Draft Environmental Impact Statement

Presidio of Monterey
Real Property Master Plan

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LIST OF ACRONYMS

AADT	Annual Average Daily Traffic
AAFES	Army and Air Force Exchange Services
ACM	asbestos-containing material
ACP	access control point
ADA	Americans with Disabilities Act
ADT	average daily traffic
AFY	acre feet per year
AMBAG	Association of Monterey Bay Area Governments
AR	U.S. Army Regulation
ARPA	Archeological Resources Protection Act
ASIP	Army Stationing and Installation Plan
ASR	Aquifer Storage and Recovery
AST	aboveground storage tank
AT/FP	anti-terrorism/force protection
AQMP	Air Quality Management Plan
BASOPS	base operations
BCC	Bird of Conservation Concern
BMP	Best Management Practice
BO	Biological Opinion
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal Am	California American Water Company
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CCRWQCB	Central Coast Regional Water Quality Control Board
CCTV	closed circuit television
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIWMB	California Integrated Waste Management Board
CMY	Community
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CPRC	California Public Resources Code
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DBH	Diameter at Breast Height
DLIFLC	Defense Language Institute Foreign Language Center
DoD	Department of Defense
DoDC-MB	Department of Defense Center-Monterey Bay
DPW	Directorate of Public Works
DWR	Department of Water Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act
ESMP	Endangered Species Management Plan
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FORA	Fort Ord Reuse Authority
FR	Federal Register
FY	fiscal year
GCC	global climate change
GHG	greenhouse gas
GIB	general instruction building
HTRW	hazardous, toxic, and radioactive waste
HUD	Housing and Urban Development
HVAC	heating, ventilation, and air conditioning
ICRMP	Integrated Cultural Resources Management Plan
IDG	Installation Design Guide
IET	Initial Entry Training
IMCOM	Installation Management Command
INRMP	Integrated Natural Resources Management Plan
IPCC	Intergovernmental Panel on Climate Change
ITA	Indian Trust Assets
kVA	kilovolt-ampere
LBP	lead-based paint
L_{dn}	day-night energy equivalent noise level
LEED	Leadership in Energy and Environmental Design
L_{eq}	equivalent energy level
LF	linear feet

L_{max}	maximum A-weighted sound level
LOS	level of service
µg/m^3	micrograms per cubic meter
µm	micrometer
MBTA	Migratory Bird Treaty Act
MBTU	million British thermal units
MBUAPCD	Monterey Bay Unified Air Pollution Control District
mcf	million cubic feet
MCL	maximum contaminant level
MCWD	Marina Coast Water District
MCWRA	Monterey County Water Resources Agency
MG/yr	million gallons per year
mgd	million gallons per day
MMP	Mitigation Monitoring Plan
MPO	Metropolitan Planning Organization
MPTM	Master Planning Technical Manual
MPUSD	Monterey Peninsula Unified School District
MPWMD	Monterey Peninsula Water Management District
MRWPCA	Monterey Regional Water Pollution Control Agency
MST	Monterey-Salinas Transit
NA	not available/not applicable
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRHP	National Register of Historic Places
O_3	ozone
OMC	Ord Military Community
OPR	Office of Planning and Research
PA	Programmatic Agreement
Pb	Lead
PEP	Proficiency Enhancement Program
PG&E	Pacific Gas and Electric
$PM_{2.5}$	particulate matter with aerodynamic diameter ≤ 2.5 µm
PM_{10}	particulate matter with aerodynamic diameter ≤ 10 µm
POM	Presidio of Monterey
POM Installation	Presidio of Monterey Installation (refers to POM and OMC collectively)
ppmv	parts per million by volume
PRO	Professional/Institutional
PSD	Prevention of Significant Deterioration
RCI	Residential Communities Initiative
RCP	reinforced concrete pipe
RCRA	Resources Conservation and Recovery Act
RES	Residential
ROD	Record of Decision
ROG	reactive organic gases
RPMP	Real Property Master Plan
RWQCB	Regional Water Quality Control Board
SAR	Species at Risk
SDWA	Safe Drinking Water Act
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SO_2	sulfur dioxide
SO_x	sulfur oxides
SPiRiT	Sustainable Project Rating Tool
SRRE	Source Reduction and Recycling Elements
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TRP	Troop
UFC	Unified Facilities Criteria
U.S.	United States
U.S. Army	United States Army
USACE	United States Army Corps of Engineers
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tanks
VA	Veterans America
VOC	volatile organic compound

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EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) describes the potential environmental consequences of the United States (U.S.) Army implementing the Real Property Master Plan (RPMP) for the Presidio of Monterey Installation (POM Installation). The POM Installation consists of two locations, the Presidio of Monterey (POM) and the Ord Military Community (OMC). The U.S. Army prepared this EIS to disclose to the public at large its plans for the POM Installation and to seek public input on the environmental effects of those plans.

The RPMP presents the U.S. Army's vision for the POM Installation over the next 20 years. It serves as a roadmap to ensure that the master planning process is proactive in meeting the installation's Real Property Vision and the current and long-term mission requirements of the installation and its tenants. It allows for systematic development that takes into account the constraints and opportunities of the installation, mission requirements, and long-range community goals, while still providing a secure, high quality environment for service members and their families, contractors, and retirees.

The study area for this EIS consists of the physical boundaries of two sites of the POM Installation, the POM and the OMC. The POM Installation is located in northern Monterey County, California along the coast of the Pacific Ocean. The Defense Language Institute Foreign Language Center (DLIFLC), located at the POM, is the largest foreign language training facility in the western world and the largest tenant of the installation. Its primary mission is to provide culturally based foreign language education and training for Department of Defense (DoD) personnel, to ensure success of the Defense Language Program, and to enhance national security.

The new RPMP would replace the current master plan, which was issued in 1983. The RPMP alternatives were developed to meet the installation's Real Property Vision, goals, and objectives. The POM's Real Property Vision is to:

> *Evolve the installation into an Army top tier training and living community with state-of-the-art facilities and land usage that maximizes mission readiness and care of people while maintaining positive community relationships.*

This vision also addresses the purpose and need for implementing the RPMP. The infrastructure of the POM Installation is aging and requires improvements to meet the needs of the U.S. Army and its tenants. In analyzing the needs over the next 20 years, the POM Installation Directorate of Public Works (DPW) initiated a multi-year planning effort to identify the installation improvements necessary to effectively meet the installation's mission. The improvements would include modernizing or replacing aging classrooms and dormitories and improving transportation circulation within the POM. The overall goal is to improve the educational and living conditions for students, educators, and employees.

Public scoping addressing the need to prepare the EIS occurred from January 6, 2009 through February 29, 2009; it began when the U.S. Army published the Notice of Intent on January 6, 2009. Two public scoping meetings were held, the first at the Stilwell Community Center at the OMC on January 27, 2009 and the second at the Monterey Institute of International Studies in the City of Monterey on January 28, 2009.

This EIS addresses the environmental consequences of implementing the RPMP at two levels. For short-range projects, those that have assured funding and developed construction design details, this EIS addresses their short-term actions at a project level. For long-range projects, those projects that have uncertainty in their timing or funding, or lack construction details, this EIS analyzes their effects at a programmatic level.

This EIS analyzes the environmental consequences of three alternatives relative to the RPMP. The first alterative is the No Action Alternative. Under the No Action Alternative, the recommendations of the RPMP would not be implemented and the POM Installation and its tenants would continue to use existing infrastructure. Because the DLIFLC has already experienced an increase in student and teacher populations and will continue to do so as mandated by DoD, under the No Action scenario, the U.S. Army would find it more and more difficult to meet the needs of its tenants. The POM Installation would also fail to meet current military standards for its soldiers or address anti-terrorism and force protection requirements.

Two action alternatives are addressed in this EIS. The first action alternative is termed the POM-Centric alternative, under which the majority of POM Installation improvements would occur within the POM with only some support facility improvements at the OMC. The second alternative, termed the POM and OMC alternative, would involve moving some of the new classrooms and housing facilities planned for the POM to the OMC. Under the second action alternative, there would be less new construction within the POM and more construction at the OMC.

This EIS analyzes consequences of a number of natural and social resource areas: water supply; geology, soils, and mineral resources; air quality; vegetation and wildlife; land use; population and housing; traffic and transportation; noise; utilities and public services; hazardous, toxic, and radioactive wastes; public health and safety; socioeconomics; environmental justice; visual, scenic, and aesthetic resources; and historical and cultural resources. Table ES-1 provides a summary of the potential environmental consequences for each of the resource areas. The text that follows provides additional details on the findings from the analysis conducted for these resource areas in this EIS.

Table ES-1. Potential Environmental Impacts by Resource Area

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Water Supply Projected water demand exceeds available supply at POM	Less than Significant	Significant and Unavoidable	Less than Significant
Water Supply Projected water demand exceeds available supply at OMC	Less than Significant	Less than Significant	Less than Significant
Geology, Soils, and Mineral Resources Potential for increased soil erosion during construction	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Geology, Soils, and Mineral Resources Potential for adverse effects from seismic activity	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Air Quality Construction impacts would exceed applicable air quality thresholds	Less than Significant with Mitigation	Less than Significant	Less than Significant
Air Quality Operation impacts would exceed applicable air quality thresholds	No Impact	Less than Significant	Less than Significant
Air Quality Construction impacts would result in substantial fugitive dust	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Vegetation and Wildlife Impacts to special status species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation

Table ES-1. Potential Environmental Impacts by Resource Area			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Vegetation and Wildlife Impacts to migratory birds	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Vegetation and Wildlife Introduction of exotic species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Land Use Changes to existing or planned land uses	No Impact	No Impact	No Impact
Land Use Conflicts with local land use policies	No Impact	No Impact	No Impact
Population and Housing Increased population at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Improved housing facilities at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Reduced demand for housing off-post	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Traffic and Transportation Increased traffic volumes on internal POM and OMC roadways	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Increased delay on internal POM and OMC intersections	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Increased vehicle queuing at ACP locations	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Introduction of safety hazards on internal POM and OMC roadways	No Impact	Less than Significant	Less than Significant
Traffic and Transportation Substantial deterioration of physical roadway conditions	No Impact	Less than Significant	Less than Significant
Noise Temporary noise increases from construction activities	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Noise Long-term noise increases from increased travel to and from the POM and OMC	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased electricity, gas, and communication service demands for POM and OMC	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased solid waste	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased demand on wastewater and storm drain distribution systems	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased demand on public schools	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazardous, Toxic, and Radioactive Wastes Contaminant release from modified landfill cap	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation

Table ES-1. Potential Environmental Impacts by Resource Area			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Hazardous, Toxic, and Radioactive Wastes Release of asbestos-containing containing materials or lead based paint to the environment	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Hazardous, Toxic, and Radioactive Wastes Impacts in using hazardous substances during construction	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Public Health and Safety Pose a risk to public health and safety through the use of construction vehicles, equipment, and general construction activities	Less than Significant	Less than Significant	Less than Significant
Public Health and Safety Increase the dangers to public health and safety from wildfires or tsunamis	No Impact	Less than Significant	Less than Significant
Public Health and Safety Impede planned evacuation routes	No Impact	No Impact	No Impact
Public Health and Safety Impede emergency service vehicles and routes	No Impact	No Impact	No Impact
Public Health and Safety Increase the demand for emergency services off-post	No Impact	No Impact	No Impact
Socioeconomics Temporary increases in economic activity from construction spending and labor	Beneficial Impact	Beneficial Impact	Beneficial Impact
Socioeconomics Long-term increases in employment from hiring teachers	Beneficial Impact	Beneficial Impact	Beneficial Impact
Socioeconomics Long-term increases in economic activity in the region from increased student population	Beneficial Impact	Beneficial Impact	Beneficial Impact
Environmental Justice Disproportionately high and adverse effects to a minority or low-income population.	No Impact	No Impact	No Impact
Visual, Scenic, and Aesthetic Resources Short-range projects would affect scenic vistas from surrounding neighborhoods	Less than Significant	Less than Significant	Less than Significant
Visual, Scenic, and Aesthetic Resources Short-range projects would substantially alter the existing visual character of an area	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Visual, Scenic, and Aesthetic Resources Long-range projects at POM would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant with Mitigation	Less than Significant
Visual, Scenic, and Aesthetic Resources Long-range projects at OMC would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant	Less than Significant
Visual, Scenic, and Aesthetic Resources Long-range projects at POM would substantially alter the existing visual character of an area	No Impact	Less than Significant with Mitigation	Less than Significant
Visual, Scenic, and Aesthetic Resources Compliance with existing Installation Design Guide	No Impact	No Impact	No Impact

Table ES-1. Potential Environmental Impacts by Resource Area			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Historic and Cultural Resources Impacts to Historic or Cultural Resources	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Growth Inducing Induce growth from construction of housing	No Impact	No Impact	No Impact
Growth Inducing Induce substantial economic growth	No Impact	No Impact	No Impact

ES.1 Water Supply

The available water supply at the POM totals 220 acre feet per year (AFY); 199.4 AFY from the original Monterey Peninsula Water Management District allocation and 20.6 AFY from approved water permits. Based on the estimated water demand in 2010 (212 AFY) and 28 AFY of documented water savings from clothes washer replacements, approximately 36 AFY would still be available from the total water supply allocation (220 AFY). At present, this amount of water is insufficient to meet the needs of the RPMP projected water requirements for all the new facilities planned for the POM under Alternative 1.

The OMC retained 1,691 AFY of water rights from the 6,600 AFY held by the former Fort Ord. Of this, 114 AFY were transferred to the City of Seaside as part of the Land Swap Agreement. As a result, the total remaining water credits at the OMC is 1,577 AFY. Based on the estimated water demand in 2010 (1,220 AFY), approximately 357 AFY would still be available from the total water credits. This allocation would be sufficient to address the RPMP proposal for development at the OMC under either action alternative.

Under the No Action Alternative, the overall water demand would increase at the POM by about 8 AFY and be unchanged at the OMC. The total water demand at each site would remain less than the site's available supply, so this alternative would have less than significant impacts to the potable water supply.

The POM-centric Alternative would increase the water needs at the POM by about 67 AFY and at the OMC by about 27 AFY, as compared to the No Action Alternative. As this alternative would involve replacing existing aging facilities at the POM with new ones, it also takes advantage of the water credits that would be freed after demolishing these buildings. The projected overall demand at the POM, however, would still exceed the available water supply and result in a significant and unavoidable impact. Implementing mitigation measures, such as water conservation or installation of stormwater collection systems, would not be sufficient to reduce this impact to less than significant. Projected water demands at the OMC under this alternative would not exceed the site's available supply so the effects are considered less than significant.

The POM and OMC Alternative would increase the water needs at the POM by an estimated 13 AFY and the demands at the OMC by approximately 64 AFY, as compared to the No Action Alternative. Implementation of this alternative would not exceed the water supplies at either the POM or OMC and the effects would be considered less than significant. Although the projected water demand and available supply appear more balanced at the POM, it is possible that an overall shortfall may be realized once the programmatic elements are subjected to a more detailed water analysis. Mitigation measures such as water conservation may be needed should the analysis indicate a shortfall in water supply.

ES.2 Geology, Soils, and Mineral Resources

The POM Installation is in a seismically active area and people living there are at risk from earthquakes. Population growth under the No Action Alternative would put more people at risk to earthquake damages. Existing buildings would remain the same, some of which may not meet current seismic design guidelines. Under the No Action Alternative, these buildings would not be retrofitted to prevent seismic damages, which would increase the risks to public safety from earthquakes.

For both of the action alternatives, construction of the new barracks and general instruction buildings at either the POM or OMC would conform to current DoD building codes and standard design guidelines for seismic hazards. Replacing the old buildings with modern buildings that meet current seismic standards would reduce risks from earthquakes to the military population and visitors. This would be a beneficial impact over the No Action Alternative under which buildings not meeting seismic standards would remain.

Construction of the projects may require extensive grading and excavation. Stormwater control and erosion mitigation would be required to prevent soil loss and water quality impacts.

ES.3 Air Quality

Under the No Action Alternative, the existing buildings at the POM and OMC would not be upgraded or replaced e and there would be construction of one new building in fiscal year 2011. Groundbreaking for the new building would expose topsoil and result in changes to air quality. The particulate matter (10 microns) construction emissions from the project are expected to exceed the daily construction emission significance threshold. Mitigation measures such as applying water to soil surfaces during construction would be required.

While construction of the facilities within the POM under the POM-centric Alternative would not exceed existing air quality thresholds for fugitive dust, fugitive dust would be present from construction vehicles and equipment. Due to the close proximity of the POM to neighborhoods, this impact would be potentially significant. Dust control measures would be implemented to reduce this impact to a less than significant level. This same air quality concern would apply to the OMC under Alternative 2, when some of the proposed development is shifted to the OMC. The potential for air quality impacts at the POM under Alternative 2 would be less than under Alternative 1.

ES.4 Vegetation and Wildlife

Construction is not planned in the open spaces of the POM under the No Action Alternative, so there would be no effects to vegetation and wildlife. The barracks and parking lot projects planned for the POM under the POM-centric Alternative would have footprints that would extend to some of the undeveloped land in and around the Huckleberry Hill Nature Preserve. Force protection guidelines and annual fuel abatement (wild fire prevention) could affect additional land that is currently bounded by the preserve. This preserve is habitat for protected plant and animal species. One of those species is Yadon's piperia, listed by the U.S. Fish and Wildlife Service (USFWS) in 1998 as endangered. The U.S. Army is in the process of consulting with the USFWS regarding measures to protect endangered species. Mitigation measures are proposed to protect these species to reduce impacts to less than significant.

Under the POM and OMC alternative, some protected plant species may exist within the project area at the OMC. Mitigation measures would be necessary to protect these species.

ES.5 Land Use

Under the No Action Alternative, land uses at the POM and OMC would continue to follow the existing RPMP developed in 1983. Existing buildings and facilities at the POM and OMC would remain the same and land uses would not change. The No Action Alternative would not conflict with any existing land uses or planning documents. There would be no impacts to land use under the No Action Alternative.

The RPMP provides the direction for the orderly development and sustainment of the real property assets of the POM Installation. This includes land, facilities, and infrastructure. The planning process follows the professional practice of community planning as implemented by all DoD services and agencies and provides the POM with the vision and framework for long- and short-term real property development. The vision of the RPMP for the POM in relation to land use is to increase building density in already developed areas, avoid impacts to undeveloped property through reuse of already developed areas, and to limit the sprawl of development within the POM. These considerations were incorporated into the selection and siting of the projects addressed in this EIS. Therefore, neither action alternative would change the land use designations at the POM or OMC. All construction would occur on Federal property and there would be no conflicts with local, city, or county land use policies. Therefore, implementation of the RPMP would be consistent with current and anticipated land uses.

ES.6 Population and Housing

Under the No Action Alternative, the population would increase at the POM Installation but not the ability to house the increased number of students. The DoD determines attendance at the DLIFLC, which in turn, affects the general population and housing needs of the installation. The Proficiency Enhancement Program for foreign language training, mandated by the DoD, requires a reduction in the student-to-teacher ratio from 10:2 to 6:2. Both factors (increased student attendance and reduced PEP ratio) are anticipated to increase the student, teacher, and associated family populations. For example, the current population at the POM of 17,400 is expected to increase to 18,500 in 2012. U.S. Army personnel stationed at the POM Installation are there temporarily for about 6 weeks to 24 months to be trained in the foreign languages. This increase in the teacher and student populations would place a strain on existing housing facilities.

The student and teacher population growth would occur with or without implementation of the RPMP. The RPMP recognizes the population growth and is structured to address the future needs of the DLIFLC. Both of the action alternatives involve new and modernized housing facilities and would serve to meet the needs of the growing POM and OMC populations. Therefore, both alternatives would beneficially address housing conditions at the POM Installation and surrounding communities.

ES.7 Traffic and Transportation

Under the No Action Alternative, student and teacher populations are expected to increase as the U.S. Army expands its education services at the POM. Traffic in the region would also increase with more vehicles and vehicle trips. Additional soldiers and teachers are expected to reside on-post and in the surrounding areas. Under the No Action Alternative, housing at the POM Installation would remain the same and would not support population growth. As a result, students, teachers, and families may need to reside off-post, which would increase traffic to and from the surrounding areas. Under the No Action Alternative, it is estimated that 12,700 military personnel and their families would live off-post from 2013 into the long-term. Because of the existing poor Level of Service ratings, this would be a potentially significant impact to off-post traffic conditions. Cities surrounding the POM are planning and implementing traffic improvement projects to alleviate future traffic conditions.

Under both action alternatives, traffic would be affected by the construction activities and the long-term implementation of the RPMP in and around the POM and OMC. Impacts to traffic would occur throughout the construction period and would result from increased haul truck traffic, increased construction worker traffic, decreased parking availability due to staging, and road detours around construction zones. Following construction, impacts could include increased vehicle trips within and around the POM and OMC from increased military personnel and increased traffic delays from vehicles entering the POM at the access control points. Unless measures are implemented to mitigate and reduce impacts, the traffic impacts within the community would be significant and unavoidable.

ES.8 Noise

Under the No Action Alternative, the existing buildings at the POM and OMC would remain the same, with the exception of the new FY11 GIB to be constructed at the POM. There would be no significant increases in noise levels as a result of the No Action Alternative.

Long-term noise impacts could occur from increased travel to and from the POM Installation due to population growth. Because on-post housing availability would be unchanged under the No Action Alternative, military personnel and families would need to find alternative housing off-post, which could increase commutes and associated noise levels in nearby areas. In order to project an appreciable noise level increase of 3 decibels or greater, traffic volumes would need to double relative to existing traffic volumes. Expected population growth would not result in doubling of traffic volumes; therefore, noise increases from traffic would not be substantially over ambient levels.

For both action alternatives, construction activities would increase noise levels at and in the vicinity of the construction sites. Construction noise would only occur during the period of construction. Traffic noise levels could increase from construction workers' vehicles and haul trucks. Although construction noise impacts would be temporary for the construction period, the construction period would last several years and thus noise disruptions to the educational mission of the POM would likely occur any time during construction. There would be an increase in traffic noise, but as indicated for the No Action alternative, the traffic noise increase is not expected to be significant.

ES.9 Utilities and Public Services

None of the alternatives would have an adverse affect on utilities and public services, such as stormwater, wastewater, solid waste, electric, gas, or communications. The anticipated increase in the number of military families associated with the increase military personnel at the POM and OMC under all alternatives would increase demands on public schools. The U.S. Army does not operate schools in the area so children of military parents would need to attend local public schools. These schools are generally over enrolled and more students would result in a potentially significant impact depending on the student age population. The POM Installation, through its U.S. Army student enrollment liaison officer, would coordinate with the school district to support potential increases in school enrollment of military children to prevent overcrowding from becoming a significant issue.

ES.10 Hazardous, Toxic, and Radioactive Wastes

Under the No Action Alternative, building construction would relate to the FY11 GIB at the POM. Asbestos-containing materials and lead-based paint encountered during renovations would be removed from the building structures or encapsulated during demolition for off-site disposal. General construction materials that may be hazardous would be managed and disposed of in accordance with manufacturer's specifications and hazardous waste regulatory standards. Therefore, there would be no significant environmental impacts from hazardous, toxic, or radioactive wastes.

Under Alternatives 1 and 2, Barracks Phase I would be constructed at the POM. A parking lot for the barracks is proposed in close proximity to the POM-05 landfill cap. The parking lot would be designed to maintain the structural integrity of the landfill cap. Waste material within the landfill cells would not be removed or exposed and any construction activity would be conducted to avoid compromising the landfill cap.

Similarly to the No Action Alternative, projects proposed within the POM and OMC boundaries under the action alternatives could produce wastes classified as toxic and hazardous. Management of the wastes in accordance with federal and state regulations would prevent the release of the wastes and prevent potential adverse environmental effects. The potential for impact would be less than significant.

ES.11 Public Health and Safety

For the No Action Alternative, public health and safety would be addressed through current POM and OMC safety programs. Construction activities at the POM under either alternative would not affect public health or the safety of the local civilian residents. Because members of the public are not allowed on the POM, construction activities would pose no risk to their public health and safety. However, construction activities such as use of vehicles and equipment could pose safety risks to military personnel on the POM Installation. Appropriate fencing, detours, and signage would be used to alert personnel of construction zones and ensure public safety. The potential for public health and safety impacts would be less than significant.

ES.12 Socioeconomics

Under the No Action Alternative, the student to teacher ratio would decrease relative to existing conditions, which would result in new teaching positions. The new civilian faculty positions would have a long-term positive impact on employment and wages and salaries in the region. Increased student population at the POM Installation under the No Action Alternative would also contribute to additional spending and economic output in the region. New residents would purchase goods and services within nearby cities, supporting economic activity in the area. Students that choose to live off-post and occupy vacant homes would also support the regional economy.

Because the population growth for the POM and OMC would be similar for the action alternatives, the action alternatives would have similar beneficial economic growth for the region.

ES.13 Environmental Justice

Under the No Action Alternative, the RPMP would not be approved, and the anticipated future population growth would place greater pressures on neighboring areas to provide housing or services that are deficient at the POM. The potential impacts to water, air, visual, biological, cultural, housing, transportation, noise, utilities and public services resources would not be appreciably more severe or greater in magnitude on the minority or low-income communities of Marina and Seaside. Therefore, the No Action alternative would have no effect on environmental justice.

Under the action alternatives, housing and barracks developments would reduce pressure on housing in neighboring areas. Therefore, the action alternatives would have no effect on environmental justice.

ES.14 Visual, Scenic, and Aesthetic Resources

Under the No Action Alternative, one new general instruction building would be built, but no construction would occur as part of the RPMP. Existing buildings at the POM would remain in their current condition. The current visual features of the area would not change. There would be continued development at the

OMC. Aging structures would be replaced with new buildings which would have a uniform visual scheme to adjacent areas. There would be no adverse impact to visual, scenic, and aesthetic resources under the No Action Alternative.

Projects constructed under the action alternatives could have visual effects through the introduction of new buildings, parking structures, fences, barracks, recreation facilities, and access control points. During renovation, demolition, and construction, there would be short-term adverse impacts to the visual features of the sites and their surroundings. These effects would be visible from adjacent communities. Short-term impacts on visual resources would be limited to the duration of construction activities.

Upgraded force protection fencing would replace existing fencing sections currently at the POM under all alternatives. While it may be taller than the existing fencing, it is not expected to substantially change the visual character of the POM and would not obstruct views from existing neighborhoods. The new access control points would consist of new guard stations and reconfiguration of the road and barriers. This would slightly change the visual character of the area as a new structure would be built. Impacts to the visual character at the POM Installation would be less than significant.

The new parking structures and buildings would be several stories high; for example, a new general instruction building or barracks could be up to 6 stories. Depending on their size and location, multi-level buildings at the POM could have the potential to obstruct views of the ocean from the surrounding neighborhoods. In the design phase of the new buildings, the POM Installation would consider, to the extent possible, potential visual impacts and visual obstructions of the surrounding neighborhoods. New buildings at the POM could permanently detract from existing views and scenic vistas from areas outside the POM. Therefore, at a preliminary level of analysis, visual impacts to existing vistas would be considered potentially significant unless design considerations reduce the visual impact. When additional building details and locations are available, supplemental environmental analysis would be required to further analyze visual impacts.

It is not expected that any views from the OMC would be affected by the long-range projects. The OMC area is flat in elevation and does not provide scenic views of the Pacific Ocean. There are no neighborhoods surrounding the proposed construction sites that would have views obstructed by the projects. There would be no visual impacts from construction at the OMC.

ES.15 Historical and Cultural Resources

Cultural and historic resources at the POM include known archaeological sites, historic buildings, structures, landscapes, monuments, and properties associated with the different historical periods of occupation. Special interest areas at the POM include the POM Historic District, El Castillo Historic District and the scenic overlook at the Sloat Monument. The POM Historic District contains over 119 historic architectural and landscape features dating back to the early 1900s, when it was a cavalry-infantry-artillery cantonment. The district contains the parade grounds, Officers' Row, and the cavalry quarters. Protection of the cultural and historic interests of POM is a paramount concern of the RPMP.

The OMC contains buildings that are turning 50 years old and thus becoming historic. A determination of eligibility for these buildings is forthcoming; however, it is unlikely that the structures will be considered eligible for listing on the National Register of Historic Places.

The State Historical Preservation Office (SHPO) Programmatic Agreement only covers the POM Historic District and lower POM archaeological area. The RPMP projects outside of the historic district and archaeological area may require consultation with California SHPO. These projects include Barracks Phases I, II, III, and IV, Classroom Renovation I and II, Classroom Renovation II, Security Fence Upgrade, Access Control Points at Highway 68 and Taylor Street, Joint Service Headquarters Building, Multi-level

Parking Structures at Rifle Range and Lawton, General Instruction Buildings (68730, 68882, and 68883), and Indoor Swimming Pool. Separate National Historic Preservation Act compliance documents would be developed for those projects not addressed in the agreement.

The design features of the projects would comply, as applicable, with the U.S. Army's Installation Design Guide, the Integrated Cultural Resources Management Plan, and the SHPO Programmatic Agreement. Following the design guidelines and cultural resource protection aspects of these two documents would keep impacts to cultural resources to less than significant.

ES.16 Growth Inducing

The No Action Alternative and the action alternatives would not have an effect on regional population growth beyond current growth projections for the region. Therefore, implementation of the RPMP would not have a noticeable growth inducing effect on the region.

ES.17 Environmentally Preferred Alternative

The POM-Centric Alternative is identified as the environmentally preferred alternative. This alternative focuses the majority of environmental concerns to the central campus and reduces the potential impacts to the extent practical through design elements and the site mitigations proposed in this document, the POM Real Property Master Plan and Biological Opinion. The POM-Centric Alternative allows for the following:

- more efficient use and modernization of facilities,
- improving energy conservation and resource management,
- avoids impacts to cultural resources and maintains the historic fabric of the POM,
- minimizes impacts to Federally-listed endangered species,
- protects natural resources to the extent feasible,
- reduces transportation needs and impacts,
- reduces traffic between the POM and OMC
- reduces air emissions impacts.

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1. INTRODUCTION

The United States (U.S.) Army Garrison – Presidio of Monterey has prepared this Draft Environmental Impact Statement (EIS) for the Presidio of Monterey Installation (POM Installation) Real Property Master Plan (RPMP) in compliance with the National Environmental Policy Act (NEPA) and NEPA Guidelines. The EIS is a public document for use by the U.S. Army, other governmental agencies, and the public to determine and evaluate the potential environmental consequences of proposed projects, identify mitigation measures to lessen or eliminate adverse impacts, and examine feasible alternatives to the projects. The impact analyses in this report are based on a variety of sources and the best available information at the time of preparation. References for each of these sources are listed at the end of each technical section. The information contained in this EIS will be reviewed and considered by the U.S. Army and POM Installation Directorate of Public Works (DPW) prior to the final decision to approve, deny, or modify the proposed projects.

This EIS addresses the potential environmental impacts of the short- and long-range projects proposed over the 20-year planning horizon of the POM Installation RPMP. The POM Installation consists of two locations, the Presidio of Monterey (POM) and the Ord Military Community (OMC). The RPMP portrays a plan for orderly management and development of the installation's real property assets, including land, facilities, and infrastructure. It serves as a roadmap to ensure that the master planning process is proactive in meeting the installation's Real Property Vision and the current and long-term mission requirements for the installation and its tenants, the largest of which is the Defense Language Institute Foreign Language Center (DLIFLC). It allows for systematic development that takes into account the constraints and advantages of the installation, mission requirements, and long-range community goals, while still providing a secure, high quality environment for service members and their families, contractors, and retirees.

Because of the 20-year planning horizon for these projects, the RPMP analyses were completed at the programmatic level. The expectation is that the individual projects would be evaluated in detail and the designs refined as needed before they are implemented. Additional environmental documentation would be required in the future for the individual projects.

The U.S. Army prepared 2010 Real Property Master Plan is under administrative review by the U.S. Army Installation Management Command (IMCOM) and POM Installation DPW. The IMCOM and POM Installation DPW will ensure that the decisions made to select the alternative for approval are in compliance with the U.S. Army's decision-making procedures and NEPA. Both the RPMP and this accompanying EIS are expected to be finalized in 2011.

1.1 Authority

This EIS has been prepared pursuant to NEPA, the regulations of the Council on Environmental Quality (CEQ) (40 CFR Part 1500 et seq.), and the Department of the Army (32 CFR Part 651). NEPA requires an EIS to be prepared for major Federal actions that would significantly affect the quality of the human environment. The CEQ issued implementing regulations governing this process (40 CFR 1500-1508). These regulations are based on the Environmental Quality Improvement Act of 1970, as amended (42 USC 4371 et seq.), Executive Orders 11514 and 11991, and Section 309 of the Clean Air Act (CAA), as amended (42 USC 7609). The EIS addresses proposed alternative measures for implementing the RPMP for the POM Installation and evaluates potential impacts to the environment.

The RPMP provides the direction for the orderly development of the real property assets of the POM and OMC. This includes land, facilities, and infrastructure. The planning process follows the professional practice of community planning as implemented by all Department of Defense (DoD) services and agencies and provides the POM Installation with the vision and framework for long- and short-term real property development.

The RPMP is required by U.S. Army Regulation (AR) 210-20 Real Property Master Planning for U.S. Army IMCOM installations and adheres to the guidance in the U.S. Army August 2008 Real Property Master Planning Technical Manual (MPTM) (U.S. Army, 2008b).

1.2 Environmental Process and Documentation

The U.S. Army is the federal lead agency responsible for the implementation of the RPMP. Three alternatives, the No Action Alternative and two action alternatives, to implement the master plan were prepared. The first action alternative, named the POM-centric alternative, would place the majority of the proposed projects within the POM. The second alternative, named the POM and OMC alternative, would move some of the POM functions to the OMC and thus is a combined POM and OMC alternative. This EIS analyzes the direct, indirect, and cumulative effects of each alternative. Within the evaluation of each alternative, the impacts of each construction action are analyzed separately.

The process for preparing this environmental document included several opportunities for input from the public and natural resource trustees. On January 27 and 28, 2009, U.S. Army representatives presented the project at public scoping meetings held in the cities of Seaside and Monterey, respectively. Written public comments on the scope of this action were solicited at these meetings. The U.S. Army has used these written scoping comments to determine and develop the environmental resource areas addressed in this document.

The Draft EIS will be distributed to the public agencies and organizations listed in Chapter 7 for review and comment. The U.S. Army also plans to present the Draft EIS at public meetings in the Monterey area to answer project questions and solicit public comments concerning the EIS. All written comments received on the Draft EIS will be considered and a Final EIS will be completed in response to the comments. The Final EIS will then be distributed to the parties that received the Draft EIS.

1.3 Previous Studies and Environmental Documents

Several projects and documents have contributed to the development of the POM Installation. The following section presents a brief summary of the existing documents and projects that have contributed to the development of the POM Installation. The documents are presented in chronological order.

Master Plan for the Presidio of Monterey Environmental Assessment (1983)

Each U.S. Army community is required to have a property master plan. An Environmental Assessment (EA) was prepared to assess the environmental impacts of the POM Master Plan in 1983. The 1983 master plan presented the demand and need of facilities for the DLIFLC. It also defined the facility expansion and development projected to 1990. The projects were reviewed for possible Congressional funding and included in a 5-year program (1986 to 1990). The EA identified a number of potential unavoidable adverse environmental and socioeconomic impacts. These potential impacts included air pollution, topographic modifications, soil erosion, water pollution, modification of onsite habitat, temporary increase of housing in neighboring communities, visual impacts, energy consumption, increased demands on public facilities and services, and increased traffic generation. The implementation of construction mitigation measures identified in the master plan and in the EA reduced these impacts to less than significant levels (U.S. Army, 1983).

Finding of No Significant Impact/Environmental Assessment for the Presidio of Monterey General Instruction Facility III, Audio Visual Center, Academic Auditorium, and Other Improvements (1994)

An EA for the General Instruction Facility III, Audio Visual Center, Academic Auditorium, and other improvements was conducted by the U.S. Army. The document determined that there would be no significant adverse impacts and a Finding of No Significant Impact (FONSI) accompanied the 1994 EA (U.S. Army, 1994a).

Leasing the Lower Presidio to the City of Monterey Environmental Assessment and Finding of No Significant Impact (1996)

An EA for the leasing of the lower parcels of the POM to the City of Monterey was conducted by the U.S. Army. The document determined that there would be no significant adverse impacts and a FONSI accompanied the 1996 EA (U.S. Army, 1996).

Final Environmental Assessment Presidio of Monterey Military Construction Project, Monterey County, California (2001)

An EA was conducted to evaluate renovation of nine existing buildings and construction of new buildings at the POM. The project consisted of renovating existing classrooms (Buildings 619, 620, 621, 623, and 624) and existing barracks (Buildings 622, 627, 629, and 630). New construction projects, including a barrack, a new computer center, and an audio-visual center, were proposed in addition to the renovations of existing buildings. The document determined that potential project impacts could be reduced to less than significant levels and a FONSI accompanied the 2001 EA (Harding Lawson Associates, 2001).

Final Environmental Assessment Construction of New Dental Clinic and Demolition of Buildings 339 and 340 Presidio of Monterey, Monterey, California (2005)

An EA was conducted for the removal of Buildings 339 and 340 to construct the dental clinic. The document determined that there would be no significant adverse impacts and a FONSI accompanied the 2006 EA (USACE, 2005a).

Environmental Assessment of Implementation of the Army Residential Communities Initiative Land Exchange, Monterey, California (2006)

An EA was prepared by the U.S. Army on the potential environmental and socioeconomic impacts of a land exchange with the City of Seaside in support of the U.S. Army's Residential Communities Initiative (RCI) at the OMC. Under the RCI, the U.S. Army was able to obtain private sector funds for constructing, maintaining, managing, replacing, rehabilitating, and developing military family housing and ancillary support facilities. The EA addressed a land exchange to increase the amount of real property available for family housing development under the RCI program. Under the land exchange, the U.S. Army transferred the Drumstick, Light Fighter Drive, and Firehouse Parcels to the City of Seaside in exchange for the Stilwell Kidney Parcel. All of these parcels are on or adjacent to the OMC. The document determined that there would be no significant adverse impacts and a FONSI accompanied the 2006 EA (USACE, 2006).

Final Environmental Assessment Proposed General Instruction Building Construction FY08, 09, 10 on the Presidio of Monterey, Monterey, California (2007)

The U.S. Army prepared an EA to assess the potential environmental impacts of constructing three new General Instructional Buildings (GIBs) on the POM within the central campus area. These buildings are necessary to provide administration and classroom space for the DLIFLC. The proposed instructional buildings would provide approximately 260,000 square feet of academic space, an additional 192 modern language classrooms, and capacity for 384 faculty and staff. Construction for these buildings would occur from 2008 to 2011. Construction of the fiscal year 2008 (FY08) GIB and FY09 GIB have been completed. Construction of the FY10 GIB was postponed and is now slated to begin in FY11. The document determined that there would be no significant adverse impacts and a FONSI accompanied the 2008 EA (ECW, 2007).

Real Property Master Plan for the Presidio of Monterey (in development)

The RPMP for the POM Installation is currently being prepared to replace the outdated 1983 POM Master Plan. The RPMP would serve as a guidance document to respond to future U.S. Army missions and is the subject of this EIS. The RPMP was prepared based on a comprehensive analysis and assessment of real property and consists of five components: the Real Property Master Plan Digest, Long Range Component, Installation Design Guide (IDG), Capital Investment Strategy, and Short Range Component. The RPMP brings together information and concepts from many sources to ensure that adequate real property support is provided to meet the mission of the U.S. Army community.

