area (U.S. Army 2005b, FHL 2011b).

**San Joaquin Kit Fox.** The San Joaquin kit fox is the smallest of North American canids and is approximately 12 inches shoulder height with a slim body, long legs, large ears, and a black-tipped bushy tail. San Joaquin kit fox can be found along the California Central Valley floor and valleys in the interior coastal ranges associated with habitats such as grasslands and scrublands (USFWS 1998). They use underground den sites throughout the year, changing den sites frequently. Den sites are located on hillsides, and dug in sandy loam. The California ground squirrel (*Spermophilus beecheyi*) is an important prey species for San Joaquin kit fox and coyotes are an important predator of San Joaquin kit fox on FHL.

Additional causes of mortality include shooting; trapping; poisoning; electrocution; road kills; suffocation; and habitat loss, degradation, and fragmentation caused by agricultural, industrial, and urban development in the San Joaquin Valley (USFWS 1998).

Surveys for San Joaquin kit fox continue annually at FHL in suitable habitat, with the most recent sightings in 2000 when two individuals were sighted separately on the same night near Training Area 22, which is approximately 3.25 miles southeast of the cantonment area (USFWS 2010, FHL 2011b). Prior to that, isolated adults were seen in 1995 in both the San Antonio and Nacimiento valleys and from 1970 to 1990 there were infrequent dens documented with San Joaquin kit foxes and pups in the San Antonio Valley on FHL (FHL 2009b). Potential habitat for San Joaquin kit fox can be found in the San Antonio River Valley, which includes the cantonment area and training areas close to the cantonment area (see **Figure 4-4**).

**Vernal Pool Fairy Shrimp.** The vernal pool fairy shrimp inhabits vernal pools and ephemeral ponds in the Central Valley, coast ranges, and a few additional locations. Vernal pools and ephemeral ponds have two distinct phases, a wet phase when they are inundated by water from fall and winter rains, and a dry season where the lack of rain in the summer allows the pool to dry up. With the onset of the fall and winter rains and the pooling of water in ponds and depressions, vernal pool fairy shrimp eggs, or cysts, hatch. Vernal pool fairy shrimp are sensitive to changes in salinity, conductivity, dissolved solids, and pH levels and seasonal changes such as duration of pool inundation. They feed on algae, bacteria, protozoa, rotifers, and detritus. As they mature, females produce cysts which are dropped to the muddy bottom of the pool or are settled to the bottom of the pool in the adult's brood sac when the adult dies. The cysts are able to withstand extremes of heat and cold and extended desiccation for many years, allowing them to survive periodic droughts until the pools fill once again. Not all cysts from the previous year would hatch during the next time the pool is inundated, which creates a cyst bank within the soil of the pond. FHL conducted USFWS protocol surveys of 308 vernal pools and ephemeral ponds in the winters of 1995 and 2000. Of the 308 vernal pools and ephemeral ponds, 75 were found to contain vernal pool fairy shrimp (FHL 2011b). An additional occupied pool was discovered in 2008 (USFWS 2010). Occupied vernal pools are identified in **Figure 4-4**. Vernal pools in the cantonment area range from less than 500 feet to approximately 1,200 feet away from sites proposed for development in the FHL RPMP (see **Figure 4-4**) (FHL 2009b).

**Purple Amole.** The purple amole is a bulbous perennial of the Agave family (Agavaceae). Individual plants have a basal rosette of 3 to 7 narrow-spreading linear leaves, slightly keeled with variably wavy margins. A central-branched inflorescence is produced up to 16 inches in height, with 7 to 30 dark blue to deep purple flowers with yellow anthers that bloom May through June. The first record of purple amole was near Jolon in 1893. There are approximately 850 acres of fragmented groups of plants at FHL in portions of the cantonment area and several adjacent training areas (13 and 16B) (FHL 2009b, FHL 2011b, Wilken 2010). See **Figure 4-4** for specific locations of purple amole in the Proposed Action area. Purple amole populations are threatened due to habitat loss, fragmentation, and alteration; removal of plants for military construction and training; exclusion by nonnative annual grasses; and potentially by the alteration of fire cycles due to military training (USFWS 2000).

### Species Protected By Other Federal Laws or State-Threatened or -Endangered

The following three state-listed threatened species and one state-listed endangered species are either known or have the potential to occur on or near FHL:

- Santa Lucia mint (*Pogogyne clareana*) - state-endangered
- Bald eagle (*Haliaeetus leucocephalus*) - state-threatened
- Swainson's hawk (*Buteo swainsoni*) - state-threatened

- Bank swallow (*Riparia riparia*) - state-threatened.

Of these four species the bald eagle, Swainson's hawk, and the bank swallow could pass through the Proposed Action area. The Santa Lucia mint is not known to occur in or near the cantonment area and is not discussed further in this document. State requirements for mitigation of effects on special status species are not applicable on Federal lands.

**Bald Eagle.** All populations of bald eagle in the lower 48 states were once listed as endangered under the ESA. In 2007, bald eagles were determined to be recovered to the extent that the species could be removed from the Endangered Species List under the ESA. The bald eagle continues to be a state-listed threatened and endangered species in some states and is protected by the Bald and Golden Eagle Protection Act. On FHL, bald eagles use the San Antonio reservoir, San Antonio River, and Nacimiento River for foraging, nesting, and overwintering habitat (FHL 2011b). Bald eagle surveys continue on FHL annually. FHL supports three bald eagle nesting pairs (Clark 2013). Two pairs nest in the San Antonio Valley approximately 3 miles east and 7 miles southeast of the cantonment area.

**Swainson's Hawk.** More than 85 percent of Swainson's hawk habitat in the Central Valley is in riparian systems adjacent to suitable foraging habitats. The Swainson's hawk was California state-listed as threatened in 1983 and also is protected under the Migratory Bird Treaty Act (MBTA). The USFWS has designated the Swainson's hawk as Not Listed (Resolved Taxon) in its entire range (FHL 2011b). There are no known nesting sites for Swainson's hawk at FHL.

**Bank Swallow.** A neotropical migrant found primarily in riparian and other lowland habitats, the bank swallow arrives in California from South America in early March and migrates to the tropics in July and August. This species nests in colonies and creates nests by burrowing into vertical banks consisting of fine-grained soils. Bank swallows are not listed under the ESA, but is a species covered by the MBTA (FHL 2011b). There are no known nesting sites for bank swallows on FHL.

There are 32 "species of special concern," which are species, subspecies, or distinct populations native to California that are of conservation concern. There are two "candidate species," or species that the California Fish and Game Commission has recognized as being under review for addition to the state list as either endangered, threatened, or a species of special concern. State requirements for mitigation of effects on special status species are not applicable on Federal lands. However, documentation of potential effects for these species is required under NEPA. **Table 4-7** lists the full complement of state-sensitive species for California.

Table 4-7. State-Sensitive Species for California

Scientific Name	Common Name	State Status
<b>Plants</b>		
<i>Abies bracteata</i>	Bristle cone fir	CEQA
<i>Aristocapsa insignis</i>	Indian Valley spineflower	CEQA
<i>Baccharis plummerae</i> ssp. <i>glabrata</i>	San Simeon baccharis	CEQA
<i>Calochortus weedii</i> var. <i>vestus</i>	Late-flowering mariposa lily	CEQA
<i>Calycadenia micrantha</i>	Small flowered calycadenia	CEQA-eligible
<i>Calycadenia truncata</i> ssp. <i>microcephala</i>	Snow Mountain calycadenia	CEQA
<i>Calycadenia villosa</i>	Dwarf calycadenia	CEQA
<i>Camissonia hardhamiae</i>	Hardham's evening-primrose	CEQA
<i>Castilleja densiflora</i> ssp. <i>obispoensis</i>	Obispo Indian paintbrush	CEQA
<i>Caulanthus coulteri</i> var. <i>lemmonii</i>	Lemmon's jewelflower	CEQA
<i>Chlorogalum purpureum</i> var. <i>purpureum</i>	Purple amole	CEQA
<i>Chorizanthe rectispina</i>	One-awned spineflower	CEQA
<i>Clarkia jolonensis</i>	Jolon clarkia	CEQA
<i>Collinsia antonina</i>	San Antonio collinsia	CEQA
<i>Delphinium umbraculorum</i>	Umbrella larkspur <sup>2</sup>	CEQA
<i>Didymodon norrissi</i>	Norris' beard moss	CEQA-eligible
<i>Eriastrum luteum</i>	Yellow-flowered eriastrum	CEQA
<i>Fritillaria viridea</i>	San Benito fritillary	CEQA
<i>Galium californicum</i> ssp. <i>luciense</i>	Cone Peak bedstraw	CEQA
<i>Galium hardhamiae</i>	Hardham's bedstraw	CEQA
<i>Juglans hindsii</i>	Northern California black walnut	CEQA-eligible
<i>Layia heterotricha</i>	Pale-yellow layia	CEQA
<i>Malacothamnus davidsonii</i>	Davidson's bushmallow	CEQA
<i>Malacothamnus palmeri</i> var. <i>involucratus</i>	Palmer's bushmallow	CEQA-eligible
<i>Monardella palmeri</i>	Palmer's monardella	CEQA
<i>Navarretia nigelliformis</i> ssp. <i>radians</i>	Shining navarretia	CEQA
<i>Navarretia prostrate</i>	Prostrate navarretia	CEQA
<i>Pentachaeta exilis</i> ssp. <i>aeolica</i>	Slender pentachaeta	CEQA
<i>Plagiobothrys uncinatus</i>	Hooked popcorn-flower	CEQA
<i>Pogogyne clareana</i>	Santa Lucia mint	E
<i>Senecio aphanactis</i>	Rayless ragwort	CEQA
<i>Sidalcea hickmanii</i> ssp. <i>hickmanii</i>	Hickman's checkerbloom	CEQA
<i>Streptanthus glandulosus</i> ssp. <i>glandulosus</i>	Most beautiful jewel-flower	CEQA
<i>Streptanthus morrisonii</i>	Morrison's jewel flower	CEQA
<i>Triteleia ixioides</i> ssp. <i>cookii</i>	Cook's triteleia	CEQA
<i>Tropidocarpum capparideum</i>	Caper-fruited tropidocarpum	CEQA

Scientific Name	Common Name	State Status
<b>Fish</b>		
<i>Lavinia symmetricus subditus</i>	Monterey roach	SSC
<b>Amphibians</b>		
<i>Rana boylei</i>	Foothill yellow-legged frog	SSC
<i>Spea hammondi</i>	Western spadefoot toad	SSC
<i>Taricha torosa</i>	Coast range newt	CEQA-eligible
<b>Reptiles</b>		
<i>Actinemys marmorata pallida</i>	Western pond turtle	SSC
<i>Phrynosoma coronatum frontale</i>	Coast horned lizard	SSC
<b>Birds</b>		
<i>Accipiter cooperi</i>	Cooper's hawk	SSC
<i>Accipiter striatus</i>	Sharp-shinned hawk <sup>1</sup>	SSC
<i>Aechmophorus occidentalis</i>	Western grebe <sup>1</sup>	C
<i>Agelaius tricolor</i>	Tricolored blackbird <sup>2</sup>	SSC
<i>Aquila chrysaetos</i>	Golden eagle <sup>1</sup>	SSC
<i>Asio flammeus</i>	Short-eared owl	SSC
<i>Asio otus</i>	Long-eared owl <sup>1</sup>	SSC
<i>Athene cunicularia</i>	Burrowing owl	SSC
<i>Buteo regalis</i>	Ferruginous hawk	SSC
<i>Buteo swainsoni</i>	Swainson's hawk	T
<i>Circus cyaneus</i>	Northern harrier <sup>1</sup>	SSC
<i>Cypseloides niger</i>	Black swift	SSC
<i>Dendroica petechia brewsteri</i>	Yellow warbler <sup>1</sup>	SSC
<i>Elanus leucurus</i>	White-tailed kite	Protected
<i>Eremophila alpestris actia</i>	California horned lark	SSC
<i>Falco columbarius</i>	Merlin	SSC
<i>Falco mexicanus</i>	Prairie falcon <sup>1</sup>	SSC
<i>Falco peregrines</i>	Peregrine falcon	Delisted
<i>Gymnogyps californianus</i>	California condor	E
<i>Haliaeetus leucocephalus</i>	Bald eagle	E
<i>Icteria virens</i>	Yellow-breasted chat <sup>1</sup>	SSC
<i>Lanius ludovicianus</i>	Loggerhead shrike	SSC
<i>Larus californicus</i>	California gull	SSC
<i>Pandion haliaetus</i>	Osprey	SSC
<i>Pelecanus erythrorhynchos</i>	American white pelican	SSC
<i>Phalacrocorax auritus</i>	Double-crested cormorant	SSC
<i>Progne subis</i>	Purple martin <sup>1</sup>	SSC
<i>Riparia</i>	Bank swallow	T
<i>Strix occidentalis</i>	California spotted owl	SSC
<i>Vireo bellii pusillus</i>	Least Bell's vireo	E

Scientific Name	Common Name	State Status
<b>Mammals</b>		
<i>Antrozous pallidus</i>	Pallid bat	C
<i>Bassariscus astutus</i>	Ring-tailed cat	Protected
<i>Cervus canadensis nannodes</i>	Tule elk	Protected
<i>Corynorhinus townsendii pallescens</i>	Pale big-eared bat	SSC
<i>Felis concolor</i>	Mountain lion	Protected
<i>Neotoma fuscipes luciana</i>	Monterey dusky-footed woodrat	SSC
<i>Perognathus inornatus psammophilus</i>	Salinas pocket mouse	SSC
<i>Sorex ornatus salaries</i>	Monterey ornate shrew	SSC
<i>Taxidea taxus</i>	American badger	SSC
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	T

Notes:

<sup>1</sup> Present during breeding season.

<sup>2</sup> On or very near FHL.

Key:

E = State Endangered

T = State Threatened

C = State Candidate Species

CEQA<sub>A</sub> = Meet the criteria for listing as described in Section 15380 of the CEQA Guidelines

CEQA-eligible = Species that are eligible for, but not yet listed by the state as threatened or endangered. These species are given the same protection as those species officially listed by state or Federal governments.

SSC = Species of Special Concern is a species, subspecies, or distinct population native to California which is of conservation concern.

Protected = Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation.

## 4.8 Cultural Resources

### 4.8.1 Definition of the Resource

“Cultural resources” is an umbrella term for many heritage-related resources defined in several Federal laws and EOs. These include the National Historic Preservation Act (NHPA) (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (NAGPRA) (1990).

The NHPA focuses on cultural resources such as prehistoric and historic sites, buildings and structures, districts, or other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reason. Such resources might provide insight into the cultural practices of previous civilizations or they might retain cultural and religious significance to modern groups. Resources judged important under criteria established in the NHPA are considered eligible for listing in the National Register of Historic Places (NRHP). These are termed “historic properties” and are protected under the NHPA. NAGPRA requires consultation with culturally affiliated Native American tribes for the disposition of Native American human remains, burial goods, and cultural items recovered from federally owned or controlled lands.

Typically, cultural resources are subdivided into archaeological sites (prehistoric or historic sites containing physical evidence of human activity but no structures remain standing); architectural sites (buildings or other structures or groups of structures, or designed landscapes that are of historic or aesthetic significance); and sites of traditional, religious, or cultural significance to Native American tribes.

*Archaeological resources* comprise areas where human activity has measurably altered the earth or deposits of physical remains are found (e.g., projectile points and bottles). *Architectural resources* include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to warrant consideration for the NRHP. More recent structures, such as Cold War-era resources, might warrant protection if they are of exceptional importance or if they have the potential to gain significance in the future. *Resources of traditional, religious, or cultural significance to Native American tribes* can include archaeological resources, sacred sites, structures, neighborhoods, prominent topographic features, habitat, plants, animals, and minerals that Native Americans consider essential for the preservation of traditional culture.

## 4.8.2 Existing Conditions

FHL was established in 1940 in anticipation of training soldiers for combat in the European theater of operations during World War II. The area chosen for the training site consisted of more than 200,000 acres of local ranch lands between the Salinas River Valley divide and the Pacific Ocean. The terrain varied from level valleys bordered by gentle hills to steep, rugged mountains and has since provided opportunities for realistic training and defense technology testing. FHL was a sub-installation of Fort Ord until November 1993 when the installation came under U.S. Army Reserve Command (USARC). A detailed prehistoric and historic chronology of the area is provided in the 2003 *Integrated Cultural Resources Management Plan: Historic Properties Component (ICRMP)* (FHL 2003). At present, the installation encompasses approximately 162,000 acres and provides a vast array of training ranges and other facilities year-round for the USAR, and training opportunities for other services and government agencies.

One NRHP-listed cultural resource (CA-MNT-940H) occurs within the existing cantonment area and one NRHP-listed cultural resource (CA-MNT-100H) shares a common border with the existing cantonment area. The Milpitas Ranch House, aka "Hacienda" (CA-MNT-940H), was built in 1929–30 for publishing magnate William Randolph Hearst, Jr. to serve as headquarters for his Milpitas Ranch. The structure was designed by renowned California architect Julia Morgan and is a notable example of Spanish Colonial Revival-style architecture. The house later served as a military headquarters and nearby buildings were used as barracks, storage facilities, maintenance buildings, and housing. Site CA-MNT-100H is the Mission San Antonio de Padua. The Mission, founded in 1771, was the third Spanish mission established in California and is adjacent to the cantonment area (FHL 2003).