1.4 Purpose and Need

The U.S. Army, in evaluating the future uses of the POM, has determined that the existing facilities do not meet current standards for the mission of the POM Installation, which includes support of the DLIFLC. The mission of the DLIFLC is increasing the number of students and instructors present at the installation. Facility improvements are needed to support the mission. The improvements include updating and adding classrooms, living quarters, and offices for the teachers, students, and employees at the POM. Centralizing the educational area is also a desired improvement for the POM. In addition, the need for anti-terrorism/force protection (AT/FP) measures and changes in access to the POM since September 11, 2001 have resulted in traffic circulation issues that need to be addressed. The U.S. Army has determined that existing facility modernization and construction of new facilities are needed to meet the mission of the POM for the next 20 years. The purpose of the 2010 RPMP is to identify the facility improvements, replacements, and sequencing necessary to maintain the mission of the POM and to address AT/FP requirements. The need for the improvements is to ensure that the active service members, staff, and instructors have modern educational facilities and housing consistent with U.S. Army standards and expectations for the 21st century.

1.5 Study Area

The POM Installation is a geographical entity comprised of multiple U.S. Army sites grouped together for planning purposes. A site is a discrete area of contiguous or near contiguous parcels of land.

While the POM Installation consists of six sites, the RPMP, and therefore this EIS, focuses only on the two sites that contain a majority of the land area and where planning and future development would occur. These are the POM and the OMC. The remaining sites, the DoD Center – Monterey Bay (DoDC-MB), Camp Roberts Satellite Communications Station, Monterey Recreation, and Benicia Military Cemetery, were not discussed in detail in the RPMP and will not be described further in this EIS. As such, "POM Installation" in this EIS will refer to only the POM plus the OMC. The U.S. Army Garrison – Presidio of Monterey is the organizational entity with base operations (BASOPS) command and control of the POM Installation. The

U.S. Army Garrison – POM Installation in turn reports to the West Region Office in San Antonio, Texas of the Installation Management Command.

The study area for this EIS consists of the physical boundaries of two sites, POM and OMC, of the POM Installation. The POM Installation is located in northern Monterey County, California along the coast of the Pacific Ocean, as shown in the regional map (Figure 1.5-1) and the location map (Figure 1.5-2). Figure 1.5-3 and Figure 1.5-4 illustrate the basic layout of the POM and OMC, respectively. Additionally, the POM features, such as the landfill and nature preserve, are shown on Figure 1.5-5.

The 392-acre POM contains a historic district (comprised mostly of wooden and a few permanent construction buildings), wooden buildings, and a collection of permanent buildings constructed since 1954. There are 20 barracks buildings, two company operations buildings, eight multi-story academic classrooms and supporting offices for the DLIFLC, a headquarters building, and community support facilities (e.g., dining facilities, physical fitness facility, recreation facility, post exchange, medical clinic, dental clinic). The result is an academic setting in keeping with the population of military students, civilian and military language instructors, support staff, and civilian employees needed to operate a U.S. Army installation (USACE, 2009).

The DLIFLC, located at the POM, is the largest foreign language training facility in the western world and the largest tenant of the installation. Its primary mission is to provide culturally-based foreign language education and training for DoD personnel, to ensure success of the defense language program, and to enhance national security.

The OMC contains privately-owned family housing parks, an adjacent DoDC-MB, and community support facilities (e.g., police station, child development center, youth center, and community center). The development has resulted in a more mixed-use, community-like setting for the populations of civilian employees and family members of service members attending the DLIFLC or Naval Postgraduate School, or assigned to various units stationed on the Monterey Peninsula (USACE, 2009).

The POM and OMC communities are made up of active and retired military service members and their families, civilian contractors, and various support staff.

Figure 1.5-1. Regional Map

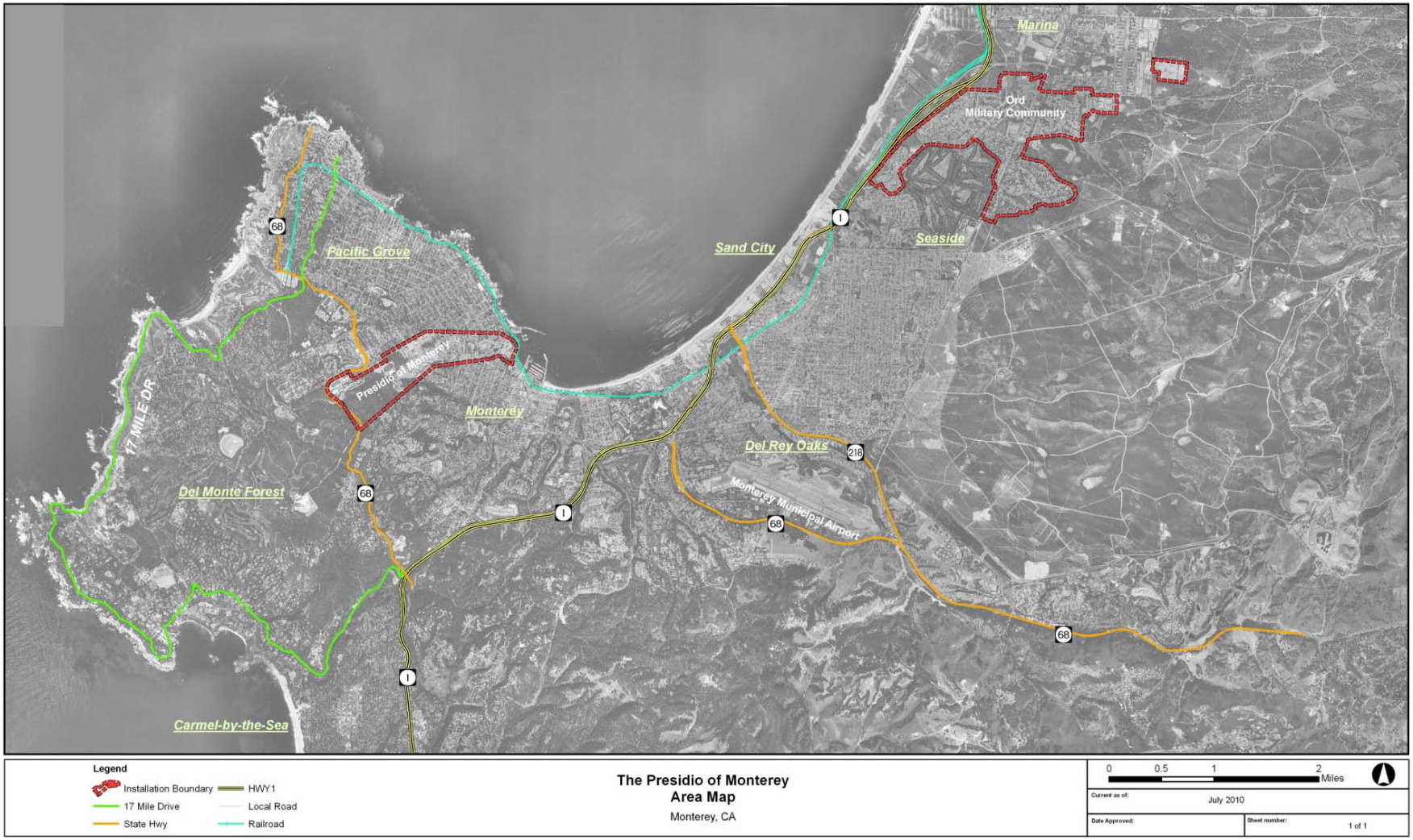

Figure 1.5-2. Location Map – POM Installation

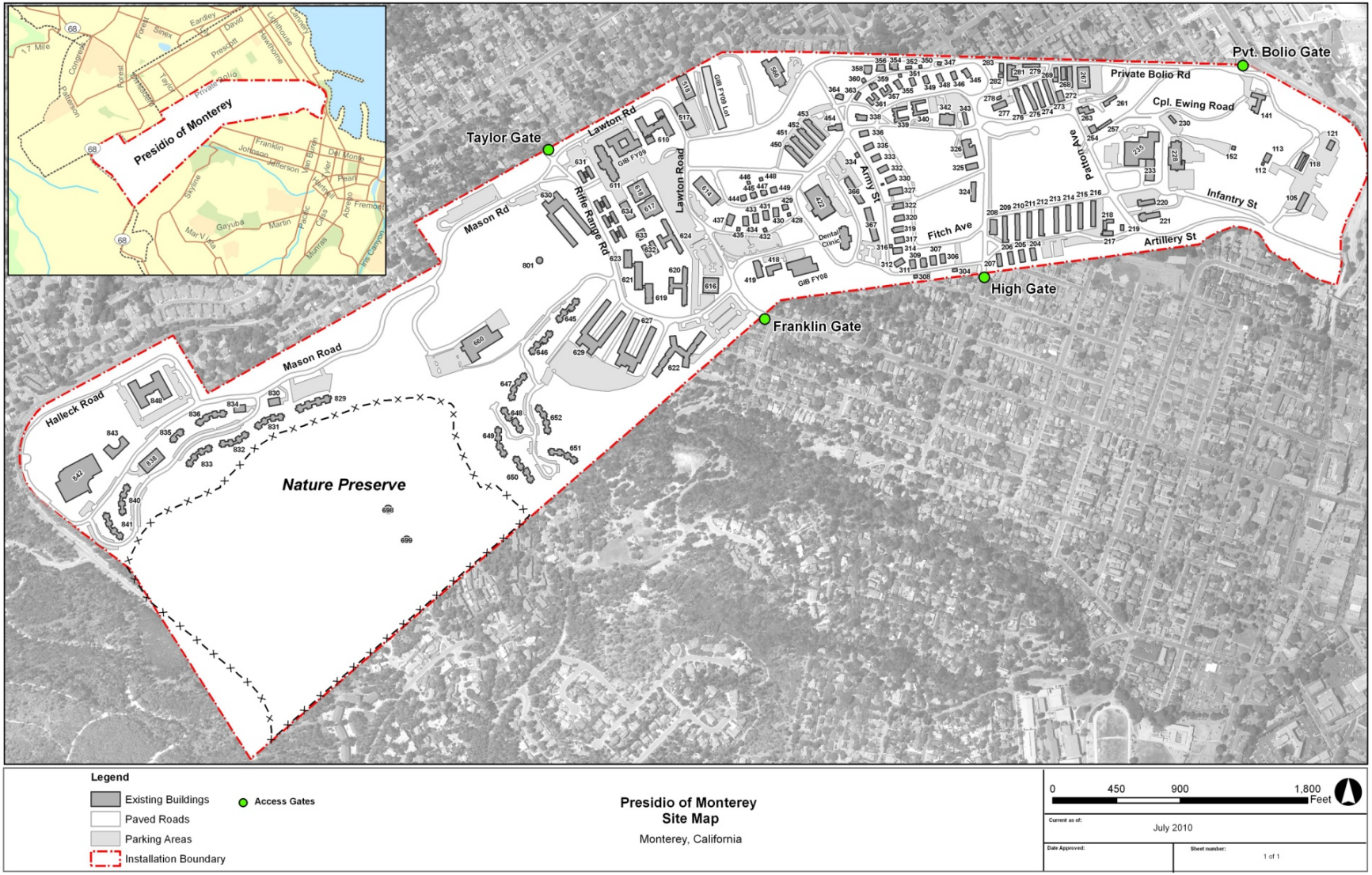

Figure 1.5-3. Site Map – POM

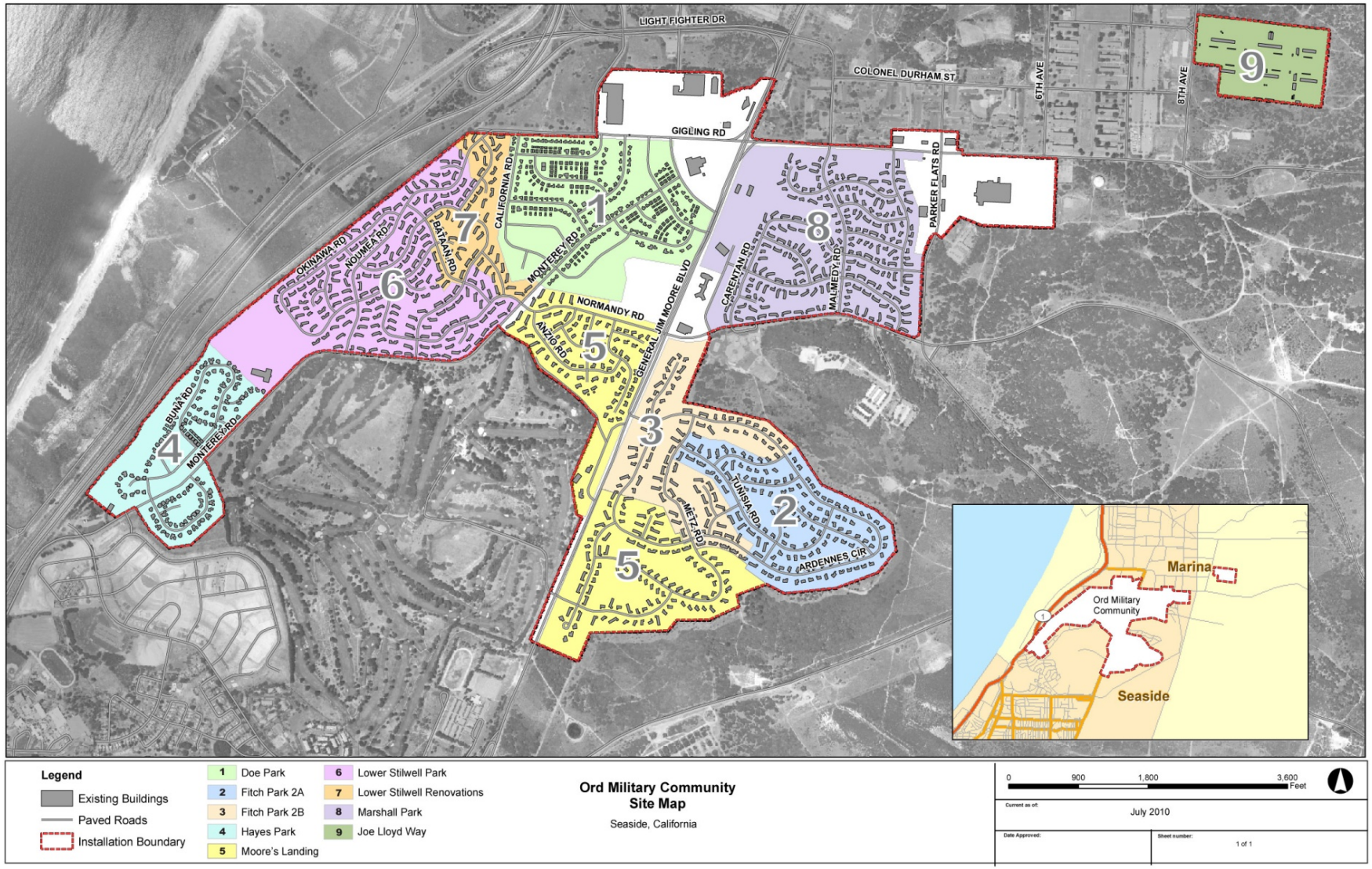

Figure 1.5-4. Site Map – OMC

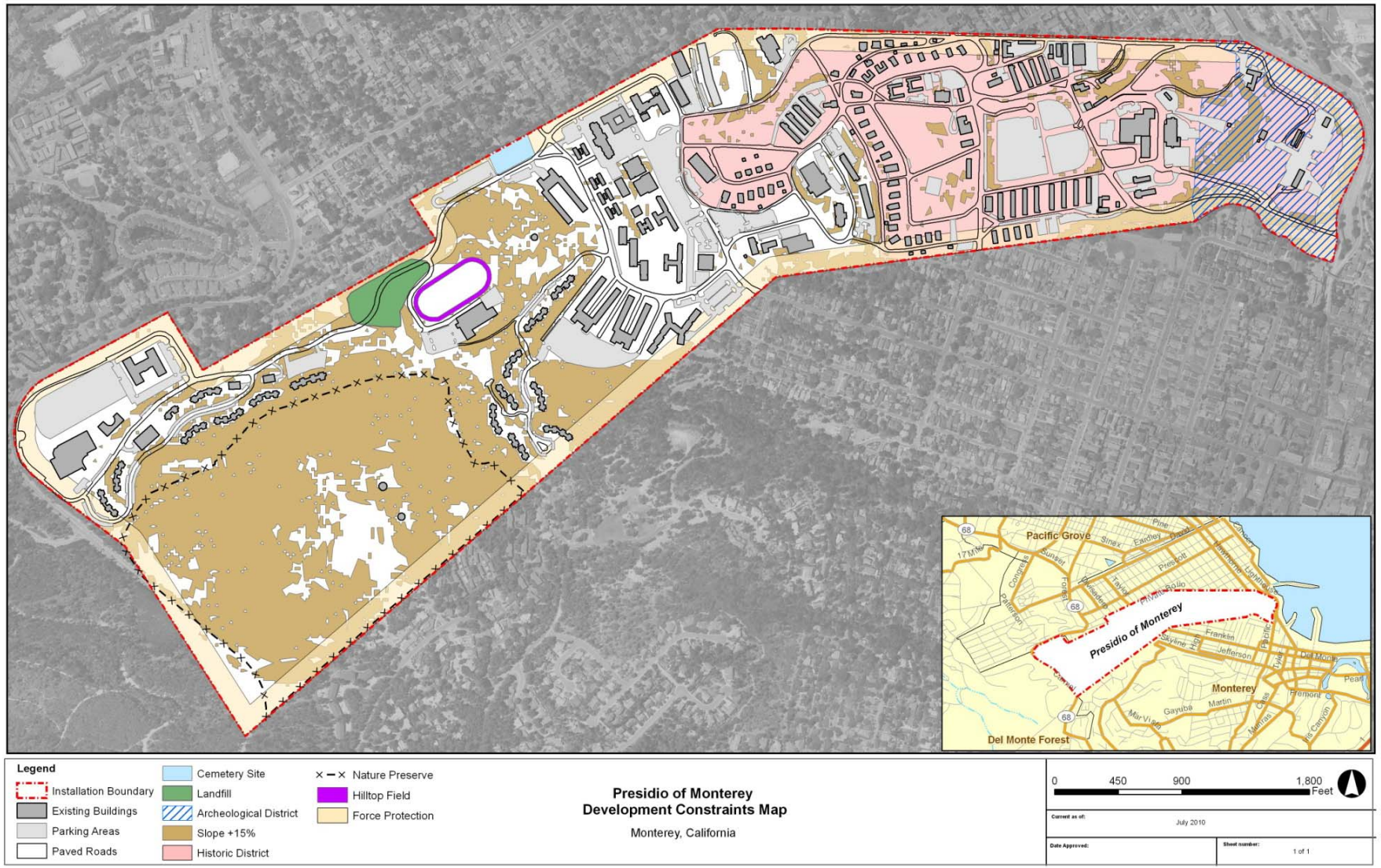

Figure 1.5-5. Site Features – POM

1.6 Report Organization

This environmental document contains nine chapters and several technical appendices. The chapters cover the following topics:

Chapter 1: Introduces the EIS and describes the purpose and need for the RPMP.

Chapter 2: Describes the RPMP alternatives including the No Action Alternative, two action alternatives, and the environmentally preferred alternative.

Chapter 3: Describes the existing environmental setting for the project.

Chapter 4: Assesses the environmental impacts of the RPMP for each of the alternatives and describes the mitigation measures.

Chapter 5: Describes, for each alternative, the potential cumulative effects associated with the combination of the RPMP alternatives and other proposed projects.

Chapter 6: Provides a list of applicable laws, regulations, and permits necessary to implement the preferred alternative.

Chapter 7: Identifies individuals and agencies receiving this document or received notification of document availability.

Chapter 8: Provides a list of individuals preparing this environmental document.

Chapter 9: Provides a list of the reference sources used to prepare this document.

Appendices: Provides the technical studies conducted for the resource areas in this document.

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2. PROPOSED ACTION AND ALTERNATIVES

2.1 Development of Alternatives

The RPMP EIS action alternatives were developed to meet the POM Installation's Real Property Vision, goals, and objectives. The Real Property Vision is to:

> *Evolve the installation into an Army top tier training and living community with state-of-the-art facilities and land usage that maximizes mission readiness and care of people while maintaining positive community relationships.*

The goals of the POM Installation are built on the commitment of IMCOM to provide the right service, at the right time, and within the right cost to the assigned service members, civilian workforce, and family members at all U.S. Army installations. To accomplish this commitment, there are four key stewardship responsibilities of the Garrison: mission, environment, force protection, and quality of life. These responsibilities are reflected in the goals of the RPMP.

Goal 1: Mission Stewardship—To obtain, operate, and maintain the highest-quality facilities to support the missions of the organizations assigned to the installation.

Goal 2: Environmental Stewardship—To protect and preserve the natural and man-made environment.

Goal 3: Force Protection Stewardship—To provide force protection of all personnel working and residing on the installation.

Goal 4: Quality of Life Stewardship—To provide enhanced quality of life for service members, civilian workforce, and family members.

The EIS action alternatives were developed by identifying the needs and opportunities at the POM Installation to achieve the above goals. The needs and opportunities that require revision of the 1983 POM Master Plan and modernization of the POM and OMC facilities are detailed in the 2010 RPMP.

2.2 Range of Alternatives Considered

To develop the alternatives, the U.S. Army considered actions necessary to modernize the mission of the facility. The No Action Alternative, Alternative 1, and Alternative 2 are discussed in Sections 2.4, 2.5, and 2.6, respectively. As part of addressing the needs of the POM Installation, the U.S. Army also considered other alternatives, such as use of local off-post classroom space or moving the POM Installation mission to another military facility. These alternatives, and the reasons they were eliminated from detailed consideration, are discussed in Section 2.3. Based on the analyses of potential impacts, as discussed throughout this EIS, the environmentally preferable alternative is presented in Section 2.7.

2.3 Alternatives Considered but Eliminated

There were five alternatives considered but eliminated, as described in this section.

2.3.1 Leased Space Alternative

The U.S. Army is currently leasing space from the Monterey Peninsula Unified School District (MPUSD) to provide additional administrative and classroom space for DLIFLC to supplement the facilities at the POM. The U.S. Army has considered leasing off-post facilities or moving some classrooms to other DoD facilities to provide additional space for DLIFLC. This alternative, however, would be costly and would not meet the criteria of the Proficiency Enhancement Program (PEP) or Initial Entry Training (IET). As a result, the alternative to lease more space off-post was not carried forward for additional analysis.

Part of the PEP purpose is to move DLIFLC students back onto the POM from off-post leased facilities and to support the re-distribution of students onsite. The IET also requires that students be located together during training. Locating classroom space outside of the POM Installation would not facilitate a central campus concept for the DLIFLC and would require additional support facilities that would duplicate ones that already exist at the POM. Moving students back to the POM would also enhance AT/FP and reduce the transportation costs of shuttling students to offsite locations. A 2005 U.S. Army Corps of Engineers (USACE)-Sacramento District survey also found that available commercial properties in the Monterey area were too small to accommodate the immediate needs of the DLIFLC. The survey found that Gilroy and Morgan Hill, which are approximately 38 miles from the POM, were the closest locations with properties of sufficient size.

2.3.2 Shift Work Alternative

The DLIFLC considered expanding the class schedules by switching to shift work. An analysis highlighted several problems with this alternative, including increased traffic, security lighting, noise during evening hours, and demand on support facilities after normal business hours.

2.3.3 Relocation Alternative

The U.S. Army considered moving the mission of the POM to a military facility outside of the region. Because it is the long-term goal of the DoD to maintain the current mission at the POM, the relocation alternative was eliminated from consideration.

2.3.4 Joe Lloyd Way Alternative

The Joe Lloyd Way area at OMC is currently used as an industrial, maintenance, and storage area with 19 acres of land potentially available for development. It was considered as an alternate site for development of a battalion-sized complex that would house up to 1,000 soldiers. The complex would be a self-contained living and learning center consisting of several barracks, GIBs, a dining hall, and a recreational facility. This alternative was eliminated because significant renovations to the existing infrastructure would be required. Development costs were conservatively estimated to range from $500 to $600 million (present value), making this alternative cost prohibitive.

2.3.5 Barracks Phase IV Alternate Sites

The proposed site for the Barracks Phase IV project at the POM was relocated based on the results from the U.S. Army's May 2010 biological plant survey of the POM and OMC. The site initially considered for the barracks parking lot was north of Buildings 830 and 834. The area, however, was found to contain the endangered plant species Yadon's piperia *(Piperia yadonii)*, as discussed further in Chapter 3. In order to reduce the biological impacts, the location was changed to the Ravine Site, as shown on Figure 2.3-1.

Six alternate sites at the POM were reviewed before the Ravine Site was considered as the feasible alternative site (Figure 2.3-1). The U.S. Army considerations for the alternate sites are described here:

- **Ravine Site** (proposed) – The steep terrain would mask the size of the structure and the location would avoid impacts to existing parking. Fewer Monterey pine trees would need to be removed or replaced during construction compared to the originally proposed site, which would reduce the biological impacts. Approximately 300 trees would be removed from the Ravine Site compared to 900 to 1,200 trees from the original site. Impacts from constructing at the Ravine Site are discussed further in Chapters 3, 4, and 5.
- **Building 627 Site** (eliminated) – Constructing the barracks over existing Building 627 would eliminate an older 1957 building and increase the overall POM barracks capacity. It is also located in an easily buildable area. The disadvantages of the location, though, is that a large structure would be built in a highly visible area potentially creating visual impacts, the new building would eliminate existing parking, and construction would relocate the Air Force administration department for a minimum of 4 years.
- **Buildings 649/650 Site** (eliminated) – Replacing Buildings 649 and 650 with the new barracks would increase the overall POM barracks capacity without affecting existing parking. This would, however, involve demolishing permanent facilities that are still functional and livable (U.S. Army classified as "green"). Although the site is easily buildable, the building would encroach on an area with Yadon's piperia (*Piperia yadonii*), a federally endangered plant species.
- **Hilltop Field Site** (eliminated) – Constructing the new barracks at this easily buildable site would increase the overall POM barracks capacity without impacting existing parking. This would, however, eliminate the physical training and athletic field and replace it with a large structure that is easily visible by the POM neighbors.
- **Buildings 840/841 Site** (eliminated) – This potential barracks location would not replace existing facilities but would encroach on the Huckleberry Hill Nature Preserve and impact endangered plant species habitat. The site topography would also be challenging for construction.
- **Behind Phase I Barracks Site** (eliminated) – This option would locate the Barracks Phase IV building near the Barracks Phase I building. It would, however, encroach on the Huckleberry Hill Nature Preserve and potentially impact the native plant vegetation.

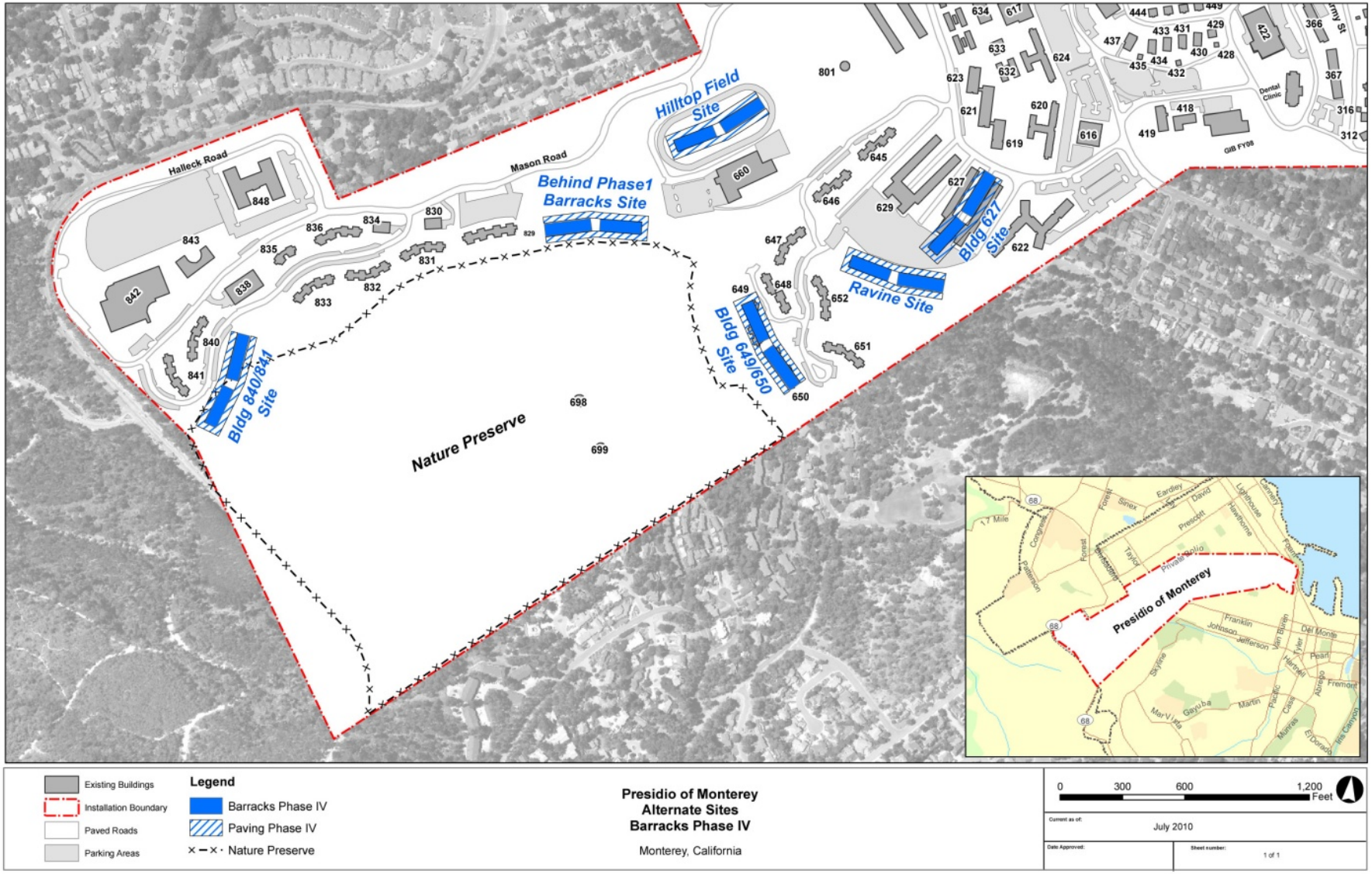


Figure 2.3-1. Alternate Sites for Phase IV Barracks Project

2.3.6 Alternative POM Facilities

Four proposed building projects were either relocated or eliminated completely from the RPMP as a result of the U.S. Army's May 2010 biological survey findings for the POM and OMC. Plants of the special status species Yadon's piperia (*Piperia yadonii*) were found at sites originally selected for these POM projects. The biological impacts combined with other planning considerations altered the development plans, as described below.

- **New chapel** (eliminated) – The existing chapel appears to be sufficient to meet the needs of the POM Installation. Eliminating this project avoided potential biological impacts because the originally proposed location east of the Hilltop Field was found to have federally endangered plant species.
- **New multi-purpose administrative/office building** (eliminated) – It was proposed that this new office building be built over an existing gas station (Building 230) on the eastern edge of the POM. Although the development would provide a more usable facility, eliminating the project avoided potential impacts to the POM historic district and to the aesthetic and visual resources.
- **New dining facility** (eliminated) – The new dining facility was to be constructed over the existing Building 324, a church annex, to create a more usable facility. With the new GIBs planned for the mid-POM area, students may migrate toward the central academic area, which would reduce the need for a new dining hall. Eliminating the project avoided potential impacts to the POM historic district and to the aesthetic and visual resources.
- **New Joint Services Training Center** (relocated) – The originally planned location for the new center was east of the Hilltop Field. That site was found to contain the federally endangered plant species, Yadon's piperia. Changing the building location avoided potential biological impacts from removing or relocating the plants. Potential environmental impacts from construction at the new building location are discussed further in Chapters 3, 4, and 5.

2.3.7 Artillery Gate Access Control Point

The POM gate located off of Artillery Street is currently closed as a result of mandated AT/FP measures. Re-opening this gate and upgrading it to current Access Control Point (ACP) and AT/FP standards was considered. The Artillery Gate would then serve as the main entrance to the POM and allow for a visitor center. This alternative was removed from consideration to avoid potential impacts to the POM archaeological and historic district. By not re-opening this gate, the City of Monterey concerns regarding possible traffic circulation impacts to Lighthouse Avenue and Pacific Street would be lessened.

2.4 No Action Alternative

An environmental analysis of a No Action Alternative is required by the CEQ regulations to serve as a benchmark against which the Proposed Action can be evaluated. The No Action Alternative is defined as the conditions that would result even if the RPMP projects were not approved or constructed. Because the EIS is for approval of a master plan rather than a single physical construction project, the No Action Alternative would be defined as not approving the RPMP. If the 2010 RPMP was not approved, management of the POM would continue based on the 1983 POM Master Plan, which is currently in effect. The 1983 POM Master Plan does not meet Goals 1 to 4 of the POM Installation, as presented in Section 2.1. An important component of the No Action Alternative is that future population growth at the POM would increase demands on existing POM facilities and place greater pressure on neighboring areas to supplement housing or services that are deficient at the POM.

2.4.1 Population Growth

Under the No Action Alternative, population at the POM Installation is projected to grow as the DoD increases its demand for foreign language training services and skills. Each quarter, the DoD assigns baseline population projections to the POM Installation, which must then provide facilities and services for this population. Additionally, the PEP for foreign language training requires a reduction in student-to-teacher ratios. The ratio at the DLIFLC is being reduced from 10:2 to 6:2 to meet the PEP requirement, which would result in an increase in the number of faculty members to correspond with the anticipated increase in the student population.

Even without approval of the RPMP, the military population would still increase as required by DoD. Most of the population at the POM and OMC are not permanent as students only require temporary housing during their training. Table 2.4-1 shows the expected population growth for military personnel assigned to the POM Installation as well as the estimated number of accompanying family members.

Table 2.4-1. Projected Population at POM Installation

Fiscal Year	Military Population (1)	Family Members (2)	Total Population (3)
2010	9,313	7,800	17,400
2011	10,324	8,800	19,300
2012	10,366	8,400	18,500
2013	10,182	8,400	18,500
2014	10,182	8,400	18,500
2015	10,182	8,400	18,500
2016 – 2030 (4)	10,182	8,400	18,500

Source: POM, 2009b

(1) Military population assigned to the POM Installation.

(2) Based on number of military personnel living at POM apartments and houses, OMC houses, and off-post. U.S. Census Bureau estimate for Monterey County of 2.1 persons per household was assumed.

(3) Total does not add up due to rounding.

(4) Assumed equal to Year 2015 population.

2.4.1.1 Housing Demand

Military personnel assigned to the POM Installation can live at the POM, OMC, or off-post in the nearby cities, such as Monterey, Pacific Grove, or Seaside. The POM has barracks for single military personnel from all four military branches and a limited number of houses or apartments for families. The barracks capacity currently totals 2,935 beds. The occupancy rate in 2009 was about 85 percent. The POM has 37 single-family residences in the historic district. Under the No Action Alternative, all barracks and single-family residences would remain and the housing capacity would not change at the POM.

The OMC also provides residential housing to the military population. In 2003, OMC housing was leased to a private company as part of the RCI. Collectively, the RCI housing areas are referred to as the "Parks at Monterey Bay," which consists of 7 neighborhoods: Doe Park, Fitch Park (2A and 2B), Hayes Park, Moore's Landing, Lower Stilwell Park (includes Lower Stilwell Renovations), and Marshall Park (Figure 1.5-4). Under the RCI, military personnel have priority to housing at OMC with the remaining vacant units available to

civilians. Approximately 80 percent of residents at the OMC are military personnel and their families and 20 percent are civilians. The OMC currently has 1,889 units through the RCI projects. In 2009, 400 units were vacant. There would be no construction of barracks at the OMC under the No Action Alternative.

Military personnel can live off-post in neighboring cities or in unincorporated areas of Monterey County. From 1990 to 2000, Monterey County added about 100,000 new housing units county-wide. Vacancy rates in the county tend to be low and the number of residents per household has increased. Rent increases have risen in recent years by about 10 to 20 percent per year between 2001 and 2003, with some renters experiencing a 25 to 30 percent increase per year.

Under the No Action Alternative, future population growth would place increasing demand on existing housing and services at the POM, OMC, and neighboring cities. Existing housing at the POM and OMC would not have the capacity to support the expected population growth. Therefore, military personnel and families would be forced to find off-post housing. High rental prices and low vacancy rates could limit the ability of military personnel to live close to the installation and create a need to live in more distant, less expensive, and lower-quality areas.

For analysis purposes, expected residency at the POM, OMC, and off-post housing were estimated. Under the No Action Alternative, residency at the POM and OMC were assumed to be at capacity, but the OMC would maintain the 80/20 percent military to civilian ratio. Remaining military personnel and their families were assumed to reside off-post. Table 2.4-2 summarizes the estimated on and off-post residency under the No Action Alternative.

Table 2.4-2. Residency at POM, OMC, and Off-post under No Action Alternative (1)

Year	POM	OMC	Off-post	Total
2010	2,500	2,700	12,100	17,400
2011	2,500	2,700	14,100	19,300
2012	2,500	2,700	13,200	18,500
2013 – 2030	2,500	3,200	12,700	18,500

Assumptions:
Barracks fill first before homes on or off-post.
2.1 persons per household; military personnel living in OMC or POM homes or off-post have families.
(1) Includes military personnel and family members, values are rounded to the nearest hundred.

2.4.2 POM

The facilities, parking, traffic, and security conditions at the POM under the No Action Alternative are described below.

2.4.2.1 Facilities

The 392-acre POM contains a mixture of wooden and permanent buildings. Many of the wooden buildings are within the historic district located on the eastern edge of the POM. The POM has 19 barracks buildings, two company operations buildings, ten multi-story academic buildings (classrooms and supporting offices), a headquarters building, and community support facilities (dining, physical fitness, and recreation facilities, post exchange, medical clinic, dental clinic, etc). The result is a campus-like setting in keeping with its populations

of military students, civilian and military language instructors, support staff, and the numerous civilian employees needed to operate a U.S. Army installation.

Many of the buildings at the POM are deteriorating as a result of age, overuse, and insufficient maintenance over the years. Current classroom conditions are not conducive to a high-quality learning atmosphere. The classrooms do not have the upgraded technology to facilitate modern teaching methods or reliable heating and air systems. Windows and blinds are old, sometimes inoperable, and need to be replaced. Many of the classroom buildings do not have elevators and, therefore, do not comply with Americans with Disabilities Act (ADA) requirements. Both interior and exterior paint is fading and cracking and some buildings require lead paint abatement. Buildings also do not have adequate security measures. Under the No Action Alternative, classroom facilities would continue to deteriorate and detract from the students and faculty quality of life and education experience at the POM. In addition, the number of classrooms under the No Action Alternative would not be adequate to support the projected increase in student and teacher populations at the POM. Existing classrooms would become crowded and further detract from desired learning conditions.

Many of the barracks and other facilities, such as the dining, administrative, sports, and social buildings, are similarly outdated and deteriorating. These conditions would continue under the No Action Alternative. There are 2,087 total sleeping spaces available in the POM barracks. The two dining facilities serve 3,400 to 3,600 meals per day for breakfast, lunch, and dinner. The existing barracks and dining facilities would not have the capacity to accommodate the projected increase in student population.

Under the No Action Alternative, one new GIB would be constructed at the POM in FY11. The remaining POM facilities would be unchanged from the existing conditions. Figure 2.4-1 shows the existing POM facilities and the planned development under the No Action Alternative. The FY11 GIB project consists of a new four-story, 105,627 square foot building and a nearby parking lot. The GIB was analyzed along with two others in a 2007 EA (ECW, 2007). The FY08 GIB and FY09 GIB have already been completed and put into service. The FY11 GIB was originally planned for 2010, but its construction was rescheduled to 2011. The intent of the new buildings is to improve the quality of the education facilities at the POM and to support the growing student and faculty populations.

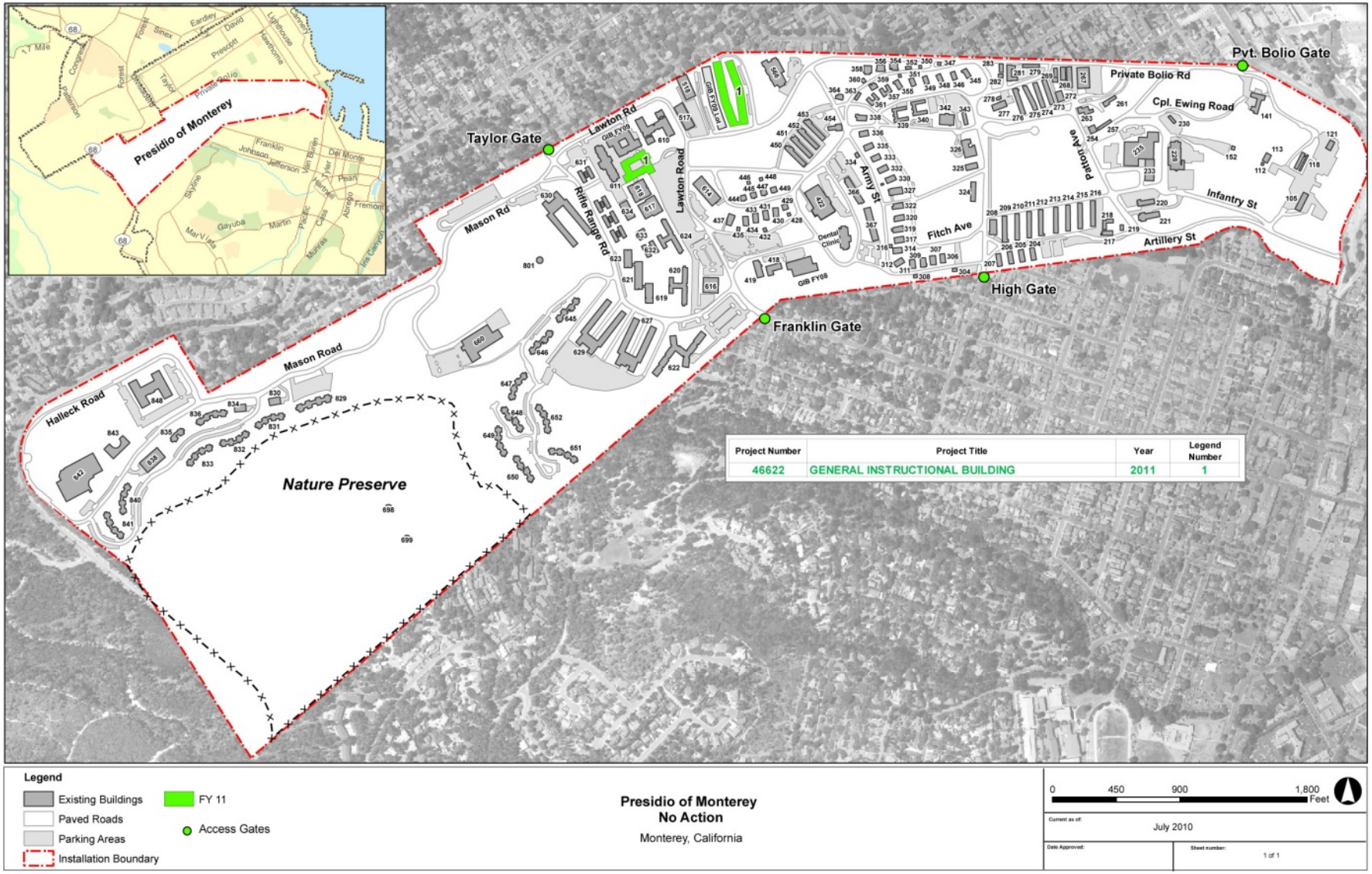


Figure 2.4-1. No Action Alternative – Projects at POM

2.4.2.2 Parking and Traffic

The POM has limited parking capacity. Students and faculty must park far away from classrooms and walk to class. Increased population would increase demand on existing parking spots and lead to a greater shortage of spaces relative to existing conditions. The increased population would also increase traffic within and around the POM. Adjacent cities, such as Monterey and Seaside, have expressed concerns regarding traffic impacts from the projected population increases. Under the No Action Alternative, one parking lot would be constructed as part of the FY11 GIB project. Additional measures, however, would not be undertaken to improve traffic flows and access into the POM. Sections 3.7 and 4.7 further discuss traffic and circulation under the existing and No Action Alternative conditions.

2.4.2.3 Security

The existing facilities at the POM do not have adequate AT/FP measures. The AT/FP measures are implemented to protect military personnel and families, information, facilities, and other critical resources. The AT/FP standards developed by the DoD for new and existing facilities are provided in the 2003 United Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings* (U.S. Army, 2003b). Because POM buildings were built before the 2003 design standards were developed, some facilities do not meet the specifications. The standards include strategies to maximize standoff distances, prevent building collapse, minimize hazardous flying debris, effectively lay out buildings, limit airborne contamination, provide mass notification, and facilitate future upgrades. For existing buildings, standoff distances can be attained by controlling access to parking and perimeters and increasing monitoring. Currently, the POM is not fully implementing the AT/FP standards and personnel are at risk. These conditions would continue under the No Action Alternative.

2.4.3 OMC

The facilities, parking, traffic, and security conditions at the OMC are described below.

2.4.3.1 Facilities

The OMC consists of lands that were formerly part of Fort Ord, a military installation that housed and trained U.S. Army troops from 1940 to 1994. After the closure of Fort Ord, the military retained the 859-acre OMC. The OMC currently contains privately owned family housing, the DoDC-MB, the Garrison Support Center, and community support facilities (e.g., police station, child development center, youth center, and Stilwell Community Center). Available areas in DoDC-MB are also used by DLIFLC to support language instruction. Consequently, the OMC has a mixed use community-like setting in keeping with the populations of civilian employees, service members, and family members. The service members attend the DLIFLC or Naval Postgraduate School or are assigned to units stationed on the Monterey Peninsula.

New and renovated housing under the RCI projects were constructed at the OMC to improve housing conditions for military personnel and their families at the OMC. The RCI redevelopment initiative designed and constructed new housing with respect to the natural and engineered environment to minimize impacts to the environment. The development used native plants for landscaping, sited housing and amenities to reduce dependency on cars, included open space habitat to improve the overall sense of community, and minimized the aboveground utilities.

Projects at the OMC are not included under the No Action Alternative. Consequently, the existing OMC buildings would remain unchanged (Figure 1.5-4). Facilities operated by the DoD would not be upgraded and, like the ones at the POM, would continue to deteriorate from age. The utilities and heating ventilation air conditioning (HVAC) systems do not currently function properly, classroom technology is outdated, and the building exteriors do not abide by current visual design standards. These conditions would continue under the No Action Alternative. Military personnel living at the OMC would not have modern facilities to support social activities and services. Most personnel would need to leave the OMC for these services.

2.4.3.2 Parking and Traffic

In contrast to the POM, parking availability at the OMC is not a primary concern. The OMC is largely a residential area with adequate garage and street parking. Support buildings also have adequate parking spaces. Military personnel and employees living at the OMC must drive to the POM for classes or other jobs. The additional students, employees, and families would likely drive similar routes during similar hours, which would increase traffic along local roads and at access points into the POM.

2.4.3.3 Security

The OMC property is currently an open installation and no special permits or licenses are required. The site is not designed to meet the security standards defined in United Facilities Criteria (UFC) 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*. Under the No Action Alternative, there would be no security measures implemented to protect military personnel. They would continue to be at risk to attacks.

2.5 Alternative 1: POM-centric

Proposed development projects under Alternative 1 involve upgrading existing facilities and constructing new ones to meet the POM Installation's mission. The projects would improve the quality of life for military personnel by providing modern living facilities, equipping classrooms with upgraded technologies to improve teaching techniques, and providing improved amenities. Alternative 1 places future development of primary and support facilities for the DLIFLC at the POM. The new barracks and GIBs would be located at the POM to preserve the centralized location of the DLIFLC. Under Alternative 1, construction of new facilities along with upgrades to existing facilities are also proposed at the OMC, but they are for community services and do not include new barracks or GIBs.

The development opportunity analysis for the POM determined that there is a total of 69 acres of land available for development. While this is a considerable area, the 69 acres are made up of small tracts of land, which adds to the complexity of site planning for development at the POM. Of the 69 acres, there are only 17 sites that exceed one acre in size, with many of the remaining sites too small to support facility development. Because of the limited space available at the POM, demolition of existing buildings and construction over open spaces would need to occur to accommodate new facilities.

The advantages of Alternative 1 are:

- Continued consolidation of all basic language instruction at the POM.
- Collocation of troop housing and support facilities with DLIFLC educational facilities.
- Confine majority of AT/FP requirements to the POM to reduce cost.
- Maximized use of an aesthetically pleasing environment.
- Reduced annual operations and maintenance costs (per square foot) through demolition of older facilities.
- Continued rich history and use of POM as a center for defense language training.

The disadvantages of Alternative 1 are:

- Limited spatial and facility design options at the POM due to steep slopes, force protection buffers, and cultural and environmental conditions.
- Few mitigation and design options available to reduce potential community concerns.
- Decreased parking availability at the POM unless multi-level parking structures are approved, funded, and built.
- Additional burden to on- and off-post roadways from increased traffic at the POM.
- Likely decreased visual aesthetics of the POM due to facility and structure development.
- Increased potential for impacts to the on- and off-post view shed, which could result in complaints or challenges from the community.
- Insufficient water credits at POM to meet water demands of proposed long-range development.
- Insufficient voice and data infrastructure leading to and within the buildings. Additional costs would be incurred to increase these capabilities.

2.5.1 Population Growth

Population growth under Alternative 1 is expected to be the same as under the No Action Alternative. In 2010, the population of military personnel assigned to the installation was 9,313 (Table 2.4-1). By 2030, the assigned military personnel would total slightly more than 10,000. The population of family members is expected to peak at about 9,000.

2.5.1.1 Housing Demand

Although the population projections under Alternative 1 would be the same as under the No Action Alternative, the distribution of people residing at the POM, OMC, or off-post would change. Housing availability at the POM would be higher under Alternative 1 relative to the No Action Alternative. It is assumed that military personnel would choose to live at the POM or OMC rather than live off-post. New housing under Alternative 1 would reduce the number of military personnel and families that would be required to find housing off-post. Living at the POM or OMC would reduce the travel needed to attend classes and to use the other services offered onsite. The estimated residency anticipated at the POM, OMC, and off-post under Alternative 1 is shown in Table 2.5-1. The projected residency was determined assuming that barracks would reach capacity before single-family homes.

Table 2.5-1. Residency at POM, OMC, and Off-post under Alternative 1 (1)

Year	POM	OMC	Off-post	Total
2010	2,500	2,700	12,100	17,400
2011	2,500	2,700	14,100	19,300
2012	2,500	2,700	13,200	18,500
2013 – 2030	2,800	5,200	8,000	16,000

Assumptions:
Barracks at POM and OMC fill first before homes on or off-post.
2.1 persons per household and all military personnel living in OMC or POM homes and off-post have families.
(1) Includes military personnel and family members, values are rounded to the nearest hundred.

Alternative 1 includes constructing new barracks to provide additional housing capacity. Total capacity of the POM barracks under Alternative 1 would be 3,061 beds. Barracks construction would be phased in according to the RPMP project list provided in Section 2.5.3. In the short-range (2011 to 2015), housing capacity would increase with the construction of the Barracks Phase I and Phase IV projects at the POM. Available housing at the POM would further increase in the long-range (2016 to 2030) after the Phase I and Phase II barracks are completed. No residential housing is proposed at the OMC under Alternative 1 so total housing would be unchanged from the No Action Alternative.

2.5.2 Design Guidelines

The building design considerations are presented below.

2.5.2.1 Installation Design Guide

The proposed buildings would accommodate the needs and space requirements of military personnel, faculty, and students at the POM Installation. New construction and all major maintenance, improvements, or renovations of the installation facilities must follow the IDG. The IDG provides design guidance for standardizing and improving the quality of the total environment of the installation. The IDG includes standards and general guidelines for the design issues of site planning; architectural character, colors, and materials; vehicular and pedestrian circulation; and landscape elements, including plant material, seating, signage, lighting, and utilities. The design guidelines incorporate sustainable and quality designs with anti-terrorism, low maintenance, and cultural considerations as well as durability, safety, and compatibility issues.

2.5.2.2 Leadership in Energy and Environmental Design Certification

In 2003, the U.S. Army adopted Leadership in Energy and Environmental Design (LEED) into its Sustainable Project Rating Tool (SPiRiT). In January 2006, the U.S. Army issued a memorandum stating that it will transition from SPiRiT to LEED beginning in FY08. All new vertical construction projects will achieve LEED Silver certification. Additionally, the U.S. Army has committed to adopting LEED for residences.

New buildings at the POM and OMC would be constructed or renovated in accordance with sustainable strategies and LEED standards. Determination of LEED credits would occur in the design phases of the projects. Areas of LEED compliance may include:

- **Sustainable sites:** site selection, alternative transportation, maximizing open space, lower heat island effect, and light pollution reduction.
- **Water efficiency:** water efficient landscaping, 30 percent water use reduction.
- **Energy and atmosphere:** optimize energy performance, enhanced commissioning and refrigerant management.
- **Innovation and design process:** innovation in design, water use reduction, green housekeeping and utilizing a LEED accredited professional.
- **Materials and resources:** use of 10 percent recycled content, 10 percent regional materials, certified wood, diversion of 75 percent of construction waste.
- **Indoor environmental quality:** low-emitting materials, construction management plan, thermal comfort, and increased ventilation.

2.5.2.3 Security

Under Alternative 1, new facilities would be designed to meet the AT/FP requirements outlined in UFC 4-010-01. New facilities at POM and OMC must comply with setbacks from perimeter fences, parking areas, and roadways. For new inhabitable buildings, minimum standoff distances are as follows:

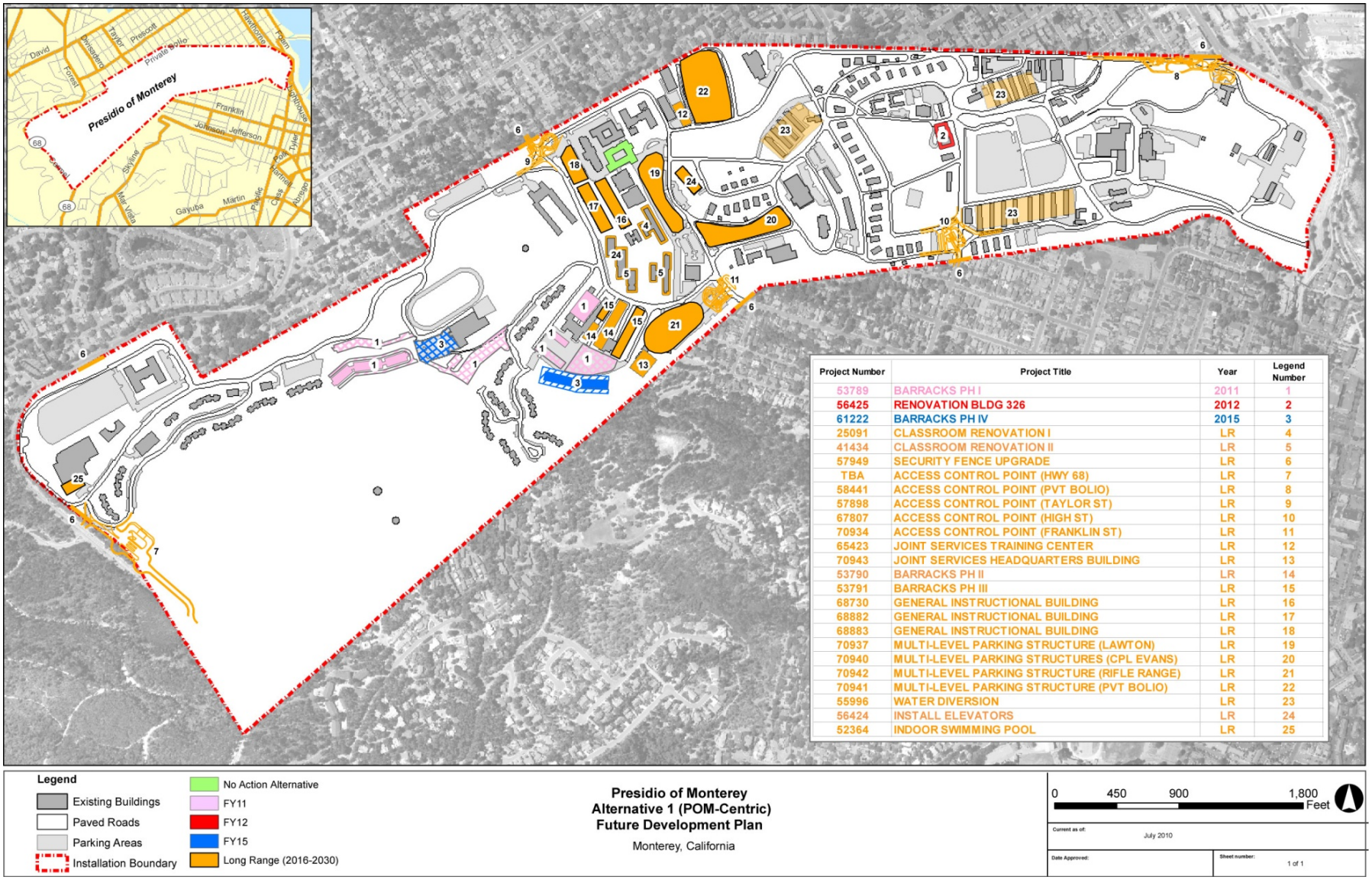
- 148 feet from the perimeter fence.
- 82 feet from internal roads and parking areas for buildings of conventional construction (ones designed only to resist common loadings and environmental effects such as wind, seismic, and snow loads).
- 33 feet from roads and parking areas for buildings of hardened construction (ones that are not specifically designed to resist weapons or explosive effects).

Additional security standards include designing unobstructed spaces around buildings, operating drive up/drop off areas rather than allowing unattended vehicles, controlling access roads, and eliminating parking beneath inhabited buildings or on rooftops. Existing buildings would be upgraded to incorporate such security measures.

2.5.3 Proposed Projects

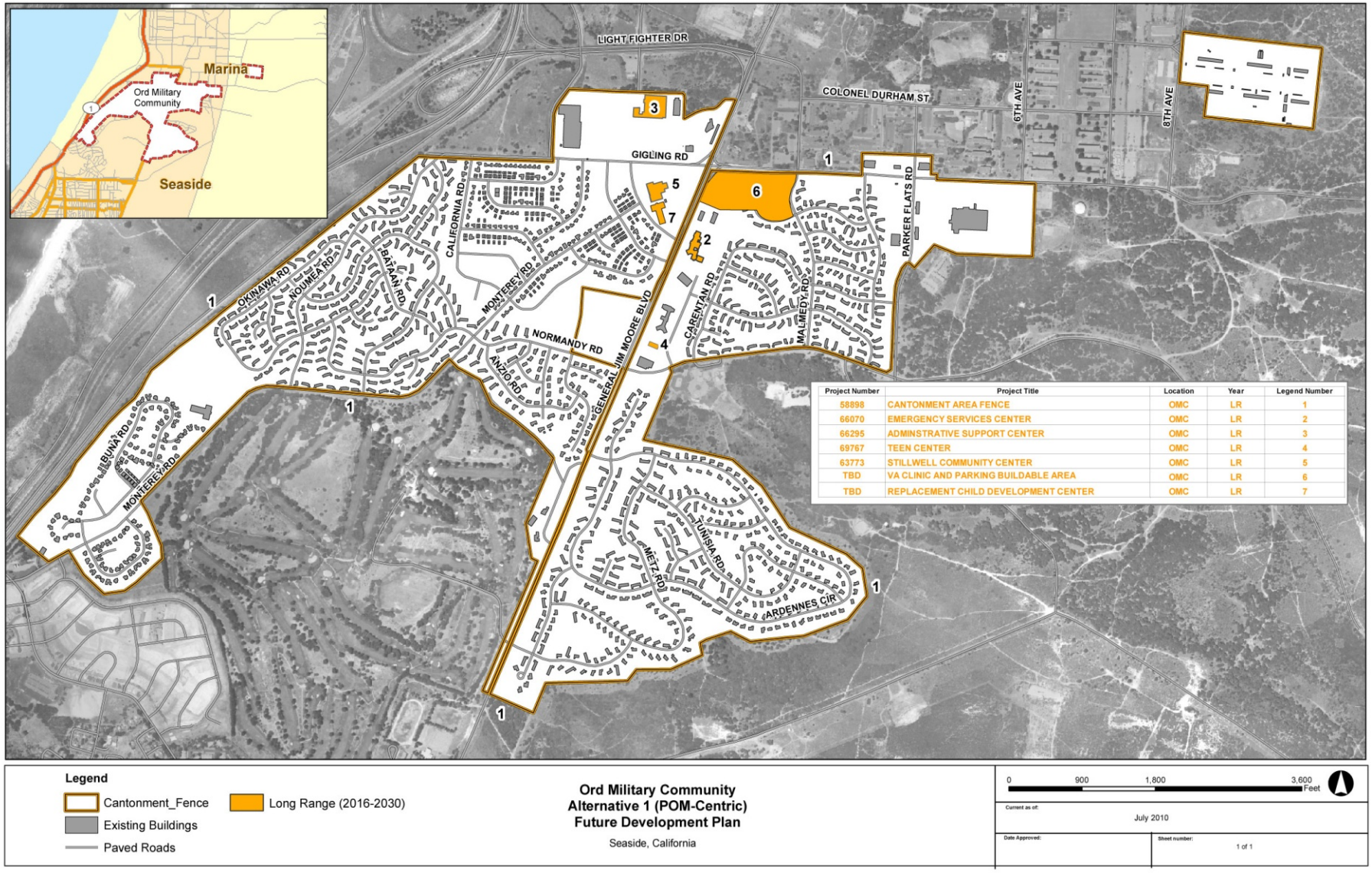
This section describes the new facilities and facility upgrades under Alternative 1. Proposed projects are separated by location (POM or OMC) and into short-range (ones that would begin construction by 2015) and long-range (ones that would begin between 2016 and 2030) categories. Alternative 1 includes 3 short-range projects at the POM and 30 long-range projects at the POM and OMC. The Alternative 1 proposed projects at the POM are shown in Figure 2.5-1 and the projects at the OMC are shown in Figure 2.5-2. Brief project descriptions are provided in Table 2.5-2 that correspond with the figures.

The amount of detail available for each proposed project varied. Generally, project level details are known for the short-range projects, while only programmatic level details are known for the long-range projects. Because the long-range spans a 15-year timeframe, detailed designs have not yet been developed for these projects. At the programmatic level, only general construction and operational details are known, while more site-specific information is available for ones with project level details.



Project Number	Project Title	Year	Legend Number
53789	BARRACKS PH I	2011	1
56425	RENOVATION BLDG 326	2012	2
61222	BARRACKS PH IV	2015	3
25091	CLASSROOM RENOVATION I	LR	4
41434	CLASSROOM RENOVATION II	LR	5
57949	SECURITY FENCE UPGRADE	LR	6
TBA	ACCESS CONTROL POINT (HWY 68)	LR	7
58441	ACCESS CONTROL POINT (PVT BOLIO)	LR	8
57898	ACCESS CONTROL POINT (TAYLOR ST)	LR	9
67807	ACCESS CONTROL POINT (HIGH ST)	LR	10
70934	ACCESS CONTROL POINT (FRANKLIN ST)	LR	11
65423	JOINT SERVICES TRAINING CENTER	LR	12
70943	JOINT SERVICES HEADQUARTERS BUILDING	LR	13
53790	BARRACKS PH II	LR	14
53791	BARRACKS PH III	LR	15
68730	GENERAL INSTRUCTIONAL BUILDING	LR	16
68882	GENERAL INSTRUCTIONAL BUILDING	LR	17
68883	GENERAL INSTRUCTIONAL BUILDING	LR	18
70937	MULTI-LEVEL PARKING STRUCTURE (LAWTON)	LR	19
70940	MULTI-LEVEL PARKING STRUCTURES (CPL EVANS)	LR	20
70942	MULTI-LEVEL PARKING STRUCTURE (RIFLE RANGE)	LR	21
70941	MULTI-LEVEL PARKING STRUCTURE (PVT BOLIO)	LR	22
55996	WATER DIVERSION	LR	23
56424	INSTALL ELEVATORS	LR	24
52364	INDOOR SWIMMING POOL	LR	25

Figure 2.5-1. Alternative 1 – Proposed Projects at POM



Project Number	Project Title	Location	Year	Legend Number
58898	CANTONMENT AREA FENCE	OMC	LR	1
66070	EMERGENCY SERVICES CENTER	OMC	LR	2
66295	ADMINSTRATIVE SUPPORT CENTER	OMC	LR	3
69767	TEEN CENTER	OMC	LR	4
63773	STILLWELL COMMUNITY CENTER	OMC	LR	5
TBD	VA CLINIC AND PARKING BUILDABLE AREA	OMC	LR	6
TBD	REPLACEMENT CHILD DEVELOPMENT CENTER	OMC	LR	7

Figure 2.5-2. Alternative 1 – Proposed Projects at OMC

Table 2.5-2. Alternative 1 (POM-centric) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
POM Improvements					
Short-range Projects (2011 – 2015)					
53789	Barracks Phase I	Demolition and new construction	2011	164,960	Construction of 3 buildings (5-story barracks, dining facility, and company operation facility) and 4 parking lots. New barracks would house 320 military personnel and dining facility would serve 474 people. Support facilities include utilities, exterior lighting, drainage, and a surveillance system. Involves demolition of aging Building 629 (82,583 square feet) and its adjacent parking lot.
56425	Renovation Building 326	Renovation of existing	2012	18,403	Due to delayed maintenance, renovation of Cultural Teaching Center (Weckerling Center) would require major construction to restore its usefulness. Project includes hazardous waste abatement, utility upgrades (electrical, gas, sewer, and water), and structural repairs.
61222	Barracks Phase IV	Demolition and new construction	2015	155,200	Construction of a 5-story barracks building and a multi-level parking structure to provide adequate and updated accommodations for language students from all four services. New 5-story building would house 400 military personnel. The existing single-level parking lot for Building 660 would be replaced with a 3-story parking structure. Support facilities include utilities, exterior lighting, drainage, and a surveillance system.
Long-range Projects (2016 – 2030)					
25091	Classroom Renovation I	Renovation of existing	2018	76,634	Renovation of two 3-story GIBs (Buildings 620 and 624) to current standards by upgrading ventilation, heating, and electrical systems and replacing interior surfaces (floor, ceiling tiles) and exterior doors. Installation of an elevator in each building to meet ADA requirements.
To be determined	Access Control Point (Highway 68)	Demolition and new construction	2016-2020	NA	Construction of an entrance gate and ACP in vicinity of State Highway 68 that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
58441	Access Control Point (Private Bolio)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Private Bolio Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
57898	Access Control Point (Taylor Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Taylor Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
67807	Access Control Point (High Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at High Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.

Table 2.5-2. Alternative 1 (POM-centric) – Proposed Construction Projects and Upgrades

U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
70934	Access Control Point (Franklin Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Franklin Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
57949	Security Fence Upgrade	Demolition and new construction	2016-2020	24,000 lineal feet	Upgrade existing fence to current AT/FP and security standards. Construction, replacement, and repair of fencing and 6 entrance gates. Project is required to prevent unauthorized access to POM.
55996	Water Diversion	Renovation of existing	2016-2020	NA	Drainage improvements to prevent underground water runoff from flooding basement classrooms and laboratories and restricting their use for prolonged periods. Project consists of inlets to receive downspout flows, providing alternate paths of flow, installation of drain trenches, replacement of existing turf landscaping, and street and walkway improvements. The project would occur at three sites: Site I: Buildings 209, 210, 212, 214, 215, and 216 Site II: Buildings 274, 275, and 276 Site III: Buildings 450, 451, 452, 453, 454
56424	Install Elevators	Renovation of existing	2016-2020	NA	Construct elevator shafts and install elevators in 6 multi-story GIBs (Buildings 614, 619, 620, 621, 623, and 624) to comply with ADA. One elevator is required in each GIB to make these facilities more accessible to the aging faculty and the handicapped.
65423	Joint Services Training Center	New construction	2016-2020	12,600	Construction of a general assembly hall with seating for 1,500 to support DLIFLC activities such as lectures, training, meetings, and ceremonies. This new facility would replace the Tin Barn for use for student assemblies. Supporting facilities for the center include utilities, storm drainage, and parking. Heating would be provided by a self-contained gas fired system. The project would replace a portion of the existing Tin Barn parking lot.
70943	Joint Services Headquarters Building	New construction	2016-2020	11,900	Construction of modern command and control facilities for each of the four services to support personnel attending or conducting language training. Involves demolition of Building 622.
70937	Multi-Level Parking Structure (Lawton)	New construction	2016-2020	NA	Construction of new parking west of Lawton Road to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
53790	Barracks Phase II	Demolition and new construction	2016-2020	165,971	Construction of a company operation facility, a battalion headquarters building, and a 4-story barracks that houses 360 military personnel to provide adequate and updated accommodations for language students from all four services. Supporting facilities include utilities, exterior lighting, storm drainage, and a surveillance system. Involves demolition of aging barracks Building 627 (80,286 square feet).
53791	Barracks Phase III	Demolition and new construction	2016-2020	139,160	Construction of a company operation facility, a battalion headquarters building, and a 4-story barracks that houses 320 military personnel to provide adequate and updated accommodations for language students from all four services. Support facilities include utilities, exterior lighting, drainage, and a surveillance system. Involves demolition of aging barracks Building 627 (80,286 square feet).

Table 2.5-2. Alternative 1 (POM-centric) – Proposed Construction Projects and Upgrades

U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
To be determined	General Instructional Building	New construction	2020-2025	25,000	Project replaces scope lost from the FY08 GIB project. Project location has not been determined and is not shown on Figure 2.5-1. Construction of a standard design single-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
68730	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
68882	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
68883	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
70940	Multi-Level Parking Structure (Cpl Evans)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
70941	Multi-Level Parking Structure (Private Bolio)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
70942	Multi-Level Parking Structure (Rifle Range)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
41434	Classroom Renovation II	Renovation of existing	2025-2030	75,320	Renovation of three 3-story GIBs (Buildings 619, 621, and 623) to current standards by upgrading ventilation, heating, and electrical systems and replacing interior surfaces (floor, ceiling tiles) and exterior doors. Installation of an elevator in each building to meet ADA requirements.
52364	Indoor Swimming Pool	New construction	2025-2030	10,000	Construction of an indoor swimming pool to meet training and recreational needs of military personnel. Replaces the need to pay to use the City of Monterey municipal pool. Project would include upgrades to utilities, walks, and drainage.

Table 2.5-2. Alternative 1 (POM-centric) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
OMC Improvements					
Short-range Projects (2011 – 2015)					
NA	None	NA	NA	NA	NA
Long-range Projects (2016 – 2030)					
58898	Cantonment Area Fence	New construction	2016-2020	52,800 lineal feet	Construction of a 10-mile perimeter fence to secure primary cantonment area and to provide a protective barrier for controlled, limited, and exclusion areas at the OMC. Fencing to be constructed to current AT/FP and security standards.
66070	Emergency Services Center	New construction	2016-2020	33,141	Construction of a new facility to house the police and fire departments. The facility consists of an apparatus room as well as primary use and dorm areas. Supporting facilities include utilities, roads and parking, and drainage.
66295	Administrative Support Center	Renovation of existing	2016-2020	88,567	Conversion of an outdated post exchange facility to a garrison/administration facility. Project includes upgrading utilities (gas, electric, sewer, and water) and HVAC systems.
63773	Stilwell Community Center	Renovation of existing and new construction	2016-2020	40,000	Renovation of aging community center and addition of a café and fitness center to consolidate family support services under one roof. The new facility would have space for Morale, Welfare, and Recreation, California Medical Detachment, and RCI services. Project includes upgrades to HVAC and electrical systems, seismic retrofit, AF/FP measures, asbestos and lead-based paint abatement, and supporting facilities such as a remodeled parking lot and drainage upgrades.
To be determined	VA Clinic and Parking Buildable Area	New construction	2016-2020	NA	Construction of a new regional medical facility by Veterans America on OMC land. Project is not part of the POM Installation construction plans.
69767	Teen Center	New construction	2020-2025	11,325	Construction of a facility for youths (ages 6 - 18) for social and recreational activities. Youth center to include an open game area, lab tech and office room, fitness and dining areas, and an arts and crafts area. Facility to have a built up roof and masonry walls and supporting facilities that include utilities, parking, drainage, landscaping, and exterior lighting. Facility to also comply with AT/FP measures and ADA requirements.
To be determined	Replacement Child Development Center	Renovation of existing	2025-2030	23,530	Renovation of existing playground area to meet current safety standards.

2.5.3.1 Short-range Projects

This section presents the new facilities and renovation projects identified for completion by 2015 in the RPMP Short Range Component. The three projects planned for the short-range would be built at the POM and are included in both Alternative 1 (POM-centric) and Alternative 2 (POM and OMC).

Barracks Phase I

The Barracks Phase I project is planned for the western part of the POM. The project consists of unaccompanied personnel housing with related support facilities. The closest ACPs to the barracks would be Taylor Gate on the north side of the POM and the Franklin Gate on the south side. The proposed footprint for the Barracks Phase I project is shown on Figure 2.5-1.

Construction of the Barracks Phase I project is scheduled for FY11. The proposed project would involve demolition of an existing 1950s era barracks (Building 629) and its adjacent parking lot. The project consists of four new parking areas and three new buildings that total 164,960 square feet. The two parking lots near Buildings 627 and 629 would be reconfigured and reconstructed within the existing parking lot. The remaining two parking lots would consist of a new terraced single-level lot south of Building 660 and a new single-level lot north of the new barracks. The development would increase the capacity of the dining facility, provide updated language student accommodations, and develop new command and control facilities. The new barracks would be designed for 320 military personnel, the new dining facility would serve up to 474 people, and the parking lots would have 192 spaces.

Site development would also include removal of trees and existing utilities, excavation, grading, landscaping, and installation of new site utilities. In some instances, these activities would result in excavations around active pedestrian or parking areas. Excavated material would be removed from the area and hauled offsite. Construction of new buildings would require a staging area for equipment and materials. Trucks would transport materials to the site. Equipment based on standard construction industry practices would be used and site activities are expected to be conducted over 10 months, from demolition of the existing building, site preparation, construction, to occupation of the completed facilities.

The new barracks would accommodate military personnel at the POM and provide housing and other general services, such as laundry and mail rooms. Although an individual's stay at the POM would be temporary, new service members would be regularly rotated to the site. Therefore, the barracks would house military personnel year-round. With the typical student schedules, the barracks would be busiest during meal times and the evening hours.

Renovation of Weckerling Center (Building 326)

The restoration of the Weckerling Center (Building 326) would improve the building's usefulness as a cultural center. The Weckerling Center, originally constructed in 1904, is in the historic district of the POM (Figure 1.5-5). The center is used on a daily basis to host cultural events and military or community functions, such as training seminars, ceremonies, conferences, and meetings. The Weckerling Center is 18,403 square feet. Renovation would include cosmetic refurbishment, interior redesign, and structural improvements. The site requires hazardous waste abatement, including interior and exterior lead paint abatement and encapsulation. The work would not alter the size or usage of the building. Building renovation is planned for FY12.

Barracks Phase IV

The Barracks Phase IV project would consist of constructing a 5-story barracks building and a multi-level parking structure (Figure 2.5-1). The barracks would be constructed at the Ravine Site, with two stories in the ravine and three stories above the parking lot level. The barracks would house 400 military personnel and would include general services, such as a mail room and laundry area. The existing single-level parking lot for Building 660 would be replaced with a 3-story parking structure with 300 spaces to accommodate parking for the Phase I and Phase IV barracks projects as well as the adjacent Building 660. Construction of the Barracks Phase IV project is planned for FY15.

Site development and construction activities for the Barracks Phase IV project would be similar to those for the Barracks Phase I project. Barracks construction would require removal of trees. Accommodations would be similar, whereby military personnel would be housed year-round, with new service members regularly rotated to the site.

2.5.3.2 Long-range Projects

The RPMP identified 23 long-range projects at the POM and 7 projects at the OMC under Alternative 1. Footprints of the proposed projects at the POM and OMC are shown in Figure 2.5-1 and Figure 2.5-2, respectively. As exact project start dates are unknown, a range of potential construction years was provided in Table 2.5-2. Multiple projects could be implemented in any one year. More specific information would become available in the future as the RPMP planning progresses and funding is secured. This EIS analyzes the long-range projects at a programmatic level because specific design and construction details would be developed after a project secures funding.

A majority of the projects are proposed to start construction between 2016 and 2020, with the remaining long-range projects scheduled for 2020 through 2030. Projects with details beyond the summaries provided in Table 2.5-2 are described briefly in this section. These include the ACP upgrades, classroom renovation, and Stilwell Community Center renovation. Supplemental environmental documentation would be necessary as the long-range projects move forward into the design and construction phases.

Classroom Renovation I

Two 1950s era GIBs (Buildings 620 and 624) at the POM would be renovated to current language training standards. The proposed improvements to the buildings would include upgrading the ventilation and heating systems, ceiling tiles, window frames, and exterior doors as well as painting the building exteriors and interiors. A new elevator would also be installed in each building to comply with ADA requirements. The renovated classrooms would primarily be in operation during the morning and afternoon hours and closed in the evenings. Both students and faculty would have access to the classrooms.

The project is slated for FY18. As renovation activities are not as intensive as demolition and new construction, this project would not require heavy construction equipment or a large staging area. Activities would largely occur inside the building.

Access Control Point Upgrades

The long-range projects include upgrades to the ACPs at the POM. The upgrades may be funded prior to 2016 as part of Federal economic stimulus efforts. The ACP projects would increase security measures and alleviate traffic in the area by reducing wait times and improving access to the POM. The ACP projects consist of upgrading the POM's four primary gates (Private Bolio, Taylor Street, High Street, and Franklin Street) and constructing a new gate and ACP near State Highway 68.

The proposed upgrades would shift ACP usage to improve access for military personnel, visitors, and delivery vehicles as well as to comply with current AT/FP requirements. Under the proposed upgrades, the Private Bolio ACP would be redesigned to allow full searches of unregistered and registered vehicles prior to entering the POM. The Taylor Street, High Street, and Franklin Street ACPs would continue to serve only registered vehicles.

The renovated ACPs would include a gate house and guard booths, active/passive barriers, over-watch position canopies, traffic control (signs, signals, and sensors), passenger search and identification check canopies, and diesel generators. The entry control stations would also have exterior and interior lighting, heating, and telephone and radio communication systems. Supporting facilities that include storm drainage, electricity, and gas lines would also be provided.

Water Diversion

This project is required to prevent underground water runoff from flooding the basements of classrooms and laboratories at the POM after sustained rainfall events. In the past, wall treatments have been used to waterproof the interior foundation walls, but these treatments have failed due to lack of water runoff barriers or diversion trenches.

The long-range water diversion projects consist of drainage improvements such as installing inlets for receiving flows from downspouts, creating alternative paths of flow, installing drain trenches, replacing existing turf landscaping, and providing surface improvements to street and walkway surfaces. The water diversion improvements would occur at 14 buildings.