To date, more than 100 cultural resources studies in history, archaeology, architectural history, and ethnography have been conducted at FHL. The first extends back to the late 19th century with the architectural survey of Mission San Antonio de Padua (CA-MNT-100H). Since then, numerous other cultural resources studies have been conducted that provide the framework for understanding the cultural and historical development of FHL and surrounding region. As of 2013, approximately 45 percent of FHL and 100 percent of the cantonment area have been inventoried for cultural resources. The extent of this coverage includes all areas subject to regular base activity and all areas with a high probability for containing cultural resources. All activities within or near the regulated area north of Historic Mission San Antonio de Padua are undertaken per NHPA Section 106 and Section 2851 National Defense Authorization Act for FYs 1992 and 1993 (FHL 2003).

**Archaeological Resources.** No archaeological sites are in the FHL cantonment area.

**Architectural Resources.** The largest concentration of buildings and structures at FHL occurs within the cantonment area. No permanent buildings were constructed on FHL by the U.S. Army until 1975. Prior to this, FHL functioned as a military reservation and built only temporary structures. The U.S. Army made use of existing buildings to serve as headquarters, barracks, storage facilities, maintenance buildings, and housing. The Milpitas Ranch House/Hacienda is the only NRHP-eligible or -listed site within the cantonment area. The Mission San Antonio de Padua is listed in the NRHP and is located adjacent to the cantonment area (FHL 2003).

**Resources of Traditional, Religious, or Cultural Significance to Native American Tribes.** No traditional cultural properties or American Indian sacred sites are in the FHL cantonment area.

## 4.9 Infrastructure

### 4.9.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as urban or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure components to be discussed in this section include utilities (electrical, propane, liquid fuel, water supply, sanitary sewage, storm water, and communications) and solid waste management.

### 4.9.2 Existing Conditions

**Electrical Systems.** Electrical power is provided to FHL by Pacific Gas and Electric (PG&E). PG&E owns and operates the overhead electrical distribution system that feeds the cantonment area up to a demarcation point near the intersection of Mission and Sulfur Springs roads. From the demarcation point, the FHL Directorate of Public Works operates and maintains the overhead and underground primary and secondary distribution lines that serve the facilities in the cantonment area. A single 12.47-kilovolt, 3-phase distribution circuit that is rated at 5.6 million-volt amperes (MVA) feeds electricity from the Jolon Substation outside of the installation to the cantonment area. Because this circuit also supplies electricity to other customers, FHL's electrical capacity is limited to 4 MVA. Current peak electrical demand for the cantonment area is approximately 2.8 MVA, which is approximately 70 percent of available capacity (FHL 2007b).

**Propane Systems.** FHL does not have a centralized propane distribution system. Propane service is provided to the majority of buildings on the installation by aboveground propane storage tanks outside of each structure. In heavily developed areas such as the family housing area, larger propane storage tanks with localized distribution networks provide propane service to as many as 18 buildings each. FHL has 68 propane storage tanks, which range in size from 300 to 9,000 gallons. Northern Energy supplies propane to all of the propane storage tanks on the installation and owns 42 of these 68 storage tanks. The remaining storage tanks, which include all storage tanks greater than 1,000 gallons in capacity, and any distribution piping, is owned by the Federal government. Annual average propane demand at FHL is approximately 275,000 gallons, and during peak heating season some propane storage tanks need to be refilled as often as twice per week. Northern Energy has always met the installation's propane demand without service interruptions (FHL 2007b).

**Liquid Fuel.** JP-8 (jet fuel) is the primary fuel source for the five boilers that serve the barracks buildings. The JP-8 is stored in approximately 1,000-gallon storage tanks. Annual average JP-8 demand at FHL for heating is approximately 75,000 gallons (FHL 2007b). Other liquid fuels, including diesel and gasoline, are used at the installation to power military vehicles and equipment.

**Water Supply Systems.** Potable water is supplied to the cantonment area by four groundwater wells (236, 382, 383, and 380R) (FHL 2011d). Wells 382 and 383, which are approximately 7 miles from the cantonment area, have a combined capacity of 1,000 gallons per minute (gpm) and serve as the primary potable water sources. Well 236 has a capacity of 300 gpm in the summer and 400 gpm in the winter, and is used only as a back-up source of water supply. Water at FHL is treated at the wellhead with chlorine and a corrosion inhibitor. As such, the installation meets or exceeds Federal and state water quality standards (FHL 2007b). Water is pumped into two aboveground storage tanks that have a combined capacity of 1,200,000 gallons. A total of 14 miles of water service piping, which ranges in diameter from 0.75 to 12 inches, is used to transport water to and throughout the cantonment area. Current water demand is approximately 0.23 MGD or 12.3 percent of the collective water pumping capacity of the three groundwater wells (FHL 2007b).

**Sanitary Sewer/Wastewater Systems.** Within the cantonment area, the sanitary sewer/wastewater system consists of approximately 8 miles of polyvinyl chloride and vitrified clay pipes, gravity sanitary sewer mains, and a wastewater treatment plant. The wastewater treatment plant is a secondary treatment facility that uses aerated lagoons and settling basins to treat wastewater. Liquid wastewater is allowed to evaporate from the settling basins during low flow periods or is pumped onto a secure spray field for evapotranspiration during periods of increased flow. Solids in the wastewater are allowed to settle in the settling basins and are dredged away as necessary. Oil/water separators and grease traps pretreat greases and oils before they enter the wastewater collection system. The wastewater system is designed to handle an average of 1.0 MGD of flow. The average flow is approximately 0.15 MGD or 15 percent of the treatment system's capacity (FHL 2007b).

**Storm Water Systems.** Storm water is collected and transported by an extensive man-made storm water drainage network that transports storm water to natural earthen drainage channels that flow to the San Antonio River. The FHL storm water drainage system consists of a combination of ditches, grassy swales, overland flow, short culverts, limited curb and gutters, and incidental storage areas such as adjacent open space and recreational fields (FHL 2012g). The system includes approximately 4,000 linear feet of collection piping and trenching and approximately 20 inlets with catch basins in the cantonment area (FHL 2007b). In general, the storm water drainage system is adequate to serve the needs of the installation; however, flood events occur approximately once every 10 years (FHL 2007b). FHL experiences flooding and ponding in several parts of the cantonment area, including developed areas of Hacienda Heights. FHL manages flooding events by directing flood flows downhill, away from structures, and into open spaces that act as storage areas and sometimes hold standing water during the wet winter months. Many of these open spaces are proposed for development in the FHL RPMP (FHL 2012g).

**Communications.** Telephone and data transmission service is provided to FHL by SBC/AT&T Communications via an underground cable, which extends from outside of the installation to the Directorate of Information Management building via the installation's main gate at Jolon Road. A series of underground telephone and data transmission cables connect from the main service line to the buildings at FHL (FHL 2006).

**Solid Waste Management.** Solid waste generated at FHL is collected on a weekly and biweekly basis by contractors. Solid waste is accumulated at the FHL Solid Waste Transfer Facility on Nacimiento-Fergusson Road or in containers located throughout the cantonment area and in training areas as required.

Materials that can be recycled are removed, and any remaining wastes are sent to the Johnson Canyon Sanitary Landfill (off installation). The Johnson Canyon Sanitary Landfill has permitting capacity to handle 1,574 tons of waste per day and has a remaining capacity of 6,923,297 cubic yards, which equates to approximately 519,247 to 1,038,495 tons of uncompacted municipal solid waste (FHL 2012h, NERC 2010). FHL generates approximately 19.6 tons of waste per month (235.20 tons annually) (FHL 2007c).

## 4.10 Traffic and Transportation Systems

### 4.10.1 Definition of the Resource

The traffic and transportation systems resource is defined as the system of roadways and highways that are in the vicinity of, and could reasonably be expected to be potentially affected by, a proposed action.

### 4.10.2 Existing Conditions

**Access Roads.** The major regional travel routes to FHL are U.S. Highway 101 and Highway 1. Primary access for virtually all traffic to the installation is via Jolon Road, which is a public roadway connecting with U.S. Highway 101 near King City and again at the town of Bradley. Traffic is heaviest on Jolon Road on Fridays and Sundays, particularly during summer months (FHL 2007c). Secondary access to FHL is provided by Nacimiento-Ferguson Road, which originates at Highway 1 near the town of Lucia on the Pacific Coast. Nacimiento-Ferguson Road is the only east-west connection between the Central Valley and the Pacific Coast between Monterey (to the north) and Cambria (to the south). While Nacimiento-Ferguson Road is the only access road to the Pacific Coast, it is a low-volume road because of dangerous conditions (e.g., narrow road, sharp turns and switchbacks, and few guardrails) (Booz Allen 2006). The northwestern portion of the installation can be accessed via Del Venturi Road, which also provides public access to Los Padres National Forest, wilderness areas, and a small number of private holdings northwest of the installation (FHL 2006).

**Installation Roadways.** Route Tampa forms the interior spine of the cantonment area, serving as a collector street with side roads extending into the other developed areas. These roads include 7th Division Road, Bradley Drive, and Sulphur Spring Road running west-east, and Infantry Road and Mission Road running north-south. Mission Road is classified a minor arterial, Bradley Drive and Infantry Road are classified as collector roadways, and Sulfur Spring Road is a local road. FHL has an ACP between Mission Road and Route Tampa on Bradley Drive (MSDDC 2010). Unpaved roads and trails extend from developed areas of the cantonment area into the field training areas (FHL 2007a). Roadways on FHL have few driving constraints with a low volume of traffic and a controlled environment. The existing cantonment area roads are in good condition and adequately support current traffic loads, missions, and mission-support requirements; however, continued maintenance is required to avoid deterioration. Upgrades are required as the mission and traffic loads increase (FHL 2007a). Additionally, safety audits performed along FHL's major roadways identified a number of safety deficiencies, including non-standard and inadequate signage, barriers, and safety features (MSDDC 2010).

Open public access to the installation is generally permitted on major roads outside of the cantonment area. Access to the cantonment area is controlled through the primary ACP on Bradley Drive, between Mission Road and Route Tampa. Average daily traffic entering the cantonment area is 771 vehicles; however, traffic volume during training exercises increases to 2,206 vehicles per day (MSDDC 2010). Secondary roads in the training areas of FHL are closed to public access without a permit issued by Range Control. Sources of civilian traffic at FHL (i.e., people not associated with the U.S. Army) include Mission San Antonio de Padua (historic church and regular worship services), public hunting and fishing,

entertainment facilities such as a bowling alley and movie theater, and construction contractors (Booz Allen 2006). On-installation residents travel to the local communities of King City or Paso Robles for entertainment, dining, or shopping.

## 4.11 Hazardous Materials and Waste

### 4.11.1 Definition of the Resource

Hazardous materials are defined by 49 CFR 171.8 as “hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR 172.101), and materials that meet the defining criteria for hazard classes and divisions” in 49 CFR Part 173. Transportation of hazardous materials is regulated by the U.S. Department of Transportation regulations within 49 CFR Parts 105–180.

Hazardous wastes are defined by the Resource Conservation and Recovery Act (RCRA) at 42 U.S.C. §6903(5), as amended by the Hazardous and Solid Waste Amendments, as “a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.” Certain types of hazardous wastes are subject to special management provisions intended to ease the management burden and facilitate the recycling of such materials. These are called universal wastes and their associated regulatory requirements are specified in 40 CFR Part 273. Four types of waste are currently covered under the universal wastes regulations: hazardous waste batteries, hazardous waste pesticides that are either recalled or collected in waste pesticide collection programs, hazardous waste thermostats, and hazardous waste lamps.

Special hazards are those substances that might pose a risk to human health and are addressed separately from other hazardous substances. Special hazards include asbestos-containing material (ACM), polychlorinated biphenyls (PCBs), and lead-based paint (LBP). The USEPA has given authority to regulate these special hazard substances by the Toxic Substances Control Act (TSCA) Title 15 U.S.C. Chapter 53. The USEPA has established regulations regarding asbestos abatement and worker safety under 40 CFR 763 and additional regulations concerning emissions under 40 CFR Part 61. Whether from lead abatement or other activities, depending on the quantity or concentration, the disposal of LBP waste is regulated by RCRA at 40 CFR 260. The disposal of PCBs is addressed in 40 CFR Parts 750 and 761.

AR 200-1, *Environmental Protection and Enhancement*, incorporates the requirements of all Federal regulations and DOD Directives for pollution prevention and the management of hazardous materials, hazardous wastes, and special hazards.

### 4.11.2 Existing Conditions

**Pollution Prevention.** FHL maintains an Integrated Hazardous Material and Waste Management Plan (IHMWMP) and a Spill Prevention, Control, and Countermeasures (SPCC) Plan. In accordance with EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, FHL has implemented an Environmental Management System (EMS) to ensure personnel awareness of their responsibility to protect the environment. The EMS stresses the reduction of solid and hazardous waste and the minimization of hazardous materials purchased and used as methods to minimize the impact installation activities have on the environment. Through the EMS process, FHL has identified the reduction of solid waste as a key priority in pollution prevention. The primary goal is to minimize the

generation of hazardous waste and nonhazardous solid wastes and, as far as possible, eliminate pollution at the front end of the waste stream (FHL 2011e).

The SPCC Plan addresses storage and management of petroleum products and hazardous materials at FHL. The plan describes practices, procedures, structures, and equipment that prevent spills at each facility and eliminate or reduce harmful effects on human health and the environment. It lists hazardous waste satellite/accumulation facilities, aboveground and underground POL storage tanks, and other miscellaneous storage areas on FHL based on substances stored and storage capacity (FHL 2012i).

***Hazardous Materials and Petroleum Products.*** AR 200-1 identifies the requirements for managing hazardous materials on U.S. Army facilities, including guidance for the proper use, generation, transportation, storage, and handling of hazardous materials and petroleum products. The FHL IHMWMP describes responsibilities, policies, and procedures for storing and managing hazardous materials and hazardous wastes on the installation. The plan establishes BMPs to comply with applicable Federal, state, and local standards (FHL 2011e).

***Hazardous and Petroleum Wastes.*** The FHL IHMWMP describes the roles and responsibilities of all members of FHL with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for hazardous waste management.

FHL is a large-quantity hazardous waste generator. The most common types of hazardous wastes generated at FHL are used POLs. Typical generators of hazardous waste include equipment concentration sites, area maintenance support activities, automobile hobby shops, and Directorate of Public Works (DPW) operations and maintenance shops. The quantities of hazardous waste generated vary from year to year. The USEPA and the State of California require the quantities to be reported in a biennial report. All hazardous waste is processed through the servicing Defense Logistics Agency Disposition Services, then recycled or transported off installation to a hazardous waste disposal facility (FHL 2011e).

***Defense Environmental Restoration Program.*** The Defense Environmental Restoration Program (DERP) was formally established by Congress in 1986 to provide for the cleanup of DOD sites. The Installation Restoration Program (IRP), Compliance Restoration (CR), and the Military Munitions Response Program (MMRP) are components of the DERP. The IRP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The MMRP addresses nonoperational range lands that are suspected or known to contain unexploded ordnance, discarded military munitions, or munitions constituent contamination.

The FHL Installation Action Plan outlines the cleanup program for the installation. It identifies 34 IRP sites (2 active IRP sites and 32 response complete sites), 1 active CR site, and 12 MMRP sites (1 active MMRP site and 11 response complete sites) within FHL. The 46 sites identified in the Installation Action Plan consist of old landfills, fire training areas, past equipment maintenance activities, and bulk fuel storage areas. Contamination in the form of elevated levels of VOCs and POLs are found in the soil, sediments, and groundwater. The contaminants of concern that have been identified in groundwater are fuels, oils, and lubricants. As part of the DERP, numerous monitoring wells have been installed to monitor confirmed sources of groundwater contamination with petroleum hydrocarbons. These wells are sampled and tested at various time intervals to delineate further the extent of the contaminated plumes and to determine corrective actions (FHL 2011c). One active IRP site and 1 active CR site are located in the cantonment area. There are no MMRP sites within the cantonment area.

A contaminated groundwater plume associated with IRP Site FTHE-28, which is in the Building 194 area, exists under a small area in the central portion of Hacienda Heights. Site FTHE-28 and former Site FTHE-19 have been combined because the groundwater plumes from both sites are commingled. Site FTHE-28 consisted of two underground storage tanks and one aboveground storage tank. Site FTHE-19 consisted of a waste oil underground storage tank. All tanks have been removed and approximately 5,000 cubic yards of contaminated soil was excavated. Clean-up activities planned include the installation of an in situ bioremediation system that will be operated until clean-up objectives have been met. Quarterly groundwater sampling will continue as part of the remediation-enhanced natural attenuation process (FHL 2011c).

A contaminated groundwater plume associated with CR Site CCFHL001, which is located south of Building 258, exists under a small area in the southern portion of Blackhawk Hills and the northern portion of Mission Valley. CR Site CCFHL001 resulted from a release of approximately 30,000 to 40,000 gallons of gasoline that occurred during an earthquake in October 1988 when the underground pipes associated with four underground storage tanks split. The plume is approximately 1 mile long and 100 yards wide and thought to be contained by bedrock. Remedial actions have been implemented using a soil vapor extraction system at the source area, monitoring well installation and sampling, quarterly sampling and analysis, and source area sampling and analysis. Final characterization was completed in 2012. The current remedial action underway is the excavation of the source area to remove existing product, followed by continued monitoring and possible natural attenuation (Moeller 2013).

A Vapor Intrusion Study was conducted at IRP Site FTHE-28 and CR Site CCFHL001 from 29 November through 3 December 2010. A total of 25 soil vapor wells were installed as part of this study (12 in the Building 194 area and 13 in the Building 258 area). Sample locations were based on existing and planned structures, with locations close to sensitive use areas such as a daycare center. Detected concentrations of potential contaminants of concern in the collected soil vapor samples suggested that soil vapor intrusion does not present an unacceptable cancer risk or non-cancer hazard to the health of the building occupants at either location. The detected concentrations were well below applicable residential screening levels published by both the USEPA and California Department of Toxic Substances Control (USACE 2011b).

**Asbestos-Containing Material.** Asbestos is regulated by USEPA under the CAA; TSCA; and the Comprehensive Environmental Response, Compensation, and Liability Act. USEPA has established that any material containing more than 1 percent asbestos by weight is considered an ACM. Friable ACM is any material containing more than 1 percent asbestos, and that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. Nonfriable ACM is any ACM that does not meet the criteria for friable ACM.

ACM at U.S. Army facilities is regulated by AR 200-1 and AR 420-1, *Facilities Engineering Army Facilities Management*. AR 200-1 contains the environmental policy for the U.S. Army's Asbestos Management Program. AR 420-1 contains the facilities engineering policy for the U.S. Army's Asbestos Management Program. It consists of requirements for facility surveys, monitoring, training, and facility disposition. AR 420-1 excludes ACM from all procurements and uses where asbestos-free substitute materials exist.

Building materials in facilities constructed before 1990 are assumed to contain asbestos. Asbestos exists in a variety of forms and can be found in floor tiles, floor tile mastic, roofing materials, joint compound, wallboard, thermal system insulation, and boiler gaskets. Therefore, the buildings proposed for demolition might contain ACMs.

**Lead-Based Paint.** The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X) regulates the use and disposal of LBP in residential properties.

Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. FHL manages LBP on the installation through the surveying and removal of LBP as needed. The purpose of the management strategy is for identification, risk assessment, worker safety, worker training and certification, community outreach and education, and childhood lead poisoning prevention; and to evaluate, manage, and abate LBP hazards in accordance with AR 420-1.

The Federal government banned the use of most LBP in 1978; hence, all buildings constructed prior to 1978 are assumed to contain LBP. Therefore, the buildings proposed for demolition under the FHL RPMP might contain LBP.

**Polychlorinated Biphenyls.** PCBs are a group of chemical mixtures used as insulators in electrical equipment. Chemicals classified as PCBs were widely manufactured and used in the United States throughout the 1950s and 1960s. PCBs can be present in products and materials produced before the 1979 ban. Common products that might contain PCBs include electrical equipment (e.g., transformers and capacitors), hydraulic systems, and fluorescent light ballasts.

AR 200-1 states that U.S. Army policy is to manage PCBs in place unless operational, economic, or regulatory considerations justify removal. The use, management, disposal, and cleanup of PCBs at U.S. Army installations must comply with 40 CFR Part 761.

Transformers at FHL are reportedly manufacturer-certified as PCB-free or have been tested to determine the PCB content. All transformers known to have PCBs have been removed from the installation (Houston 2009). Based on their age, the buildings proposed for demolition under the FHL RPMP might have PCB-containing equipment.

**Pesticides.** AR 200-1 promulgates policies, responsibilities, and procedures to implement the U.S. Army Pest Management Program. Pest management practices at FHL are covered in the *Integrated Pesticide Management Plan*. FHL is currently utilizing an integrated pest management approach to pest control to minimize the types and quantities of pesticides used at the installation. Least-toxic chemical controls are used, where appropriate (FHL 2009c).

The application of pesticides, herbicides, and fertilizers varies across the installation, but focuses on two major areas: 160 acres of “improved” grounds mostly within the cantonment area, and disease vector control throughout the entire installation. Pesticide management is currently handled from Building 153, the Pest Control Shop (FHL 2009c).

Pesticide and herbicide application at FHL is conducted by Pest Management Personnel. The Pest Management Coordinator, in conjunction with the FHL DPW, oversees the implementation of the *Integrated Pest Management Plan* and follows a general policy of evaluating the need for chemical application prior to spraying (FHL 2009c).

**Radon.** Radon is a naturally occurring radioactive gas found in soils and rocks. Radon has the tendency to accumulate in enclosed spaces that are usually below ground and poorly ventilated (e.g., basements). Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer. In general, the risk increases as the level of radon and length of exposure increase.

USEPA has established a guidance radon level of 4 picocuries per liter (pCi/L) in indoor air for residences; however, there have been no standards established for commercial or industrial structures. Radon gas accumulation greater than 4 pCi/L is considered to represent a health risk to occupants.

Monterey County has a Zone 2 listing for radon. In Zone 2 areas, 99 percent of living areas and 92 percent of basements are between 2 and 4 pCi/L, which is below the USEPA radon guideline (USEPA 2013).

## 4.12 Health and Safety

### 4.12.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Various stressors in the environment, including physical, behavioral, psychological, and chemical stressors, can adversely affect human health and safety. Identification and control or elimination of these stressors can reduce risks to health and safety to acceptable levels.

Physical hazards in the environment can cause injury, temporary or permanent disability, disease, or death. These stressors encompass a wide range of factors, such as dust, humidity, temperature, noise, and radiation. Behavioral stressors include the effects of military activities on (1) psychological characteristics such as emotion, motivation, the learning process, and general behavior; and (2) psychological needs such as freedom, space, privacy, and societal acceptance. Behavioral stressors can cause mental effects ranging from direct physical damage to the brain tissue to temporary irritability. Some chemical and physical elements and situations can cause mental tension and strain (i.e., psychological stressors) that are closely related to behavioral stressors. Psychological stressors can be physical in nature, such as traffic congestion, excessive noise, air pollution, or inadequate working and living facilities, or they can be emotional in nature, such as the effects of discrimination or sexual harassment.

Several chemical substances have the potential to produce undesired or toxic health effects. Some chemicals act locally and some act systemically (requiring absorption into the blood stream). Chemical stressors can also be transmitted by air; by ground water or surface water used for drinking, irrigation, or recreation; or by direct contact.

Health and safety hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Hazards include transportation, maintenance and repair activities, and the creation of noisy environments or a potential fire hazard. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments due to noise or fire hazards for nearby populations. Noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

### 4.12.2 Existing Conditions

**Contractor Safety.** All contractors performing activities are responsible for following Federal and California Occupational Safety and Health Administration regulations, and are required to conduct activities in a manner that does not increase risk to workers or the public. California is one of several states that administer their own occupational safety and health (OSH) program according to the provisions of the Federal Occupational Safety and Health Act of 1970, which permits a state to administer its own OSH program if it meets all of the Federal requirements regarding the program's structure and operations. The California Occupational Safety and Health Act of 1973 revised worker safety and health laws and created a comprehensive state OSH program in lieu of Federal preemption. The purpose of the Act is to ensure safe and healthful working conditions for all California workers.

OSH programs address exposure to hazardous and toxic substances, safety hazards, use of personal protection equipment, and use and availability of Material Safety Data Sheets. Occupational health and safety is the responsibility of each employer, as applicable. Employer responsibilities are to review potentially hazardous workplaces; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous substances), physical (e.g., noise propagation, falls), and biological (e.g., infectious waste, wildlife, poisonous plants) agents; recommend and evaluate controls (e.g., administrative, engineering, personal protection equipment) to ensure personnel are properly protected or unexposed; and ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to the use of respiratory protection, engaged in hazardous waste work, or other work requiring medical monitoring.

**Military Personnel Safety.** Each branch of the military has its own policies and regulations that act to protect its workers, independent of their work location. The Assistant Secretary of the Army for Installations, Energy, and the Environment has overall responsibility for the Army's Human Health and Safety programs, including those at FHL. Two Army regulations govern these programs:

- AR 385-10, *Army Safety Program*, prescribes Department of the Army policy, responsibilities, and procedures to protect and preserve Army personnel and property against accidental loss. It provides for public safety incident to Army operations and activities and safe and healthful workplaces, procedures, and equipment. This regulation ensures statutory and regulatory compliance with the Occupational Safety and Health Act of 1970 as implemented by EO 12196.
- AR 40-5, *Preventive Medicine*, is a consolidation of several regulations that cover the Army's preventive medicine program. It establishes the practical measures for the preservation and promotion of health and the prevention of disease and injury. This regulation implements EO 12196 and DOD Instructions 6050.5, 6055.1, 6055.5, and 6055.12. This regulation applies to all facilities controlled by the Army and to all elements of the Army.

**Public Safety.** The FHL Directorate of Emergency Services provides for the protection, welfare, and safety of the installation community. This includes all first responders to emergency situations and emergency response planning and community education through the dissemination of public safety information. The Directorate of Emergency Services includes the Police/Provost Marshal Division, which provides law enforcement services, and the Fire Protection and Prevention Division, which includes the fire department and emergency medical services (FHL 2013).

## 5. Environmental Consequences

The Proposed Action addressed in **Section 5** includes the siting and design of cantonment area facilities. Construction and operation of these facilities were analyzed in the 2010 IDTEA and supplemental documents.

The specific criteria for evaluating the potential environmental effects of the Proposed Action and the No Action Alternative are described in the following sections. The significance of an action is also measured in terms of its context and intensity. The context and intensity of potential environmental effects are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, as summarized in the following paragraphs:

**Short-term or long-term.** In general, short-term effects are those that would occur only with respect to a particular activity, for a finite period, or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.

**Direct or indirect.** A direct effect is caused by an action and occurs around the same time at or near the location of the action. An indirect effect is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.

**Negligible, minor, moderate, or significant.** These relative terms are used to characterize the magnitude or intensity of an impact. Negligible impacts are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. Significant effects are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA. Significance criteria by resource area are presented in the following text.

**Adverse or beneficial.** An adverse effect is one having unfavorable or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment.

### 5.1 Noise

#### 5.1.1 Evaluation Criteria

Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors that are potentially exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise effects are evaluated qualitatively. The primary issues with respect to noise are the extent to which the Proposed Action would affect the ambient noise environment at the cantonment area and the potential for impacts on human receptors and land uses.

#### 5.1.2 Environmental Consequences

##### 5.1.2.1 Proposed Action

Implementation of the FHL RPMP would not result in additional different noise sources in the cantonment area. However, the RPMP would site new or relocate existing specific noise generators and sensitive receptors to different areas, and would incorporate master planning design features that would

reduce noise impacts. While not significant, the Proposed Action would result in long-term, beneficial impacts on noise.

Industrial uses, which generate higher noise levels than other uses, would be consolidated and sited in the southern portion of the cantonment area in Mission Valley away from noise sensitive uses such as residential uses, including family and barracks housing, and civic uses such as the chapel and child services. Land uses that would not generate noise (usually campus [i.e., administrative] buildings with high vertical heights or open space) would be sited between industrial uses and other land uses. The RPMP would make the cantonment area more walkable through compact development, connected sidewalks, and additional bike lanes would likely reduce vehicle traffic and thus result in less noise from traffic. Parking would be sited on the perimeter, which would also reduce the volume of traffic driving through central portions of the cantonment area where sensitive receptors are located. Tactical and commercial vehicle traffic routes would avoid housing and community centers to provide separation between family-centric areas (with noise-sensitive receptors) and mission-centric areas (that produce noise) to provide a less noisy environment outside industrial hubs. Addition of the new access road parallel to Route Tampa would limit convoy traffic on Route Tampa and Mission Road, thereby shifting convoy reentry sequences and reducing vehicle traffic noise.

Trees and other vegetation landscaping would be planted along roads and in specific areas to screen industrial areas from surrounding land uses, such as the administrative barracks area in Blackhawk Hills. This would dampen noise from traffic and industrial operations, thereby reducing the overall ambient noise. Vegetation affects the propagation of sound and ground absorption can occur over long distances if soft ground surfaces, such as grass, lie between the noise source and receptors.

While Tusi AHP would be relocated during implementation of the FHL RPMP, the impacts of this action on noise would be analyzed in a separate NEPA document.

### 5.1.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the RPMP and existing noise sources, such as commercial and tactical vehicle traffic and industrial uses, would continue to generate noise that could be experienced by various sensitive receptors throughout the cantonment area. New development might not site land uses to allow for separation between sensitive noise receptors and noise-producing land uses, and design principles such as use of landscape standards that provide for tree and vegetation to buffer noise would not be incorporated into new designs.

## 5.2 Land Use

### 5.2.1 Evaluation Criteria

The significance of potential land use effects is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. The Proposed Action was evaluated to determine if any the following were to occur:

- Preclude the viability of existing land use, or the continued use or occupation of an area
- Be incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

## 5.2.2 Environmental Consequences

### 5.2.2.1 Proposed Action

Full implementation of the FHL RPMP would be expected to have long-term, moderate, beneficial impacts on land use, although these impacts would not be significant. Due to the nature of the FHL RPMP as a master planning document, its implementation would result in siting of land uses in the cantonment area in a manner that fully considers the existing conditions and constraints at FHL to effectively support the installation's current missions while also making the cantonment area a more functional, easy to navigate, and aesthetically pleasing place to work and live. At full implementation of the RPMP, approximately 175 acres of forest land or rangeland within the cantonment area would be designated as a specific land use, although not all of this land would actually have a facility sited on it.

Land uses are sited in the RPMP's Regulation Plan, which spatially identifies standards for the cantonment area that outline the basic requirements for building within each area in terms of height, siting, elements and uses. The RPMP includes standards for Barracks, Campus, Civic, Commercial, Industrial, Large Format, Mixed-Use, Single-Family, Townhome, and Parks/Open Space. These standards replace the former land use categories in siting land uses within the cantonment area; however, the standards also provide additional useful information that the former land use categories did not. The standards identify site-specific building requirements (e.g., setbacks, building form, building heights, and parking requirements) in each area, and standards for aesthetic design (exterior and interior), transportation (streets and pedestrian), and landscaping. The implementation of these appropriate design standards would assist in making the cantonment area more useful and attractive as a workplace and a home. Complete details of these standards are provided in Installation Design Guide, a component of the RPMP (FHL 2012e).

Under the FHL RPMP, some land uses would be relocated and the concentration of other uses would be increased through siting of similar or compatible uses in order to strengthen the vision of each district. The main land use changes identified in the FHL RPMP include enhancing residential uses in Hacienda Heights through the siting of additional family housing units and neighborhood amenities such as parks, establishing Blackhawk Hills as an administrative and training area through development of complementary campuses for administrative and barracks uses and other training areas, and relocating most industrial land uses to Mission Valley. None of these land use changes would create land use incompatibilities within the cantonment area or outside the cantonment area with adjacent land uses.

***Hacienda Heights.*** Various types and densities of housing and commercial and civic uses are sited in Hacienda Heights to develop the district into an attractive small town with several focal points, including a town square. The types and location of land uses in the district would foster the livability of the districts while also protecting the existing historic buildings (i.e., Mission San Antonio de Padua and the Chapel).

***Blackhawk Hills.*** The siting of large administrative and barracks campuses in Blackhawk Hills promotes compact development that facilitates the walkability and small town feel of the district. The collocation of barracks housing near administrative uses, such as FHL headquarters and training classrooms and facilities, supports the functional relationship between these two uses. Additional land uses that support the administrative/training and barracks environment, such as parks/open space and recreation, are also sited in Blackhawk Hills.

***Mission Valley.*** Industrial is the primary land use in Mission Valley occupying most of the western and central portion of the district. Relocation of industrial uses to Mission Valley is beneficial because it consolidates these potentially nuisance-causing uses in one location away from residential and community service uses. Commercial uses are located at the northern portion of Mission Valley to support the

industrial uses and connect Mission Valley to Blackhawk Hills. Most of the eastern portion of Mission Valley is Park/Open Space, which is appropriate given the steep slopes and presence of sensitive species in the area.

The far southern portion of the cantonment area in Mission Valley is within the northern edge of the approach-departure clearance surface for Schoonover Airfield (FHL 2010a). The RPMP sites all or portions of the ECS facilities and vehicle storage areas; the convoy reentry area including queuing area, staging, POL facility, and washrack; and the expanded wastewater treatment plant in the area overlapped by the approach-departure clearance surface. No land uses are prohibited from being sited under the approach-departure clearance surface. However, man-made or natural objects that project above an imaginary surface are considered obstructions and would be prohibited or need a waiver (DOD 2008). It is not expected that any of the proposed uses sited in this area would project into the approach-departure surface. Therefore, the Proposed Action would not result in any impacts due to inconsistency with aircraft safety planning criteria. Tusi AHP would be relocated outside of the cantonment area as a result of implementation of the FHL RPMP, but this action will be analyzed in a separate, future NEPA document.

The RPMP has the flexibility to accommodate FHL's mission as it evolves in the future. The RPMP's flexibility is based in the form-based code consisting of the Regulating Plan (see **Figure 2-1**) and the aforementioned street, building, and landscape standards that are the foundation of the RPMP.