Joint Services Training Center

A new 12,600 square foot general assembly hall would be constructed at the POM to support DLIFLC activities such as ceremonies, lectures, and meetings. Currently the Tin Barn, a substandard sheet metal building constructed in 1935 as a cavalry stable, is used for student assemblies. Due to fire regulations, seating in the Tin Barn is limited to 469. The new facility would increase seating to 1,500 people and would see use by the students and faculty. The center would be used for activities such as the annual program reviews, general officers steering meetings, and academic advisory council meetings.

Stilwell Community Center

The existing community center at the OMC would be renovated to consolidate family support services for the military personnel stationed at the DLIFLC. This would incorporate space for the support organizations as well as adding a café and fitness center. The Morale, Welfare, and Recreation group provides food and beverage services and outdoor recreational activities for youths and the U.S. Army community. The California Medical Detachment provides TriCare and a pediatric clinic. The RCI area would include a housing office, café, and fitness center. Additional support areas comprised of a personnel office, retiree office, and thrift shop would also be included. As this project entails renovation and new construction, heavy equipment and demolition would be involved.

2.6 Alternative 2: POM and OMC

Proposed development projects for this alternative include upgrades to existing facilities and construction of new facilities to meet the POM Installation's mission. Under Alternative 2, specific projects proposed for the POM under Alternative 1 would instead be constructed at the OMC. Three GIBs and two barracks complexes (Barracks Phase II and Phase III) would be shifted to the OMC. The change makes demolition of an existing POM barracks (Building 627) unnecessary.

Proposed projects under Alternative 2 would improve the quality of life for military personnel at the POM Installation by providing modern living facilities, equipping classrooms with new technologies, and improving amenities offered on post. Alternative 2 proposes to make the OMC a core part of the DLIFLC.

The development opportunity analysis for the OMC found a total of 153 acres of land available for development. Unlike the POM, many of the buildable areas consist of large parcels of land. Sites at the OMC include the Marshall Park housing area (127 acres), community area (17 acres), and Youth Center area (9 acres).

The advantages of Alternative 2 are:

- Relieves the facility load at the POM to create a less densely developed environment.
- Reduces the future parking demands and vehicular traffic conditions at the POM.
- Use of OMC as a center for defense language learning.
- Reduces the need for phased construction and temporary space assignments during construction.
- Takes advantage of the water credits available at the POM and OMC to support proposed development.
- Encourages the continuation of infrastructure improvements at the OMC, which are underway as part of the Fort Ord Reuse Plan.
- Reduces the cost of construction realized by building more horizontal rather than vertical structures.
- Encourages efficiencies in spatial and functional design at the OMC because new facility layouts would not be as encumbered by existing land uses.
- Reduces the demolition costs at the POM.
- Promotes the "good neighbor" concept with the community around the POM. Decrease the potential for community challenges to actions by distributing the impacts of actions between the POM and OMC.
- Facilitates timely environmental review and construction.
- Protects the historic character of the POM.

The disadvantages of Alternative 2 are:

- Changes the central campus concept and the tradition of having the language school at the POM.
- Increases AT/FP requirements and costs to support development at OMC. Regardless of the Military Construction, Army project specifications, all projects would still require upgrades for security coverage. Fencing improvements are only a portion of the security measures that would be required at ACPs. (This issue may become moot as the U.S. Army may decide independently to implement AT/FP measures at the OMC.)
- Requires demolition of vacant buildings at the OMC and rebuilding of infrastructure to support more dense development. Requires demolition funds; consumption of natural resources would increase with new construction.
- Does not provide voice or data infrastructure in the designated areas so network and phone services would not be available. Additional costs would be incurred to add these capabilities.

2.6.1 Population Growth

Population growth under Alternative 2 is expected to be the same as with Alternative 1 and the No Action Alternative (Table 2.4-1). The growth is discussed is Section 2.4.1.

2.6.1.1 Housing Demand

Although the population projections under Alternative 2 would be the same as the No Action Alternative, the distribution of people living at the POM, OMC, or off-post would change. Alternative 2 proposes increased housing availability at the OMC relative to the No Action Alternative and Alternative 1. The POM would offer increased housing to that of the No Action Alternative but total capacity would be less than proposed under Alternative 1. The conditions would similarly be improved as the barracks are rebuilt and modernized. It is assumed that military personnel would choose to live at the POM or OMC before living off-post. New housing under Alternative 2 would reduce the number of military personnel and families that would be required to find off-post housing. Living at the POM Installation would reduce the travel needed to attend classes and to use the services offered on-post.

Alternative 2 would increase the total capacity at the barracks to 3,589 beds (2,909 beds at POM and 680 beds at OMC). Construction of the barracks would be phased in according to the RPMP project list discussed in Section 2.6.3. New residential housing is not proposed at the OMC under Alternative 2, so it would remain the same as the No Action Alternative.

For analysis purposes, expected residency at the POM, OMC, and off-post housing was estimated for Alternative 2, as shown in Table 2.6-1. The total military population would be the same as the No Action Alternative. The projections assume that barracks would reach capacity before single-family homes.

Table 2.6-1. Residency at POM, OMC, and Off-post under Alternative 2 (1)

Year	POM	OMC	Off-post	Total
2010	2,500	2,700	12,100	17,400
2011	2,500	2,700	14,100	19,300
2012	2,500	2,700	13,200	18,500
2013 – 2030	2,600	5,900	7,000	15,500

Assumptions:
Barracks at POM and OMC fill first before homes on or off-post.
2.1 persons per household, all military personnel living in OMC or POM homes or off-post have families.
(1) Includes military personnel and family members, values are rounded to the nearest hundred.

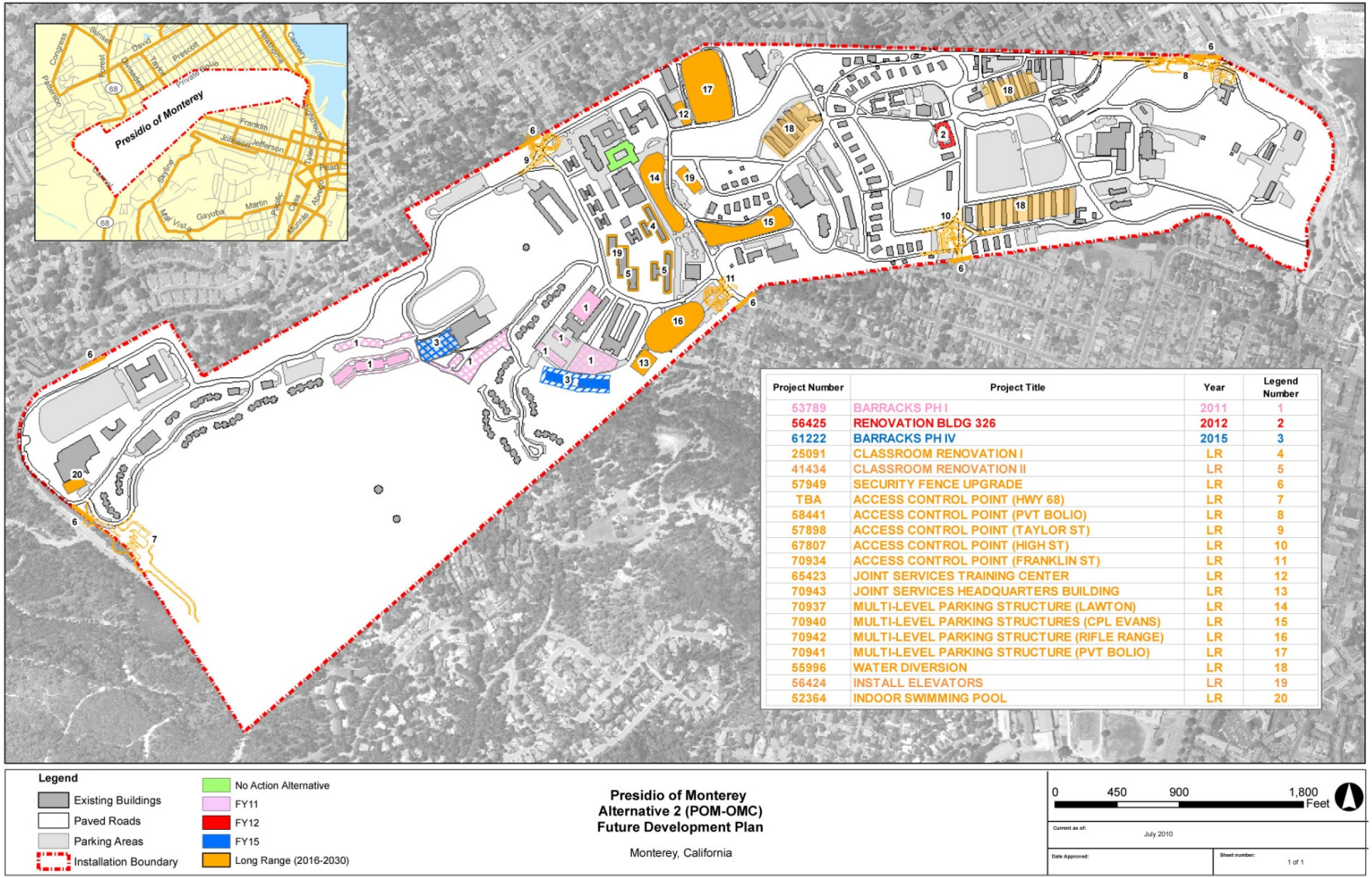
2.6.2 Design Guidelines

The design guidelines relating to IDG, LEED, and AT/FP would be the same as Alternative 1. Additional AT/FP measures would be required because the population would be more spread out than under Alternative 1.

2.6.3 Proposed Projects

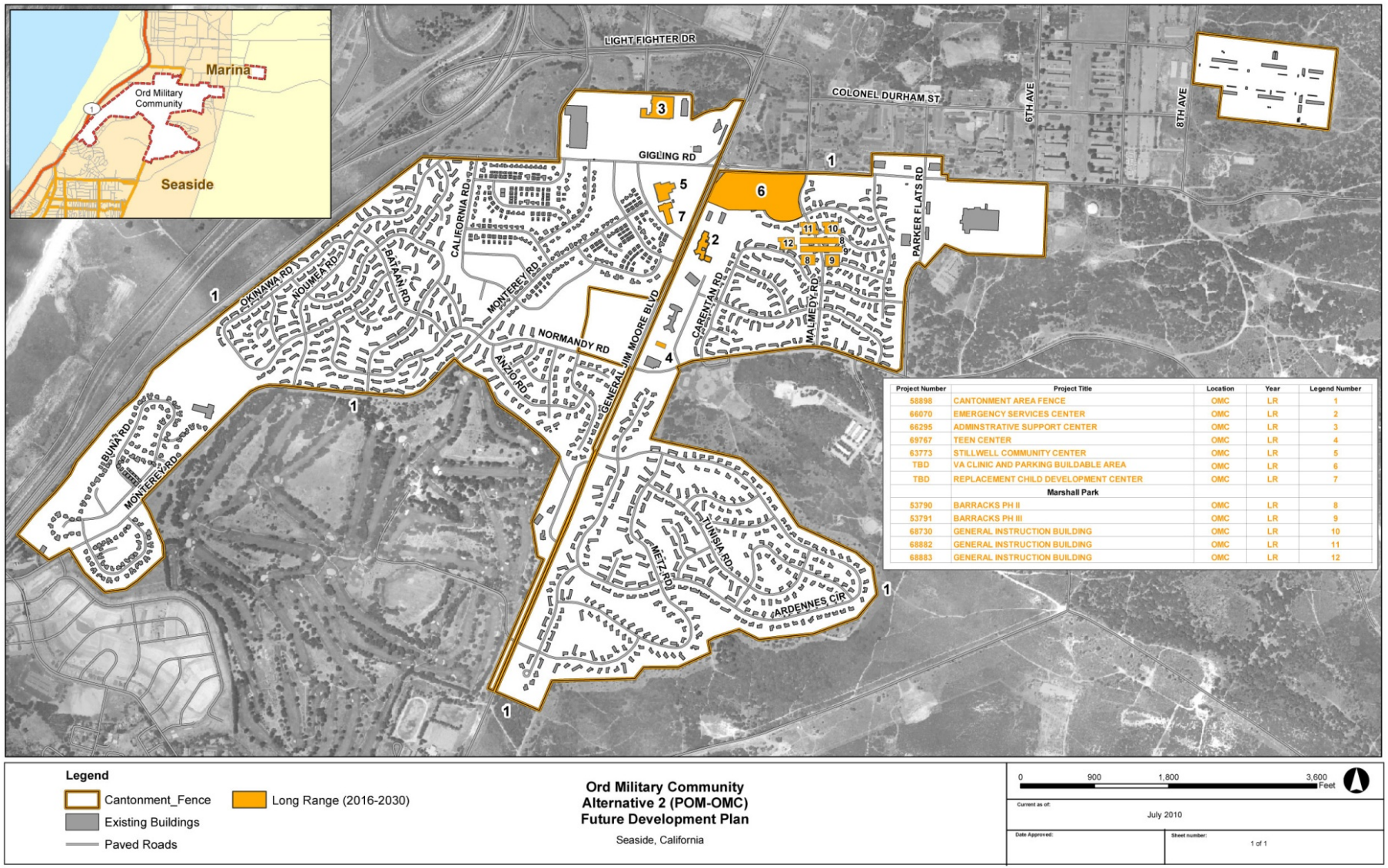
This section describes the new facilities and facility upgrades under Alternative 2. The construction projects proposed at the POM are shown in Figure 2.6-1 and the ones at the OMC are shown in Figure 2.6-2.

Alternative 2 is focused on distributing the buildings between the POM and OMC and establishing the OMC as a core component of the DLIFLC. The short-range projects would be unchanged from Alternative 1, but the distribution of the long-range projects would change. The only difference between the two action alternatives is the placement of five projects. The Barracks Phase II and Phase III projects and three GIBs (each at 110,000 square feet) proposed for the POM under Alternative 1 would be re-located to the OMC under Alternative 2. The project plans and their construction timeframes are identical between Alternative 1 and Alternative 2. Project details available at this time are provided in Table 2.6-2. The long-range projects were analyzed at a programmatic level for this EIS as specific design and construction details would be developed after a project secures funding.



Project Number	Project Title	Year	Legend Number
53789	BARRACKS PH I	2011	1
56425	RENOVATION BLDG 326	2012	2
61222	BARRACKS PH IV	2015	3
25091	CLASSROOM RENOVATION I	LR	4
41434	CLASSROOM RENOVATION II	LR	5
57949	SECURITY FENCE UPGRADE	LR	6
TBA	ACCESS CONTROL POINT (HWY 68)	LR	7
58441	ACCESS CONTROL POINT (PVT BOLIO)	LR	8
57898	ACCESS CONTROL POINT (TAYLOR ST)	LR	9
67807	ACCESS CONTROL POINT (HIGH ST)	LR	10
70934	ACCESS CONTROL POINT (FRANKLIN ST)	LR	11
65423	JOINT SERVICES TRAINING CENTER	LR	12
70943	JOINT SERVICES HEADQUARTERS BUILDING	LR	13
70937	MULTI-LEVEL PARKING STRUCTURE (LAWTON)	LR	14
70940	MULTI-LEVEL PARKING STRUCTURES (CPL EVANS)	LR	15
70942	MULTI-LEVEL PARKING STRUCTURE (RIFLE RANGE)	LR	16
70941	MULTI-LEVEL PARKING STRUCTURE (PVT BOLIO)	LR	17
55996	WATER DIVERSION	LR	18
56424	INSTALL ELEVATORS	LR	19
52364	INDOOR SWIMMING POOL	LR	20

Figure 2.6-1. Alternative 2 – Proposed Projects at POM



Project Number	Project Title	Location	Year	Legend Number
58898	CANTONMENT AREA FENCE	OMC	LR	1
66070	EMERGENCY SERVICES CENTER	OMC	LR	2
66295	ADMINSTRATIVE SUPPORT CENTER	OMC	LR	3
69767	TEEN CENTER	OMC	LR	4
63773	STILLWELL COMMUNITY CENTER	OMC	LR	5
TBD	VA CLINIC AND PARKING BUILDABLE AREA	OMC	LR	6
TBD	REPLACEMENT CHILD DEVELOPMENT CENTER	OMC	LR	7
	Marshall Park			
53790	BARRACKS PH II	OMC	LR	8
53791	BARRACKS PH III	OMC	LR	9
68730	GENERAL INSTRUCTION BUILDING	OMC	LR	10
68882	GENERAL INSTRUCTION BUILDING	OMC	LR	11
68883	GENERAL INSTRUCTION BUILDING	OMC	LR	12

Figure 2.6-2. Alternative 2 – Proposed Projects at OMC

Table 2.6-2. Alternative 2 (POM and OMC) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
POM Improvements					
Short-range Projects (2011 – 2015)					
53789	Barracks Phase I	Demolition and new construction	2011	164,960	Construction of 3 buildings (5-story barracks, dining facility, and company operation facility) and 4 parking lots. New barracks would house 320 military personnel and dining facility would serve 474 people. Support facilities include utilities, exterior lighting, drainage, and a surveillance system. Involves demolition of aging Building 629 (82,583 square feet) and its adjacent parking lot.
56425	Renovation Building 326	Renovation of existing	2012	18,403	Due to delayed maintenance, renovation of Cultural Teaching Center (Weckerling Center) would require major construction to restore its usefulness. Project includes hazardous waste abatement, utility upgrades (electrical, gas, sewer, and water), and structural repairs.
61222	Barracks Phase IV	Demolition and new construction	2015	155,200	Construction of a 5-story barracks building and a multi-level parking structure to provide adequate and updated accommodations for language students from all four services. New 5-story building would house 400 military personnel. The existing single-level parking lot for Building 660 would be replaced with a 3-story parking structure. Support facilities include utilities, exterior lighting, drainage, and a surveillance system.
Long-range Projects (2016 – 2030)					
25091	Classroom Renovation I	Renovation of existing	2018	76,634	Renovation of two 3-story GIBs (Buildings 620 and 624) to current standards by upgrading ventilation, heating, and electrical systems and replacing interior surfaces (floor, ceiling tiles) and exterior doors. Installation of an elevator in each building to meet ADA requirements.
To be determined	Access Control Point (Highway 68)	Demolition and new construction	2016-2020	NA	Construction of an entrance gate and ACP in vicinity of State Highway 68 that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
58441	Access Control Point (Private Bolio)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Private Bolio Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
57898	Access Control Point (Taylor Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Taylor Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
67807	Access Control Point (High Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at High Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.

Table 2.6-2. Alternative 2 (POM and OMC) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
70934	Access Control Point (Franklin Street)	Demolition and new construction	2016-2020	NA	Construction of an ACP at Franklin Street Gate that meets AT/FP requirements. Includes a guard house, visitor center, barrier system, CCTV, traffic control, and passenger and vehicle search areas. Supporting facilities include utilities, storm drainage, roads, and parking.
57949	Security Fence Upgrade	Demolition and new construction	2016-2020	24,000 lineal feet	Upgrade existing fence to current AT/FP and security standards. Construction, replacement, and repair of fencing and 6 entrance gates. Project is required to prevent unauthorized access to POM.
55996	Water Diversion	Renovation of existing	2016-2020	NA	Drainage improvements to prevent underground water runoff from flooding basement classrooms and laboratories and restricting their use for prolonged periods. Project consists of inlets to receive downspout flows, providing alternate paths of flow, installation of drain trenches, replacement of existing turf landscaping, and street and walkway improvements. The project would occur at three sites: Site I: Buildings 209, 210, 212, 214, 215, and 216 Site II: Buildings 274, 275, and 276 Site III: Buildings 450, 451, 452, 453, 454
56424	Install Elevators	Renovation of existing	2016-2020	NA	Construct elevator shafts and install elevators in 6 multi-story GIBs (Buildings 614, 619, 620, 621, 623, and 624) to comply with ADA. One elevator is required in each GIB to make these facilities more accessible to the aging faculty and the handicapped.
65423	Joint Services Training Center	New construction	2016-2020	12,600	Construction of a general assembly hall with seating for 1,500 to support DLIFLC activities such as lectures, training, meetings, and ceremonies. This new facility would replace the Tin Barn for use for student assemblies. Supporting facilities for the center include utilities, storm drainage, and parking. Heating would be provided by a self-contained gas fired system. The project would replace a portion of the existing Tin Barn parking lot.
70943	Joint Services Headquarters Building	New construction	2016-2020	11,900	Construction of modern command and control facilities for each of the four services to support personnel attending or conducting language training. Involves demolition of Building 622.
70937	Multi-Level Parking Structure (Lawton)	New construction	2016-2020	NA	Construction of new parking west of Lawton Road to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
To be determined	General Instructional Building	New construction	2020-2025	25,000	Project replaces scope lost from the FY08 GIB project. Project location has not been determined and is not shown on Figure 2.6-1. Construction of a standard design single-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
70940	Multi-Level Parking Structure (Cpl Evans)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.

Table 2.6-2. Alternative 2 (POM and OMC) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
70941	Multi-Level Parking Structure (Private Bolio)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
70942	Multi-Level Parking Structure (Rifle Range)	New construction	2025-2030	NA	Construction of new parking to replace parking areas lost from associated new building construction. Assumes standard design for about 300 vehicles and up to 3 floors.
41434	Classroom Renovation II	Renovation of existing	2025-2030	75,320	Renovation of three 3-story GIBs (Buildings 619, 621, and 623) to current standards by upgrading ventilation, heating, and electrical systems and replacing interior surfaces (floor, ceiling tiles) and exterior doors. Installation of an elevator in each building to meet ADA requirements.
52364	Indoor Swimming Pool	New construction	2025-2030	10,000	Construction of an indoor swimming pool to meet training and recreational needs of military personnel. Replaces the need to pay to use the City of Monterey municipal pool. Project would include upgrades to utilities, walks, and drainage.
OMC Improvements					
Short-range Projects (2011 – 2015)					
NA	None	NA	NA	NA	NA
Long-range Projects (2016 – 2030)					
58898	Cantonment Area Fence	New construction	2016-2020	52,800 lineal feet	Construction of a 10-mile perimeter fence to secure primary cantonment area and to provide a protective barrier for controlled, limited, and exclusion areas at the OMC. Fencing to be constructed to current AT/FP and security standards.
66070	Emergency Services Center	New construction	2016-2020	33,141	Construction of a new facility to house the police and fire departments. The facility consists of an apparatus room as well as primary use and dorm areas. Supporting facilities include utilities, roads and parking, and drainage.
66295	Administrative Support Center	Renovation of existing	2016-2020	88,567	Conversion of an outdated post exchange facility to a garrison/administration facility. Project includes upgrading utilities (gas, electric, sewer, and water) and HVAC systems.
63773	Stilwell Community Center	Renovation of existing and new construction	2016-2020	40,000	Renovation of aging community center and addition of a café and fitness center to consolidate family support services under one roof. The new facility would have space for Morale, Welfare, and Recreation, California Medical Detachment, and RCI services. Project includes upgrades to HVAC and electrical systems, seismic retrofit, AF/FP measures, asbestos and lead-based paint abatement, and supporting facilities such as a remodeled parking lot and drainage upgrades.
To be determined	VA Clinic and Parking Buildable Area	New construction	2016-2020	NA	Construction of a new regional medical facility by Veterans America on OMC land. Project is not part of the POM Installation construction plans.

Table 2.6-2. Alternative 2 (POM and OMC) – Proposed Construction Projects and Upgrades					
U.S. Army Project No.	New and Upgraded Facilities	Type of Activity	Construction Date	Square Footage	Description
53790	Barracks Phase II	Demolition and new construction	2016-2020	165,971	Construction of a company operation facility, a battalion headquarters building, and a 4-story barracks that houses 360 military personnel to provide adequate and updated accommodations for language students from all four services. Supporting facilities include utilities, exterior lighting, storm drainage, and a surveillance system. Involves demolition of aging barracks Building 627 (80,286 square feet).
53791	Barracks Phase III	Demolition and new construction	2016-2020	139,160	Construction of a company operation facility, a battalion headquarters building, and a 4-story barracks that houses 320 military personnel to provide adequate and updated accommodations for language students from all four services. Support facilities include utilities, exterior lighting, drainage, and a surveillance system. Involves demolition of aging barracks Building 627 (80,286 square feet).
68730	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
68882	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
68883	General Instructional Building	New construction	2020-2025	110,000	Construction of a standard design 3- to 6-story GIB to accommodate and provide modern facilities for the anticipated future growth of students. The GIB includes about 100 classrooms and consolidates language training to improve both effectiveness and efficiency of instruction. Support facilities include utilities, fire protection and alarm systems, parking, drainage, information/network support systems, and access for persons with disabilities.
69767	Teen Center	New construction	2020-2025	11,325	Construction of a facility for youths (ages 6 - 18) for social and recreational activities. Youth center to include an open game area, lab tech and office room, fitness and dining areas, and an arts and crafts area. Facility to have a built up roof and masonry walls and supporting facilities that include utilities, parking, drainage, landscaping, and exterior lighting. Facility to also comply with AT/FP measures and ADA requirements.
To be determined	Replacement Child Development Center	Renovation of existing	2025-2030	23,530	Renovation of existing playground area to meet current safety standards.

2.6.3.1 Short-range Projects

The short-range projects under Alternative 2 are the same as Alternative 1. These consist of the Barracks Phase I and Phase IV projects and renovation of the Weckerling Center. The projects are scheduled for development by 2015, as described in Section 2.5.3.1.

2.6.3.2 Long-range Projects

The projects proposed for the long-range are similar to Alternative 1. The only difference between the alternatives is the locations of two barracks projects (Barracks Phase II and III) and three GIBs. Under Alternative 2, the buildings would be developed at the OMC instead of at the POM. The new barracks and classrooms would permanently support military personnel and teachers at the OMC.

The buildings would have the same capacity as those proposed under Alternative 1, but would not need to have as many vertical stories. Operating hours for classes, activities, and facility access would be similar to Alternative 1. Parking demands would be alleviated since classrooms would be divided between the POM and OMC and some military personnel and teachers would go to the OMC for classes.

Construction staging and scheduling for the new buildings would depend on whether the buildings were constructed at the POM or OMC. More space would be available for staging and storage of materials for construction occurring at the OMC. Construction scheduling would not need to be phased because of space limitations. Construction for Alternative 2 could be completed over a shorter time period relative to Alternative 1 partly as a result of the space limitations at the POM.

2.7 Environmentally Preferable Alternative

The U.S. Army's objective is to comply with the environmental laws and regulations and to fulfill its commitment to a sustainable environment. The environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment. It is also the alternative that best protects, preserves, and enhances historic, cultural, and natural resources (CEQ, 1981).

The CEQ provides direction that "…the environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of the National Environmental Policy Act…" which considers:

- Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations.
- Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings.
- Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences.
- Preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice.
- Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities.
- Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (42 USC 4331).

This environmentally preferable alternative incorporates the POM Installation's Real Property Vision, goals, and objectives with commitment to the assigned service members, civilian workforce, and family members while incurring the least impacts to the environment.

This section focuses on the potential impacts to each of the resource areas from the No Action Alternative and the action alternatives, Alternative 1 and Alternative 2. A summary of the potential impacts is provided in Table 2.7-1. The impact summary is the arithmetic total of resource areas in each impact category. The details for each resource, as presented in Chapter 4 – Environmental Consequences and Mitigations, are shown in Table 2.7-2. The U.S. Army color-coded reporting system was used to provide a quick reference guide of the potential human and environmental impacts. Olive green reflects alternatives with beneficial effects, light green indicates no impact or less than significant impact, yellow indicates areas with significant impacts that can be reduced using mitigation, and red indicates impacts that are significant and unavoidable.

Table 2.7-1. Comparison of Alternatives: Impact Summary

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Beneficial Impact	3	7	7
No Impact	22	9	9
Less than Significant	13	13	16
Less than Significant with Mitigation	4	16	14
Significant and Unavoidable	5	2	1

Table 2.7-2. Comparison of Alternatives: Impacts by Resource Area

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Water Supply Projected water demand exceeds available supply at POM	Less than Significant	Significant and Unavoidable	Less than Significant
Water Supply Projected water demand exceeds available supply at OMC	Less than Significant	Less than Significant	Less than Significant
Geology, Soils, and Mineral Resources Potential for increased soil erosion during construction	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Geology, Soils, and Mineral Resources Potential for adverse effects from seismic activity	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Air Quality Construction impacts would exceed applicable air quality thresholds	Less than Significant with Mitigation	Less than Significant	Less than Significant
Air Quality Operation impacts would exceed applicable air quality thresholds	No Impact	Less than Significant	Less than Significant
Air Quality Construction impacts would result in substantial fugitive dust	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Vegetation and Wildlife Impacts to special status species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Vegetation and Wildlife Impacts to migratory birds	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Vegetation and Wildlife Introduction of exotic species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Land Use Changes to existing or planned land uses	No Impact	No Impact	No Impact

Table 2.7-2. Comparison of Alternatives: Impacts by Resource Area			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Land Use Conflicts with local land use policies	No Impact	No Impact	No Impact
Population and Housing Increased population at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Improved housing facilities at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Reduced demand for housing off-post	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Traffic and Transportation Increased traffic volumes on internal POM and OMC roadways	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Increased delay on internal POM and OMC intersections	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Increased vehicle queuing at ACP locations	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Traffic and Transportation Introduction of safety hazards on internal POM and OMC roadways	No Impact	Less than Significant	Less than Significant
Traffic and Transportation Substantial deterioration of physical roadway conditions	No Impact	Less than Significant	Less than Significant
Noise Temporary noise increases from construction activities	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Noise Long-term noise increases from increased travel to and from the POM and OMC	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased electricity, gas, and communication service demands for POM and OMC	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased solid waste	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased demand on wastewater and storm drain distribution systems	Less than Significant	Less than Significant	Less than Significant
Utilities and Public Services Increased demand on public schools	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable
Hazardous, Toxic, and Radioactive Wastes Contaminant release from modified landfill cap	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Hazardous, Toxic, and Radioactive Wastes Release of asbestos-containing containing materials or lead based paint to the environment	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Hazardous, Toxic, and Radioactive Wastes Impacts in using hazardous substances during construction	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Public Health and Safety Pose a risk to public health and safety through the use of construction vehicles, equipment, and general construction activities	Less than Significant	Less than Significant	Less than Significant

Table 2.7-2. Comparison of Alternatives: Impacts by Resource Area			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Public Health and Safety Increase the dangers to public health and safety from wildfires or tsunamis	No Impact	Less than Significant	Less than Significant
Public Health and Safety Impede planned evacuation routes	No Impact	No Impact	No Impact
Public Health and Safety Impede emergency service vehicles and routes	No Impact	No Impact	No Impact
Public Health and Safety Increase the demand for emergency services off-post	No Impact	No Impact	No Impact
Socioeconomics Temporary increases in economic activity from construction spending and labor	Beneficial Impact	Beneficial Impact	Beneficial Impact
Socioeconomics Long-term increases in employment from hiring teachers	Beneficial Impact	Beneficial Impact	Beneficial Impact
Socioeconomics Long-term increases in economic activity in the region from increased student population	Beneficial Impact	Beneficial Impact	Beneficial Impact
Environmental Justice Disproportionately high and adverse effects to a minority or low-income population.	No Impact	No Impact	No Impact
Visual, Scenic, and Aesthetic Resources Short-range projects would affect scenic vistas from surrounding neighborhoods	Less than Significant	Less than Significant	Less than Significant
Visual, Scenic, and Aesthetic Resources Short-range projects would substantially alter the existing visual character of an area	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Visual, Scenic, and Aesthetic Resources Long-range projects at POM would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant with Mitigation	Less than Significant
Visual, Scenic, and Aesthetic Resources Long-range projects at OMC would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant	Less than Significant
Visual, Scenic, and Aesthetic Resources Long-range projects at POM would substantially alter the existing visual character of an area	No Impact	Less than Significant with Mitigation	Less than Significant
Visual, Scenic, and Aesthetic Resources Compliance with existing Installation Design Guide	No Impact	No Impact	No Impact
Historic and Cultural Resources Impacts to Historic or Cultural Resources	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Growth Inducing Induce growth from construction of housing	No Impact	No Impact	No Impact
Growth Inducing Induce substantial economic growth	No Impact	No Impact	No Impact

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3. AFFECTED ENVIRONMENT

3.1 Water Supply

This section describes the potable water supply available to the POM and OMC. Potable water is water that is drinkable based on health and aesthetic standards. The POM and OMC each has one supply source used to meet all water needs, such as drinking, domestic use, and irrigation.

3.1.1 Study Area

The study area is encompassed by the physical boundaries of the POM and OMC, as described in Chapter 1.

3.1.2 Regulatory Setting

The following section describes the federal, state, and local regulations and agreements applicable to the water supplies of the study area.

3.1.2.1 Federal

The federal regulation applicable to the proposed project is described below.

Safe Drinking Water Act

Enacted in 1974, the Safe Drinking Water Act (SDWA) gave the U.S. Environmental Protection Agency (U.S. EPA) the authority to establish drinking water regulations to protect human health from contaminants in the nation's drinking water supply (Title XIV, Part B). As a result, the U.S. EPA set primary (health based) and secondary (aesthetic based) drinking water standards. The primary drinking water standards consist of contaminant-specific standards, known as Maximum Contaminant Levels (MCL), which are enforceable at the federal level. Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic or aesthetic effects, such as taste or color.

3.1.2.2 State

The state regulations applicable to the proposed project are described in this section.

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act (Porter-Cologne) granted statutory authority to the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs) operating under the SWRCB. Per the California Water Code, the SWRCB regulates statewide water quality standards programs and is responsible for the allocation and determination of surface water rights (Jones & Stokes, 2008). Appropriative water rights allow surface water diversions for beneficial uses. Prior to 1914, appropriative water rights could be attained by posting a written notice and recording a copy with the County Recorders Office that stated the diversion amount and purpose, place of use, and the means for diverting the water (SWRCB and CalEPA, 1995). Since 1914, an appropriative water right can only be obtained through an application with the SWRCB, which can issue a water rights permit if unappropriated water is shown to be available (Jones & Stokes, 2008).

State Water Resources Control Board Order No. 95-10

The SWRCB adopted Order No. 95-10, *Order on Four Complaints Filed Against the California-American Water Company, Carmel River, Monterey County*, in 1995 to address complaints of over-pumping of the Carmel Valley Groundwater Basin (Department of Water Resources [DWR] Basin #3-7), as shown on Figure 3.1-1. The proposed cease and desist order was against California American Water Company (Cal Am) for unauthorized diversion of water from the Carmel River in Monterey County. Order 95-10 stated that Cal Am, which supplies water to the POM, was diverting 10,730 acre feet per year (AFY) from the Carmel River without a valid water right and was required to reduce its pumping by that amount. Cal Am was thus forced to find an alternate water source to replace approximately 75 percent of its annual supply. Cal Am has implemented water conservation measures to reduce demand and has increased its pumping from the nearby Seaside Area Subbasin to supplement its water supply. However, the Seaside Area Subbasin has since been adjudicated and pumping from the aquifer restricted. Cal Am has explored potential regional water projects to develop a new reliable water supply for its customers, but a new supply has not yet been established.

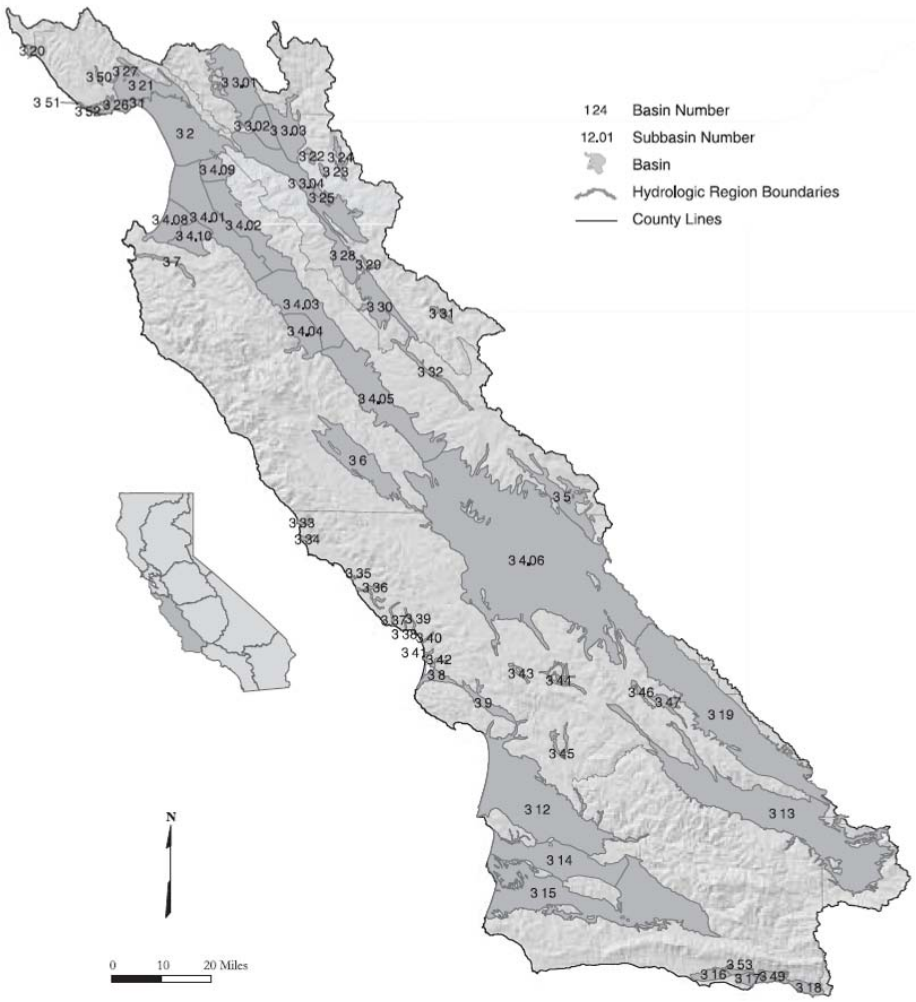

Figure 3.1-1. Carmel Valley Groundwater Basin (3-7) and Salinas Valley Groundwater Basin (3-4)
Source: DWR, 2003

Seaside Area Subbasin Adjudication

Under court adjudication, such as for the Seaside Area Subbasin, a court decides the amount of groundwater that can rightfully be extracted by each landowner or party overlying the groundwater basin. The court also appoints a Watermaster to oversee the judgment. The Seaside Area Subbasin (DWR Basin #3-4.08), which is part of the Salinas Valley Groundwater Basin, was adjudicated in 2006 due to overdraft conditions (Case No. M666343). Long-term pumping to meet demands in the Monterey area had caused a long-term decline in water levels, which resulted in seawater intrusion in some groundwater aquifers of the Salinas Valley Groundwater Basin. The conditions were exacerbated when Order 95-10 limited the available supply from the Carmel Valley Groundwater Basin, resulting in increased production in the nearby Seaside Area Subbasin (AMBAG, 2002). The adjudication decision mandated that groundwater pumping had to decrease until the defined operating yield (5,600 AFY) of the subbasin reached the natural "safe yield" of 3,000 AFY (WMG and RMC, 2007). A Watermaster comprised of 9 local entities was formed to oversee the subbasin.

3.1.2.3 Local

Water allocations to the POM and OMC are determined by agreements between the U.S. Army, water purveyors, and water management agencies. Two regional water management agencies have jurisdiction over the water supplies for the POM and OMC. The Monterey County Water Resources Agency (MCWRA) regulates surface water and groundwater drawn from the Salinas River and Salinas Valley Groundwater Basin, respectively. The Monterey Peninsula Water Management District (MPWMD) is responsible for water drawn from the Carmel River and Carmel Valley Groundwater Basin, as well as groundwater pumped from the Seaside Area Subbasin of the Salinas Valley Groundwater Basin. Further details of the POM and OMC water supply and demand conditions are provided in Appendix A, Revised Water Impact Analysis.