#### 5.2.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the FHL RPMP and new development in the cantonment area would not meet the purpose of and need for the FHL RPMP, which is to implement planning strategies based on FHL's new vision to create a small, walkable, attractive town that supports the surrounding training areas. Cantonment area development would continue, but would not be sited according FHL's planning vision and would not incorporate the proposed standards (i.e., form-based code) that adhere to this vision. Development would not be spatially or aesthetically designed to contribute to transforming the cantonment area into an attractive, walkable small town. No new impacts on land uses would occur as a result of the No Action Alternative, but development would likely continue to be haphazardly sited resulting in long-term, adverse impacts on land use.

### 5.3 Air Quality

#### 5.3.1 Evaluation Criteria

The environmental consequences on local and regional air quality conditions from a proposed Federal action are determined based upon the increases or decreases in regulated air pollutant emissions, and upon existing conditions and ambient air quality. The evaluation criteria are dependent on whether the proposed action is located in an attainment, nonattainment, or maintenance area for criteria pollutants. Other evaluation criteria include whether Major New Source Review (NSR) air quality construction permitting is triggered or Title V operating permitting is triggered. Major NSR air quality permitting is divided into Nonattainment Major NSR for nonattainment pollutants and PSD permitting for attainment pollutants. All of these evaluation criteria are discussed in the following paragraphs, as applicable.

**Attainment Area Pollutants.** The attainment area pollutants at FHL are CO, NO<sub>2</sub> (measured as NO<sub>x</sub>) SO<sub>2</sub>, Pb, PM<sub>10</sub>, PM<sub>2.5</sub>, and O<sub>3</sub> (measured as NO<sub>x</sub> and VOCs). The impact in NAAQS "attainment" areas would be considered significant if the net increases in these pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Exceed any evaluation criteria established by a SIP
- Cause an increase of 250 tpy of any attainment criteria pollutant (i.e., CO, NO<sub>2</sub> [measured as NO<sub>x</sub>], SO<sub>2</sub>, Pb, PM<sub>10</sub>, PM<sub>2.5</sub>, and O<sub>3</sub> [measured as NO<sub>x</sub> and VOCs]) from stationary plus mobile source emissions<sup>1</sup>.

Although the 250 tpy stationary plus mobile source threshold is not a regulatory driven threshold, it is being applied as a conservative measure of significance in attainment areas. The rationale for this conservative threshold is that it is consistent with the threshold for a PSD major source in attainment areas.

***Nonattainment or Maintenance Area Pollutants.*** Monterey County, California, has been designated as unclassified/attainment by the USEPA for all criteria pollutants; therefore, nonattainment and maintenance area evaluation criteria are not applicable to this Proposed Action.

***PSD and Title V Permits.*** The following factors were considered in determining the significance of air quality impacts with respect to PSD permitting requirements prior to construction:

- If the net increase in stationary source emissions qualifies as a PSD major source. This includes 250 tpy emissions per attainment pollutant (40 CFR 52.21(b)(1) and 40 CFR 52.21(a)(2)), or 100,000 tpy emissions of GHGs.
- If the net increase in stationary source emissions qualifies as a significant modification to an existing PSD major stationary source, (i.e., change that adds 10 to 40 tpy of regulated pollutants to the PSD major source's potential to emit depending on the pollutant, or adding 75,000 tpy of GHGs).
- If the Proposed Action occurs within 10 kilometers of a Class I area and if it would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 µg/m<sup>3</sup> or more (40 CFR 52.21[b][23][iii] and 40 CFR 52.21[a][2]).

The following factor was considered in determining the significance of air quality impacts with respect to Title V operating permit requirements (40 CFR 71.2 and 40 CFR 71.3):

- If the increase in stationary source emissions under the Proposed Action qualifies as a Title V major source by itself, or the resulting stationary source emissions after the change exceed the Title V thresholds. This includes the potential to emit 100 tpy for regulated pollutants (lower thresholds apply in nonattainment areas and depend on the pollutant and severity of nonattainment), or 10 tpy of any individual HAP, or 25 tpy of all HAPs combined, or 100,000 tpy of GHGs.

Only operational emissions increases were evaluated for PSD and Title V permitting impacts as construction activity emissions are typically not subject to the above significance criteria for these permit programs.

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<sup>1</sup> The Pb threshold would be 250 tpy but because emissions sources at an Army base have such low Pb emissions, a comparison to this threshold was not considered necessary.

## 5.3.2 Environmental Consequences

### 5.3.2.1 Proposed Action

**Air Emission Estimates.** Implementation of the FHL RPMP would not result in the direct production of criteria pollutant and GHG air emissions as it consists of siting and design. Potential air emissions from the construction activities and operational functions associated with the projects identified in the FHL RPMP were analyzed in the 2010 IDTEA.

Indirect, long-term, minor, beneficial impacts on air quality would result from the implementation of the FHL RPMP. The FHL RPMP encourages future development to be arranged in a small town atmosphere by siting workplaces and housing within walkable districts and incorporating bicycle lanes on various roadways. These features would indirectly reduce potential criteria pollutant and GHG air emissions by discouraging personnel from driving to destinations, and encouraging pedestrian movement by non-vehicle transport options such as walking or bicycling.

DOD policy requires new construction to consider energy efficiency during project siting and planning. Therefore, implementation of the RPMP would result in older, less energy-efficient buildings being replaced with newer, more energy-efficient buildings. Reducing FHL's overall energy use would reduce the amount of criteria pollutant and GHG air emissions produced at the installation.

**General Conformity.** The General Conformity Rule applies only to significant Federal actions in nonattainment or maintenance areas. Monterey County, California, is in Federal attainment for all criteria pollutants; therefore, a conformity determination in accordance with 40 CFR 93-153(1) is not required.

**Nonattainment NSR, PSD, and Title V Air Permitting.** Implementation of the FHL RPMP would not result in changes to stationary source air emissions on FHL. Nonattainment NSR, PSD, and Title V air permitting implications associated with the individual projects identified in the RPMP were considered in the 2010 IDTEA.

### 5.3.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the RPMP. Existing conditions would remain the same, and no new impacts on air quality would occur. Development would continue to occur in the cantonment area and more energy-efficient buildings could replace older, less energy-efficient buildings. However, development would likely not occur in a manner that facilitates non-vehicle transport options such as walking and bicycling that do not generate air emissions.

## 5.4 Geological Resources

### 5.4.1 Evaluation Criteria

Protection of regional geology and unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper erosion-control measures and structural engineering design are incorporated into project design and development. A proposed action could have a significant effect with respect to geological resources if any the following were to occur:

- Alteration of the lithology, stratigraphy, and geological structure

- Substantial changes to the soil composition, structure, or function within the environment.

## 5.4.2 Environmental Consequences

### 5.4.2.1 Proposed Action

No significant effects would be expected as a result of the Proposed Action.

**Geology.** No effects on geology would be expected as a result of the Proposed Action. No unique geological features or the regional lithology, stratigraphy, and geological structure would be impacted by the Proposed Action.

**Topography.** Long-term, negligible, adverse effects on topography would be expected as a result of the Proposed Action. New facilities that would be sited on steep slopes, such as in the east and the north, would require grading and leveling, thereby permanently changing the topography in some areas. However, most new facilities would be on land with little or no slopes, which would help minimize changes in topography.

**Soils.** Long-term, minor, adverse effects on soils would be expected as a result of the Proposed Action.

At full implementation of the FHL RPMP in which all new facilities are sited at their proposed locations, the amount of impervious surfaces would increase. Approximately 175 acres of land within the cantonment area would be transferred from undeveloped uses (i.e., forest land or rangeland) to developed uses. While impervious surfaces would not result on all 175 acres of this land, the area of impervious surfaces would be greater than currently exists in the cantonment area. Increased impervious surfaces would increase storm water runoff, potentially increasing the amount of soil erosion occurring within the cantonment area.

The Proposed Action includes siting new development on Lockwood shaly loam, which is a farmland of statewide importance. However, this area is not available as farmland. The land is adjacent to existing housing, is surrounded by roads, is already partially developed, and was not intended to be used as farmland.

The RPMP would site new facilities on soils with limited load-bearing capabilities due to the soils' shrink-swell potential, erosion potential, slope, bedrock depth, and saturation. Some housing areas and parking lots in Hacienda Heights and the BCTC campus in Mission Valley are sited on soils with building limitations; however, most new development proposed in the cantonment area would avoid these soils. Those soils with limitations could experience movement if under the weight of a building, potentially creating an unsafe environment for human occupation if these limitations are not taken into account. However, these limitations can be overcome or minimized by special planning, design, or installation.

**Geologic Hazards.** Long-term, minor, adverse effects on humans and property could occur in the event of earthquake activity. Any new projects proposed within the FHL RPMP would be designed consistent with requirements established in UFC 3-310-03, *Seismic Design for Buildings*, EO 12699, *Seismic Safety*, and seismic hazard codes found in the *Guidelines for Evaluating and Mitigating Seismic Hazards in California*, which would reduce the potential for adverse effects associated with structural failure during or following a seismic event.

### 5.4.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the Proposed Action. Development in the cantonment area would still occur, but in an ad hoc fashion and facilities might not be located as efficiently as they would be within the RPMP. Effects would be similar to the Proposed Action but potentially slightly greater because they would not be sited as efficiently to avoid geological effects.

## 5.5 Water Resources

### 5.5.1 Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of flood zones; and associated regulations. A proposed action could have a significant effect with respect to water resources if any the following were to occur:

- Substantial reduction in water availability or supply to existing users
- Overdraft of groundwater basins
- Exceedence of safe annual yield of water supply sources
- Substantial adverse affect on water quality
- Endangerment to public health by the creation or worsening of health hazard conditions
- Threats or damage to unique hydrologic characteristics
- Violation of established laws or regulations adopted to protect water resources.

The potential effect of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

### 5.5.2 Environmental Consequences

#### 5.5.2.1 Proposed Action

No significant effects on water resources would be expected. The Proposed Action would result in short-term and long-term, minor effects on water resources.

The new and relocated industrial uses proposed within the FHL RPMP could be required to obtain coverage under the SWRCB NPDES Industrial Storm Water General Permit No. CAS000001 (SWRCB Order No. 97-03-DWQ). Ten categories of industrial activities would be required to implement BMPs in the FHL SWPPP to control discharges to reduce potential contamination. The SWPPP is a "living document" and would need to be updated if any new industrial activities that are covered under the Industrial Storm Water General Permit are sited in the RPMP. While most of the BMPs included in the SWPPP would be non-structural and, therefore, would not apply to siting and design actions as proposed in the RPMP, some BMPs, such as inclusion of a vegetative buffer to reduce sedimentation, are included in the RPMP and would need to be incorporated into the project design. Additionally, the SWPPP would include monitoring such as periodic visual inspections for unauthorized discharges and storm water sampling. These BMPs would be consistent with the intent of the EISA, Section 438.

At full implementation of the RPMP, approximately 175 acres that currently contain forest land or rangeland would be designated for developed land uses. While facilities would not be sited on all 175 acres, the area of impervious surfaces in the cantonment area would increase. Increased impervious surfaces resulting from specific siting and design would provide less area for groundwater infiltration that could hamper groundwater recharge, and would increase storm water runoff and possibly erosion and sedimentation. However, new and redeveloped facilities and storm water controls in the FHL cantonment

area would be designed with low impact development (LID) features with the goal of maintaining or restoring natural hydrologic functions in accordance with EISA Section 438. The FHL RPMP states that in lieu of traditional “end-of-the-pipe” solutions, onsite natural design features to control storm water runoff quantity and quality would be used. Therefore, existing hydrology (i.e., surface runoff and subsurface flow) in the cantonment area would usually be maintained, including the direction of surface flow. LID features would include not only siting of open space (parks and town squares) and natural features (vegetated buffers between drainages and development and bio-swales to trap sediments and pollutants before they can enter a waterway), but also man-made features such as building roofs, streets, and parking surfaces.

The LID features would reduce the amount of runoff and would facilitate groundwater recharge through infiltration. The Mission-San Antonio Basin and the Jolon-Lockwood Basin contain a total usable water supply of 12,500 acre-feet per year and well water consumption averages 260 acre-feet (32 hectare-meters) per year. LID would assist in maintaining the existing hydrology in the cantonment area so that groundwater supply would not be significantly affected.

The FHL RPMP would avoid siting of structures in the 100-year flood zone and several structures within or near the flood zone in Hacienda Heights would be removed resulting in a long-term, beneficial impact. Siting of other facilities would not be expected to divert flow or alter floodwater volume or velocity. If, upon final design, impacts cannot be avoided, measures would be developed to minimize the impacts as are appropriate and consistent with EO 11988.

### 5.5.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The existing cantonment area would continue to be used and developed, but the RPMP would not be implemented. Existing water resources conditions would remain the same, and no new impacts would be expected.

## 5.6 Biological Resources

### 5.6.1 Evaluation Criteria

The significance of effects on biological resources is based on the following:

- The importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
- The proportion of the resource that would be affected relative to its occurrence in the region
- The sensitivity of the resource to proposed activities
- The duration of ecological ramifications.

Effects on biological resources would be significant if species or habitats of high concern are adversely affected over relatively large areas. Effects would also be considered significant if disturbances cause reductions in population size or distribution of a species of high concern.

### 5.6.2 Environmental Consequences

#### 5.6.2.1 Proposed Action

No significant effects on biological resources would be expected from implementing the Proposed Action.

**Vegetation.** Short- and long-term, minor, adverse and beneficial effects on terrestrial vegetation would result from implementing the Proposed Action.

As a result of selective facility siting and landscape design standards, tree removal proposed in the FHL RPMP would be kept to a minimum. A 3:1 tree replacement program is in place at FHL. Tree replacement, however, can take many years to compensate for tree loss (especially for oaks), and young trees do not provide as much cover and are much smaller than older trees.

Adverse effects on vegetation would result from siting proposed projects in portions of the cantonment area that were not previously developed. At full implementation of the RPMP, the increased road and other impervious surfaces would facilitate storm water runoff and disturb soils leading to erosion and sedimentation, providing habitat for exotic or invasive plant species. The spreading of invasive species could degrade vegetation communities. However, integration of current natural resources management practices and implementation of the plans identified in the FHL RPMP (i.e., the Street Tree Plan, and Parks and Quads Plan) would reduce potentially adverse effects on vegetation communities. The Street Tree Plan recommends that tree species native to Monterey County such as the California sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), box elder (*Acer negundo*), and the California laurel (*Umbellularia californica*) be planted to minimize additional watering and maintenance after they become established. The Parks and Quads Plan would also provide landscaped open space in several developed areas, and undeveloped natural open spaces are identified throughout the cantonment area, particularly in woodlands and areas with steep slopes (see **Figure 2-1**). As part of the RPMP and these plans, Landscape Design Standards would be implemented, including preference for native plant species, preservation of mature trees in parcels, and the use of vegetated swales between parking bays in parking areas.

To reduce the potential for long-term effects, implementation of the FHL RPMP would minimize vegetation clearing to the extent practicable through selective siting and building design, and revegetation and landscaping with native vegetation would be implemented in accordance with the Street Tree Plan and Landscape Design Standards identified in the RPMP. All revegetation would be conducted in accordance with the installation's reseeding and replanting procedures (FHL 2011b). Full implementation of the FHL RPMP would site additional projects in undeveloped areas that would require vegetation clearing that has the potential to result in direct and indirect, adverse effects on wildlife through habitat loss. However, siting of all projects would be enhanced with the addition of native vegetation in accordance with the Landscape Design Standards, which would provide a long-term beneficial effect as habitat for animal species. Also, large swaths of land in the eastern part of the cantonment area would be maintained as open space and parks.

**Wetlands.** Short- and long-term, negligible to minor, adverse effects would be expected on wetlands. Siting of new facilities throughout the cantonment area could have a potential for damaging wetlands. However, new facilities would be sited to maintain a buffer from wetlands and streams with the exception of a modified drainage channel in the southern portion of the cantonment area. The channel runs through or near the ECS facilities and vehicle storage areas and a proposed convoy queuing area (see **Figure 2-2**). Adverse effects on wetlands and wetlands transition areas would also be minimized to the maximum extent practicable. Projects potentially sited within wetland buffer areas would be coordinated with regulatory agencies to determine if wetlands could be affected and if mitigation measures would be required.

The development over time of the cantonment area could indirectly affect vernal pools and their watersheds. The Proposed Action includes siting industrial facilities, such as the POL facility and wastewater treatment plant expansion, in the southern portion of the cantonment area, which is 75 feet or more from vernal pools near Gravel Pit Pond and Mission Road (see **Figure 4-4**). The Proposed Action would include designing facilities to maintain existing hydrologic conditions in accordance with EISA, which would protect integrity of the pools. The pools are included in FHL's long-term monitoring actions that evaluate the success of protection measures (USFWS 2010).

Jurisdictional and non-jurisdictional wetlands and sensitive aquatic features that have not been documented could exist within the cantonment area. To minimize the potential for adverse effects on wetlands, vernal pools, swales, and wet meadows, wetland delineations are recommended for each project area, and consultation with USACE, when appropriate.

In accordance with EO 11990, *Protection of Wetlands* (May 24, 1977), avoidance of all long- and short-term effects on wetlands on Federal lands is a priority. EO 11990 also promotes initiatives, which would be implemented if applicable, to enhance the natural value of wetlands.

**Wildlife Resources.** Short- and long-term, negligible to minor, adverse and beneficial effects on wildlife could occur as a result of implementing the Proposed Action. Because storm water runoff flows directly into the San Antonio River, short-term effects on fish or other aquatic fauna would be expected to occur as runoff might impact water quality. However, facility design would comply with EISA and LID requirements that would minimize storm water runoff, maintain hydrology, and reduce impacts to negligible levels.

At full implementation of the RPMP, a decrease in vegetation cover would occur in the cantonment area and could result in direct effects on migratory bird species by displacing adult or breeding birds. Some individuals could be permanently displaced if activities occur during the breeding season. Implementation of seasonal timing and other natural resources management practices would avoid or minimize adverse effects. With the addition of trees and maintenance of open space in the cantonment area, there would be a potential beneficial impact due to an increase in the available habitat for roosting bird species. Also, new power lines associated with the Proposed Action are expected to be routed underground, thereby reducing the potential for collision or electrocution of bird species.

Inclusion of a pedestrian network, bicycle lanes, and strategically siting new facilities to improve walkability would most likely decrease vehicle usage in the cantonment area. With the full implementation of the FHL RPMP, a majority of the military and POV vehicle use would be on existing paved and gravel roadways and the roadway system would be designed to promote transit within the cantonment area via foot or bicycle. As a result, the “edge effect” (how two communities impact one another) on the existing wildlife would be reduced. Habitat “edge effects” include noise, brood parasitism, mortality, and increased exotic species.

### 5.6.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The existing cantonment area would continue to be used and developed, but the RPMP, including the Street Tree Plan and Parks and Quads Plan, would not be implemented. Therefore, the beneficial impacts on vegetation communities would not occur. Additionally, new development would not be designed using the Landscape Design Standards. No new impacts on biological resources would be expected.

## 5.7 Threatened and Endangered Species

### 5.7.1 Evaluation Criteria

As a requirement under the ESA, Federal agencies must provide documentation that ensures that agency actions will not adversely affect the existence of any threatened or endangered species. Section 7 of the ESA establishes a consultation process with the USFWS that ends with USFWS concurrence or a determination of the risk of jeopardy from a Federal agency project. A proposed action could have a significant effect with respect to disturbance if the following were to occur:

- “Taking” threatened or endangered species
- Jeopardizing threatened or endangered species habitat.

## 5.7.2 Environmental Consequences

### 5.7.2.1 Proposed Action

No significant effects on Federal or state threatened and endangered species would be expected from implementing the Proposed Action (i.e., siting and design of proposed facilities) as these species were considered during preparation of the FHL RPMP. Potential habitat for all of the special status species described in **Section 4.7.2** occurs at FHL. Species potentially impacted include the arroyo toad, California condor, San Joaquin kit fox, vernal pool fairy shrimp, and purple amole. Anticipated effects on these species are summarized in the following paragraphs. Section 7 consultations were completed for construction and development of cantonment area facilities, and surveys and mitigation measures would need to be implemented to avoid violating the ESA and the MBTA.

**Arroyo Toad.** Many proposed facilities in the cantonment area would be sited within 1.2 miles of arroyo toad breeding habitat. U.S. Army regulations require that new development use LID techniques such as maintaining vegetated buffers between drainages and development, or creating bio-swales for vegetation to trap sediments and pollutants before they can enter a waterway. In accordance with these regulations, the proposed facilities would be designed to comply with LID and EISA requirements, which would minimize impacts on arroyo toad breeding habitat from storm water runoff.

**California Condor.** The Proposed Action would likely have a potential long-term, beneficial effect on California condors because power lines added or modified in the cantonment area would be buried underground, thereby reducing the potential for powerline-related deaths.

**San Joaquin Kit Fox.** San Joaquin kit foxes have not been seen in the cantonment area or on FHL since 2000 (USFWS 2010, FHL 2011b); therefore, any effects on habitat from facility siting and design are not expected to impact the species significantly.

**Vernal Pool Fairy Shrimp.** The Proposed Action would include siting industrial facilities such as the proposed wastewater treatment plant expansion and POL facility in the southern portion of the cantonment area (i.e., Mission Valley), which would be 75 feet or more from vernal pools near Gravel Pit Pond and Mission Road (see **Figure 4-4**). The Proposed Action would also include facility design that would maintain existing hydrologic conditions in accordance with EISA, which would protect the integrity of the pools. The vernal pools are included in FHL’s long-term monitoring actions that evaluate the success of protection measures (USFWS 2010). Impacts on vernal pools and vernal pool fairy shrimp are not expected to be significant.

**Purple Amole.** The RPMP would site facilities to avoid disturbances of purple amole where it is known to occur on the eastern side of the cantonment area (primarily in Mission Valley, but also marginally in Blackhawk Hills) (see **Figure 4-4**). The areas where the plants are known to occur are mainly in areas that are designated as open space by the FHL RPMP consisting of blue oak woodlands, and valley oak savanna. Proposed modification to portions of Infantry Road, including the addition of on-street parking and bike lanes, would be sited to avoid purple amole to the maximum extent possible. Light human activity does not appear to affect purple amole populations and could help reduce thatch from annual grasses (USFWS 2010). The impacts on purple amole along Infantry Road would be negligible to minor.

The FHL RPMP would comply with the FHL INRMP (FHL 2007d, FHL 2011b) and any state-listed species potentially impacted by facility siting and design would be addressed through the goals and

strategies of the INRMP. Any project potentially affecting Federal-listed species must be coordinated with USFWS. The USFWS prepared a programmatic Biological Opinion (BO) addressing the effects on federally protected species, as required under Section 7 of the ESA, and mitigation measures were determined. FHL would comply with the terms and conditions of the programmatic biological opinion for FHL issued by the USFWS in 2005 (USFWS 2005), and as amended in 2010 (USFWS 2010).

### 5.7.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The existing cantonment area would continue to be developed, but it would not be developed in accordance with the proposed siting and design in the RPMP. It is likely that the presence of threatened and endangered species and their habitat would still be considered when siting new projects; therefore, no new impacts on threatened and endangered species would be expected.

## 5.8 Cultural Resources

### 5.8.1 Evaluation Criteria

Adverse impacts on cultural resources can include the following:

- Physically altering, damaging, or destroying all or part of a resource
- Altering characteristics of the surrounding environment that contribute to the resource's significance
- Introducing visual or audible elements that are out of character with the property or that alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed
- The sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

Ground-disturbing activities and visual impacts constitute the most relevant potential effects on cultural resources at FHL.

### 5.8.2 Environmental Consequences

#### 5.8.2.1 Proposed Action

No significant impacts would be expected as a result of the Proposed Action. Any possible significant effects could be minimized through avoidance or consultation with the SHPO. Proposed projects would be sited and designed in accordance with the guidelines set forth in the ICRMP and coordinated with the Cultural Resources Manager at FHL for compliance with the NHPA and other appropriate authorities. SHPO and Tribal consultation would occur as necessary and required by NHPA, NAGPRA, and other authorities. Adverse effects on NRHP-eligible and -listed cultural resources should be avoided or, if avoidance is not possible, then mitigation of adverse effects would be required in consultation with the SHPO.

**Archaeological Resources.** There are no NRHP-eligible or -listed archaeological sites within the cantonment area; therefore, no impacts on archaeological sites are expected from implementation of the Proposed Action.

**Architectural Resources.** Minor, long-term, adverse impacts on historic buildings, structures, landscapes, or viewsheds are anticipated as a result of the Proposed Action. Siting of facilities as proposed in the FHL RPMP, particularly the previously analyzed ORTC in Blackhawk Hills (Army Reserve, FHL, and USACE 2012) and the housing area in Hacienda Heights, have the potential to alter the viewshed of cultural resources and would be considered indirect, adverse effects. Use of compatible architectural design for proposed projects would help minimize adverse visual effects on the Hacienda. All projects identified in the FHL RPMP would be sited outside of the Mission Viewshed Restricted Building Zone around the Mission San Antonio de Padua (a NRHP-listed property); however, proposed facilities might be within the viewshed of the Mission. Therefore, particular attention should be taken to preserve the viewshed of the Mission to prevent adverse effects on this historic resource.

**Resources of Traditional, Religious, or Cultural Significance to Native American Tribes.** No impacts are expected on resources of traditional, religious, or cultural significance to Native American Tribes.

Should the siting and design of any proposed projects have the potential to impact the Hacienda or Mission San Antonio de Padua, FHL would need to coordinate with the SHPO pursuant to 36 CFR Part 800, regarding ways to avoid, minimize, or mitigate adverse effects. In the event of an inadvertent find of archaeological materials in an area in which a project was sited, FHL would follow the procedures for inadvertent discovery outlined in the installation's ICRMP (FHL 2003).

#### 5.8.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the Proposed Action. Development in the cantonment area would still occur, but in an ad hoc fashion. Siting and design of projects would need to follow procedures outlined in the FHL ICRMP and in consultation with SHPO pursuant to the NHPA.

### 5.9 Infrastructure

#### 5.9.1 Evaluation Criteria

Impacts on infrastructure are evaluated based on their potential for disruption or improvement of existing levels of service and additional needs for energy, fuel, and water consumption; and sanitary sewer, wastewater, communications, and solid waste management systems. Impacts might arise from utility needs created by either direct or indirect workforce and population changes related to installation activities. An impact might be considered adverse if a proposed action exceeded capacity of a utility. A proposed action could have a significant impact with respect to infrastructure if the following were to occur:

- Capacity of a utility exceeded
- A long-term interruption of the utility
- A violation of a permit condition
- A violation of an approved plan for that utility.

#### 5.9.2 Environmental Consequences

##### 5.9.2.1 Proposed Action

The FHP RPMP considered the existing utility network in the cantonment area when siting and designing projects; therefore, the Proposed Action would not result in any significant effects.

**Electrical Systems.** Long-term, negligible, adverse impacts on electrical systems in the cantonment area would be expected from implementing the FHL RPMP due to an increase in demand resulting from siting of an additional 2 to 3 million ft<sup>2</sup> of development. Incorporation of the planning principles into building designs would partially offset the increase in demand for electricity, and the proposed solar panel-covered parking facilities would contribute to an increase in supply of electricity at FHL.

**Propane Systems.** Long-term, minor, beneficial impacts on propane systems in the cantonment area would be expected from implementing the RPMP. Use of solar walls and other green building design techniques as proposed in the RPMP, and more efficient building design would partially offset short-term increased demand on the propane system. Additionally, it would decrease the long-term demand for propane as new buildings adhering to the RPMP's planning principles replace existing, less energy efficient buildings with more efficient heating systems.

**Liquid Fuel.** Long-term, negligible, adverse impacts on liquid fuel supplies in the cantonment area could be expected as more facilities are added to FHL's inventory and demand for JP-8 for heating increases. However, this increase in demand would not be anticipated to exceed supply.

**Water Supply Systems.** Long-term, negligible, adverse impacts on water supply systems would be expected from the increased water needed to support the siting of new development in the cantonment area under the RPMP. The potential increased water demand would be minimized through the design of new facilities to be water-efficient and to reuse graywater, when applicable. Additionally, adaptive landscape design identified in the FHL RPMP proposes the use of xeriscape landscapes, which would conserve water while providing attractive landscaping. Existing well capacity would be sufficient to accommodate any increases in demand on the water supply.

**Sanitary Sewer/Wastewater Systems.** Long-term, negligible, beneficial and adverse impacts on the sanitary sewer/wastewater systems would be expected from implementing the RPMP. While overall demand on sanitary sewer systems would be expected to increase due to the siting of an additional 2 to 3 million ft<sup>2</sup> of development in the cantonment area, new proposed buildings would incorporate sustainable building planning principles that promote graywater recycling and reuse. Graywater recycling would minimize demand on the wastewater system, thereby partially offsetting the increased demand from new development.

**Storm Water Systems.** Long-term, minor, beneficial impacts on storm water systems would be expected from implementing the RPMP. Although the overall area of impervious surfaces would increase due to full implementation of the RPMP in which new facilities are sited throughout the cantonment area, incorporation of the landscape screening, preservation of trees, and vegetative buffers identified in the RPMP's Landscape Design Standards would help reduce storm water flow, erosion, and potential flooding, thereby improving control of storm water on cantonment area. FHL has prepared a storm water master plan that provides a strategy and recommendations for improving the reliability and safety of storm drainage system in the cantonment area as redevelopment under the RPMP occurs (FHL 2012h).

**Communications.** No impacts on communications systems would be expected from implementation of the RPMP as the siting of an additional 2 to 3 million ft<sup>2</sup> of new proposed facilities would require phone and data connections. Communications infrastructure would be incorporated into the new facilities, and existing communications capacity would not be exceeded by demand.

**Solid Waste Management.** Long-term, negligible, adverse impacts on solid waste management would be expected from the siting of an additional 2 to 3 million ft<sup>2</sup> of facilities at FHL resulting from implementation of the RPMP. The increased development in the cantonment area would be expected to

result in an increase in solid waste generation. However, regional landfill capacity would be sufficient to accommodate the additional solid waste.

### 5.9.2.2 No Action Alternative

Long-term, minor, adverse impacts on utilities and infrastructure would be expected under the No Action Alternative, as development would proceed, but on an ad hoc basis rather than in accordance with the proposed siting and design in the RPMP. Design principles intended to reduce the adverse effects of development would not be applied, and facilities might not be concentrated in close proximity to existing utility connections.

## 5.10 Traffic and Transportation Systems

### 5.10.1 Evaluation Criteria

Impacts on traffic and transportation systems are evaluated by how well existing roadways can accommodate increases in traffic. Adverse effects occur if the following were to occur:

- Increases in traffic volume and congestion
- Decrease in level of service
- Disruption of traffic
- Road traffic conflicts.

### 5.10.2 Environmental Consequences

#### 5.10.2.1 Proposed Action

Impacts on traffic and transportation systems from implementation of the Proposed Action would not result in significant adverse impacts on traffic and transportation system resources.

Development of the cantonment area based on siting and design proposed in the FHL RPMP would result in long-term, moderate, beneficial impacts on traffic and transportation systems. While up to approximately 3 million ft<sup>2</sup> of development is proposed in the RPMP, roadways would be realigned and additional roadways would be built, and approximately 1,435 street parking spaces and 3,580 spaces in car parks would be added throughout the cantonment area to support the siting of the proposed new facilities.

The district design principles laid out in the FHL RPMP include walkable, transit-oriented development, and an emphasis on the 10-minute walk as a viable transit option for most trips in the cantonment area. Specific street and parking design principles including traffic-calming measures such as planting strips, street trees and other vegetation, and other landscaping measures; and connected road and sidewalk networks, wide roads with medians clear signage, and adequate parking facilities integrated into the overall street and development plan would support these overall district design principles. Additionally, the FHL RPMP would designate specific commercial and tactical vehicle routes (including the convoy sequence access road), which would divert this traffic out of the residential and commercial areas of the cantonment area, thereby reducing through traffic and overall congestion.

In aggregate, these principles would reduce congestion by offering clear rights-of-way for vehicles, pedestrians, and cyclists, and by better integrating the transportation system into the developed portions of the cantonment area. Wider roadways and increased off-street parking facilities, including providing parking on the perimeter of developed areas, would also lessen congestion from parallel parking on the

street. Additionally, providing safe and viable routes for pedestrians and cyclists would reduce the number of trips in the cantonment area roadways, as non-motorized transportation would become an increasingly attractive option to residents and workers. This would reduce the number of trips taken by car on the installations roadways, ultimately reducing maintenance costs.

### 5.10.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the Proposed Action. Long-term, minor, adverse impacts on traffic and transportation systems would be expected from increased traffic that could not be accommodated by the existing roadway network and parking lots. Additional increased traffic would be anticipated over the long term due to continued development of the cantonment area in an ad hoc fashion that does not incorporate siting and design features that facilitate walking or reduced vehicle use.

## 5.11 Hazardous Materials and Waste

### 5.11.1 Evaluation Criteria

A proposed action could have a significant effect with respect to hazardous materials and waste if the following were to occur:

- Noncompliance with applicable Federal and state regulations as a result of a proposed action
- Disturbance of or creation of contaminated sites resulting in adverse effects on human health or the environment
- Established management policies, procedures, and handling capacities could not accommodate the proposed action.

### 5.11.2 Environmental Consequences

#### 5.11.2.1 Proposed Action

**Pollution Prevention.** No effects on pollution prevention would be expected. Implementation of the Proposed Action would require changes to the SPCC Plan, SWPPP, and IHMWMP, which would be complied with. The RPMP would include some design features included in these plans, such as use of vegetative buffers identified in the SWPPP, to prevent pollution runoff.

**Hazardous Materials and Petroleum Products.** Long-term, minor, beneficial effects would be expected from the Proposed Action. Relocation of all industrial areas to Mission Valley would consolidate industrial activities, including the use of hazardous materials and petroleum products, into one location in the southern portion of the cantonment area that is separated from other land uses such as residential, commercial, and recreation.