Water at the POM is supplied by Cal Am within the jurisdiction of the MPWMD. The POM water supply, which totals 220 AFY, is part of the City of Monterey's water allocation from the MPWMD. The original POM allocation of 199.365 AFY was increased by 20.6 AFY from water permits approved for three GIBs and the FY05 dental clinic (Malcolm Pirnie, 2006), as shown in Table 3.1-1. Two of the three GIBs (FY08 and FY09) have been completed and brought online. The third GIB was rescheduled from FY10 to FY11 and would be constructed under the No Action Alternative.

Water at the OMC is provided by Marina Coast Water District (MCWD) within the jurisdiction of the MCWRA and MPWMD. The water service was transferred from the U.S. Army to MCWD when Fort Ord was closed. The OMC retained 1,691 AFY of water rights from the 6,600 AFY held by former Fort Ord. Of this, 114 AFY were transferred as part of the City of Seaside Land Swap Agreement, leaving the OMC with 1,577 AFY of available supply (Table 3.1-1).

Table 3.1-1. Existing Conditions – Water Availability at POM and OMC

Type	POM (AFY)	OMC (AFY)
2005 annual usage	198.6	869
New demand (2006 - 2010):		
Dental clinic and GIBs (FY08 and FY09)	12.9	0
RCI housing and facilities	0	351.4
Demand reduction (water savings) (1)	(27.9)	0
Total existing demand (2)	183.6	1,220.4
Water rights (3)	199.4	1,691
Water permits (4)	20.6	0
Water transfer (City of Seaside Land Swap)	0	(114)
Total water available	220	1,577
Excess or shortfall (5)	36.4	356.6

Source: Malcolm Pirnie, 2006

(1) From high efficiency clothes washer replacement in 2005 (MPWMD, 2010).

(2) Existing conditions = July 2010

(3) POM allocation from MPWMD. OMC water rights retained from former Fort Ord.

(4) POM water permits for dental clinic and three GIBs (FY08, FY09, and FY11). FY11 GIB construction under the No Action Alternative.

(5) Excess or shortfall = Water available – Water demand

3.1.3 Affected Environment

This section presents the existing water supply and demand conditions within the study area.

3.1.3.1 Surface Water

Onsite surface water is not a stable or reliable water source for the POM and OMC. Permanent surface water features, like streams and lakes, are not present. The nearest feature at the POM is one intermittent stream along the POM's southeastern boundary. Because of the dune characteristics at the OMC, infiltration rates are high in the sand and gravelly soils and surface water runoff is minimal.

3.1.3.2 Groundwater

Groundwater pumped from two groundwater basins (Salinas Valley and Carmel Valley Groundwater Basins) in DWR's Central Coast hydrologic region is the main source of potable water to the POM and OMC. The POM boundary overlaps two Salinas Valley Groundwater Basin subbasins, the Seaside Area Subbasin and the 180/400 Foot Aquifer Subbasin, and is northeast of the Carmel Valley Groundwater Basin. The OMC is located above the Seaside Area Subbasin and near the adjacent 180/400 Foot Aquifer Subbasin.

Instead of direct pumping from the underlying aquifers, the POM and OMC are supplied water from two purveyors, Cal Am and MCWD, respectively, as described in Section 3.1.3.3.

3.1.3.3 Wholesale Water Supply

Water service to the POM is provided by Cal Am, while water service to the OMC is from MCWD. The water supplies of both purveyors meet drinking water standards and requirements. Additional details on the water supplies and demands at the POM and OMC are provided in Appendix A, Revised Water Impact Analysis.

POM

Because limited groundwater is found in the underlying bedrock, potable water to the POM is supplied by Cal Am within the jurisdiction of the MPWMD. Cal Am's water supply comes almost entirely from a network of groundwater wells drawing from the Carmel Valley Groundwater Basin and the Seaside Area Subbasin. The remainder is supplied from the San Clemente and Los Padres reservoirs in the upper reaches of the Carmel River (SWRCB and CalEPA, 1995). Both basins are overdrawn and groundwater pumping in each is restricted; the Carmel Valley Groundwater Basin by SWRCB Order 95-10 and the Seaside Area Subbasin through court adjudication.

Water usage at the POM has decreased largely as a result of conservation measures and water management programs. Available demand data from 1976 to 2005 showed that usage at the POM varied from 197 to 307 AFY (Malcolm Pirnie, 2006). Total demand (198.6 AFY) in 2005, a non-drought year, was the second lowest within that 30-year data period. The 2005 demand was higher only than the 1991 total, when drought restrictions were in effect. The POM's demand decreased further after hundreds of clothes washers were replaced with high efficiency ones in 2005. The MPWMD determined that the reduction from clothes washer replacement was 27.912 AFY (MPWMD, 2010). Combined with the increased demand from the new dental clinic and the FY08 and FY09 GIBs, the total existing demand was estimated to be about 184 AFY (Table 3.1-1).

The available water supply at the POM totals 220 AFY, which is made up of the original MPWMD allocation and the additional permitted amount. Based on the estimated water demand in 2010 (184 AFY), approximately 36 AFY would still be available from the total water supply allocation (Table 3.1-1).

OMC

Similarly to the POM, potable water to the OMC is provided by a local purveyor and not via onsite production wells. As part of the Base Realignment and Closure (BRAC) process of 1990, ownership of the water facilities at the OMC was transferred to MCWD by the Fort Ord Reuse Authority (FORA). MCWD's water supply is primarily from groundwater wells drawing from the Salinas Valley Groundwater Basin.

Historical usage at the OMC was estimated since most customers are unmetered and because the POM Installation, DPW stopped collecting family housing demand data in 2003 (Malcolm Pirnie, 2006). Total OMC consumption in 2005 was estimated at 869 AFY (Malcolm Pirnie, 2006). Since then, some existing family housing have been replaced and additional new housing and recreational facilities have been constructed at the OMC through the RCI projects. Water commitments for the RCI projects total about 1,115 AFY, but a large portion was from housing replacement and not considered new demand. Only about one-third (351 AFY) of the RCI total was attributed to new demand (Table 3.1-1). Conservation measures have also been implemented at the OMC, but quantified water savings are not available since the OMC is not fully metered.

The OMC retained 1,577 AFY of water rights. Based on the estimated existing water demand (1,220 AFY), approximately 357 AFY would still be available from water credits (Table 3.1-1).

3.2 Geology, Soils, and Mineral Resources

This section describes geology, soils, and mineral resources in the study area. This section also discusses the potential for seismic events, landslides, and liquefaction in the study area and provides the basis to determine whether construction activities could increase their occurrence or affect the proposed construction.

3.2.1 Study Area

The study area is the POM and OMC where potential construction activities would occur.

3.2.2 Regulatory Setting

This section describes the federal and state rules and regulations applicable to the proposed action.

3.2.2.1 Federal

Clean Water Act

The federal Clean Water Act (CWA) includes provisions for reducing soil erosion relevant to water quality. Under the CWA, discharge of pollutants from non-point sources (including construction sites) into navigable waters is prohibited, unless in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This pertains to construction sites where soil erosion (sediment) and other pollutant discharges (construction related materials) could affect water quality. For construction sites with disturbed soil areas of one acre or more, construction activities must comply with a NPDES stormwater construction permit. A stormwater general construction permit is issued in California which authorizes discharges of stormwater associated with construction activities that are in compliance with all the requirements and conditions of the general permit. All discharges are prohibited except for stormwater and non-stormwater discharges specifically authorized in the general permit. Each construction project would prepare Permit Registration Documents for submission to the SWRCB that includes a Notice of Intent, Risk Assessment, Site Map, Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and payment of fees. The findings of the Risk Assessment will determine the potential pollutant hazards associated with the site conditions (i.e., Risk Level 1, 2, or 3) and establish the specific compliance conditions and requirements of the permit. A SWPPP is required to be developed prior to construction to address the control of pollutant discharges using best management practices (BMPs) and monitoring for the construction project. Visual monitoring would be required weekly as well as pre and post rain events, while numerical limits or action levels for pollutants to control construction stormwater discharges would be monitored based on the determined Risk Level. Following the completion of the development project, the site must meet the conditions for Termination of Coverage by certifying the site is stabilized and there is no potential for post-construction-related stormwater discharges. On September 2, 2012, the new post-construction standards will be in effect and post-construction and long-term maintenance plans must be developed (SWRCB Order No. 2009-0009-DWQ; NPDES No. CAS000002). The post-construction standards require dischargers to comply with permit runoff reduction requirements by demonstrating non-structural and structural controls that replicate the pre-project water balance.

Clean Air Act

The federal CAA also includes provisions for reducing soil erosion relevant to air and water quality. On construction sites, exposed soil surfaces are vulnerable to wind erosion and small soil particulates are carried into the atmosphere. Suspended particulate matter is one of the six criteria air pollutants of the CAA (see Section 3.3.2.1 for additional details). Construction sites would be required to implement wind erosion BMPs for reducing air quality and soil erosion impacts.

Energy Independence and Security Act

Under Section 438 of the Energy Independence and Security Act of 2007 (EISA), Congress required federal agencies to provide national leadership to reduce water quality problems from stormwater runoff. The law requires federal developments with a footprint greater than 5,000 square feet to use site planning, design, construction, and maintenance strategies to maintain or restore the pre-development hydrology to the

maximum extent technically feasible. The intent of this new requirement is for federal facilities to adopt green infrastructure and sustainable design techniques, which are also known as Low Impact Development practices. These Low Impact Development practices are meant to imitate the pre-development site stormwater runoff conditions by using site design techniques that store, infiltrate, evaporate, and detain runoff. The requirements are to ensure that receiving waters are not negatively impacted by changes in runoff temperature, volumes, durations, and rates resulting from federal projects. Military installations are now required to apply the EISA requirements to projects. Section 438 of the EISA is independent of stormwater requirements under the Clean Water Act and is not included as conditions for permits for stormwater (U.S.EPA, 2009).

3.2.2.2 State

The 1972 Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code (CPRC) 2621 et seq.) requires local agencies to regulate development within earthquake fault zones to reduce the hazards associated with surface fault ruptures. It also regulates construction in earthquake fault zones.

The 1990 Seismic Hazards Mapping Act (CPRC 2690-2699.6) addresses strong ground shaking, liquefaction, landslides, or other ground failures as a result of earthquakes. This Act requires statewide identification and mapping of seismic hazard zones which are used by cities and counties to adequately prepare the safety element of their general plans and protect public health and safety (California Geological Survey, 2003). Local agencies are also required to regulate development in any seismic hazard zones, primarily through permitting. Permits for development projects are not issued until geologic investigations have been completed and mitigation has been developed to address any issues.

3.2.3 Affected Environment

3.2.3.1 POM

Geology

The POM is near the boundary of the North American and Pacific plates, along the western margin of the Coast Ranges physiographic province. The province contains many elongated ranges and narrow valleys that generally parallel the coast. The POM is along the southern margin of Monterey Bay and lies at elevations ranging from approximately 30 to 770 feet above mean sea level (ECW, 2007).

The POM overlies a geologically complex subsurface consisting primarily of variously weathered granites and marine terrace deposits (USACE, 2009). The bedrock is weathered to varying degrees depending on relative location to drainage features, fractures, joints, and rock type. The subsurface profile varies substantially, even over short distances (ECW, 2007). Ancient sand dunes also add to the geologic complexity of the POM. The ancient dunes were formed as terraces cut by the rising oceans and covered with beach deposits as the oceans returned to former levels. The raised beach terraces are similar to others that line the Pacific Coast.

Soils

The two primary soil types encountered at the site are Narlon loamy fine sand and Sheridan coarse sandy loam. Narlon soils are located on the gently sloping dissected marine terraces that occur in most of the developed portions of the POM. Narlon Series soils are poorly drained with slow to medium runoff rates. Erosion hazard is considered moderate (ECW, 2007). The Narlon soils can pose severe limitations for construction activities because of the low strength, high shrink-swell potential of the clay subsoil, and acidity that is corrosive to steel and concrete. These soil limitations often require special engineering solutions (ECW, 2007). The Sheridan Series covers much of the Presidio Knoll, which encompasses the Huckleberry

Hill Nature Preserve. The erosion hazard ranges from moderate to very high and runoff is rapid. Much of the Sheridan soil is underlain by clay and clay loam subsoils.

Soil thickness varies across the site from less than one foot to approximately 30 feet (USACE, 2009). Previous borings drilled at the POM encountered predominantly clayey and silty sands overlying granite bedrock. At some locations the sands are derived from the underlying granite bedrock and grade, with depth, into weathered bedrock. In other locations, clayey and silty sands were deposited directly onto the bedrock surface during formation of the marine terrace platforms during the late Pleistocene. The sandy soils encountered in the borings vary in thickness from less than one foot to approximately 30 feet (ECW, 2007).

Seismicity

The POM is in a highly seismically active region with several major faults and fault zones in close proximity. These include the San Andreas Fault Zone (approximately 25 miles northeast), the San Gregorio-Hosgri fault (approximately 19 miles northwest) and the Palo Colorado fault (approximately 6 miles west). The Sur-Nascimento Fault Zone is approximately ten miles southwest of the POM and may exhibit substantial seismic activity. There are lower magnitude fault zones near the site, the closest of which is the Monterey Bay Fault Zone, approximately one mile offshore in Monterey Bay (ECW, 2007). This is the closest active mapped fault to the POM. No known active faults have been identified at the actual POM (ECW, 2007).

The Monterey Peninsula is in Seismic Risk Zone 4, identified as a seismically active area by the Uniform Building Code. Areas within Zone 4 are expected to experience severe ground shaking and "major destructive damage" in response to seismic activity within the region (ECW, 2007). Several moderate to large magnitude historical earthquakes have caused significant ground shaking in the past.

Liquefaction

Liquefaction is the process in which water-saturated sand and silt change from a solid to a liquid state. This can be caused by strong shaking of the sediments, which happens during an earthquake. Liquefied sediments lose their strength to support overlying structures. Areas with a shallow groundwater table, or perched groundwater would be susceptible to liquefaction in a strong earthquake.

The potential for liquefaction of soils during an earthquake at the POM is considered minimal due to shallow soils and lack of groundwater. Perched groundwater has been identified at only two locations on the POM: the Child Care Center (Building 566); and Buildings 835 and 836. The perched groundwater was encountered at depths less than 30 feet below ground surface at these locations (ECW, 2007).

Landslides

Landslide potential is considered minimal for most of the POM, as the majority of the POM buildings are on a series of gently dipping marine terrace platforms cut into a bedrock hill adjacent to Monterey Bay. The Huckleberry Hill Nature Preserve, areas at the base of Huckleberry Hill Nature Preserve/Presidio Knoll, and south of the parking are behind Buildings 627 and 629 are areas which contain slopes greater than 25 percent (City of Monterey, 2005).

Mineral Resources

The upper POM contains marine sandstone from the middle Cenozoic era. An area at the upper portion of the historic POM, approximately 597 feet above sea level, has been quarried in the past. This stone is thought to be the source for the façade of the Spanish Royal Presidio Chapel of 1794. A second area to the west at 700 feet above sea level is on land added to the POM this century. This area is now part of the Huckleberry Hill Nature Preserve and is currently protected. No future quarry activities are planned for the POM (City of Monterey, 2002).

3.2.3.2 OMC

Geology

The OMC is south of the mouth of the Salinas River, between Monterey Bay and the Sierra de Salinas Mountains. The OMC is in the Coast Ranges Province, a northwest-trending series of mountain ranges and basins which extends from southern California to Oregon.

The western and northern portions of the site are characterized by sand dune morphology, with topography sloping gently to the north and west, toward Monterey Bay. In this region high rates of surface water infiltration, typical of sand dune formations, result in a lack of well-defined drainage features. Topography and drainage features differ significantly in the southern portion of the site. This area is characterized by moderate to steeply sloping canyons which drain to the east, into Salinas Valley (U.S. Army, 1992).

Soils

The two main soil series encountered at the OMC are Oceano loamy sand and the Baywood sand. The Oceano series are derived from stabilized dunes (2 to 15 percent slopes) and are generally very well- to excessively well-drained. The permeability rate for the Oceano series is rapid, runoff is slow to medium, the shrink-swell potential is low, and the erosion hazard is high in localized storm drainage areas. Oceano loamy sand is classified as a Soil of Statewide Importance by the U.S. Department of Agriculture; however, it has been several years since any of the land at the OMC was under cultivation and conversion of farmland is not anticipated (USACE, 2006).

Similar to the Oceano series, the Baywood series consists of excessively drained soils that form in stabilized sand dunes. Slopes are also 2 to 15 percent and erosion potential is slight to moderate.

Seismicity

The nearest active faults to the OMC are the Monterey Bay Fault, the San Gregorio Fault, the San Andreas Fault, the Ord Terrace Fault, the Seaside Fault, and the Chupines Fault. The San Gregorio and San Andreas Faults are capable of generating large earthquakes of magnitude 7 or 8 on the Richter scale. The potential for an earthquake of magnitude 6.7 or greater on the San Andreas Fault between 2003 and 2032 has been estimated to be about 21 percent. The probability for the San Gregorio fault during the same period was estimated at about 10 percent (USACE, 2006). No active faults, or Alquist-Priolo Fault Zones, are mapped within the project area.

The OMC is in an area where there is a 10 percent probability that an earthquake would cause peak bedrock acceleration in the range of 0.3 to 0.4 times the acceleration of gravity during the next 50 years, according to the U.S. Geological Survey (USACE, 2006). This is a moderately high to high acceleration. Ground shaking intensity is generally lowest in areas underlain by shallow bedrock and is higher in areas underlain by unconsolidated sediments. The intensity of ground shaking in a strong earthquake is expected to be severe within the project area. The intensity of ground shaking in the project area during the 1989 Loma Prieta Earthquake, which was centered about 30 miles north of the project area, was reported to be about VI on the modified Mercali scale (USACE, 2006). Although ground shaking feels strong at this intensity, damage is generally light.

Liquefaction

Although the OMC is in a potentially active seismic zone, the potential for liquefaction of soils during an earthquake at the OMC is considered minimal due to the depth of groundwater (USACE, 2006).

Landslides

Due to the relatively flat and developed nature of the OMC, land sliding is not an issue.

Mineral Resources

There are no known mineral resources at the OMC; however, there are several sand and gravel quarries in the Seaside/Marina area (USACE, 2006).

3.3 Air Quality

This section describes the area studied in the air quality analysis, as well as the regulatory and environmental setting. The regulatory setting is described in terms of the state and federal requirements. The environmental setting is described in terms of climate, atmospheric conditions, and air pollutant sources.

3.3.1 Study Area

The air quality impact analysis evaluates the existing conditions and air emissions from project construction activities in Monterey County.

3.3.2 Regulatory Setting

The following section describes the federal, state, and local rules and regulations applicable to the proposed project.

Air quality management and protection responsibilities exist in federal, state, and local levels of government. The primary statute that establishes ambient air quality standards and establishes regulatory authorities to enforce regulations designed to attain those standards is the state and federal CAA.

3.3.2.1 Federal

The federal CAA, as amended in 1990, is currently comprised of six titles:

- Title I – Air Pollution Prevention and Control
- Title II – Emission Standards for Moving Sources
- Title III – General
- Title IV – Acid Deposition Control
- Title V – Permits
- Title VI – Stratospheric Ozone Protection

Title I and V contain the provisions that typically address construction projects and stationary source emissions. Title I requirements include, among others, requirements (a) to establish National Ambient Air Quality Standards (NAAQS) for air pollutants that protect human health with an adequate margin of safety as well as protect public welfare, (b) to limit emissions from new stationary sources, (c) to prevent significant deterioration of air quality in regions with air quality that is already better than the NAAQS, and (d) in developing state implementation plans (SIPs) that establish the steps to be taken to bring areas with air quality that is worse than the NAAQS back into attainment of the NAAQS by mandated attainment dates. As part of Title I, federal agencies cannot engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an U.S. EPA-approved SIP.

Title V requires that major stationary sources obtain operating permits and pay fees that are based on the quantity of pollutants emitted. Title III of the CAA gives authority to the U.S. EPA to promulgate

regulations that implement the CAA requirements. Titles II and IV are not relevant or applicable to the proposed activities in the RPMP.

National Ambient Air Quality Standards

As required by the Federal CAA, the U.S. EPA has established and continues to update the NAAQS for specific "criteria" air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead (Pb). The two particulate matter categories refer to solid and liquid particles of dust, soot, aerosols, smoke, ash, and pollen and other matter that are small enough to remain suspended in air for a long period of time; $PM_{2.5}$ refers to particulates with aerodynamic diameters less than or equal to 2.5 micron (µm) and PM_{10} have diameters less than or equal to 10 µm. The NAAQS for these pollutants are listed in Table 3.3-1 and represent the levels of air quality deemed necessary by U.S. EPA to protect the public health and welfare with an adequate margin of safety. Table 3.3-2 describes the criteria pollutants of primary concern (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter), their potential health effects, and their major sources.

Table 3.3-1. National Ambient Air Quality Standards

Pollutant	Averaging Time	Standard (ppmv)	Standard (µg/m³)	Violation Criteria
Ozone (O_3) (1)	8 hours	0.075	147	If exceeded on more than 3 days in 3 years
Carbon monoxide (CO)	8 hours	9	10,000	If exceeded on more than 1 day per year
	1 hour	35	40,000	If exceeded on more than 1 day per year
Nitrogen dioxide (NO_2)	Annual	0.053	100	If exceeded
	1 hour	0.100	188	3-year average of the 98th percentile of the daily maximum 1-hour average
Sulfur dioxide (SO_2) (2)	3 hours	0.5	1,300	If exceeded on more than 1 day per year
	1 hour	0.075	196	3-year average of the annual 99th percentile of 1-hour daily maximum concentrations
Lead (Pb)	Calendar Quarter	NA	1.5	If exceeded
	Rolling 3-Month Average	NA	0.15	If exceeded
Inhalable particulate matter (PM_{10})	24 hours	NA	150	If exceeded on more than 1 day per year
Fine particulate matter ($PM_{2.5}$)	Annual	NA	15.0	If exceeded
	24 hours	NA	35	If exceeded on more than 1 day per year

Sources: 40 CFR Part 50; and 71 FR 61144

(1) On January 19, 2010, the U.S. EPA released a proposed rule to strengthen the 8-hour primary O_3 NAAQS to a level within the range of 0.060 to 0.070 parts per million by volume (ppmv). The U.S. EPA also proposed to establish a cumulative, seasonal secondary O_3 NAAQS within the range of 7 to 15 ppm-hours. (75 FR 2938)

(2) On June 22, 2010, the U.S. EPA established the new 1-hour SO_2 standard, effective August 23, 2010, and revoked both the 24-hour primary SO_2 standard of 0.14 ppm and the annual primary standard of 0.030 ppm.

Table 3.3-2. Criteria Pollutants and Potential Health Effects			
Pollutant	Characteristics	Health Effects	Major Sources
Ozone	A highly reactive photochemical pollutant created by the action of sunshine on ozone precursors (reactive organic gasses and oxides of nitrogen).	Eye irritation. Respiratory function impairment.	Combustion sources, such as factories and automobiles, evaporation of solvents and fuels, refining and gasoline delivery.
Carbon Monoxide	Odorless, colorless gas that is highly toxic. Formed by the incomplete combustion of fuels.	Impairment of oxygen transport in the bloodstream. Aggravation of cardiovascular disease. Fatigue, headache, dizziness.	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide	Reddish-brown gas formed during combustion.	Increased risk of acute and chronic respiratory disease. Eye irritation. Colors atmosphere reddish-brown.	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
Sulfur Dioxide	Colorless gas with a pungent odor.	Increased risk of acute and chronic respiratory disease. Can damage plants. Destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Oil and coal-powered power plants, industrial processes, diesel vehicle exhaust.
Lead	Metal found naturally in the environment as well as in manufactured products.	Distributes throughout the body in the blood. Accumulated in the bones. Depending on the level of exposure, affects the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system.	The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources.
PM_{10} and $PM_{2.5}$	PM_{10} refers to solid and liquid particles of dust, soot, aerosols, smoke, ash, and pollen and other matter that are small enough (aerodynamic diameter $\leq$ 10 µm) to remain suspended in the air for a long period. $PM_{2.5}$ refers to particulate matter with an aerodynamic diameter < 2.5 µm. PM_{10} and $PM_{2.5}$ are also formed from NO_x and SO_x.	Aggravation of chronic disease and heart/lung disease symptoms. May irritate eyes and respiratory tract. Produces haze and limits visibility.	Construction dust, erosion, incinerators, automobile and aircraft exhaust, open fires, industrial and agricultural operations, atmospheric photochemical reactions, and natural activities (e.g. ocean sprays).

Source: CARB, 2008a

Within the last three years, the U.S. EPA has made substantial changes to the NAAQS. The NO_2 standard was revised on February 9, 2010 by establishing a new 1-hour NO_2 standard at a level of 100 ppb, based on the 3-year average of the 98th percentile of the yearly distribution of the 1-hour daily maximum concentrations (75 FR 6474). The SO_2 standard was revised on June 22, 2010 by establishing a new 1-hour primary SO_2 standard of 75 ppb, based on the 3-year average of the 99th percentile of the 1-hour daily maximum concentrations; the 24-hour and annual primary standard were both also revoked (75 FR 35520). The U.S. EPA has also proposed to strengthen the 8-hour O_3 standard, but has not yet finalized the rule.

The federal CAA requirements classify air basins (or portions thereof) as either "attainment" or "non-attainment" with respect to criteria air pollutants, based on whether the NAAQS have been achieved, and to prepare air quality plans containing emission reduction strategies for those areas designated as "non-attainment." Non-attainment means that the air quality levels exceed the standards that have been established for that area. The North Central Coast Air Basin (NCCAB) (and therefore Monterey County) is in attainment for all pollutants under the federal NAAQS. A summary of the attainment status for all criteria pollutants is presented in Table 3.3-3.

Table 3.3-3. Attainment Status for North Central Coast Air Basin

Pollutant	Federal NAAQS
Ozone (O_3)	Attainment
Inhalable Particulates (PM_{10})	Attainment
Fine Particulates ($PM_{2.5}$)	Unclassified/Attainment
Carbon Monoxide (CO)	Attainment
Nitrogen Dioxide (NO_2)	Attainment
Sulfur Dioxide (SO_2)	Attainment
Lead (Pb)	Attainment

Source: MBUAPCD, 2007

Although the 1-hour O_3 standard was revoked on June 15, 2005, the former 1-hour ozone designations and classifications are being retained for purposes of anti-backsliding. Attainment areas (that is areas with air quality levels that meet the standards) with maintenance plans for the 1-hour standards are required to demonstrate maintenance for 10 years after designation under the 8-hour O_3 standard (U.S. EPA, 2008). The NCCAB was a maintenance area for the 1-hour O_3 standard and is attainment for the 8-hour O_3 standard. In 2007, the Federal Maintenance Plan[1] was updated to address the changes in the O_3 standards (MBUAPCD, 2007).

[1] The 2007 *Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region* was approved by the Monterey Bay Unified Air Pollution Control District Board on March 21, 2007. The Association of Monterey Bay Area Governments approved the plan on May 9, 2007.

State Implementation Plans

Counties or regions that are designated as federal non-attainment areas for one or more criteria air pollutants must prepare a SIP that demonstrates how the area would achieve attainment of the standards by the federally mandated deadlines. In addition, those areas that have been re-designated from non-attainment to attainment are required to have a maintenance plan that shows how the area would maintain the standard for up to 10 years.

All of Monterey County had been designated a non-attainment area (marginal) for the 1-hour O_3 NAAQS. Although the area had attained the 1-hour standard when that standard was revoked, a maintenance plan for ozone is required under the implementation rules for the 8-hour O_3 NAAQS as an anti-backsliding measure.

General Conformity

Section 176(c) of the CAA requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity must demonstrate that the action conforms to the applicable SIP required under Section 110(a) of the CAA (42 U.S.C. 7410(a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements would, in fact, conform to the applicable SIP before the action is taken. Although this project is sponsored and supported by a federal agency, the 1-hour O_3 standard was the only pollutant in non-attainment or maintenance.

Only those federal actions that take place in a region designated as an NAAQS nonattainment area or maintenance area must be evaluated for general conformity. Areas that are in attainment for the 8-hour O_3 standard but were in non-attainment or maintenance for the 1-hour O_3 standard are not required to demonstrate general conformity (U.S. EPA, 2008). Due to the attainment status of the other pollutants, the project is not subject to general conformity requirements.

Massachusetts et al. v. Environmental Protection Agency et al.

Twelve U.S. states and cities (including California) in conjunction with several environmental organizations, brought suit to force the U.S. EPA to regulate Greenhouse Gases (GHGs) as a pollutant pursuant to the CAA (Massachusetts et al. v. Environmental Protection Agency et al. [U.S. Supreme Court No. 05–1120]; argued November 29, 2006—decided April 2, 2007). The Court ruled that the plaintiffs had standing to sue, that GHGs fit within the CAA's definition of an air pollutant, and that the U.S. EPA's reasons for not regulating GHGs were insufficiently grounded in the CAA.

Mandatory Greenhouse Gas Reporting Rule

On October 30, 2009, the U.S. EPA published the final mandatory Greenhouse Gas (GHG) reporting rule in the Federal Register (74 FR 56260). This rule requires suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that directly emit 25,000 metric tons or more of carbon dioxide equivalent (CO_2e) per year to submit annual reports to the U.S. EPA. Reporting would start in 2011 for the calendar year 2010 except for vehicle and engine manufacturers who would begin reporting for model year 2011.

Endangerment Finding

On December 15, 2009, the U.S. EPA published its endangerment finding for GHGs in the Federal Register (74 FR 66496). The U.S. EPA Administrator determined that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. Further, the Administrator found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to air pollution that endangers the public health and welfare under CAA Section 202(a). These findings are expected to pave the way for future regulations to control emissions of GHGs on a nationwide basis.

Tailoring Rule

On May 13, 2010, the U.S. EPA published the Final GHG Tailoring Rule, which sets GHG emissions thresholds for when permits under the Prevention of Significant Deterioration (PSD) and Title V Operating Permit programs are required for new or modified industrial facilities (75 FR 31514). Commencing January 2, 2011, only facilities that are currently subject to PSD or Title V permitting program that would significantly increase emissions other than GHG pollutants would be required to address GHG pollutants.

Beginning July 1, 2011, PSD permitting requirements will cover new construction projects that emit at least 100,000 tons per year of GHG emissions regardless of any other pollutant emission. New source facilities that emit at least 100,000 tons per year of CO_2e would be subject to Title V permitting requirements.

3.3.2.2 State

The California Clean Air Act (CCAA) substantially added to the authority and responsibilities of the State's air pollution control districts. The CCAA establishes an air quality management process that generally parallels the federal process. The CCAA, however, focuses on attainment of the California Ambient Air Quality Standards (CAAQS) that are, for certain pollutants and averaging periods, more stringent than the comparable NAAQS.

The CCAA requires that the CAAQS be met as expeditiously as practicable, but does not set precise attainment deadlines. Instead, the act established increasingly stringent requirements for areas that will require more time to achieve the standards. The air quality attainment plan requirements established by the CCAA are based on the severity of air pollution problems caused by locally generated emissions. Upwind air pollution control districts are required to establish and implement emission control programs commensurate with the extent of pollutant transport to downwind districts. The NCCAB is in non-attainment for the O_3 and PM_{10} CAAQS and an Air Quality Management Plan was prepared to address attainment of the CAAQS.

Air pollution problems in Monterey County are influenced by contributions from the San Francisco Bay Area or the San Joaquin Valley. The San Francisco Bay Area Air Basin (SFBAAB) can contribute up to 50 percent of NCCAB exceedances and is classified as having an overwhelming significant contribution to NCCAB air quality. Thirty percent of exceedances were classified as significant from both the SFBAAB and the San Joaquin Valley Air Basin (SJVAB) (MBUAPCD, 2008a).

The California Air Resources Board (CARB) is responsible for developing emission standards for on-road motor vehicles and some off-road equipment in the state. In addition, CARB develops guidelines for the local districts to use in establishing air quality permit and emission control requirements for stationary sources subject to the local air district regulations.

California Executive Order S-3-05

California Executive Order S-3-05 (signed by Governor Schwarzenegger on June 1, 2005) established the following GHG emission reduction targets for California:

- Reduce GHG emissions to 2000 levels by 2010;
- Reduce GHG emissions to 1990 levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

Global Warming Solutions Act of 2006 (AB 32)

California AB 32, the Global Warming Solutions Act of 2006, codifies the state's GHG emissions target. It requires California to reduce GHG emissions to 1990 levels by 2020 and CARB to enforce a statewide cap on GHG that must be phased in by 2012. AB 32 was passed into on September 27, 2006. Key AB 32 milestones are as follows:

- **June 30, 2007:** Identification of "discrete" early action GHG emissions reduction measures.
- **January 1, 2008:** Identification of the 1990 baseline GHG emissions level and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.
- **January 1, 2009:** Adoption of a scoping plan for achieving GHG emission reductions.
- **January 1, 2010:** Adoption and enforcement of regulations to implement the "discrete" actions.
- **January 1, 2011:** Adoption of GHG emission limits and reduction measures by regulation.
- **January 1, 2012:** GHG emission limits and reduction measures adopted in 2011 become enforceable.

3.3.3 Affected Environment

The existing air quality conditions for a project area are typically the result of meteorological conditions and existing emission sources in an area.

3.3.3.1 NCCAB Emissions Inventories

The Monterey Bay Unified Air Pollution Control District (MBUAPCD) has compiled the 2007 emission inventories for the NCCAB (the old 1-hour O_3 non-attainment area), presented in Table 3.3-4.

Table 3.3-4. 2007 Emissions Inventory for North Central Coast Air Basin

Source Category	2007 Daily Emissions (tons per day)	
	VOC	NO_x
Stationary Sources	9.28	20.67
Area-Wide Sources	29.63	4.17
On-Road Motor Vehicles	18.71	40.93
Other Mobile Sources	13.19	15.63
Total All Sources	70.82	81.46

Source: MBUAPCD, 2008a

3.3.3.2 Monitoring Data—Criteria Pollutants Concentrations

Table 3.3-5 summarizes air quality data from the Salinas monitoring from CARB's Air Quality Data Statistics database. The Salinas station was selected because it is the closest representative station to the project site.

Table 3.3-5. Summary of Air Pollutant Monitoring Data in Salinas, California

Pollutant	Average Time	2007	2008	2009	NAAQS
CO (ppm)	1-hr (2nd High)	1.7	1.6	ND (1)	35
	8-hr (2nd High)	0.99	0.80	0.85	9
O_3 (ppm)	8-hr (4th High)	0.053	0.060	0.056	0.075
NO_2 (ppm)	1-hr (1st High)	0.050	0.049	0.040	0.100
	Annual	0.007	0.007	0.006	0.053
PM_{10} (µg/m^3)	24-hr (2nd High)	34	50	30	150
$PM_{2.5}$ (µg/m^3)	24-hr (2nd High)	15.6	13.8	13.6	35
	Annual	6.9	7.1	6.7	15

Sources: CARB, 2008b; U.S. EPA, 2010

(1) Monitoring data for 1-hour CO standard not reported on CARB's website. Data only available until 2008 on U.S. EPA's data repository.

3.3.3.3 Greenhouse Gases

Briefly stated, global climate change (GCC) is a change in the average climatic conditions of the earth, as characterized by changes in wind patterns, storms, precipitation, and temperature. The baseline by which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. Many of the recent concerns over GCC use this data to extrapolate a level of statistical significance, specifically focusing on temperature records from the last 150 years (the Industrial Age) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission projections of GHG needed to stabilize global temperatures and GCC impacts. The IPCC predicted that the range of global mean temperature increase from 1990 to 2100, given six scenarios, could range from 1.4 to 5.8 degrees Celsius (°C) (IPCC, 2001). Regardless of analytical methodology, global average temperature and mean sea level are expected to rise under all scenarios.

Climate models applied to California's conditions project that, under different scenarios, temperatures in California are expected to increase by 3 to 10.5 degrees Fahrenheit (°F) (California Climate Change Center, 2006). Almost all climate scenarios include a continuing trend of warming through the end of the 21st century given the substantial amounts of GHG already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. According to the 2006 California Climate Action Team Report, the following climate change effects are predicted in California over the course of the 21st century (CalEPA, 2006).

- A diminishing Sierra snowpack declining by 70 to 90 percent, threatening the State's water supply.
- Increasing temperatures, as noted above, of up to approximately 10 °F under the higher emission scenarios, leading to a 25 to 35 percent increase in the number of days ozone pollution levels are exceeded in most urban areas.

- Coastal erosion along the length of California and seawater intrusion into the Delta from a 4- to 33-inch rise in sea level. This would exacerbate flooding in already vulnerable regions.
- Increased vulnerability of forests due to pest infestation and increased temperatures.
- Increased challenges for the State's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta.
- Increased electricity demand, particularly in the hot summer months.

As such, temperature increases would lead to adverse environmental impacts in a wide variety of areas, including: sea level rise, reduced snowpack resulting in changes to existing water resources, increased risk of wildfires, public health hazards associated with higher peak temperatures, heat waves, and deteriorated air quality.

In December 2008, the CARB released a Climate Change Scoping Plan that outlines the State's strategy to achieve the 2020 GHG emissions limit mandated by Assembly Bill 32 (AB 32). AB 32 requires the State to reduce GHG emissions to 1990 levels by 2020 (CARB, 2008c). The GHG emissions in the State are expected to increase by nearly 30 percent between the 2002-2004 levels (average emissions) and 2020 under the business-as-usual conditions.

In a staff report entitled "California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit," CARB estimated the 1990 emission level as approximately 427 million metric tons of carbon dioxide equivalent (CARB, 2007a; CARB, 2007b). The State would need to reduce emissions by 169 million metric tons of carbon dioxide equivalent in the year 2020 as compared to business-as-usual to meet the emission targets; this represents a nearly 30 percent decrease in emissions from business-as-usual conditions.

3.4 Vegetation and Wildlife

This section describes the vegetation and wildlife that occur at the POM and OMC.

3.4.1 Study Area

The study area consists of all portions of the POM and the OMC.

3.4.2 Regulatory Setting

The following section describes the federal, state, and local rules and regulations with respect to vegetation and wildlife applicable to the proposed RPMP at the POM and OMC.

3.4.2.1 Federal

Endangered Species Act

The Endangered Species Act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the Endangered Species Act requires federal agencies to aid in the conservation of listed species, and to ensure that the activities of federal agencies will not jeopardize the continued existence of listed species or adversely modify designated critical habitat. At the federal level, the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration are responsible for administration of the Endangered Species Act.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected. Nearly all native North American bird species are protected by the act. Under the act, taking, killing, or possessing migratory birds is unlawful. Projects that are likely to result in taking of birds protected under the MBTA would require the issuance of take permits from the USFWS. Activities that would require such a permit would include destruction of migratory bird nesting habitat during the nesting season when eggs or young are likely to be present. Under the act, surveys are required to determine if nests would be disturbed and, if so, a buffer area with a specified radius around the nest would be established so that no disturbance or intrusion would be allowed until the young had fledged and left the nest. If not otherwise specified in the permit, the size of the buffer area would vary with species and local circumstances (e.g. presence of busy roads), and would be based on the professional judgment of the monitoring biologist.

Executive Order 13112, Invasive Species and Landscaping

Executive Order 13112 directs Federal agencies to expand and coordinate their efforts to combat the introduction and spread of plants and animals not native to the United States. Requirements of Executive Order 13112 are to prevent the introduction of invasive species; provide for their control; and take measures to minimize economic, ecological, and human health effects. In compliance with Executive Order 13112, restoration of disturbed vegetation should be conducted using native plants and efforts to prevent the introduction of invasive plant species must be demonstrated.