**Hazardous and Petroleum Wastes.** Long-term, minor, beneficial effects would be expected from the Proposed Action. Relocation and siting of all industrial areas to Mission Valley would consolidate industrial activities, including the generation of hazardous and petroleum wastes, into one location in the southern portion of the cantonment area that is separated from other land uses such as residential, commercial, and recreation.

**Defense Environmental Restoration Program.** The Proposed Action would not involve the disturbance of any DERP sites and, therefore, would not be expected to result in effects. Proposed projects would be

sited in the cantonment area at and adjacent to the contaminated groundwater plumes associated with IRP Site FTHE-28 and CR Site CCFHL001. However, siting alone would not result in an impact as the contamination at these IRP sites in underground in the groundwater. The projects would be designed so as to not extend to the depth of groundwater or disturb these plumes. Additionally, a Vapor Intrusion Study conducted at Sites FTHE-28 and CCFHL001 detected concentrations that were well below applicable residential screening levels published by both the USEPA and California Department of Toxic Substances Control, which suggests that soil vapor intrusion would not present an unacceptable cancer risk or non-cancer hazard to the health of the building occupants in those locations.

**Asbestos-Containing Material.** Any facilities constructed before 1990 that are proposed for demolition under the FHL RPMP could contain ACM. Compliance with the Monterey Bay Unified Air Pollution Control District Rule 424 would be required. Rule 424 contains investigation and reporting requirements for asbestos. All Federal, state, and local regulations and installation management plans would be adhered to during demolition. Siting of the proposed land uses and facilities, and implementation of various planning principles would not create a hazard to the public or the environment due to exposure to ACM.

**Lead-Based Paint.** Any facilities constructed before 1978 that are proposed for demolition under the FHP RPMP could contain LBP. All Federal, state, and local regulations and installation management plans would be adhered to during demolition.

**Polychlorinated Biphenyls.** The Proposed Action would not be expected to create a hazard to the public or environment due to exposure to PCBs. No PCB-containing electrical transformers would be installed or removed under the Proposed Action. Any PCB-containing equipment that might be within buildings proposed for demolition under the FHL RPMP would be handled and disposed of in accordance with Federal, state, and local regulations. Siting of the proposed land uses and facilities, and implementation of various planning principles would not disrupt PCBs.

**Pesticides.** No effects from management and use of pesticides would be expected. The primary uses of pesticides in the cantonment area would not increase due to siting and design proposed in the RPMP.

**Radon.** The Proposed Action would not be expected to create a hazard to the public or environment due to radon exposure. Based on the USEPA's designation of Monterey County as Radon Zone 2, indoor radon concentrations are not expected to be a concern as a result of siting the proposed facilities.

### 5.11.2.2 No Action Alternative

Under the No Action Alternative, FHL would not implement the Proposed Action. Development in the cantonment area would still occur, but in an ad hoc fashion that would not consider the siting and design principles identified in the FHL RPMP. Existing hazardous conditions in the cantonment area would remain the same. Long-term, minor, adverse effects from hazardous materials and waste would be expected.

## 5.12 Health and Safety

### 5.12.1 Evaluation Criteria

Any increase in safety risks would be considered an adverse effect on safety. A proposed action could have a significant effect with respect to health and safety if the following were to occur:

- Substantial increase in the risks associated with the safety of contractors or the local community

- Substantial hindrance in the ability to respond to an emergency
- Introduction of a new health or safety risk for which the installation is not prepared or does not have adequate management and response plans in place.

## 5.12.2 Environmental Consequences

### 5.12.2.1 Proposed Action

The Proposed Action would not be expected to result in significant effects on health and safety.

**Contractor Safety.** No adverse effects on contractor safety would be expected. The FHL RPMP includes siting and design of projects proposed for the cantonment area. Construction, demolition, and operation activities associated with these projects were analyzed in the 2010 IDTEA, and are not included in the Proposed Action. Safety risks were considered during siting and design of these proposed projects in the RPMP, and all risks would be managed by adherence to established Federal, state, and local safety regulations.

**Military Personnel Safety.** Long-term, minor, beneficial effects on military personnel safety would be expected. Soldiers would be expected to comply with all U.S. Army safety regulations and policies to ensure that safety risks are minimized. Beneficial effects are expected to result from improved transportation planning, such as separate routes for military vehicles and commercial vehicles, reducing the safety risk associated with military, commercial, and public road uses. Additional beneficial effects are expected from the walkable paths to allow for improved emergency evacuation routes.

Relocation and consolidation of industrial uses in Mission Valley would result in beneficial effects on military personnel safety. By separating sensitive land uses such as residential, recreation, and civic uses from industrial uses, safety risks to military personnel from potentially hazardous industrial activities would be reduced.

**Public Safety.** Long-term, minor, beneficial effects would be expected. Beneficial effects on public safety would result from the incorporation of current AT/FP standards into the design of the proposed cantonment area projects. Furthermore, separation of sensitive land uses from industrial uses, and creation of single-purpose roadways would reduce the safety risk to the public by limiting unnecessary exposure to military activities. The creation of walkable pathways would also reduce safety risks by reducing traffic and providing clear emergency evacuation routes.

Relocation and consolidation of industrial uses in Mission Valley would result in beneficial effects on public safety. Safety risks to visitors, contractors, and non-military residents from potentially hazardous industrial activities would be reduced.

### 5.12.2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. Development would continue in the cantonment area; however, land uses and projects would not be sited or designed in accordance with the principles identified in the RPMP. Existing health and safety conditions would continue, and no new effects on health and safety would be expected.

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## 6. Cumulative Effects, Best Management Practices, and Adverse Effects

### 6.1 Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis in an EA should consider the potential environmental effects resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR Part 1508.7). CEQ guidance in considering cumulative effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with a proposed action. The scope must consider other projects that coincide with the location and timetable of a proposed action and other actions. Cumulative effects analyses must also evaluate the nature of interactions among these actions (CEQ 1997).

#### 6.1.1 Projects Identified with the Potential for Cumulative Effects

The geographic region of influence (ROI) is an important consideration when discussing cumulative effects. For the purposes of this analysis, the ROI was determined to be FHL and the adjacent communities, including the community of Lockwood.

An effort was undertaken to identify other projects for evaluation in the context of the cumulative effects analysis. This was further developed through review of public documents and information gained from the coordination with various applicable agencies.

Activity within the adjacent communities was negligible. Planning for the ROI was undertaken by the Monterey County Planning Department. The South County Planning Area is the largest and least populated of the Planning Areas in the Monterey County General Plan. Overall, the future vision for the South County Planning Area will be to maintain its rural character and expand the agricultural-based economy, while enhancing infrastructure and community services for the small, unincorporated communities. The vision for the South County Planning Area will be to achieve a balance between the two perspectives of restricting additional subdivisions while maintaining property rights. The vision includes the development of the proposed Jolon Road winery corridor, providing revenue and jobs in the area. However, the development of this corridor is dependent upon concurrent improvement of the Planning Area’s infrastructure. The Monterey County General Plan also specifically calls for low-density development in areas adjacent to FHL to avoid encroachment issues (Monterey County 2010). Industry within the ROI appears limited to some gas and oil exploration.

The past, ongoing, and reasonably foreseeable future projects identified with the potential for cumulative effects were reviewed with respect to the latest available information. The FHL cantonment area was selected as the primary focus for potential cumulative effects because the RPMP would provide a strategy for guiding the large number of proposed future development activities in the cantonment area. Because the Proposed Action is the siting and design of proposed projects whose construction and operation were previously analyzed in the 2010 IDTEA, the Proposed Action would be a refinement of previously analyzed future actions. An effort was undertaken to identify projects in the areas surrounding the FHL cantonment area (including activities on training lands) for evaluation in the context of the cumulative effects analysis. Proposals from the FHL’s Range Complex Master Plan, training plans and the Monterey County General Plan were all reviewed.

## 6.1.2 Cumulative Effects Analysis

**Table 6-1** summarizes potential cumulative effects on resources from the Proposed Action when combined with other past, present, and future activities. Only those actions that are additive to the Proposed Action are considered.

## 6.2 Reasonable and Prudent Measures and Best Management Practices

The Proposed Action would not result in significant adverse effects on the land or the surrounding area. Common BMPs and other impact minimization measures are incorporated into the FHL RPMP as design features. Therefore, implementation of the Proposed Action would eliminate or reduce the adverse effects of the proposed cantonment area projects that were previously analyzed in the 2010 IDTEA.

General BMPs that would be implemented as part of the Proposed Action are summarized as follows:

- Storm water management would be incorporated as appropriate during project design to minimize offsite runoff. Storm water management systems included in the project design would ensure that predevelopment site hydrology is maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow in accordance with Section 438 of EISA. The existing riverine monitoring program will be continued for the San Antonio and Nacimiento Rivers to monitor sites from each river on a quarterly basis for water quality parameters. Inclusion of these BMPs in the RPMP and implementation of the Proposed Action would minimize adverse effects on water resources associated with construction and operation of projects that were analyzed in the 2010 IDTEA.
- Disturbance of environmental resources and topography would be minimized by integrating existing vegetation, trees, and topography into site design. Inclusion of these design principles in the RPMP and implementation of the Proposed Action would minimize adverse effects on soil and biological resources associated with construction and operation of projects that were analyzed in the 2010 IDTEA.
- Minimization of impervious surfaces through use of shared parking, compact development, increased building height (i.e., multi-story buildings), or other measures, as appropriate. Inclusion of these BMPs would minimize adverse effects on soil and water resources associated with construction and operation of projects that were analyzed in the 2010 IDTEA.
- FHL would comply with the terms and conditions of the programmatic biological opinion for FHL issued by the USFWS in 2005, and as amended in 2010.

## 6.3 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action. As discussed in detail in **Section 5** and summarized in **Section 7**, the Proposed Action would result in short- and long-term, adverse effects associated with the Proposed Action, including siting of proposed facilities on undeveloped portions of the cantonment area, thereby increasing impervious surfaces and converting undeveloped, vegetated land to urban land uses. Additional long-term, non-significant impacts would also result from implementation of the RPMP including impacts on geological resources, biological resources, threatened and endangered species, and infrastructure. None of these effects would be significant.

**Table 6-1. Cumulative Effects of the Proposed Action on Resources**

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Noise</b>	Helicopter and aircraft activities and heavy artillery use during division-level training were the dominant noise sources, and other support activities produced noise in the cantonment area as it developed.	Helicopters and aircraft activities in addition to small arms fire are the dominant noise sources.	Long-term, minor, beneficial effects would be anticipated from consolidation of industrial uses farther from noise-sensitive uses, facilitation of decreased vehicle use, shifting traffic to the exterior of the cantonment area, and use of trees and other vegetation as buffers to dampen noise along roads and surrounding industrial uses.	Continued increases in training operations could result in increased noise.	Aircraft and helicopter activities along with small arms fire would remain the dominant noise sources. Selective siting and design identified in the FHL RPMP would minimize adverse noise effects of operation of future actions in the cantonment area.
<b>Land Use</b>	Past development has extensively modified land use.	Military installation land uses, including urban uses and training, in the cantonment area.	Proposed siting would give full consideration to existing environmental and land uses conditions and constraints by collocating or relocating uses. Use of structural and landscape design standards in the Regulation Plan would further make land uses more compatible and strengthen the walkable, small town feel of the cantonment area resulting in a long-term, beneficial effect.	Construction and operation of projects in the cantonment area that would be sited and designed according to the FHL RPMP. No changes in training lands or adjacent communities.	Proposed Action would enhance land use compatibility in the cantonment area through strategic siting and design of future projects. Proposed Action would reduce adverse effects of construction and operation of known future actions resulting in beneficial cumulative effects.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Air Quality</b>	Emissions from aircraft, vehicles, and stationary sources could have resulted in some degradation of habitat; however, AQCR would have been classified as being in attainment.	Emissions from aircraft, vehicles, and stationary sources such as dust generated from construction and training activities on unpaved surfaces.	Reduction to air emissions through design of a walkable cantonment area that would decrease vehicle operations, and through the replacement of old, less energy-efficient buildings with newer, more energy-efficient buildings.	Combustion air emissions and dust generation during construction and demolition activities and emissions due to asphalt paving activities. Increases in field training and small arms range use and increases in aircraft in adjacent training areas and helicopter operations.	Minor, short- and long-term, cumulative effects on air quality, including the generation of GHGs. The Proposed Action would provide a small reduction in emissions to overall cumulative effects.
<b>Geological Resources</b>	Past development and training activities have modified topography and soils, and resulted in increased erosion and sedimentation.	Existing impervious surfaces in the cantonment area can lead to locally increased storm runoff and erosion and sedimentation. Training activities contribute to ongoing modification of topography and soils and to erosion and sedimentation.	Effects from the siting of projects on soils with limited load-bearing capabilities and from overall increased impervious surfaces could increase runoff and erosion. Appropriate design can minimize soil limitation and effects from erosion.	Continued impacts on topography and soils, and increased erosion and sedimentation from construction and operation of new projects in the cantonment area.	Long-term, minor cumulative effects on soils due to modification by development and training activities and increased erosion and sedimentation, although these would be offset by siting and design standards identified in the RPMP and BMPs in numerous management plans.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Water Resources</b>	Groundwater and surface water quality moderately impacted by past development and training activity.	Pollution from industrial and municipal sources is generally low. Contaminated groundwater plumes are present in the cantonment area.	Effects on groundwater and surface water quality could result from increased impervious surfaces at full implementation of the FHL RPMP that leads to erosion and sedimentation, and possible contamination of storm water runoff. Use of design standards in the RPMP would incorporate LID features and other measures into project design to help minimize effects. Long-term, beneficial effects would be anticipated from removal of structures from the 100-year floodplain and by avoiding siting new structures in the floodplain.	Development would result in sedimentation from construction activities potentially affecting water quality, and increases in impervious surfaces resulting in increased storm water runoff.	Increased impervious area would have minor cumulative effects on storm water discharges and water quality. Proposed Action would not induce further degradation of water quality. Cumulative effects would not be significant due to implementation of project design features, including LID and BMPs from numerous other management plans.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Biological Resources</b>	Degraded habitat of wildlife and plant species.	Presence and operation of facilities and training lands impact wildlife and their habitats, and plants.	Short- and long-term, minor, adverse effects on vegetation and wildlife would be anticipated from siting projects in undeveloped portions of the cantonment area; however, beneficial effects would be anticipated from minimization of vegetation clearing, and replacement and addition of native vegetation in accordance with Street Tree Plan and the Landscape Design Standards. Potential for damaging wetlands could occur due to siting new facilities in the cantonment area, but all projects would be sited to maintain an appropriate buffer from wetlands. Indirect effects on vernal pools could occur due to siting new facilities near vernal pools. Natural resources management practices would be implemented and coordination with regulatory agencies would be conducted, as appropriate.	Development of the area and construction of projects in the cantonment area would impact vegetation communities and wildlife habitat.	Permanent loss of vegetation and other habitat are minor in scale, and impacts would be minimized by selective siting and project design as per the FHL RPMP and careful management and monitoring. Cumulative effects would not be significant.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<p><b>Threatened and Endangered Species</b></p>	<p>Degraded habitat of Federal threatened and endangered species.</p>	<p>Presence and operation of facilities and training lands impact Federal listed species and their habitat.</p>	<p>Siting of facilities in the cantonment area near arroyo toad and vernal pool fairy shrimp habitat could result in minor, adverse impacts on Federal-listed species. Siting of facilities to avoid purple amole habitat could result in a beneficial impact. The RPMP proposes facility design that would comply with EISA requirements, including LID, which could result in a beneficial impact on Federal-listed species.</p>	<p>Development of the area and construction and operation of new facilities in the cantonment area could have continuing minor effects on Federal threatened and endangered species habitat.</p>	<p>Permanent loss of threatened and endangered species habitat would be minimized through continued natural resources management. The Proposed Action could have a minor cumulative effect from the siting new facilities near arroyo toad and vernal pool fairy shrimp habitat, but could have beneficial cumulative effects due to avoiding purple amole habitat and implementing LID features that could benefit Federal-listed species.</p>

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Cultural Resources</b>	Possible destruction of eligible historic properties and archaeological sites. Unknown impacts on traditional cultural properties.	Presence and operation of facilities and training lands have no significant effects.	No effects on archaeological resources or resources of traditional, religious, or cultural significance to Native American Tribes would be anticipated. Minor, long-term, indirect, adverse effects on historic buildings, structures, landscapes, or viewsheds would be anticipated from the siting of facilities where they could have the potential to alter the viewshed of cultural resources or introduce noise and vibration. Mitigation to avoid adverse effects on historic buildings and viewsheds could include relocating buildings, reducing building heights, planting of trees, use of neutral colors, and incorporation of compatible architectural design, as determined through consultation with SHPO.	General development and training activities could have effects on viewsheds, archaeological sites, and traditional cultural properties. Consultation with the SHPO would be required to avoid significant effects.	Implementation of procedures in the ICRMP including survey, monitoring, and site protection would help minimize cumulative effects. The Proposed Action would not significantly contribute to cumulative effects on cultural resources.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Infrastructure</b>	Infrastructure developed to support current FHL cantonment area.	FHL continues to improve infrastructure system.	Siting of an additional 2 to 3 million ft <sup>2</sup> of structures at full implementation of the FHL RPMP would result in negligible, adverse effects on some utility and infrastructure due to increased demand. Long-term, beneficial effects on propane systems, sanitary sewer/wastewater systems, and storm water systems would be anticipated due to use of more efficient or sustainable systems, graywater recycling, and incorporation of vegetation buffers and preparation of a storm water master plan that would offset increased demand.	Utility and infrastructure improvements and additions would occur on the installation.	Construction and operation of new facilities in the cantonment area and training facility upgrades combined with local development would have an adverse cumulative effect on some aspects of infrastructure. The Proposed Action would minimize some of these effects through design of projects to be more efficient in terms of energy and water use.
<b>Traffic and Transportation Systems</b>	Past division-level training exercises resulted in heavy convoy activity that impacted local traffic flows.	Current traffic flow is related to daily operations and various training activities. Units primarily arrive by bus or aircraft with minimal convoy activity.	The realignment of cantonment area roadways, increased parking, and promotion of a walkable cantonment area that would reduce vehicle trips and traffic congestion are all beneficial effects.	Increases in POVs arriving to the installation and increased tactical/combat vehicle activity on the installation as a result of increases in operations.	The Proposed Action could have a minor, beneficial, cumulative effect on traffic and transportation systems due to siting and design that would result in a more efficient roadway network and less vehicular use from a more walkable cantonment area.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
<b>Hazardous Materials and Waste</b>	34 IRP sites, 1 active CR site, and 12 MMRP sites have been identified.	Presence and operation of facilities and training operations.	Beneficial effects would result from siting industrial uses in a consolidated area away from sensitive land uses. The presence of ACM and LBP in old buildings that would be demolished due to siting of new facilities would need to be considered. Projects would be sited at and adjacent to contaminated groundwater plumes; however, design of these projects would prevent disturbance of the plumes.	Development of several maintenance facilities and Tactical Training Base field operations will increase hazardous material use and waste generated but not to levels that cannot be managed by current practices.	Construction and demolition activities would have a minor cumulative effect on hazardous materials and wastes, although effects would not be significant. Beneficial effects from consolidation and relocation of industrial uses. Potential for long-term, minor, beneficial effects created by possible further cleanup of IRP sites.
<b>Health and Safety</b>	FHL has abided by Federal and U.S. Army health and safety regulations.	FHL has abided by Federal and U.S. Army health and safety regulations.	Beneficial effects on military personnel and public safety due to relocation and consolidation of industrial uses, and improved transportation planning and roadway network.	Short-term increase in risk to contractors during construction and demolition activities.	All current and planned equipment and operations at FHL would comply with Federal, state, and U.S. Army safety regulations. No significant cumulative effects would be expected.