3.4.2.2 State

California Endangered Species Act

The California Department of Fish and Game is responsible for administration of the California Endangered Species Act. Unlike the federal Endangered Species Act, there are no state agency consultation procedures under the California Endangered Species Act. For projects that affect both a state and federal listed species, compliance with the federal Endangered Species Act will satisfy the California Endangered Species Act if the California Department of Fish and Game determines that the federal incidental take authorization is "consistent" with the California Endangered Species Act. Projects that result in a take of a state-only listed species require a take permit under the California Endangered Species Act. The federal and state acts also lend protection to species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or den locations, communal roosts, and other essential habitat.

Under State law, plant species may be formally designated rare, threatened, or endangered by the California Fish and Game Commission. The California Native Plant Society (CNPS) Rare Plant Program operates under a Memorandum of Understanding with the California Department of Fish and Game. This cooperative agreement results in rare plant assessment, protection, and formalized cooperative ventures such as data sharing and production of complementary information sources for rare plants.

California Fish and Game Code Sections 3500 – 3705, Migratory Bird Protection

Sections 3500 through 3705 of the California Fish and Game Code regulate the taking of migratory birds and their nests. These codes prohibit the taking of nesting birds, their nests, eggs, or any portion thereof during the nesting season. Typically, the breeding/nesting season is from February 1st through August 15th. Depending on each year's seasonal factors, the breeding season can start earlier and end later.

3.4.2.3 Local

Monterey County General Plan

The Monterey County General Plan (Monterey County, 2004b) establishes goals and policies for the protection of natural resources in Monterey County, including the preservation and conservation of native vegetation and wildlife species and habitats.

Monterey County Preservation of Oak and Other Protected Trees

Monterey County Tree Ordinance 21.64.260 limits the removal or trimming of oaks and other protected tree species (Monterey County, 1997). The U.S. Army considers and discusses this ordinance during the planning process in accordance with NEPA but is not subject to these regulations.

3.4.3 Affected Environment

3.4.3.1 POM

Wetlands

No wetland areas exist at the POM. However, limited wetland resources occur along an intermittent stream that follows the southeastern boundary of the POM from Franklin Street to Lighthouse Avenue (POM, 2008b).

Vegetation

Vegetation within the developed areas of the POM consists of landscaped vegetation such as ornamental shrubs and irrigated lawns. Non-native trees in the developed areas include blackwood acacia (*Acacia melonoxylon*), Sydney golden wattle (*Acacia longifolia*), and blue gum eucalyptus (*Eucalyptus globulus*). Native Monterey pines (*Pinus radiata*) also occur here. Non-native grasses and forbs dominate disturbed areas throughout the POM (POM, 2008b).

The undeveloped natural areas of the POM include the Presidio Knoll, which encompasses the Huckleberry Hill Nature Preserve and forested areas at the base of the preserve. There are also undeveloped areas between Hilltop Field and Building 630 and south of the parking area behind Buildings 627 and 629. Vegetation communities in the Presidio Knoll area are dominated by a Monterey pine tree forest with two types of understory: shrub and grass. Non-native, invasive French broom is also in the Presidio Knoll area, especially along the disturbed edges of dirt roads and trails. In addition, a central maritime chaparral vegetation community dominated by manzanita interspersed with Monterey pine and coast live oak (*Quercus agrifolia*) is along the western slope of the Presidio Knoll (POM, 2008b).

Monterey Pine Forest with Shrub Understory. This subtype of Monterey pine forest covers approximately 120 acres, or 31 percent of the total land area, of the POM (POM, 2008b). This forest has an understory of chaparral vegetation, with dominant shrubs including shaggy-barked manzanita (*Arctostaphylos tomentosa*), California huckleberry (*Vaccininm ovatum*), bush monkeyflower (*Mimulus aurantiacus*), poison-oak (*Toxicodendron diversilobum*), California coffeeberry (*Rhamnus californica*), and Hooker's Manzanita (*Arctostaphylos hookeri* ssp. *Hookeri*). Herbaceous species include Douglas' iris (*Iris douglasii*), small-leaved lomatium (*Lomatium parvifolium*), Pacific peavine (*Lathyrus vestitus*), Pacific sanicle (*Sanicula crassicaulis*), and Monterey sedge (*Carex hartfordii*).

Monterey Pine Forest with Grassy Understory. Monterey pine forest with a grassy understory occurs in the forest patch east of the sports arena and makes up approximately 9.8 acres, or 2.5 percent of the total land area of the POM (POM, 2008b). Likely cleared in the past, this understory is dominated by herbaceous vegetation including California brome (*Bromus carinatus*), rattlesnake grass (*Briza major*), slender wild oat, Monterey sedge, California buttercup (*Ranunculus californicus*) and Douglas' iris. Additionally, shrubs including coast live oak, California huckleberry, and Hooker's manzanita, occur throughout the understory but are not dominant species.

Special Status Plant Species

Special status species with the potential to occur at the POM and OMC are listed in Table 3.4-1. The information was compiled from the California Natural Diversity Database, USFWS, and biological surveys conducted at the POM. Yadon's piperia (*Piperia yadonii*) (Figure 3.4-1) is the only federally-endangered plant species known to occur at the POM. Other special status plant species at the POM include Monterey pine (Figure 3.4-2), small-leaved lomatium (*Lomatium parvifolium*) (Figure 3.4-3), and Hooker's Manzanita (Figure 3.4-4). Monterey pine and Hooker's manzanita are considered rare or endangered in California by the CNPS, while small-leaved lomatium is considered a species of limited distribution.

Yadon's Piperia. Yadon's piperia, also known as Yadon's rein orchid, was listed by the USFWS as endangered in 1998 (USFWS, 1998). This species occurs in maritime chaparral and Monterey pine forests in northern coastal Monterey County. It prefers acidic soils, and is typically found in grassy clearings within Monterey pine forests. In the maritime chaparral it is often associated with Hooker's manzanita. Large populations of Yadon's piperia exist on the POM; within the Monterey pine forest across from the cemetery, between Building 630 and Hilltop Field, north of Mason Road across from Buildings 829 through 834, and south of Buildings 831 through 833. Smaller populations grow just outside the Huckleberry Hill Nature Preserve boundary fence behind Buildings 832 and 833 and west of Buildings 649 and 650. The entire Huckleberry Hill Nature Preserve has not been surveyed for Yadon's piperia however numerous populations have been documented within the Monterey pine forest and beneath the shrub understory. Plus individual plants occur throughout the Monterey pine habitat.

The greatest threat to Yadon's piperia is development for urban and recreational land uses, including golf courses (USFWS, 1998). Other threats include competition from non-native plants, maintenance activities such as roadside mowing, and potentially deer herbivory. At the POM, Yadon's piperia is protected through management efforts in accordance with an Endangered Species Management Plan (ESMP), which is reviewed annually and has been recently updated (POM, 2008a).

Critical habitat for Yadon's piperia was designated in 2007 (USFWS, 2007). POM lands were excluded from designation under Section 4 (a)(3) of the ESA as amended, because "…conservation efforts identified in the ESMP and Integrated Natural Resources Management Plan (INRMP) provide benefits to *Piperia yadonii* occurring in habitats within the POM…" (USFWS, 2007).

Monterey Pine. Native Monterey pine populations are restricted to three areas along the coast of California; Monterey, San Mateo and Santa Cruz counties and two islands off the Baja California coast (USDA, 2008). Along the immediate California coast, Monterey pine dominates forests with winter rainfall and frequent summer fogs. Monterey pine is found in areas with dominant plant communities such as redwood or Douglas fir, coast live oak forest, grassland and chaparral (POM, 2008b). The California Coastal Commission considers native Monterey pine ecosystems to be Environmentally Sensitive Habitat Areas. The California Native Plant Society lists the species as rare or endangered. This species is threatened by development, pine pitch cancer disease, genetic contamination and climatic changes (Jones & Stokes Associates, 1996).

Historically Monterey pine forest was the dominant vegetation at the POM. Several areas within the 81-acre Huckleberry Hill Nature Preserve have been identified as important for preservation based on the geomorphic surfaces where they occur. However, an analysis for the California Department of Fish and Game ranks the Presidio Management Unit as a low overall conservation priority since areas within the existing nature preserve are protected (Jones & Stokes, 1996). Similarly Monterey pine is not included in the ESMP because the majority of Monterey pines at the POM are protected within the preserve, which is currently managed by the City of Monterey under a lease agreement.

Table 3.4-1. Potential for Occurrence of Special Status Species at POM and OMC					
Scientific Name	Common Name	Status (1)	Potential Location	General Habitat	Potential for Occurrence
Birds					
Accipiter straitus	Sharp-shinned hawk	CSC	POM	Montane evergreen forests in the drier regions of the western United States. Nest in large forests composed of conifer, deciduous, or mixed woodlands with a closed canopy.	Potential to occur. Was observed during biological surveys in 1994 and 1995.
Agelaius tricolor	Tricolored blackbird	CSC	OMC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	None. No suitable habitat present.
Athene cunicularia hypugea	Western burrowing owl	CSC	OMC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation.	Potential to occur.
Buteo regalis	Ferruginous hawk	CSC	POM, OMC	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats.	None. No suitable habitat present.
Charadrius alexandrinus nivosus	Western snowy plover	FT, CSC	POM	Flat, open coastal beaches, in dunes, and near stream mouths.	None. No suitable habitat present.
Contopus cooperi	Olive-sided flycatcher	CSC	POM	Open areas with tall trees, generally near coniferous or mixed coniferous forest.	Potential to occur. Was observed during biological surveys in 2005.
Eremophila alpestris actia	California horned lark	CSC	OMC	Coastal regions with short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Potential to occur.
Lanius ludovicaianus	Loggerhead shrike	CSC	POM, OMC	Open habitat characterized by grasses and forbs of low stature interspersed with bare ground and shrubs or low trees.	Potential to occur.
Pelecanus occidentalis californicus	California brown pelican	Delisted	POM, OMC	Colonial nester on coastal islands just outside the surf line.	Potential to occur as a fly-over.
Amphibians					
Ambystoma californiense	California tiger salamander	FT, CSC	OMC	Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	Potential to occur. Occurrence noted in 2006 and 2007.
Rana aurora draytonii	California red-legged frog	FT, CSC	POM, OMC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	None. No suitable habitat present.

Table 3.4-1. Potential for Occurrence of Special Status Species at POM and OMC					
Scientific Name	Common Name	Status (1)	Potential Location	General Habitat	Potential for Occurrence
Reptiles					
Anniella pulchra nigra	Black legless lizard	CSC	OMC	Sand dunes and sandy soil with bush lupine and mock heather as dominant plants. Moist soil is essential.	Potential to occur.
Anniella pulchra pulchra	Silvery legless lizard	CSC	OMC	Sandy or loose loamy soils with high moisture content under sparse vegetation.	None. No suitable habitat present.
Phrynosoma blainvillii	Coast horned lizard	CSC	OMC	Variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Potential to occur.
Invertebrates					
Danaus plexippus	Monarch butterfly	None	POM	Winter roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Present. Known to occur at POM.
Euphilotes enoptes smithi	Smith's blue butterfly	FE	OMC	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz counties.	None. No suitable habitat present.
Linderiella occidentalis	California linderiella	None	OMC	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.	None. No suitable habitat present.
Mammals					
Lasiurus cinereus	Hoary bat	None	POM	Open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage.	Potential to occur. No known occurrences.
Neotoma fuscipes luciana	Monterey dusky-footed woodrat	CSC	OMC	Brushy habitat in chaparral and foothills of woodlands.	Potential to occur.
Sorex ornatus salarius	Monterey ornate shrew	CSC	OMC	Brackish water marshes, along streams, brushy areas of valleys and foothills, forests.	Potential to occur.
Taxidea taxus	American badger	CSC	OMC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Potential to occur.

Table 3.4-1. Potential for Occurrence of Special Status Species at POM and OMC					
Scientific Name	Common Name	Status (1)	Potential Location	General Habitat	Potential for Occurrence
Plants					
Allium hickmanii	Hickman's onion	1B.2	POM, OMC	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland, coastal prairie.	Potential to occur. No known occurrences.
Arctostaphylos hookeri ssp. Hookeri	Hooker's manzanita	1B.2	POM, OMC	Chaparral, coastal scrub, closed-cone coniferous forest, cismontane woodland.	Present. Known to occur at POM.
Arctostaphylos montereyensis	Toro manzanita	1B.2	OMC	Chaparral, cismontane woodland, coastal scrub.	Potential to occur. No known occurrences.
Arctostaphylos pumila	Sandmat manzanita	1B.2	POM, OMC	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal dunes, coastal scrub.	Present. Known to occur at OMC.
Astragalus tener var. titi	Coastal dunes milk-vetch	FE, SE, 1B.1	POM	Coastal bluff scrub, coastal dunes.	None. No suitable habitat present.
Callitropsis goveniana	Gowen cypress	FT, 1B.2	POM	Closed-cone coniferous forest.	Potential to occur. No known occurrences.
Callitropsis macrocarpa	Monterey cypress	1B.2	POM, OMC	Closed-cone coniferous forest.	Present. Known to occur as horticultural plantings only.
Ceanothus cuneatus var. rigidus	Monterey ceanothus	4.2	OMC	Closed-cone coniferous forest, Northern Coastal Scrub, Coastal Sage Scrub.	Present. Known to occur at OMC.
Chorizanthe pungens var. pungens	Monterey spineflower	FT, 1B.2	OMC	Coastal dunes, chaparral, cismontane woodland, coastal scrub.	Present. Known to occur at OMC.
Chorizanthe robusta var. robusta	Robust spineflower	FE	OMC	Cismontane woodland, coastal dunes, coastal scrub.	None. No suitable habitat present.
Clarkia jolonensis	Jolon clarkia	1B.2	POM, OMC	Cismontane woodland.	None. No suitable habitat present.
Collinsia multicolor	San Francisco collinsia	1B.2	POM	Closed-cone coniferous forest, coastal scrub.	Potential to occur. No known occurrences.
Cordylanthus rigidus ssp. littoralis	Seaside bird's-beak	SE, 1B.1	OMC	Closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, coastal dunes.	Potential to occur. No known occurrences.
Eriastrum virgatum	Virgate eriastrum	4.3	OMC	Coastal dunes, chaparral.	Present. Known to occur at OMC.
Ericameria fasciculata	Eastwood's goldenbush	1B.1	POM, OMC	Closed-cone coniferous forest, chaparral (maritime), coastal scrub, coastal dunes.	Potential to occur. No known occurrences.
Erysimum ammophilum	Sand-loving wallflower	1B.2	OMC	Chaparral (maritime), coastal dunes, coastal scrub.	None. No suitable habitat present.

Table 3.4-1. Potential for Occurrence of Special Status Species at POM and OMC

Scientific Name	Common Name	Status (1)	Potential Location	General Habitat	Potential for Occurrence
Erysimum menziesii ssp. menziesii	Menzies' wallflower	FE, SE, 1B.1	OMC	Coastal dunes.	None. No suitable habitat present.
Fritillaria liliacea	Fragrant fritillary	1B.2	POM	Coastal scrub, valley and foothill grassland, coastal prairie.	None. No suitable habitat present.
Gilia tenuiflora ssp. arenaria	Sand gilia	FE, ST, 1B.2	OMC	Coastal dunes, coastal scrub, chaparral (maritime), cismontane woodland.	None. No suitable habitat present.
Horkelia cuneata ssp. sericea	Kellogg's horkelia	1B.1	OMC	Closed-cone coniferous forest, coastal scrub, chaparral.	Potential to occur. No known occurrences.
Lasthenia conjugens	Contra Costa goldfields	FE, 1B.1	OMC	Valley and foothill grassland, vernal pools, cismontane woodland. Extirpated from most of its range; extremely endangered.	None. No suitable habitat present.
Layia carnosa	Beach layia	FE, SE, 1B.1	OMC	Coastal dunes.	None. No suitable habitat present.
Lomatium parvifolium	Small-leaved lomatium	4.2	POM	Closed-cone coniferous forest, Chaparral.	Present. Known to occur at POM.
Lupinus tidestromii	Tidestrom's lupine	FE, SE, 1B.1	OMC	Coastal dunes.	None. No suitable habitat present.
Malacothamnus palmeri var. involucratus	Carmel Valley bush-mallow	1B.2	OMC	Cismontane woodland, chaparral.	None. No suitable habitat present.
Microseris paludosa	Marsh microseris	1B.2	POM, OMC	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland.	Potential to occur. Known to occur near POM at Veteran's Memorial Park. No known occurrences at POM or OMC.
Pinus radiata	Monterey pine	1B.1	POM	Closed-cone coniferous forest, cismontane woodland.	Present. Known to occur at POM.
Piperia yadonii	Yadon's rein orchid	FE, 1B.1	POM, OMC	Closed-cone coniferous forest, chaparral, coastal bluff scrub.	Present. Known to occur at POM.
Potentilla hickmanii	Hickman's potentilla	FE, SE, 1B.1	POM	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps.	Potential to occur. No known occurrences.
Rosa pinetorum	Pine rose	1B.2	POM	Closed-cone coniferous forest.	Potential to occur. No known occurrences.
Stebbinsoseris decipiens	Santa Cruz microseris	1B.2	POM, OMC	Broad-leafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub	Potential to occur. No known occurrences.
Trifolium buckwestiorum	Santa Cruz clover	1B.1	OMC	Coastal prairie, broad-leafed upland forest, cismontane woodland.	Potential to occur. No known occurrences (elkhorn slough reports).
Trifolium polyodon	Pacific Grove clover	1B.1	POM	Closed-cone coniferous forest, meadows and seeps, coastal prairie.	Potential to occur. No known occurrences.

Table 3.4-1. Potential for Occurrence of Special Status Species at POM and OMC					
Scientific Name	Common Name	Status (1)	Potential Location	General Habitat	Potential for Occurrence
Trifolium trichocalyx	Monterey clover	FE, SE, 1B.1	POM	Closed-cone coniferous forest.	Potential to occur after fire. No known occurrences.
Vegetation Communities					
Central Maritime Chaparral	Central Maritime Chaparral	None	POM, OMC	NA	Known to occur at POM and OMC
Monterey Cypress Forest	Monterey Cypress Forest	None	POM, OMC	NA	Known to occur at POM and OMC as horticultural plantings only.
Monterey Pine Forest	Monterey Pine Forest	None	POM	NA	Known to occur at POM.
Northern Bishop Pine Forest	Northern Bishop Pine Forest	None	POM	NA	Known to occur at POM.
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	OMC	NA	None present at OMC; but occurs in Former Fort Ord.

Sources: DFG, 2010; POM, 2008b; National Audubon Society, 2009; USFWS, 2009

(1) 1B.1 = Plants Rare, Threatened, or Endangered in California and Elsewhere. Seriously endangered in California.
1B.2 = Plants Rare, Threatened, or Endangered in California and Elsewhere. Fairly endangered in California.
4.2 = Plants of Limited Distribution – A Watch List. Fairly endangered in California.
4.3 = Plants of Limited Distribution – A Watch List. Not very endangered in California.
CSC = California species of special concern
ST = State listed threatened
FE = Federally listed endangered
SE = State listed endangered
FT = Federally listed threatened

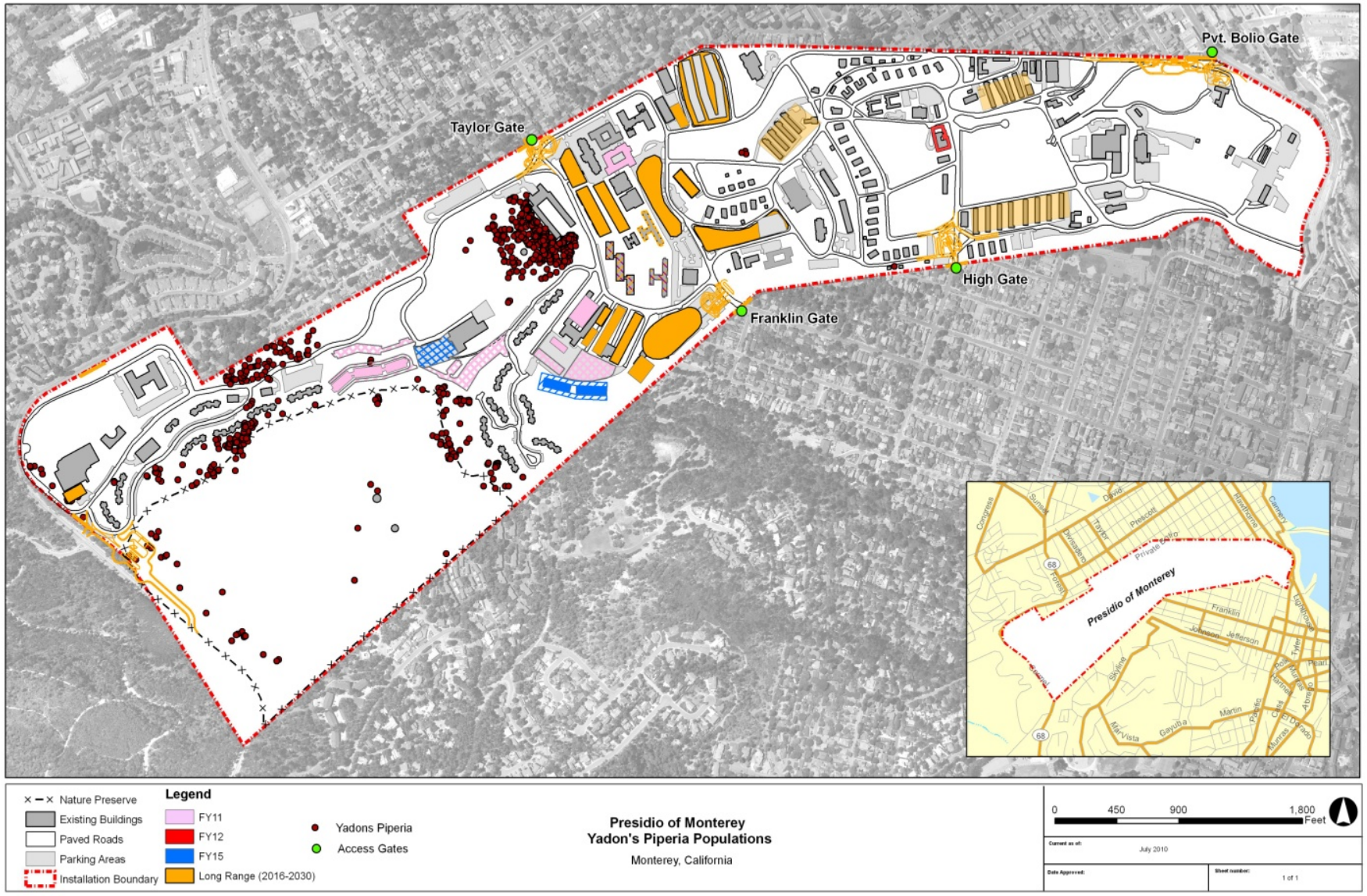

Figure 3.4-1. POM – Yadon's piperia

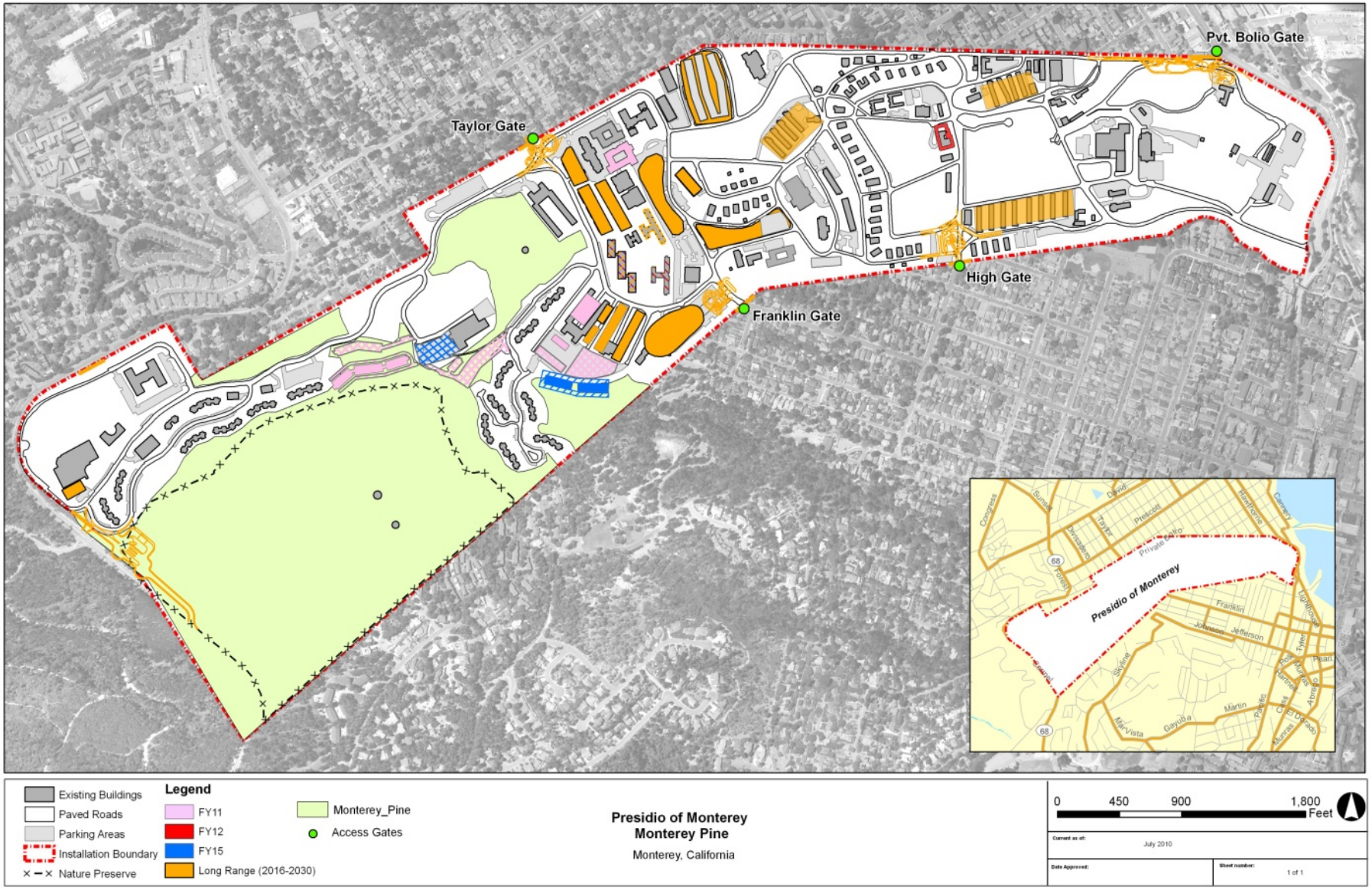

Figure 3.4-2. POM – Monterey pine

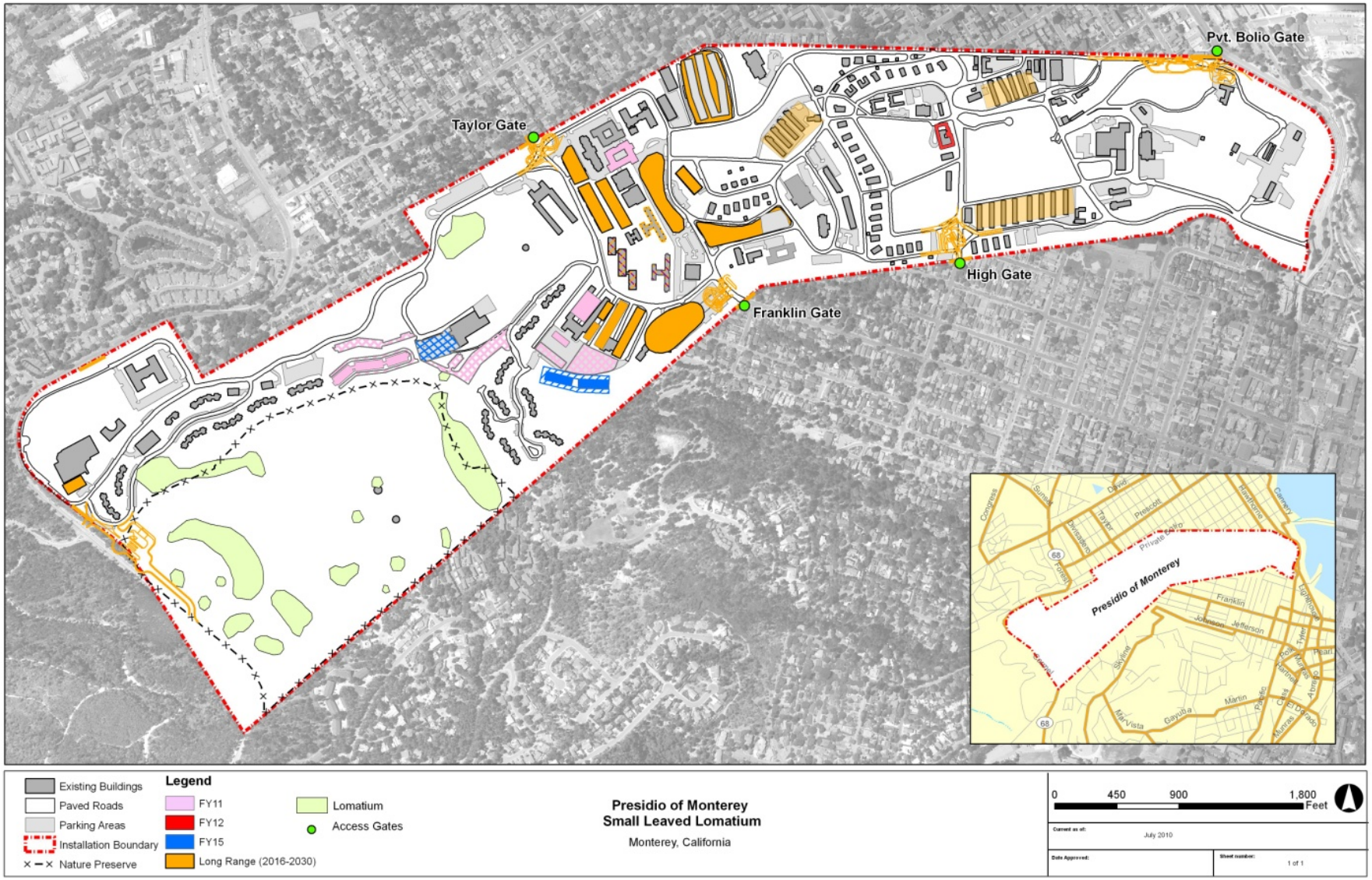

Figure 3.4-3. POM – Small-leaved lomatium

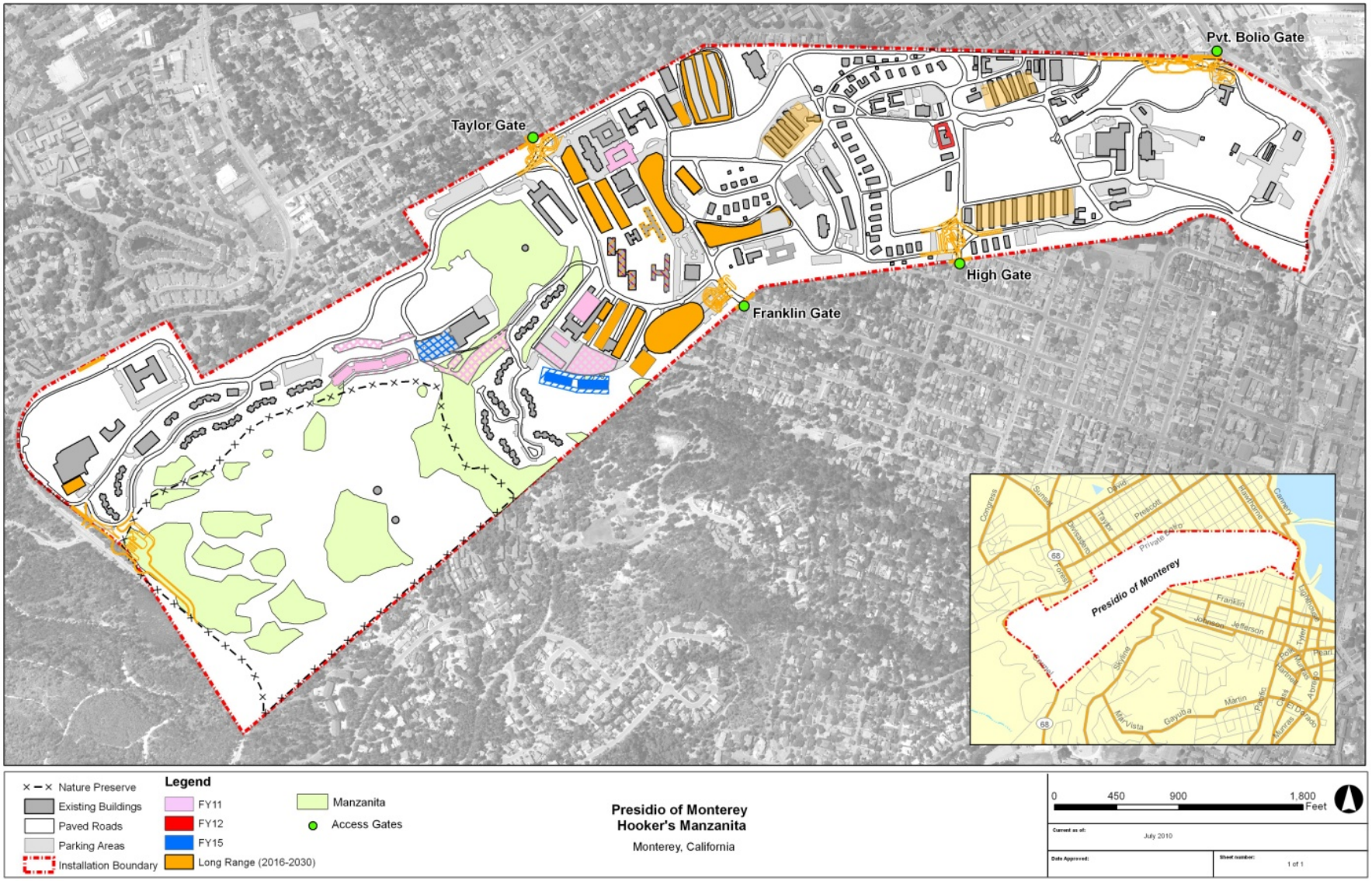

Figure 3.4-4. POM – Hooker's Manzanita

Hooker's Manzanita. Hooker's manzanita is endemic to the Monterey Bay area, found on sandy soils and sandstone outcrops along the coast, often as a co-dominant species within the maritime chaparral communities (POM, 2008b). The species is considered rare and endangered in California by the California Department of Fish and Game. The native occurrence of Hooker's manzanita has declined due to coastal development and fire suppression activities. The U.S. Army considers Hooker's manzanita a Species at Risk (SAR) at POM. The SAR are defined as native, regularly occurring species in the United States that are not federally listed under the ESA, but are either candidates for listing under the ESA or critically imperiled or imperiled across their range according to the NatureServe. NatureServe is a non-profit conservation organization providing an international network of biological inventories on rare and endangered species and threatened ecosystems (NatureServe, 2008).

At the POM, Hooker's manzanita occurs in the understory of the Monterey pine forest throughout the POM and the on Huckleberry Hill Nature Preserve, and it has also been planted in median strips and other landscaped areas (POM, 2008b). It is protected through management efforts in accordance with the ESMP (POM, 2008a).

Small-Leaved Lomatium. Small-leaved lomatium is found in Monterey, Santa Cruz, and San Luis Obispo Counties and occurs in pine forest and chaparral habitats on serpentine outcrops (POM, 2008b). It is listed by CNPS as a plant of limited distribution. Small-leaved lomatium populations have declined as a consequence of coastal development. At the POM, small-leaved lomatium grows in the understory of Monterey pine forest and in chaparral dominated by Hooker's manzanita in the Huckleberry Hill Nature Preserve. In accordance with the ESMP, the existing populations of small-leaved lomatium are currently protected and monitored during Yadon's piperia surveys on the POM.

Wildlife

Within the developed areas of the POM, wildlife habitat is limited to landscaped areas consisting of lawns, hedges, planted trees and gardens (POM, 2008b). As such, wildlife species are limited to those that are accustomed to living near humans. Common native wildlife species include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), scrub jay (*Aphelocoma coerulescens*), northern mockingbird (*Mimus polyglottos*), house finch (*Carpodacus mexicanus*), and striped skunk (*Mephitis mephitis*). Non-native species include rock dove (*Columba livia*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), Norway rat, Virginia opossum, and the domestic and feral cat.

Undeveloped areas of the POM provide habitat types including Monterey pine forest, riparian habitat, and native shrub that are more valuable to wildlife (POM, 2008b). These areas provide habitat for many native mammal species, such as western gray squirrel (*Sciurus griseus*), brush rabbit (*Sylviagus bachmani*), desert cottontail (*Sylvilagus audubonii*), black-tailed hare (*Lepus califomicus*), gray fox (*Urocyron cinereoargenteus*), black-tailed deer (*Odocoileus hemionus columbianus*), and raccoon (*Procyon lotor*). In addition, many bird species occur within the undeveloped areas of the POM, including California quail (*Qillipepla califomica*), American crow (*Corvus brachyrhynchos*), band-tailed pigeon (*Columba fasciata*), mourning dove (*Zenaida macroura*), scrub jay (*Aphelocoma coerulenscens*), American robin (*Turdus migratorius*), red-tailed hawk (*Buteo jamaicensis*), pygmy nuthatch (*Sitta pygmaea*), Townsend's warbler (*Dendroica townsendi*), dark-eyed junco (*Junco hyemalis*), northern flicker (*Colaptes auratus*), spotted towhee (*Pipilo erythrophthalmus*), and acorn woodpecker (*Melanerpes formicivorus*). Amphibian species utilizing Monterey pine forest habitat include the arboreal salamander (*Aneides lugubris*) and California slender salamander (*Batrachoseps attenuatus*). Riparian habitat along an intermittent stream at the southeastern boundary of the POM may provide habitat for fish species, including mosquito fish (*Gambusia affinis*), stickleback (*Gasterosteus* sp.), and introduced minnows (POM, 2008b). Native shrub habitat also provides shelter for wildlife species at the POM.

Special Status Animal Species

Table 3.4-1 presents the special status species with the potential to occur at the POM. With the exception of the recently delisted brown pelican (*Pelecanus occidentalis*) (USFWS, 2008a), which is known to fly over, there are no federally-listed wildlife species known to, or have the potential to, occur at the POM. Other special status wildlife species that have been observed at the POM include the sharp-shinned hawk (*Accipiter straitus*), a California species of concern, which was observed during surveys conducted in 1994 and 1995 in the Huckleberry Hill Preserve. The olive-sided flycatcher (*Contopus cooperi*), a federal species of concern designated as a Bird of Conservation Concern (BCC) (USFWS, 2002), was observed during surveys in 2005 and 2009 (POM, 2008b, ICFJ&S). In addition, over 100 species of migratory birds are known to occur at the POM, and are federally protected by the MBTA. These birds may utilize Monterey pine forest and other habitats, including landscaped vegetation, for shelter, foraging, and breeding. The Monarch butterfly (*Danaus plexippus)* is known to roost in the Huckleberry Hill Nature Preserve.

Special-status species with the potential to occur due to suitable habitat at the POM include the American badger (*Taxidea axus*), loggerhead shrike (*Lanius ludovicaianus*), and hoary bat (*Lasiurus cinereus).* There are no known occurrences of these species based on the U.S. Army's May 2010 biological plant survey.

3.4.3.2 OMC

Wetlands

There are no wetland areas that exist at the OMC (POM, 2008b).

Vegetation

Along with landscaped vegetation that dominant the developed areas of the OMC, other habitats include coast live oak woodland, central maritime chaparral, coastal scrub, and annual grassland.

Coast Live Oak Woodland. Coast live oak (*Quercus agrifolia*) woodland makes up approximately 106 acres, or 12 percent, of the total land area of the OMC (POM, 2008b). This vegetation community borders the OMC on the southern and eastern edges and extends into portions of the Marshall and Fitch Park housing areas. The coast live oak woodland at the OMC ranges from 20 to 90 percent canopy cover. Understory shrub species in this community include poison oak, coyote brush (*Baccharis pilularis*), and shaggy-barked manzanita, while herbaceous plant species include California hedge nettle (*Stachys bullata*), California brome, and miner's lettuce (*Claytonia perfoliata*).

Central Maritime Chaparral. Central maritime chaparral covers approximately 19 acres, or 2 percent of the total land area of the OMC (POM, 2008b). This community is located along a portion of the southern edge of Fitch Park and in a few isolated patches within residential areas. Common species of this community include shaggy-barked manzanita, poison oak, black sage (*Salvia mellifera*) and coyote brush.

Coastal Scrub. A small patch of coastal scrub occurs in the Marshall park housing area on the OMC, making up approximately 5.2 acres or 0.6 percent of the total land area (POM, 2008b). This vegetation community is dominated by poison oak, California sagebrush (*Artemisia californica*), mock heather (*Ericameria ericoidies*), tree lupine (*Lupinus arboreus*) and coyote brush.

Annual Grassland. Grassland occupies approximately 55 acres, or 6 percent of the total land area of the OMC (POM, 2008b). This community occurs in open areas adjacent to residences and in several small buffer zone areas bordering oak woodland. Plant species dominating this community include annual grasses and perennial and annual forbs such as soft brome (*Bromus hordeaceus*), slender wild oat, filaree (*Erodium sp.*), ripgut brome (Bomus rigidus) and silver hairgrass (*Aira caryophyllea*).

Special Status Plant Species

One federally-listed species, the Monterey spineflower (*Chorizanthe pungens* var. *pungens*) (Figure 3.4-5), is known to occur at the OMC. Several other special status plant species are known to occur on the OMC lands (Table 3.4-1). Monterey ceanothus (*Ceanothus cuneatus var. rigidus*) (Figure 3.4-6) and Sandmat manzanita (*Arctostaphylos pumila*) (Figure 3.4-7) are considered federal species of concern. The fourth special status species, virgate eriastrum (*Eriastrum virgatum*) (Figure 3.4-8) is not federally protected but is considered a species of limited distribution by CNPS. All of these species occur in intact ecosystems at the former Fort Ord (POM, 2008b).

Monterey Spineflower. This species colonizes open or disturbed sandy sites in coastal dune, coastal scrub, grassland, and maritime chaparral habitats. It occurs along the coast of southern Santa Cruz and northern Monterey counties and inland to the western edge of the Salinas Valley. Locations of Monterey spineflower at the OMC are known from surveys in 1992 (POM, 2008b).

Sandmat Manzanita. Sandmat manzanita occurs in maritime chaparral and coast live oak woodland at scattered locations around the Monterey Peninsula and in extensive stands on the former Fort Ord (POM, 2008b). Specific populations of the species are shown in Figure 3.4-7.

Monterey Ceanothus. Monterey ceanothus occurs in maritime chaparral, closed-cone coniferous forests, and coastal scrub, with the largest population found on the former Fort Ord (POM, 2008b). At the OMC, the highest density of Monterey ceanothus occurs in the undeveloped areas adjacent to the Fitch Park Housing Area, based on surveys conducted in 1992 (POM, 2008b).

Virgate Eriastrum. This plant species occurs in maritime chaparral. Based on surveys conducted in 1992, virgate eriastrum occurs near the Fitch Park Housing Area at the OMC (POM, 2008b).

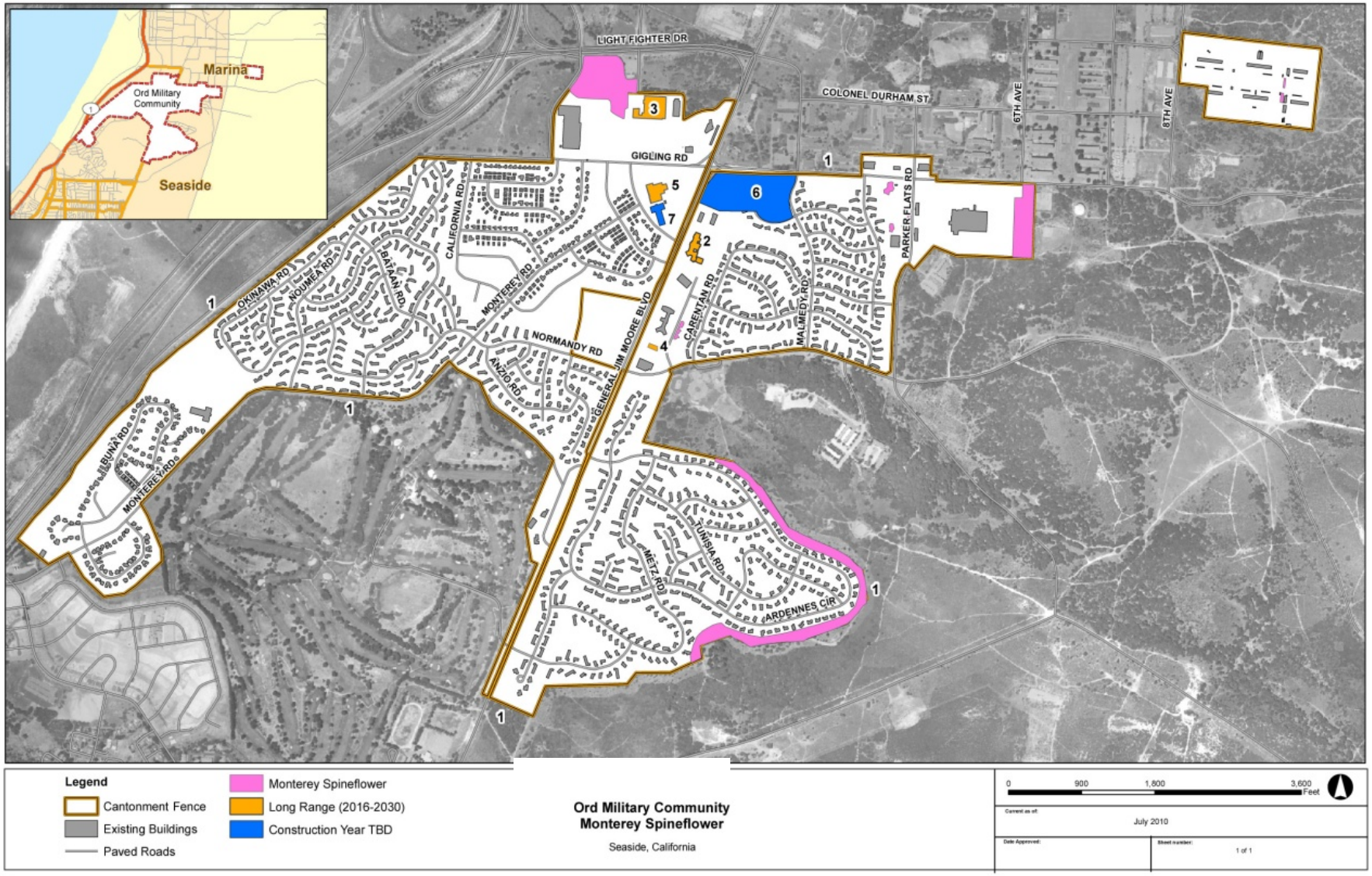

Figure 3.4-5. OMC – Monterey spineflower

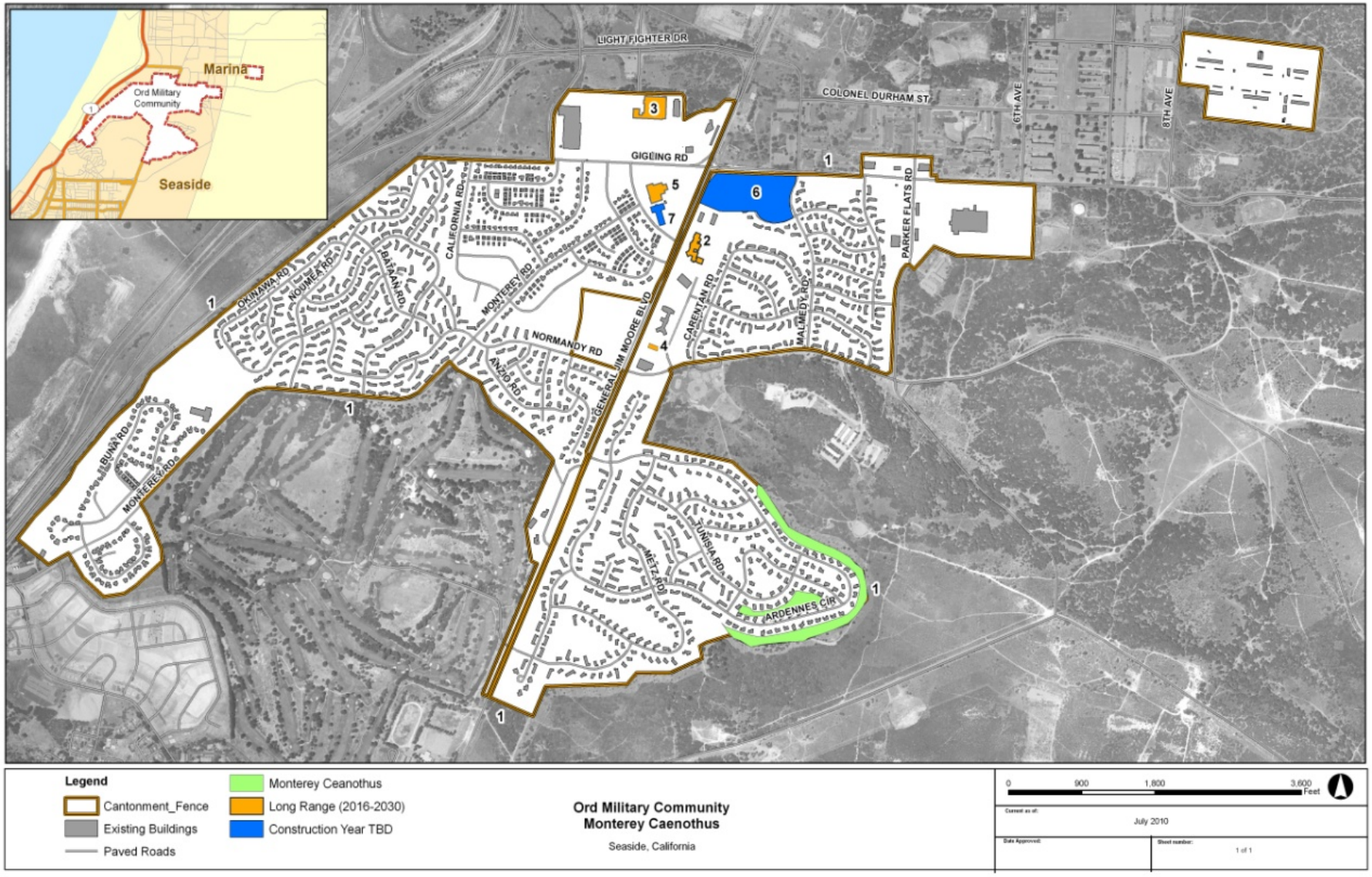

Figure 3.4-6. OMC – Monterey ceanothus

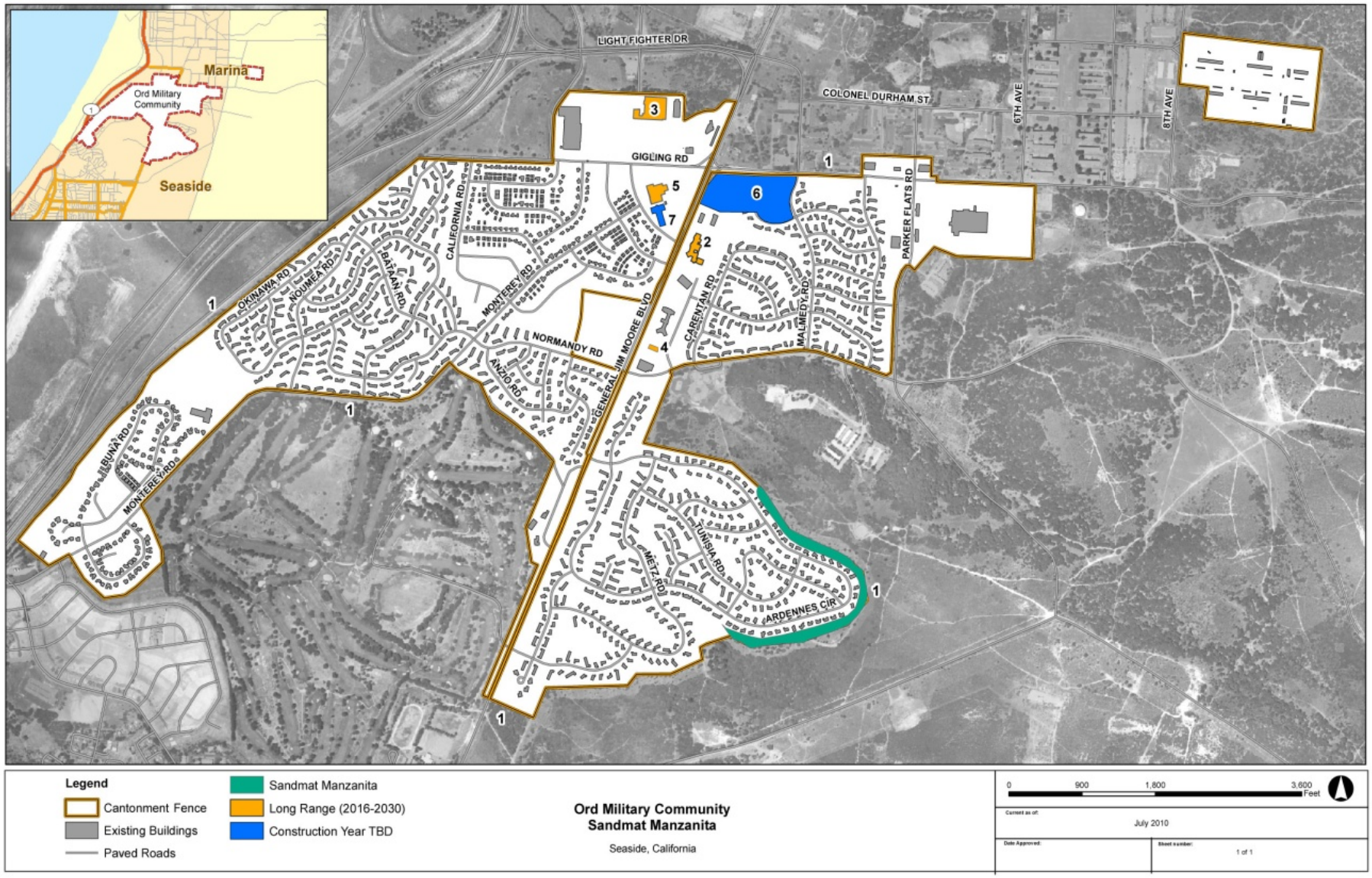

Figure 3.4-7. OMC – Sandmat manzanita

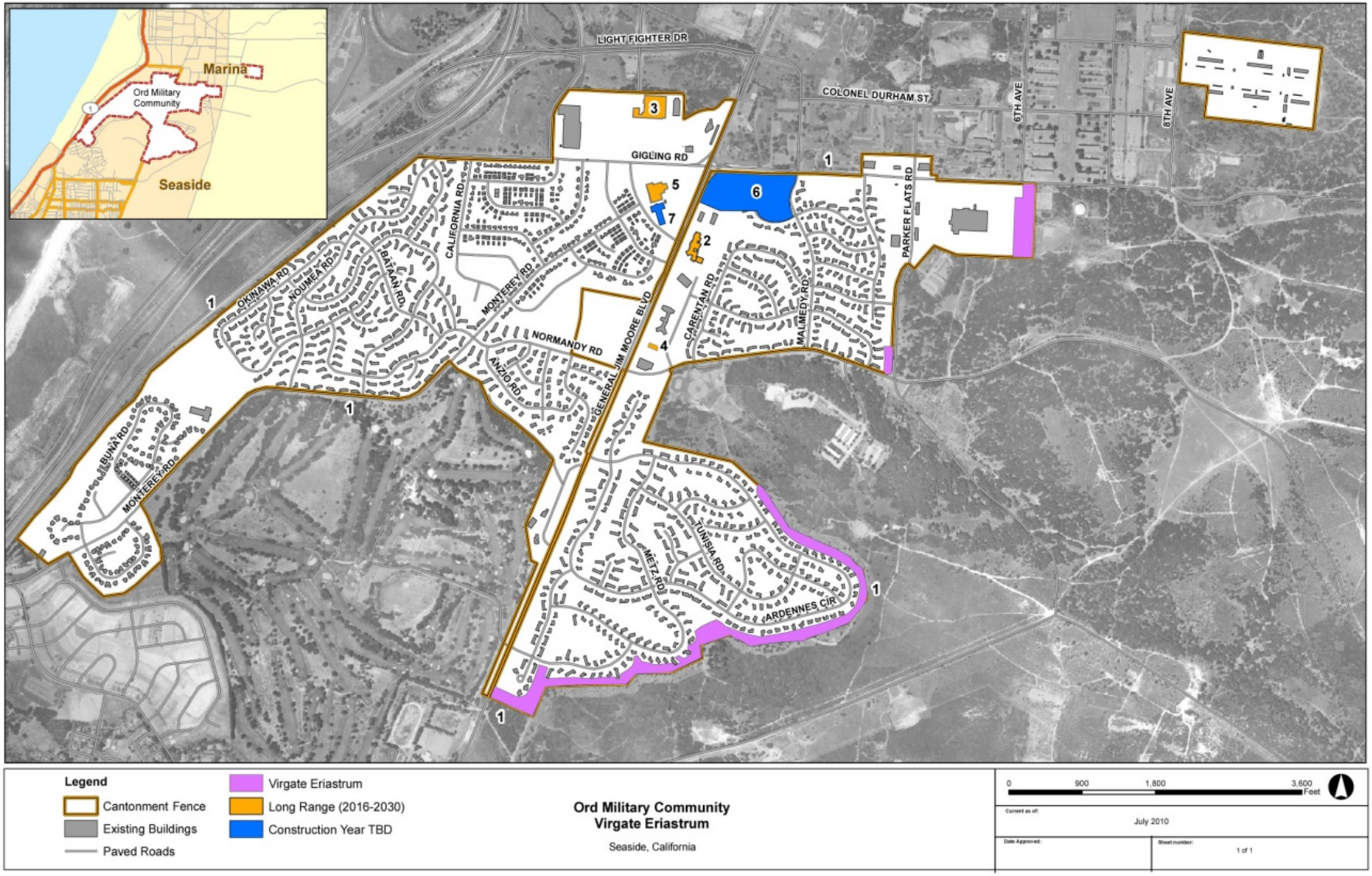

Figure 3.4-8. OMC – Virgate eriastrum

Wildlife

The majority of OMC consists of developed areas associated with the former Fort Ord and is currently used for housing (POM, 2008b). As such, wildlife species in the developed areas are limited to those adapted to living near urban development. However, valuable habitat for terrestrial wildlife occurs at the OMC in grassland, coast live oak woodland, maritime chaparral, and coastal scrub communities. No aquatic habitat exists for fish or other aquatic species.

Native species occupying grasslands at the OMC include brush rabbit, western fence lizard, black legless lizard (*Anniella pulchra nigra*), burrowing owl (*Athene cunicularia hypugea*), Botta's pocket gopher (*Thomomys bottae*), western spadefoot toad (*Scaphiopus hammondi*), gray fox, and deer mouse (*Peromyscus maniculatus*). Typical non-native species that inhabit this land cover include rock dove.

A wide range of wildlife utilize coast live oak woodland at the OMC, including several species of mammals such as the Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*), black tailed deer, black-tailed hare, desert cottontail, and California ground squirrel (*Spermophilus beecheyi*). While coyote (*Canis latrans*), mountain lion (*Felis concolor*), and bobcat (*Lynx rufus*) may occasionally occur at the OMC from surrounding natural areas, the limited habitat areas within the OMC are unlikely to provide permanent habitat. Several bird species utilizing the woodland for foraging include plain titmouse (*Parus inorantus*), hermit thrush (*Catharus guttatus*), American robin (*Turdus migratorius*), loggerhead shrike (*Lanius ludovicianus*), wild turkey (*Meleagris gallopavo*), acorn woodpecker, California quail, and several raptor species. Reptiles include the southern alligator lizard (*Gerrhonotus multicarinatus*) and western fence lizard.

Small areas of central maritime chaparral habitat at OMC is used by raccoon, loggerhead shrike, bushtit (*Psaltriparus minimus*), brush mouse (*Peromyscus boylii*), mourning dove, arboreal salamander, house wren (*Troglodytes aedon*), and barn swallow (*Hirundo rustica*). The coast horned lizard (*Phrynosoma coronatum*) may occur in small patches of coastal scrub that exist at OMC.

Special Status Wildlife Species

One federally-threatened species, the California tiger salamander (*Ambystoma californiense*) has the potential to occur at the OMC based on observations in 2006 and 2007. In addition, several other special status wildlife species have the potential to occur at the OMC (POM, 2008b) (Table 3.4-1). They include three mammals, the Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*), American badger (*Taxidea taxus*) and the Monterey ornate shrew (*Sorex ornatus salarius*), all of which are federal and state species of concern. Special status reptile species with the potential to occur include the coast horned lizard (*Phrynosoma coronatum*), a federal species of concern and a state fully-protected species and the California black legless lizard (*Anniella pulchra nigra*), a state protected species. Three special status bird species may occur at the OMC, including the loggerhead shrike (*Lanius ludovicaianus*), a federal and state species of concern, the California horned lark (*Eremophila alpestris actia*), a state species of concern, and the burrowing owl (*Athene cunicularia hypugea*), a federal and state species of concern. In addition, other migratory birds are known to occur at the OMC, and are federally protected by the MBTA. These bird species may utilize habitats within the undeveloped areas in addition to landscaped vegetation within the developed areas of the OMC.

California Tiger Salamander. The California tiger salamander is a terrestrial amphibian that is found in grasslands and low foothill regions where there are aquatic sites for breeding. The preferred aquatic sites are those that are seasonally wet, such as vernal pools and stock ponds. During dry months of the year, when the California tiger salamander goes into a dormant phase, they require underground refuges, such as burrows dug by ground squirrel or other small animals (USFWS, 2008b). The OMC is not within designated critical habitat for this species.

3.5 Land Use

This section describes existing land use within the project study area. Generally defined, land use describes the physical use of land. Lands at the POM and OMC are characterized as improved, semi-improved, and unimproved. The improved and semi-improved land uses describe the developed portions of the installation and the unimproved lands refer primarily to undeveloped open spaces.

3.5.1 Study Area

The study area consists of all portions of the POM and the OMC.

3.5.2 Regulatory Setting

The following section describes the federal regulations applicable to the proposed project. The local general plans and ordinances do not have jurisdiction over federal development actions at POM and OMC.

3.5.2.1 Federal

Coastal Zone Management Act

States must develop coastal zone management programs in order "to preserve, protect, develop and, where possible, to restore or enhance the resources of the nation's Coastal Zone...." Each coastal management plan must identify coastal zone boundaries, define permissible land and water uses within the coastal zone, inventory and designate areas of particular concern within the coastal zone, identify means by which the state proposes to exert control over land and water uses, establish guidelines for priorities of uses with particular areas, and describe the organizational structure proposed to implement the management program.

Consequently, California promulgated the California Coastal Act requiring each local coastal jurisdiction to prepare a local coastal program, consisting of a land use plan and an implementation program. The Monterey County Coastal Implementation Plan was effectively certified on January 12, 1988.

Federal lands are excluded from the Coastal Zone Management Act. Under the federal Coastal Zone Management Act, "The boundary of a State's coastal zone must exclude lands owned, leased, held in trust… [by the Federal Government]." However, federally-conducted activities on excluded lands that have spillover impacts on non-excluded lands, water use, or natural resources of the coastal zone will require a consistency determination. The requirements for consistency determinations are established in the National Oceanic Atmospheric Administration regulations.

U.S. Army Regulation 210-20 Real Property Master Planning for U.S. Army Installations

The U.S. Army Regulation 210-20 establishes the implementation process for developing U.S. Army installation RPMPs with specific guidance on the assessment of environmental effects and the development of environmental overlays to denote areas appropriate within each installation appropriate for development. U.S. Army Regulation 210-20 also presents guidance on the incorporation of sustainable property development principles in installation RPMPs (U.S. Army, 2008a).

3.5.3 Affected Environment

3.5.3.1 POM

Land at the POM is considered improved and semi-improved in the lower portion of the POM and unimproved in the upper portion, which contains the Huckleberry Hill Nature Preserve. Improved grounds include roads, structures, buildings, fields, parking lots, and other fully maintained areas. Semi-improved grounds are located in the urban forest area adjacent to and north of Kit Carson Road. Unimproved lands are located in the upper POM within and adjacent to the Huckleberry Hill Nature Preserve and between Hilltop and Building 630. The central and eastern portions of the POM, below the 450-foot elevation contour, commonly known as the middle and lower POM, are the most heavily developed and are considered improved grounds. The developed areas supporting the DLIFLC are also considered improved grounds. Buildings on the middle and lower POM provide classrooms, administrative, and support functions for the base mission. The lower POM, site of the historic district, has been leased to the City of Monterey as a historic preserve.

The unimproved upper portion of the POM, known as the Huckleberry Hill Nature Preserve, has been designated as open space. Monterey pine forest dominates the vegetation cover of the POM above the 450-foot elevation contour. The preserve is currently leased to and managed by the City of Monterey. The preserve is operated with the goal of retaining the forest while providing a recreation area for residents to enjoy for future generations (City of Monterey, 1987). Soldier Field, located in the lower POM, is also leased to the City of Monterey for recreational use. Existing land use categories on the POM include:

- **Professional/Institutional (PRO):** Includes educational and nonindustrial support activities.
- **Community (CMY):** Includes the POM Historic District; the cemetery; and recreational, medical, and commercial activities.
- **Residential (RES):** Includes on-post accompanied personnel housing.
- **Troop (TRP):** Includes on-post unaccompanied personnel housing with related support facilities and activities.

These land use activities are housed in both permanent and temporary structures. As shown in Figure 3.5-1, the existing land use pattern of the POM shows a mix of categories, which is common on most U.S. Army posts.

The area directly surrounding the POM is under the jurisdiction of the City of Monterey and consists of land that is categorized as low density (2 to 8 dwellings an acre) and medium density (8 to 30 dwellings an acre) residential (City of Monterey, 2005).

3.5.3.2 OMC

The OMC is primarily developed and comprises improved grounds with limited unimproved buffer areas. There are three types of land categories at the OMC: Community (CMY), Professional/Institutional (PRO), and Residential (RES) (Figure 3.5-2). The majority of the OMC is devoted to residential housing for Department of Defense personnel. In 2003, OMC housing was leased to a private company as part of the Residential Community Initiative (RCI). Collectively, the RCI housing areas are referred to as the "Parks at Monterey Bay." The RCI housing areas at the OMC consist of Doe Park, Fitch Park 2A and 2B, Hayes Park, Moore's Landing, Lower Stilwell Park, and Marshall Park.

Land surrounding the OMC is under the jurisdiction of the City of Seaside and is designated as recreational/commercial (Bayonet Black Horse Golf Course), low and medium density residential, medium density single-family residential, parks and open space, mixed use, and public/institutional (City of Seaside, 2004).

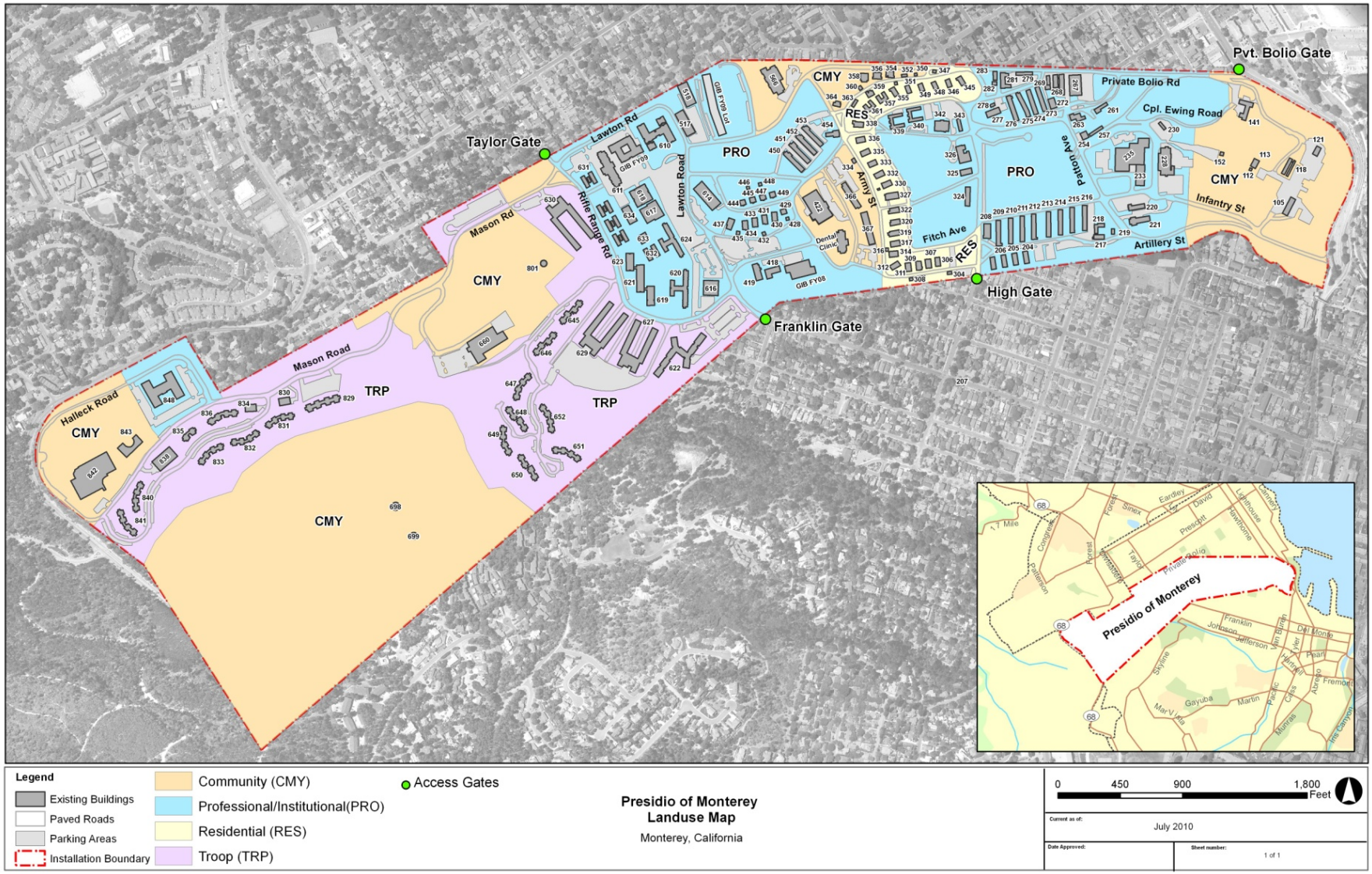

Figure 3.5-1. Existing Land Use—POM

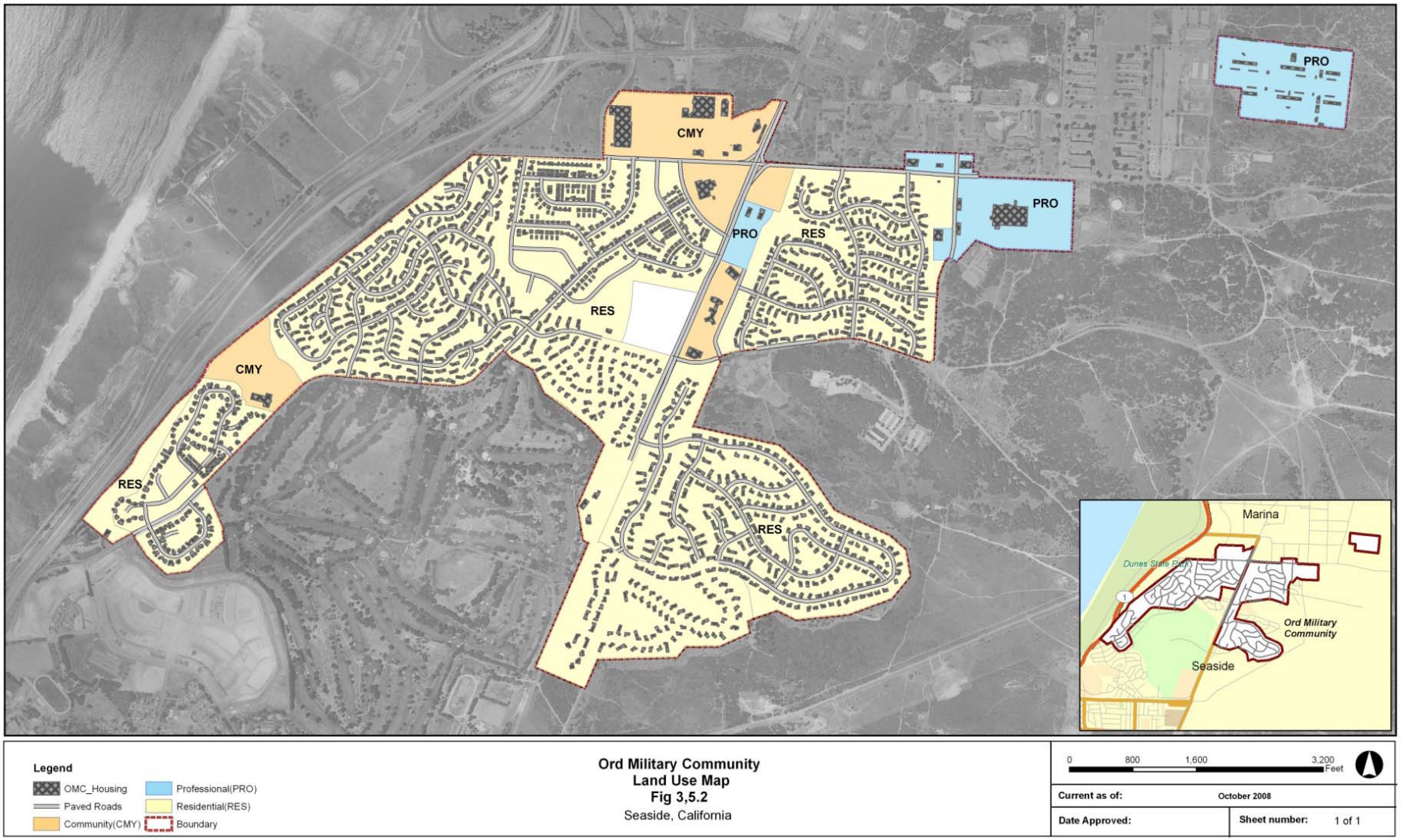

Figure 3.5-2. Existing Land Use—OMC

3.6 Population and Housing

This section describes the existing population and housing characteristics within the POM Installation and surrounding communities.

3.6.1 Study Area

The study area for population and housing includes the POM and OMC. Although the DoD owns the POM and OMC lands, the POM falls within the border of the City of Monterey and is directly adjacent to the City of Pacific Grove. The OMC falls mainly within the City of Seaside boundary with the exception of a small portion of land within unincorporated Monterey County. While DoD lands are not subject to local government rules and regulations, population and housing in these areas could be affected if military personnel choose to live off-post. Therefore, the cities of Monterey, Pacific Grove, and Seaside are also discussed in this section.

3.6.2 Regulatory Setting

There are no specific regulations that are applicable to population and housing.

3.6.3 Affected Environment

The estimated population and housing at the POM and OMC and in the nearby cities of Monterey, Seaside, and Pacific Grove are presented here. The physical boundaries of these areas are shown in Figure 1.5-2.

3.6.3.1 POM Installation

Population

The anticipated population of military personnel assigned to the POM Installation is shown in Table 2.4-1. An estimated 9 percent increase is expected from 2010 to 2015 even without construction of the RPMP proposed projects. The number of civilians and family members of military personnel that are anticipated to live at the POM or OMC would range from 8,000 to 9,000 people.

Housing

Military personnel can live at the POM, OMC, or off-post. Single military personnel are given the option to stay in barracks, which typically have double occupancy dorm rooms. The POM has 19 existing barracks buildings, with a total capacity of 2,935 beds (Table 3.6-1). There are 37 single-family homes at the POM that provide housing for officers and their families. Military personnel with family members can also live in apartments at the POM. Civilians are not allowed to live at the POM.

Table 3.6-1. Existing Barracks Capacity

Barracks Building No.	Capacity (beds)
622	402
627	528
629	344
630	364
Other barracks (1)	1,297
TOTAL	2,935

Note: Barracks are located at the POM; OMC does not currently have barracks.
(1) Other barracks include Buildings 645, 647-652, 829, 831-833, 835, 836, 840 and 841.

OMC housing is made up of residential housing, mostly single-family homes, that are open to military personnel and civilians. Barracks are not located at the OMC. OMC housing was privatized in 2003 as part of the RCI. The RCI housing, referred to as the "Parks at Monterey Bay," consists of 7 neighborhoods with a total of 1,889 units, as shown in Table 3.6-2. Housing priority is given to military personnel and their families, with the remaining vacant units available to civilians. The distribution of people living at the OMC is approximately 80 percent military and 20 percent civilian.

Table 3.6-2. Existing OMC Housing

Neighborhood	Number of Units
Hayes Park	160
Fitch Park – 2A	215
Fitch Park – 2B	138
Marshall Park	353
Lower Stilwell Park	492
Moore's Landing	247
Doe Park	284
TOTAL	1,889

Source: POM, 2010a
Note: Joe Lloyd Way is not a housing area.
Moore's Landing encompasses the old Lower Fitch Park and Upper Stilwell Park neighborhoods.

It is difficult to determine the exact number of military personnel living in U.S. Army housing or off-post because the population fluctuates on a monthly basis. There are currently over 3,000 military personnel and their families living in U.S. Army housing at the POM or OMC and over 800 civilians with family members living at the OMC (POM, 2009a).

3.6.3.2 City of Monterey

Population

The population of the City of Monterey was 30,121 in 2007 (AMBAG, 2008a). Table 3.6-3 presents the AMBAG population and housing projections through 2030 for the city (AMBAG, 2008b). The city population is expected to remain fairly constant, with only slight increases after 2015. The number of housing units is expected to increase slowly. Employment is anticipated to rise slightly, with an increase of about 19 percent from 2010 to 2030.

Table 3.6-3. City of Monterey – Population, Housing and Employment Projections

Data	2010	2015	2020	2025	2030
Population	30,106	30,092	30,278	30,464	30,650
Housing Units	13,630	13,723	13,816	13,909	14,002
Employment	32,752	34,209	35,773	37,346	38,974

Source: AMBAG, 2008b

Housing

The City of Monterey had a total of 13,238 housing units in 2000, with an average household size of 2.13 persons (U.S. Census Bureau, 2000b). Approximately 38.5 percent of the housing units are owner-occupied and 61.5 percent are renter-occupied. The percentage of owner-occupied housing has decreased over time because many areas originally zoned for single-family housing have been re-zoned for apartment or commercial development. The houses are being removed and there are a limited number of sites available for new construction. Almost all of the land within the City of Monterey's jurisdiction is already developed and few vacant lots are available. New housing in Monterey is typically higher density housing constructed on previously developed sites. In addition, the city does not have additional water for new commercial or residential development. These factors contribute to a slow growth in housing occupancy within the city. Monterey has adopted polices to encourage single-family housing (City of Monterey, 2005).