## 6.4 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Effects on the ground surface as a result of the Proposed Action would occur entirely within the boundaries of FHL. Implementation of the FHL RPMP would not result in any significant or incompatible land use changes on or off the installation. The proposed RPMP would be developed in a manner that fully considers the existing conditions and constraints at FHL through the use of spatial design standards in the Regulation Plan. Land uses are sited to strengthen the specific vision of each district through the addition or removal of land uses and planning features. Consequently, implementation of the RPMP would not be in conflict with installation land use policies or objectives, but rather would establish new procedures for the cantonment area. The Proposed Action would not conflict with designated clear zones or any applicable off installation land use ordinances.

## 6.5 Relationship Between the Short-Term Use of the Environment and Long-Term Productivity

Short-term uses of the biophysical components of human environment include direct construction-related disturbances and direct effects associated with an increase in activity that occurs over a period of less than 5 years. Long-term uses of human environment are those effects occurring over a period of more than 5 years, including permanent resource loss.

The Proposed Action would not result in an intensification of land use in the surrounding area. Construction of the Proposed Action would not represent a significant loss of open space. The long-term, beneficial effects of creating a flexible training environment surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families enjoy living and working, would support FHL's ongoing and future mission requirements and national security objectives.

## 6.6 Irreversible and Irrecoverable Commitments of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals).

**Land Use.** The Proposed Action would result in the commitment of land for future proposed facilities.

**Biological Resources.** Full implementation of the Proposed Action would include siting of additional facilities in undeveloped portions of the cantonment area that would result in the loss of some vegetation and habitat.

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## 7. Conclusions and Recommendations

This EA contains a comprehensive evaluation of the existing conditions and potential environmental consequences of the Proposed Action. The conclusions in this section are limited to the Proposed Action and the No Action Alternative, as required under NEPA.

### 7.1 Impacts Identified

No effects on cultural resources (archaeological resources or resources of traditional, religious, or cultural significance to Native American Tribes) would be anticipated. Long-term, beneficial effects on noise, land use, air quality, water resources, biological resources, threatened and endangered species, infrastructure, traffic and transportation, hazardous materials and waste, and health and safety would be expected. Resources that could be adversely affected by the Proposed Action include geological resources, water resources, biological resources, threatened and endangered species, cultural resources (historic buildings), infrastructure, and hazardous materials and waste. In all instances, effects on these resources are expected to be negligible to minor in significance. Siting of new facilities in the cantonment area could result in adverse impacts on arroyo toad and vernal pool fairy shrimp. Common BMPs and impact minimization measures are included as part of the action of implementing the FHL RPMP as project design features. Use of these design features and selective siting identified in the RPMP, and other BMPs identified in FHL's SWPPP, SPCC Plan, and other management plans, would help minimize effects on surface and groundwater resources, including wetlands and vernal pools. Implementation of the No Action Alternative would not result in a change in how the cantonment area is developed; therefore, development would occur in an ad hoc fashion and specific projects would not be sited and designed to reduce adverse effects associated with their construction and operation as was analyzed in the 2010 IDTEA. While the No Action Alternative would result in associated adverse effects, no significant direct or indirect effects would occur.

**Table 7-1** summarizes the effects of the Proposed Action and the activities that could be conducted during implementation to avoid or minimize these effects. Activities to minimize effects would be required by Federal or state regulations. Evaluation of each of the effect categories during preparation of this EA resulted in negligible to minor, adverse effects, which can be considered an "insignificant" effect or "no effect" classification. No significant effects would be anticipated from implementing the Proposed Action.

### 7.2 Cumulative Effects Identified

The potential for cumulative effects on the environment was evaluated by reviewing other projects in the vicinity of the FHL that could affect the same environmental resources as the Proposed Action. Although some cumulative effects could occur, they are expected to be negligible to minor in significance. Implementation of the No Action Alternative would not result in a change in how the cantonment area is developed; therefore, continued ad hoc development of the cantonment area could result in long-term, adverse cumulative effects on the quality of the human or natural environment when compared to the Proposed Action.

### 7.3 NEPA Determination

Based upon the findings of this EA, implementation of the Proposed Action would not have a significant adverse direct, indirect, or cumulative effect on the quality of the human or natural environment on FHL or on adjacent properties. Implementation of the Proposed Action would ensure that development of the FHL cantonment area occurs in accordance with FHL's vision to create a flexible training environment

surrounding an attractive small town with walkable main streets and a usable town square, where soldiers, civilians, and their families enjoy living and working, while also continuing to meet FHL’s mission requirements and national security objectives.

Based upon the analysis of potential effects, it has been determined that the Proposed Action does not constitute a major Federal action affecting the quality of human health or the environment. Because there would be no significant effect resulting from the implementation of the Proposed Action, a Draft FNSI has been prepared to accompany this EA and concludes that an EIS, the next higher level of environmental effect investigation under NEPA, is not required for this action.

**Table 7-1. Summary of Environmental Consequences for the Proposed Action**

<b>Resource Area</b>	<b>Proposed Action</b>	<b>No Action</b>
<b>Noise</b>	Long-term, minor, beneficial effects would be anticipated from consolidation of industrial uses farther from noise-sensitive uses, facilitation of decreased vehicle use, shifting traffic to the exterior of the cantonment area, and use of trees and other vegetation as buffers to dampen noise along roads and surrounding industrial uses.	No new adverse effects would be anticipated.
<b>Land Use</b>	Long-term, minor to moderate, beneficial effects would be anticipated from siting and design of proposed facilities in a manner that fully considers the existing conditions and constraints at FHL through the use of spatial design standards in the Regulation Plan and by collocating or relocating uses. Land uses are sited to strengthen the specific vision of each district through the addition or removal of uses and planning features.	Long-term, adverse effects would be anticipated.
<b>Air Quality</b>	Long-term, minor, beneficial effects would be anticipated from indirectly reducing air emissions through design of a walkable cantonment area that would decrease vehicle operations, and through the replacement of old, less energy-efficient buildings with newer, more energy-efficient buildings. The Proposed Action would not result in the direct production of air emissions.	Long-term, adverse effects would be anticipated.
<b>Geological Resources</b>	Long-term, negligible, adverse effects on topography would be anticipated due to siting facilities on slopes that could require grading or other alteration to accommodate development. Long-term, minor, adverse effects on soils would be anticipated from siting of development on soils with limited load-bearing capabilities and from overall increased impervious surfaces at full implementation of the RPMP that could increase runoff and erosion. Special project design can minimize soil limitations and effects from erosion.	No adverse effects would be anticipated.

Resource Area	Proposed Action	No Action
<b>Water Resources</b>	Short- and long-term, minor, adverse effects could occur from full implementation of the specific project siting and design in the RPMP that would result in increased impervious surfaces and storm water runoff. Effects on groundwater recharge and water quality from increased impervious surfaces could result from increased erosion and sedimentation, and possible contamination of runoff. Use of specific project designs that are identified in the RPMP, including LID features, and other BMPs in the installation’s SPCC Plan and SWPPP, and other plans would minimize effects. Long-term, beneficial effects would be anticipated from not siting new facilities in and removal of existing structures from the 100-year floodplain.	No new effects would be anticipated.
<b>Biological Resources</b>	Short- and long-term, minor, adverse effects on vegetation and wildlife would be anticipated from siting projects in undeveloped portions of the cantonment area. However, beneficial effects would be anticipated from projects that would be designed to minimize vegetation clearing, and replace and add native vegetation in accordance with Street Tree Plan and the Landscape Design Standards. Potential for damaging wetlands could occur due to siting new facilities in the cantonment area, but all projects would be sited to maintain an appropriate buffer from wetlands. Indirect effects on vernal pools could occur due to siting new facilities near vernal pools. Natural resources management practices would be implemented and coordination with regulatory agencies would be conducted to avoid or minimize impacts, as appropriate.	No new effects would be anticipated.
<b>Threatened and Endangered Species</b>	Siting of facilities in the cantonment area near arroyo toad and vernal pool fairy shrimp habitat could result in minor, adverse impacts on Federal-listed species. Beneficial impacts on threatened and endangered species could occur due to specifically siting facilities to avoid purple amole habitat, and implementing facility design that would comply with EISA requirements, including LID.	No new effects would be anticipated.
<b>Cultural Resources</b>	No effects on archaeological resources or resources of traditional, religious, or cultural significance to Native American Tribes would be anticipated. Minor, long-term, indirect, adverse effects on historic buildings, structures, landscapes, or viewsheds would be anticipated from the siting of facilities where they could have the potential to alter the viewshed of cultural resources or introduce noise and vibration. Mitigation to avoid adverse effects on historic buildings and viewsheds could include relocating buildings, reducing building heights, planting of trees, use of neutral colors, and incorporation of compatible architectural design, as determined through consultation with SHPO.	Adverse effects similar to the Proposed Action would be anticipated.

Resource Area	Proposed Action	No Action
<b>Infrastructure</b>	Long-term, negligible, adverse effects on electrical systems, liquid fuel, water supply systems, sanitary sewer/wastewater systems, communications, and solid waste management would be anticipated from increased demand on the systems from siting of an additional 2 to 3 million ft <sup>2</sup> of structures at full implementation of the FHL RPMP. Long-term, negligible to minor, beneficial effects on propane systems, sanitary sewer/wastewater systems, and storm water systems would be anticipated due to use of more efficient or sustainable systems, graywater recycling, incorporation of vegetation buffers, and preparation of a storm water master plan that would offset increased demand.	No new effects would be anticipated.
<b>Traffic and Transportation</b>	Long-term, moderate, beneficial effects due to realignment of cantonment area roadways, increased parking, and promotion of a walkable cantonment area that would reduce vehicle trips and traffic congestion.	Long-term, minor, adverse effects would be anticipated.
<b>Hazardous Materials and Waste</b>	Long-term, beneficial effects would be anticipated from consolidating and relocating industrial uses, which use hazardous materials and generate hazardous wastes, away from other land uses. Old structures that would be removed due to siting of new facilities could contain ACM or LBP and would need to be performed in accordance with appropriate regulations. No effects on pollution prevention, DERP, PCBs, pesticides, and radon would be anticipated. Projects would be sited at and adjacent to contaminated groundwater plumes; however, design of these projects would prevent disturbance of the plumes.	Long-term, minor, adverse effects on hazardous materials and waste would be anticipated. No other new adverse effects.
<b>Health and Safety</b>	No effects on contractor safety would occur as no contractors would be involved in the Proposed Action. Long-term, minor, beneficial effects on military personnel and public safety from improved road network that separates commercial and tactical vehicles from other traffic and the relocation of industrial uses away from sensitive land uses.	No new effects would be anticipated.

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## 10. Abbreviations and Acronyms

$\mu\text{g}/\text{m}^3$	micrograms per cubic meter	EMS	Environmental Management System
ACM	asbestos-containing material	EO	Executive Order
ACP	access control point	ESA	Endangered Species Act
AHP	Army Heliport	FEMA	Federal Emergency Management Agency
AICUZ	Air Installations Compatible Use Zones	FHL	Fort Hunter Liggett
AQCR	air quality control region	FIRM	Flood Insurance Rate Map
AR	Army Regulation	FNSI	Finding of No Significant Impact
AT/FP	anti-terrorism force protection	FPPA	Farmland Protection Policy Act
BCTC	Battle Command Training Center	$\text{ft}^2$	square feet
BMP	best management practice	FY	fiscal year
BO	Biological Opinion	GHG	greenhouse gas
CAA	Clean Air Act	gpm	gallons per minute
CEQ	Council on Environmental Quality	HAP	hazardous air pollutant
CEQA	California Environmental Quality Act	ICRMP	Integrated Cultural Resources Management Plan
CFR	Code of Federal Regulations	IDTEA	Environmental Assessment Addressing Installation Development and Training
CNDDB	California Natural Diversity Data Base	IHMWMP	Integrated Hazardous Material and Waste Management Plan
CO	carbon monoxide	INRMP	Integrated Natural Resources Management Plan
$\text{CO}_2$	carbon dioxide	IRP	Installation Restoration Program
CR	Compliance Restoration	LBP	lead-based paint
CWA	Clean Water Act	LID	low impact development
dba	A-weighted decibel	LUPZ	land use planning zone
DERP	Defense Environmental Restoration Program	MBTA	Migratory Bird Treaty Act
DNL	day-night average sound level	$\text{mg}/\text{m}^3$	milligrams per cubic meter
DOD	Department of Defense	MGD	million gallons per day
DPW	Directorate of Public Works	MMRP	Military Munitions Response Program
EA	Environmental Assessment	MS4	municipal separate storm sewer system
ECS	Equipment Concentration Site		
EISA	Energy Independence and Security Act		

MSL	mean sea level	PSD	Prevention of Significant Deterioration
MVA	million-volt amperes	RCRA	Resource Conservation and Recovery Act
NAAQS	National Ambient Air Quality Standards	ROI	region of influence
NAGPRA	Native American Graves Protection and Repatriation Act	RPMP	Real Property Master Plan
NEPA	National Environmental Policy Act	RTC	Regional Training Center
NHPA	National Historic Preservation Act	RWQCB	Regional Water Quality Control Board
NO <sub>2</sub>	nitrogen dioxide	SHPO	State Historic Preservation Officer
NOA	Notice of Availability	SIP	State Implementation Plan
NO <sub>x</sub>	nitrogen oxides	SO <sub>2</sub>	sulfur dioxide
NPDES	National Pollutant Discharge Elimination System	SO <sub>x</sub>	sulfur oxides
NRHP	National Register of Historic Places	SPCC	Spill Prevention, Control, and Countermeasures
NSR	New Source Review	SSPP	Strategic Sustainability Performance Plan
O <sub>3</sub>	ozone	SWMP	storm water management program
ORTC	Operational Readiness Training Complex	SWPPP	Storm Water Pollution Prevention Plan
OSH	occupational safety and health	SWRCB	State Water Resources Control Board
OSHA	Occupational Safety and Health Administration	TEMF	Tactical Equipment Maintenance Facility
Pb	lead	tpy	tons per year
PCB	polychlorinated biphenyl	TSCA	Toxic Substances Control Act
pCi/L	picocuries per liter	U.S.C.	United States Code
percent g	percentage of the force of gravity	UFC	United Facilities Criteria
PG&E	Pacific Gas and Electric	USAR	U.S. Army Reserve
PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter	USARC	U.S. Army Reserve Command
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter	USEPA	U.S. Environmental Protection Agency
POL	petroleum, oil and lubricant	USFWS	U.S. Fish and Wildlife Service
POV	privately owned vehicle	VOC	volatile organic compound
ppb	parts per billion	WDR	waste discharge requirement
ppm	parts per million		

## **APPENDIX A**

**CANTONMENT AREA PROJECTS IDENTIFIED IN THE FINAL ENVIRONMENTAL  
ASSESSMENT ADDRESSING INSTALLATION DEVELOPMENT AND TRAINING  
(IDTEA) AT FORT HUNTER LIGGETT, CALIFORNIA**



## Appendix A

### Cantonment Area Projects Identified in the 2010 IDTEA

Installation Project Number	Real Property Master Plan Project Number	EA Project Identification Number and Title	FY	Land Use	Project Area (ft <sup>2</sup> )	Change in Impervious Surface (ft <sup>2</sup> )
72103 (Warehouse) 72097 (Maintenance Facility) 73703 (ECS yard)	P13	C1. Equipment Concentration Site (Warehouse, Maintenance Facility, and ECS yard)	2011	ADM	103,700 (Warehouse) 74,688 (Maintenance Facility) 1,437,480 (ECS yard)	681,971
72098	P5	C2. Consolidated Vehicle Washrack	2011	ADM	435,600	435,600
75510	--	C3. Storm water System Upgrade/Expansion	2010	OS	79,200	79,200
71160	--	C4. Physical Fitness Center	2010		22,100	59,027
72170	P22	C5. Unaccompanied Personnel Housing, Senior NCO (Transient Training NCO billets)	2010	HU	506,295	
11130	P40	C6. Rotary Wing Landing Pad (Medivac)	2009	AOM	15,624	
71382 / 71334	--	C7. Transient Quarters Complex	2010	ADM	276,634	276,634
74398	--	C8. Regional Training Center – Medical Facility	2010	ADM	44,000	44,000
74689	--	C9. Education Center	2010	COM	8,700	
72412	P23	C10. Transient Training Officers Quarters	2010	HU	194,760	
17211	P41	C11. Marksmanship Training Facility	2010	ADM	3,600	
70442	--	C12. Family Care Clinic	2010	MED	55,157	55,157
71482	--	C13. Operational Readiness Training Center	2010	ADM	304,797	
73704	--	C14. Utility Upgrade Phase I	2010		63,000	
73738	P24	C15. Fire Response Site at Schoonover Airfield	2010	AF	6,100	

<b>Installation Project Number</b>	<b>Real Property Master Plan Project Number</b>	<b>EA Project Identification Number and Title</b>	<b>FY</b>	<b>Land Use</b>	<b>Project Area (ft<sup>2</sup>)</b>	<b>Change in Impervious Surface (ft<sup>2</sup>)</b>
74731	--	C16. Training Exercise Warehouse	2010	ADM	8,000	
74732	--	C17. Family Life Center	2010	COM	3,400	
44271	P16	C18. Consolidated Housing Furniture, Storage	2011	ADM	4,050	
44224	P17	C19. Storage Building, General Purpose Org ESC and RTC	2011	ADM	105,000	
71035	P4	C20. Training Aids Center (TAC)	2011	ADM	37,134	
71036	--	C21. Emergency Services Center	2011	ADM	161,114	
71037	--	C22. Logistics Warehouse	2011	ADM	103,700	
72106	--	C23. Logistics Maintenance Facility, fenced with parking	2011	ADM	126,785	
72079	--	C24. Unaccompanied Enlisted Personal Housing (UEPH)	2012	ADM	30,744	
73713	--	C25. Unaccompanied Enlisted Personal Housing (UEPH)	2012	ADM	13,500	
72160	--	C26. Unaccompanied Enlisted Personal Housing (UEPH)	2013	ADM	22,000	
73699	--	C27. Community Activity Center	2012	COM	36,304	
73702	--	C28. Regional Training Site-Medical Warehouse	2012	ADM	30,000	
71038	P6	C29. General Instruction Building (Training Site and Army Reserve School) (104th)	2014	ADM	84,073	
71460 (FY 2013) / 72336 (FY 2015)	--	C30. Battle Command Training Center	2013 and 2015	ADM	237,231	
	--	C31. Army Reserve Center (104th, 356th, OPFOR)	2014	ADM	41,000	
	P14	C32. Maintenance Shop, General Purpose (DOL)	2014	ADM	50,000	

Installation Project Number	Real Property Master Plan Project Number	EA Project Identification Number and Title	FY	Land Use	Project Area (ft <sup>2</sup> )	Change in Impervious Surface (ft <sup>2</sup> )
	P15	C33. Entomology Facility 2,100 Modify portion of B 252	2014	ADM	2,100	
	P7	C34. Administrative Building, General Purpose (Garrison Activities) 91st	2014	ADM	80,000	
	P21	C35. Enlisted Barracks, Transient Training	2014	HU	174,982	
75011	P31	C36. Court Area	2014	OR	4 each	
	P32	C37. Playground	2015		1 each	
	P33	C38. Softball Fields	2015		5 each	
	P36	C39. Recreational Shelter				
72212	P39	C40. Dining Facility	2014	COM	17,000	
44220	P16	C41. Storage Building, General Purpose Installation DOL/DPW	2015	ADM	99,250	
72834	P26	C42. Chapel	2015	COM	3,400	3,400
74001	--	C43. Physical Fitness Center with Parking Lot <sup>a</sup>	2011	COM	18,500	
	P9	C44. Auto-Aide Instruction Building	TBD	ADM	2,249	
74006	P27	C45. Bank	TBD	COM	1,500	
70700	--	C46. Repair Range Area Bridges	2010	OS		
72247	--	C47. Facility Camp Ground	2010	OS	217800	
74068	P30	C48. Recreation Center	2015		19,800	
72284	--	C49. Total Army School System Center	2014		59,953	71,257

Source: FHL 2010a

Note:

a. Indicates reuse of existing building; additional construction may not be required.

Key:

ADM = administrative

OR = outdoor recreation

COM = community

AOM = aircraft operations and maintenance

OS = open space

MED = medical

HU = housing unaccompanied

AF = airfield

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## **APPENDIX B**

### **APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA**



## Appendix B

### Applicable Laws, Regulations, Policies, and Planning Criteria

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When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws and Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

*NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.*

#### Noise

Federal, state, and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978, requires compliance with state and local noise laws and ordinances.

The U.S. Department of Housing and Urban Development (HUD), in coordination with the Department of Defense (DOD) and the Federal Aviation Administration, has established criteria for acceptable noise levels for aircraft operations relative to various types of land use.

The U.S. Army, through AR 200-1, *Environmental Protection and Enhancement*, implements Federal laws concerning environmental noise from U.S. Army activities. The U.S. Air Force's Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near U.S. Air Force installations.

#### Land Use

The term "land use" refers to real property classifications that indicate either natural conditions or the types of human activities occurring on a defined parcel of land. In many cases, land use descriptions are codified in local zoning laws. However, there is no nationally recognized convention or uniform terminology for describing land use categories.

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the HUD and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use. The U.S. Army uses the 12 land use types for installation land use planning, and these land use types roughly parallel those employed by municipalities in the civilian sector.

#### Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's

air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQS) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance and leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment for pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCRs). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassified. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction and long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

The General Conformity Rule requires that any Federal action meet the requirements of a State Implementation Plan (SIP) or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds presented in 40 Code of Federal Regulations (CFR) 93.153. If a Federal action does not meet or exceed the *de minimis* thresholds and is not considered regionally significant, then a full Conformity Determination is not required.

On May 13, 2010, the USEPA issued the Greenhouse Gas (GHG) Tailoring Rule that sets thresholds for GHG emissions from large stationary sources. The new GHG emissions thresholds for large stationary sources define when permits under the New Source Review Prevention of PSD and Title V Operating Permit programs are required for new and existing industrial facilities. Large industrial facilities that have CAA permits for non-GHG emissions must also include GHGs in these permits. All new construction or renovations that increase GHG emissions by 75,000 tons of carbon dioxide or equivalent per year or more are required to obtain construction permits for GHG emissions. Operating permits are needed by all sources that emit GHGs above 75,000 tons of carbon dioxide or equivalent per year.

## Health and Safety

Human health and safety relates to workers' health and safety during demolition or construction of facilities, or applies to work conditions during operations of a facility that could expose workers to conditions that pose a health or safety risk. The Federal Occupational Safety and Health Administration (OSHA) issues standards to protect persons from such risks, and the DOD and state and local jurisdictions

issue guidance to comply with these OSHA standards. Safety also can refer to safe operations of aircraft or other equipment.

U.S. Army regulations in AR 385-10, *Army Safety Program*, prescribe policy, responsibilities, and procedures to protect and preserve U.S. Army personnel and property from accidental loss or injury. AR 40-5, *Preventive Medicine*, provides for the promotion of health and the prevention of disease and injury.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 23, 1997), directs Federal agencies to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Federal agencies must also ensure that their policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks.

## Geology and Soil Resources

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act (FPPA) to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland is described as soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, and deep or thick effective rooting zones, and that are not subject to periodic flooding. Under the FPPA, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject to the FPPA include Federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

## Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, including the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Under Section 307, Federal agency activities that affect any land or water use or natural resource of a coastal zone must be consistent to the maximum extent practicable with the enforceable policies of the state's coastal management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5, 2009), directed the USEPA to issue guidance on Section 438 of the Energy Independence and Security Act (EISA). The EISA establishes into law new storm water design requirements for Federal construction projects that disturb a footprint of greater than 5,000 square feet of land. Under these requirements, predevelopment site hydrology must be maintained or restored to the maximum extent technically feasible with respect to temperature, rate, volume, and duration of flow. Predevelopment hydrology

would be calculated and site design would incorporate storm water retention and reuse technologies to the maximum extent technically feasible. Post-construction analyses will be conducted to evaluate the effectiveness of the as-built storm water reduction features. These regulations are applicable to DOD Unified Facilities Criteria. Additional guidance is provided in the USEPA's *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act*.

EO 13514 also requires Federal agencies to improve water efficiency and management by reducing potable water consumption intensity by 2 percent annually, or by 26 percent, by Fiscal Year (FY) 2020, relative to a FY 2007 baseline. Furthermore, Federal agencies must also reduce agency industrial, landscaping, and agricultural water consumption by 2 percent annually, or 20 percent, by FY 2020, relative to a FY 2010 baseline.

## Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

MBTA of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess; offer to or sell, barter, purchase, or deliver; or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport, or carry from one state, territory, or district to another; or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

The Sikes Act (16 U.S.C. 670a-670o, 74 Stat. 1052), as amended, Public Law (P.L.) 86-797, approved September 15, 1960, provides for cooperation by the Departments of the Interior and Defense with state agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States. In November 1997, the Sikes Act was amended via the Sikes Act Improvement Amendment (P.L. 105-85, Division B, Title XXIX) to require the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate this program, the amendments require the Secretaries of the military departments to prepare and implement Integrated Natural Resources Management Plans (INRMPs) for each military installation in the United States unless the absence of significant natural resources on a particular installation makes preparation of a plan for the installation inappropriate. INRMPs must be reviewed by the USFWS and applicable states every 5 years. The National Defense Authorization Act of

2004 modified Section 4(a) (3) of the ESA to preclude the designation of critical habitat on DOD lands that are subject to an INRMP, if the Secretary of the Interior determines in writing that such a plan provides a benefit to the species for which critical habitat is proposed for designation.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 13112, *Invasive Species* (February 3, 1999), provides direction to use relevant programs and authorities to prevent introduction of invasive species, detect and respond rapidly to control populations of invasive species, monitor invasive species populations, provide restoration of native species and habitat conditions in ecosystems that have been invaded, conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species, and promote public education on invasive species with means to address them. EO 13112 was created to minimize the economic, ecological, and human health impacts that invasive species cause.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

## Cultural Resources

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). The ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain “cultural items,” defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners’ access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13175, *Consultation and Coordination with Indian Tribal Governments* (November 6, 2000), was issued to provide for regular and meaningful consultation and collaboration with Native American tribal officials in the development of Federal policies that have tribal implications, and to strengthen the United States government-to-government relationships with Native American tribes. EO 13175 recognizes the following fundamental principles: Native American tribes exercise inherent sovereignty over their lands and members, the United States government has a unique trust relationship with Native American tribes and deals with them on a government-to-government basis, and Native American tribes have the right to self-government and self-determination.

EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

## Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agencywide environmental justice strategies. The strategy must list “programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations.” A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

## Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal “Superfund” to respond to emergencies immediately. Although the “Superfund” provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters. Section 120(h) of CERCLA requires Federal agencies to notify prospective buyers of contaminated Federal properties about the type, quantity, and location of hazardous substances that would be present.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes; redesigning products; substituting raw materials; and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]), sets a goal for all Federal agencies to promote environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products; and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of; increase diversion of solid waste, as appropriate; and maintain cost-effective waste prevention and recycling programs at their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decisionmaking processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA.”

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous

waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA strengthens control of both hazardous and nonhazardous waste and emphasizes the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 United States Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

## Energy

The Energy Policy Act (EPA) of 2005, P.L. 109-58, amended portions of the National Energy Conservation Policy Act and established energy management goals for Federal facilities and fleets. Section 109 of EPA directs that new Federal buildings (commercial or residential) be designed 30 percent below American Society of Heating, Refrigerating, and Air-Conditioning Engineers standards or the International Energy Code. Section 109 also includes the application of sustainable design principles for new buildings and requires Federal agencies to identify new buildings in their budget requests that meet or exceed the standards. Section 203 of EPA requires that all Federal agencies’ renewable electricity consumption meet or exceed 3 percent from FY 2007 through FY 2009, with increases to at least 5 percent in FY 2010 through FY 2012 and 7.5 percent in FY 2013 and thereafter.

Section 203 also establishes a double credit bonus for Federal agencies if renewable electricity is produced onsite at a Federal facility, on Federal lands, or on Native American lands. Section 204 of EPAct establishes a photovoltaic energy commercialization program for Federal buildings.

EO 13514, *Federal Leadership In Environmental, Energy, And Economic Performance* (dated October 5, 2009), directs Federal agencies to improve water use efficiency and management; implement high performance sustainable Federal building design, construction, operation and management; and advance regional and local integrated planning by identifying and analyzing impacts from energy usage and alternative energy sources. EO 13514 also directs Federal agencies to prepare and implement a Strategic Sustainability Performance Plan to manage its greenhouse gas emissions, water use, pollution prevention, regional development and transportation planning, sustainable building design and promote sustainability in its acquisition of goods and services. Section 2(g) requires new construction, major renovation, or repair and alteration of buildings to comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings. The CEQ regulations at 40 CFR 1502.16(e) directs agencies to consider the energy requirements and conservation potential of various alternatives and mitigation measures.

Section 503(b) of EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, instructs Federal agencies to conduct their environmental, transportation, and energy-related activities under the law in support of their respective missions in an environmentally, economically, and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. EO 13423 sets goals in energy efficiency, acquisition, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, fleets, and water conservation. Sustainable design measures such as the use of “green” technology (e.g., photovoltaic panels, solar collection, heat recovery systems, wind turbines, green roofs, and habitat-oriented storm water management) would be incorporated where practicable.

## **APPENDIX C**

### **INTERAGENCY COORDINATION AND PUBLIC INVOLVEMENT**





FROM: U.S. Army Garrison Fort Hunter Liggett  
California Avenue, Building 238  
Fort Hunter Liggett, CA 93928-7000

SUBJECT: Environmental Assessment (EA) Addressing Cantonment Area Master Planning at Fort Hunter Liggett, California and Draft Finding of No Significant Impact (FNSI)

Dear Interested Party,

Fort Hunter Liggett proposes to implement the Fort Hunter Liggett Real Property Master Plan (RPMP), a master planning document that provides a strategy for guiding future development of the installation's cantonment area through siting and design of future projects. The Fort Hunter Liggett RPMP includes the Installation Design Guide, Installation Development Plan (based on three Area Development Plans), Capital Investment Strategy, and RPMP Digest.

We request your participation and solicit comments on the attached EA and Draft FNSI for this Proposed Action. Please provide your comments no later than 30 days from receipt of this correspondence. Comments may include any issues or concerns related to the Proposed Action.

The EA and Draft FNSI are also available for review at the following Web site: <http://www.liggett.army.mil/sites/dpw/environmental.asp>, and at the following locations: Fort Hunter Liggett Library, Building 291, Room 3, 7th Division Road, Fort Hunter Liggett, Jolon, CA 93928; Monterey County Free Library, Buena Vista Branch, 18250 Tara Drive, Salinas, CA 93908; and Monterey County Free Library, King City Branch, 402 Broadway Avenue, King City, CA 93930.

More information on the Proposed Action can be obtained at public open houses that will be held on Wednesday, August 21, 2013 at the Fort Hunter Liggett Hacienda from 3:00-5:00 p.m. and at the San Antonio Valley Community Center-Lockwood from 7:00-9:00 p.m.

Please provide any comments or information within 30 days from receipt of this correspondence to Liz Clark, Fort Hunter Liggett Environmental Office, 233 California Avenue, Fort Hunter Liggett, CA 93928-7090 or e-mail to [elizabeth.r.clark14civ@mail.mil](mailto:elizabeth.r.clark14civ@mail.mil).

Sincerely,  
**HDR**

A handwritten signature in black ink, appearing to read 'D. Boyes'.

David Boyes  
Project Manager

Attachments:  
EA and Draft FNSI  
Distribution List

## Environmental Assessment Distribution List

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Governor's Office of Planning and Research  
California State Clearinghouse  
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