3.6.3.3 City of Seaside

Population

The population of the City of Seaside was 34,641 in 2007 (AMBAG, 2008a). Table 3.6-4 presents the population, housing, and employment projections through 2030 for the city (AMBAG, 2008b). The city population is expected to grow by only 1 percent from 2010 to 2030, while the number of housing units is expected to increase by about 7 percent over the same time period. Employment is anticipated to increase by about 37 percent from 2010 to 2030.

Table 3.6-4. City of Seaside – Population, Housing and Employment Projections

Data	2010	2015	2020	2025	2030
Population	34,666	35,165	35,158	35,709	35,017
Housing Units	11,408	11,593	11,779	11,964	12,149
Employment	7,360	7,792	8,462	9,224	10,055

Source: AMBAG, 2008b

Housing

There were 11,005 housing units in the City of Seaside in 2000 (U.S. Census Bureau, 2000c). Approximately 44 percent of the units were owner-occupied. In 2000, the average number of persons per household was 3.21. Table 3.6-4 shows the projected number of housing units through 2030.

3.6.3.4 City of Pacific Grove

Population

The population of the City of Pacific Grove was 15,444 in 2007 (AMBAG, 2008a). Table 3.6-5 presents the city's population, housing, and employment projections through 2030 (AMBAG, 2008b). The population and number of housing units are expected to remain relatively static from 2010 to 2030. Employment is anticipated to increase by about 10 percent from 2010 to 2030.

Table 3.6-5. City of Pacific Grove – Population, Housing and Employment Projections

Data	2010	2015	2020	2025	2030
Population	15,530	15,550	15,550	15,300	15,057
Housing Units	8,108	8,108	8,108	8,123	8,140
Employment	7,058	7,406	7,586	7,684	7,785

Source: AMBAG, 2008b

Housing

In 2000, Pacific Grove had about 7,998 housing units, with approximately 67.2 percent of them categorized as residential. Table 3.6-5 shows the projected number of housing units through 2030. Approximately 44.7 percent of the housing units were owner-occupied, 46.5 percent were renter-occupied, and 8.8 percent were vacant (City of Pacific Grove, 2003). From 1970 to 1990, housing in Pacific Grove increased by about 1,930 units, while from 1990 to 2000, the increase was only 82 units (City of Pacific Grove, 2003). Like Monterey, Pacific Grove has few vacant lots available for new development (only 85 in 2003). The city does, however, have a number of lots zoned for multi-family that are currently considered underutilized. The average household size in 2000 was 2.10 persons, which has decreased since 1990 by 0.06 persons (City of Pacific Grove, 2003).

3.7 Traffic and Transportation

This section presents the existing conditions found on the transportation system within the study area. For the existing conditions analysis, no "new" data collection effort was undertaken. Rather, all data utilized for this section were obtained through a multitude of previous studies. Further details of the potential impacts from implementing the projects under the No Action Alternative, Alternative 1, or Alternative 2 are provided in Appendix B, Revised Traffic Impact Study.

Analysis of the existing traffic conditions were based on investigations of the following:

- Roadway functional classification
- Roadway lane use configurations (geometrics)
- Roadway Annual Average Daily Traffic (AADT) volumes
- Intersection levels of service (LOS)
- Access gate volumes and operations

Evaluation of these types of transportation data was completed for this EIS at the project level for the short-range projects and at the programmatic level for the long-range ones. As project level details are not available for the long-range projects, additional data collection and analysis would be needed once detailed designs are completed for the projects in the alternatives.

3.7.1 Study Area

The study area consists of the POM, the OMC, and the areas immediately adjacent to them as future activities have the potential to impact traffic outside of the POM and OMC. The study area boundary for the transportation analysis is shown on Figure 3.7-1.

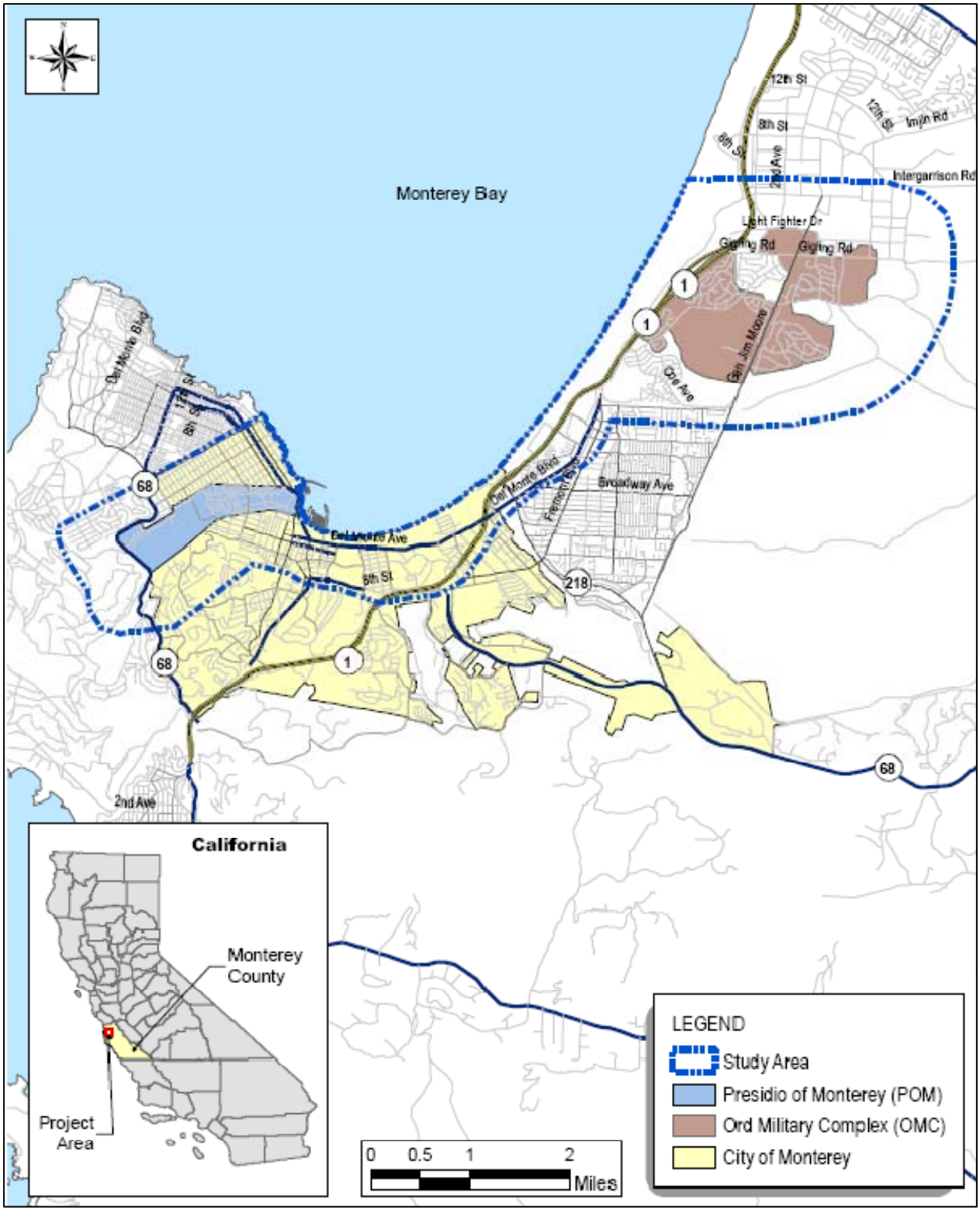

Figure 3.7-1. Traffic Study Area Boundary

3.7.2 Regulatory Setting

The AMBAG serves as the designated Metropolitan Planning Organization (MPO) for the region that includes Monterey, San Benito and Santa Cruz counties. Local municipalities determine their own criteria for streets and roads while the California Department of Transportation (Caltrans) oversees state highways. The relevant criteria for LOS for intersections and roadways are listed in Table 3.7-1.

Table 3.7-1. Local and Regional LOS Standards and Significance Thresholds

Regulatory Agency	Standards	Significance Thresholds
City of Monterey	LOS D on city roadway segments that do not adequately serve alternative modes of transportation LOS E & F on roadway segments that are adequately served by alternative modes of transportation	General Plan incorporates monitoring program to assess LOS standards that balance how the transportation system is operating. Roadway LOS standards apply to average (non-summer) conditions. Requires an analysis of the effects of transportation for projects that may cause significant traffic impacts: • Defines the traffic impact study area to be analyzed as all roadway segments where project traffic is expected to increase the existing traffic by two percent (2%) or more. • A project's traffic impact is defined as significant if the roadway segment is expected to operate at LOS = E or LOS = F under cumulative traffic conditions during typical (i.e., non-summer) weekday traffic conditions.
City of Seaside	LOS C for signalized intersections LOS C for unsignalized intersections LOS C for roundabout intersections LOS C for roadway segments	General Plan defines performance standards via level of service criteria. Intersections: For signalized intersections, LOS C is the standard. A significant impact would occur if an intersection operating at LOS A, B, or C degrades to LOS D, E, or F. For intersections already operating at unacceptable LOS D, a significant impact would occur if a project increases average delay more than 2.0 seconds. If the intersection is already operating at LOS E or F, a significant impact would occur if the project results in an increase of more than 1.0 second in the average delay. A LOS standard at signalized intersections can be exceeded if all of the following conditions are satisfied: • The level of service deficiency will be short term. This requires that cumulative mitigations are planned at the location that will experience the level of service deficiency or network improvements (i.e.; new streets) are planned that will redistribute traffic that will result in a long term acceptable level of service without capacity improvements at the subject location. The project must also contribute to the planned cumulative mitigations through traffic impact fees or some other funding mechanism, unless the improvement is fully funded by some other source. • There are physical or environmental constraints to providing the capacity to achieve an acceptable level of service. • The forecasted average vehicular delay is within two seconds of the acceptable level of service standard. (Average control delay per vehicle of 35 seconds for LOS C and 55 seconds for LOS D). • The project has a minimal impact at the location in question, i.e., the project will add ten peak hour trips or less to total intersection volumes or increase delay 1.0 seconds or less. • Credit can be given for signal timing optimization, implementation of signal coordination systems and/or implementation of intelligent transportation systems that can be demonstrated to increase the efficiency of the transportation system in question, thus partially mitigating the project

Table 3.7-1. Local and Regional LOS Standards and Significance Thresholds		
Regulatory Agency	Standards	Significance Thresholds
		impact. For unsignalized intersections, the LOS standard is LOS C for the average delay for all entering traffic at most locations. In addition to average delay for all entering traffic, the standard for side street Level of Service is E or F, in conjunction with peak hour signal warrants described in the most recent version of the Caltrans Traffic Manual. Side street delay at unsignalized intersections can be calibrated based upon actual field measurements in accordance with the latest version of the "Manual of Transportation and Traffic Engineering Studies", Institute of Transportation Engineers or utilizing electronic data measuring techniques approved by the City of Seaside Public Works Department. For roundabout intersections, LOS C is the appropriate standard. The LOS methodology shall be consistent with Chapter 4.4 Performance Analysis, U.S. Department of transportation, Federal Highway Administration, June 2000, or the most recent update. Roadways: LOS thresholds for street segments shall correspond with the LOS C standard described for signalized intersections. Planning level LOS standard is only appropriate for program level environmental documents. The Highway Capacity Manual (HCM 2000) states that the level of service for streets with a signal spacing of less than two miles is generally controlled by the signalized intersection levels of service along the corridor.
City of Pacific Grove	LOS D for intersections on arterial routes LOS C for arterial and collector streets	General Plan policy strives for LOS no worse than C during peak periods on arterials and collector streets within the city. Accepts LOS D during weekday peak-periods at intersections that are close to or at the limits of LOS D on arterial routes outside the Downtown area.
Monterey County	LOS C for all county roads LOS D proposed for some county roads serving affordable housing areas	General Plan for Monterey County utilizes a LOS C standard for all county roads, although some roads are not operating at that level. The goal contained in the General Plan is to assure that new development does not reduce the quality of life for existing residents, such as lower levels of service on county roads. The County does not have the funding ability to make the necessary improvements to achieve LOS C on all roads. The County may lower the LOS standard for roads serving Community Areas that are planned to accommodate the County's affordable housing allocation. The draft General Plan may include policies that recognize that a LOS D or lower standard is allowed within Community Areas and for the regional and local county roads that directly serve them. This may include State highways as well as other roads that function as the primary regional commuter routes in these areas. For roads in other unincorporated areas that are not serving Community Areas, the County can maintain a standard of LOS C.

Sources: City of Pacific Grove, 1994; City of Monterey, 2005; City of Seaside, 2004; Monterey County, 2004b

3.7.3 Affected Environment

3.7.3.1 Existing Roadway Network Functional Classification System

A transportation system is made up of a hierarchy of roadways, with each roadway classified according to certain parameters. Some of these parameters are geometric configuration, traffic volumes, spacing in the area's transportation grid, and speeds. For an overall traffic circulation assessment, it is standard practice to examine roadways that are functionally classified as a collector, minor arterial, or principal arterial. The reasoning for examining these three roadway classifications is that when the major roadway system (i.e., collectors or above) is functioning to an acceptable level, then the local roadways are not used beyond their intended function. The roadways analyzed in and around the POM and OMC are shown on Figure 3.7-2 and Figure 3.7-3, respectively.

Regional Roadway Network

The major regional roadways that are most significant, and that are external to both the POM and the OMC, are summarized below.

State Highway 1 – State Highway 1 is a major north-south roadway that roughly follows the Pacific Coast from Northern California to Los Angeles. State Highway 1 is a limited access (freeway) facility from Castroville to just north of Carmel. In the project vicinity, there are freeway interchanges at Reservation Road, Del Monte Boulevard, 1st Ave (12th Street Gate), Light Fighter Drive (Main Gate), and Fremont Boulevard in Seaside.

State Highway 68 – State Highway 68 primarily provides access from Salinas to Monterey and areas south of Seaside. South of the study area, State Highway 68 extends west of State Highway 1 into Pacific Grove, and is known as Holman Highway.

State Highway 156 – State Highway 156 links State Highway 1 (north of Marina) with U.S. 101 to the northeast.

State Highway 183 – State Highway 183 connects Salinas to State Highway 1 to the west.

State Highway 218 – State Highway 218 starts at State Highway 1 in Sand City and provides access through Del Rey Oaks to the southeast where it joins State Highway 68. State Highway 218 is an alternative route to the westernmost segment of State Highway 68. It also serves areas on the south side of the City of Seaside.

U.S. 101 – The U.S. 101 freeway is a major north-south route in California. It is aligned to the east of State Highway 1, through Prunedale and Salinas in the vicinity of the OMC.

Del Monte Avenue/Boulevard – Del Monte Avenue/Boulevard is a non-continuous roadway, roughly parallel to State Highway 1, extending from Washington Avenue in Monterey to the interchange with State Highway 1 on the north side of Marina.

Fremont Street/Boulevard – Fremont Street/Boulevard is a key four-lane arterial providing an important link through Seaside. It runs north-south, roughly parallel to State Highway 1, and has interchanges with State Highway 1 at either end.

Broadway Avenue – Broadway Avenue is a four-lane arterial that provides an east-west connection between Del Monte Boulevard, Fremont Boulevard, and General Jim Moore Boulevard.

Reservation Road – This facility is aligned approximately east-west, from State Highway 1 past the northern boundary of the OMC to State Highway 68 south of Salinas. It is currently classified as a rural highway east of Imjin Road, and a signalized arterial from Imjin Road west to State Highway 1.

Figure 3.7-2. Roadway Functional Classification / Study Network – POM

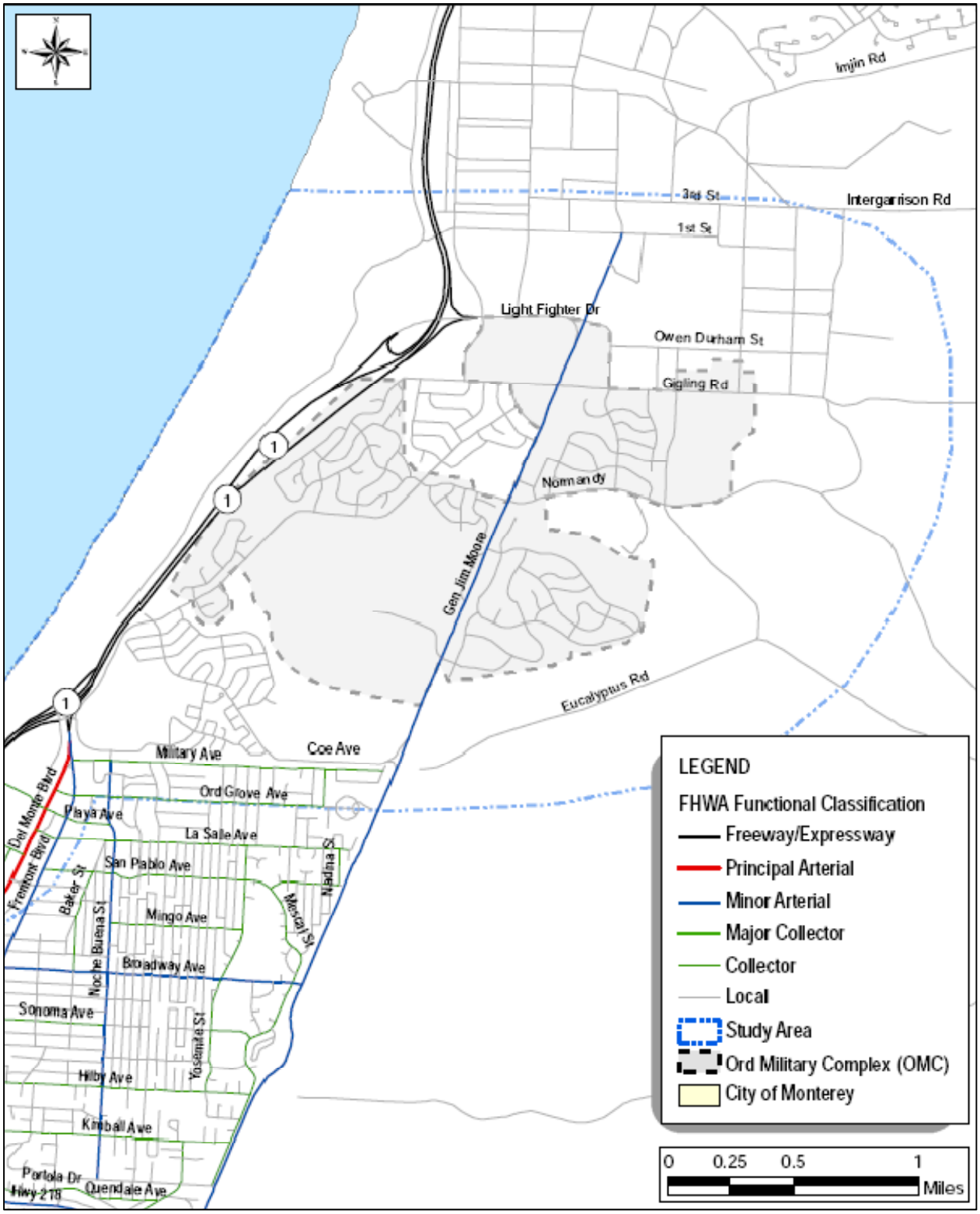

Figure 3.7-3. Roadway Functional Classification / Study Network – OMC

Blanco Road – Blanco Road is an east-west route north of the OMC that provides a connection between U.S. 101 and Reservation Road. This facility currently provides an important link between the OMC and Salinas.

Davis Road – Davis Road is an arterial between Salinas and Reservation Road, aligned approximately parallel to State Highway 68.

POM Internal Roadway Network

The internal roads of the POM generally run northeast-southwest or southeast-northwest following and crossing the natural contours of the land. The historic nature of the roadways and urban development of the POM do not accommodate high levels of vehicle speed or significant volumes of traffic. The POM has four operational ACPs at Franklin Street, High Street, Private Bolio Road, and Taylor Street. Prior to implementing security measures in 2001 that closed the POM to public access, two intersections were not operating at an acceptable level of service for the movement of vehicle traffic. Since implementation of the security measures, all intersections are operating at an acceptable level of service.

The major POM internal roadways are summarized below.

Lighthouse Avenue – Lighthouse Avenue is a four-lane undivided arterial roadway that follows the Monterey Bay coastline. Lighthouse Avenue connects the City of Pacific Grove and old Monterey with downtown Monterey. Lighthouse Avenue is signalized at major cross streets. It provides access to the POM via a gate at Private Bolio Road.

Pacific Street – Pacific Street is a north-south arterial roadway that connects the POM with State Highway 1. Pacific Street is a two-lane roadway with traffic signals at major intersections.

Pine Street – Pine Street is an east-west residential collector with two travel lanes. It provides access to the POM via a gate at Private Bolio Road.

High Street – High Street is a north-south residential collector street with one lane in each direction. It provides access to the POM via a gate at Stilwell Road and Corporal Evans Road.

Franklin Street – Franklin Street is an east-west residential collector street with one-lane in each direction. It provides access to the POM via a gate at Rifle Range Road and Lawton Road.

Prescott Avenue – Prescott Avenue is an east-west collector street that parallels the POM on the north. Prescott Avenue is a two-lane street near the POM.

OMC Internal Roadway Network

The OMC is an open installation and no special access permits or licenses are required. The primary access road to the OMC is Light Fighter Drive, which can be accessed from State Highway 1. Another major roadway providing access to OMC is Gigling Road, which provides access to all areas of the OMC except the maintenance area, which is accessed via Joe Lloyd Way. Primary roadways on the OMC include General Jim Moore Boulevard, Gigling Road, and Light Fighter Drive.

The roadway network within the OMC consists of a mix of arterial and local roads. The older area of the OMC (area of World War II vintage barracks and structures) was laid out in a traditional street pattern (integrated). Subsequent residential development incorporated the curvilinear and cul-de-sac street patterns common to residential developments following World War II. The existing roadway system in the OMC generally consists of four types of roads:

- 2-lane rural local
- Residential local
- Urban arterial (both 4- and 6-lane)
- Rural arterial

The 2-lane rural roads primarily serve the artillery ranges and remote areas of the OMC; examples are Parker Flats Road and Barloy Canyon Road. These roads are paved but not engineered to any specific standard. The residential streets serve permanent housing areas as well as several mobile home park facilities such as Marshall Park Family Housing and Patton Park Family Housing.

Four-lane urban arterials consist of streets such as Gigling Road, Light Fighter Drive (main entrance road) and the portion of General Jim Moore Boulevard between Light Fighter Drive and Ardennes Circle. These streets have curbs and in some cases sidewalks and a median. Rural arterials such as Inter-Garrison Road, Reservation Road, and the remaining portion of General Jim Moore Boulevard have no curbs, sidewalks, or medians.

The key existing roadways within the OMC include 2nd Avenue, Light Fighter Drive, Gigling Road, Imjin Road, Inter-Garrison Road, Coe Avenue, and General Jim Moore Boulevard. These facilities are described below.

2nd Avenue – This roadway runs north-south and is east of State Highway 1.

12th Street – 12th Street is an east-west collector road running between Imjin Road and State Highway 1. Access to State Highway 1 is provided at the 12th Street interchange.

8th Street/8th Street cut-off – This arterial runs from the railroad tracks just east of State Highway 1 eastward towards Imjin Road. Near this location the roadway turns to a southeast direction and intersects Inter-Garrison Road.

Light Fighter Drive – Light Fighter Drive is a short east-west arterial that provides access to State Highway 1. It also connects to 2nd Avenue and General Jim Moore Boulevard.

Gigling Road – This roadway is an east-west facility in the central part of former Fort Ord, aligned south of Light Fighter Drive. It connects with several north-south streets, including General Jim Moore Boulevard.

Imjin Road – Imjin Road is an arterial roadway running south from Reservation Road through the OMC where it ends at 8th Street. The northern portion of Imjin is four lanes, narrowing to two lanes in the southern portion.

Inter-Garrison Road – Inter-Garrison Road is an east-west two-lane arterial that provides a connection from Reservation Road to the central area of former Fort Ord, where Inter-Garrison Road becomes 3rd Street.

Coe Avenue – Coe Avenue, a two-lane arterial, currently provides access to OMC areas south of the golf courses from General Jim Moore Boulevard. It starts at General Jim Moore Boulevard and ends immediately east of State Highway 1 at its intersection with Monterey Road.

General Jim Moore Boulevard – This facility is the major north-south roadway through the southern part of former Fort Ord. It begins north of State Highway 218 and follows the western edge of former Fort Ord at the Seaside city limits. Farther north, General Jim Moore Boulevard intersects with Coe Avenue, and continues to an intersection with Light Fighter Drive. General Jim Moore Boulevard ends at 3rd Street, where it becomes 4th Avenue. General Jim Moore Boulevard is also known as North South Road.

3.7.3.2 Existing Roadway Lane Use Configurations

Traffic volumes collected by the regional MPO and various cities were used to determine current traffic conditions at the gates entering the POM. In 2009, traffic volumes were collected for 24-hour periods in order to determine AADT volumes on major road segments within the POM. This information is shown on Figure 3.7-4. Existing traffic volume data from 2005 were used to determine AADT volumes on major road segments within the OMC, as shown on Figure 3.7-5.

After identifying the current AADT volumes, the existing road network was examined to determine the current corridor size (i.e., lane use configuration) of the major routes. This information is presented on Figure 3.7-6 for the POM and Figure 3.7-7 for the OMC.

3.7.3.3 Existing Intersection Descriptions

Intersections within POM

Major intersections within the POM are described below.

Taylor Street, Rifle Range Road, Mason Road, and Lawton Road – The traffic flow at the intersection of Mason Road, Lawton Road, Taylor Street, and Rifle Range Road consists of four approaches. The lane configuration of the Mason Road approach from the west consists of a single through/left turn lane. The Lawton Road approach from the east consists of a combined through/right/left turn lane. Both the approach on Taylor Street from the north and the approach from the south on Rifle Range Road have a combined through/right/left turn lane.

Rifle Range Road and SSG Fronins Street – The SSG Fronins Street at Rifle Range Road intersection consists of three approaches. The approach from the north along Rifle Range Road consists of a combined through/right turn lane. The approach from the south along Rifle Range Road consists of a combined through/left turn lane. The lane configuration of the SSG Fronins Street approach from the west is a combined left/right turn lane.

Patton Avenue and Plummer Street – The Patton Avenue at Plummer Street intersection consists of three approaches. The approach from the south along Patton Avenue consists of a combined through/left turn lane. The approach from the west along Plummer Street consists of a combined right turn /left turn lane. The lane configuration of the Patton Avenue approach from the north is a combined left/right turn lane.

Kit Carson Road at Stilwell Road and Plummer Street – The Kit Carson Road at Stilwell Road and Plummer Street intersection consists of four approaches. The lane configuration of the Stilwell Road for both approaches is a combined through/left/right turn lane. The approach of Plummer Street from the east consists of an exclusive right turn lane and an exclusive through/left turn lane. The approach along Kit Carson Road from the west consists of a combined through/left/right turn lane.

Army Street and Private Bolio Road – The Army Street at Private Bolio Road intersection consists of three approaches. The approach from the south along Army Street consists of a combined left/right turn lane. The approach from the east along Private Bolio Road consists of a combined through/right turn lane. The lane configuration of the Private Bolio Road approach from the east is a combined through/left turn lane.

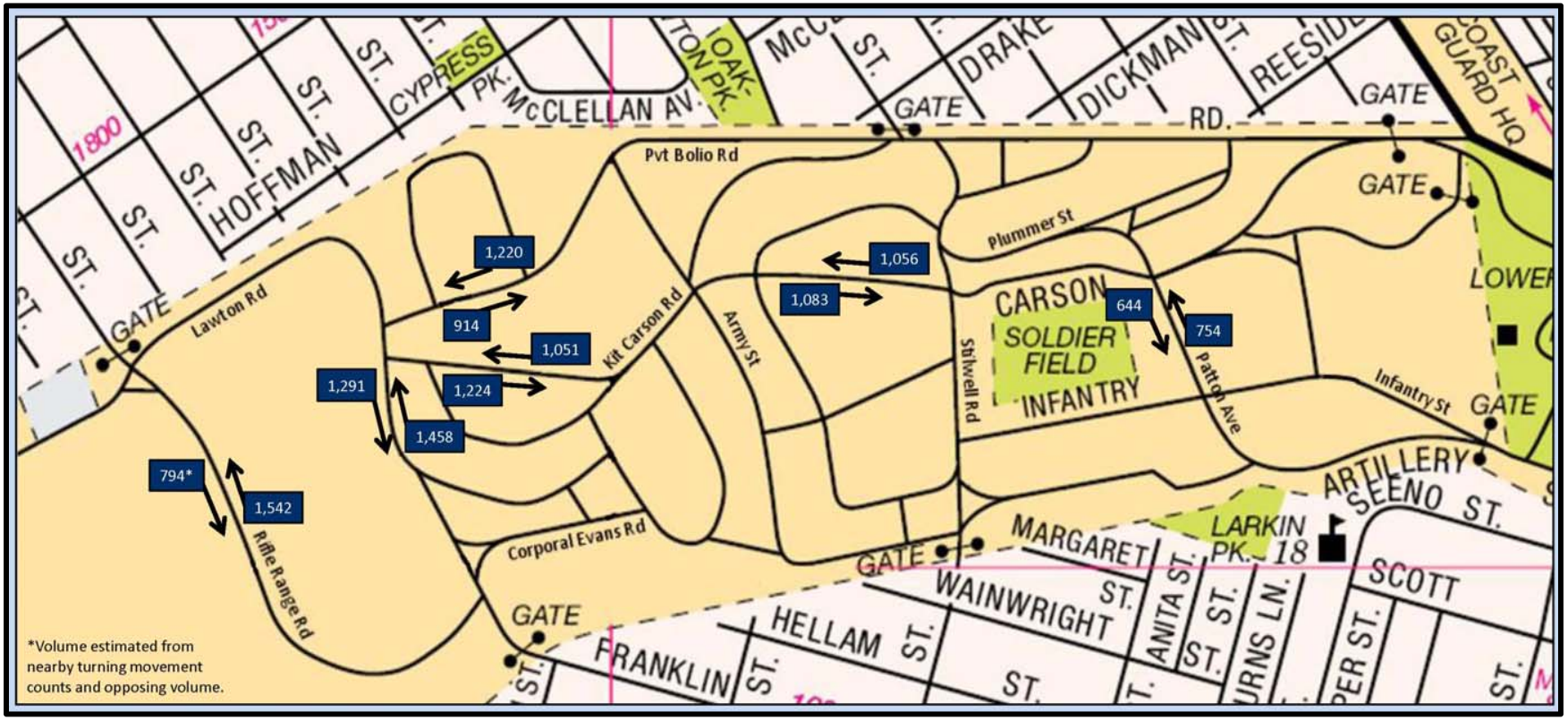

Figure 3.7-4. Annual Average Daily Traffic Volumes – POM

Source: Gannett Fleming, 2010.

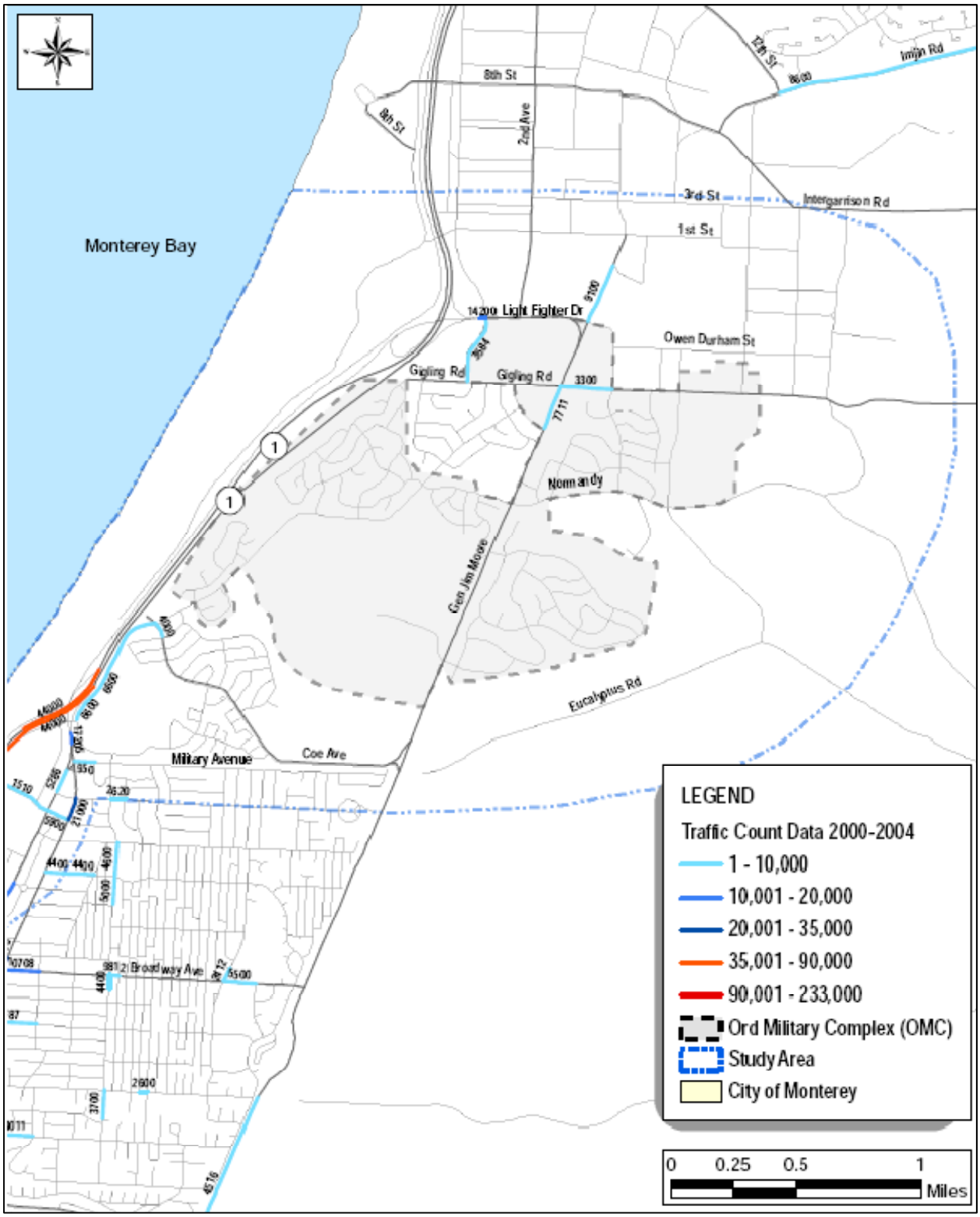

Figure 3.7-5. Weekday Traffic Volumes – OMC

Figure 3.7-6. Corridor Size – POM

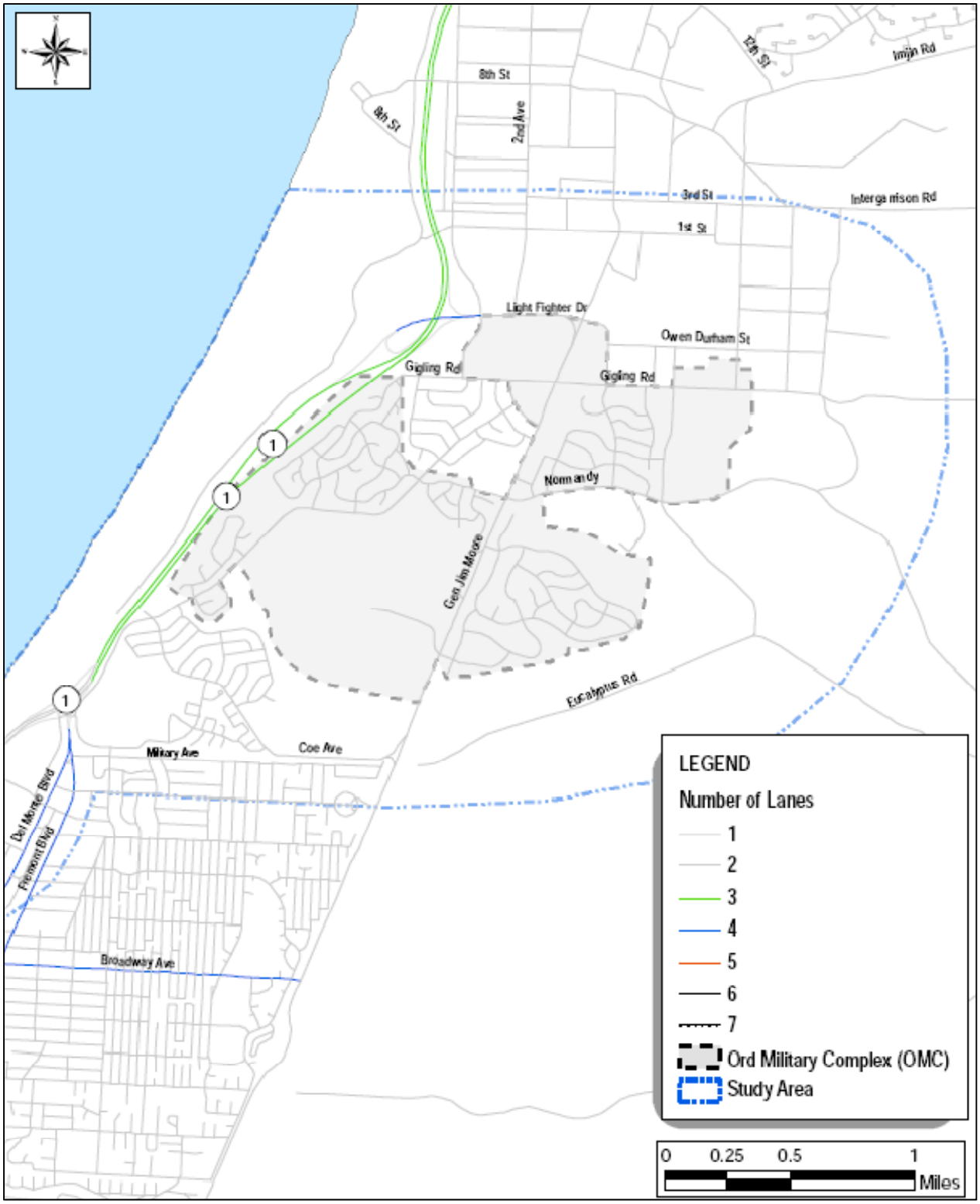

Figure 3.7-7. Corridor Size – OMC

Army Street and Kit Carson Road - The Army Street at Kit Carson Road intersection consists of four approaches. The lane configuration of Army Street for both the north and south approaches is a combined through/left/right turn lane. The lane configuration of Kit Carson Road for both the east and west approaches is a combined through/left/right turn lane.

Kit Carson Road at Lewis Road – The Kit Carson Road at Lewis Road intersection consists of three approaches. The approach from the north along Lewis Road consists of a combined through/right turn lane. The approach from the south along Lewis Road consists of a combined through/left turn lane. The lane configuration of the Kit Carson Road approach from the west is a combined through/left/right turn lane.

Lawton Road at Kit Carson Road – The Lawton Road at Kit Carson Road intersection consists of four approaches. The Lawton Road approaches both consist of a combined through/left/right turn lane. The approach from the east on Kit Carson Road is a single through/left/right turn lane. The approach to this intersection for the west is from a parking lot and consists of a single through/left/right turn lane.

Lawton and Franklin Street at Rifle Range Road – The traffic flow at the intersection of Franklin Road and Rifle Range Road consists of three approaches. The Franklin Road approach from the north consists of a combined through/right turn lane. The Franklin Road approach from the south consists of an exclusive through lane and exclusive left turn lane. The approach from Rifle Range Road from the west consists of an exclusive left turn lane and an exclusive right turn lane.

Lawton Road at Private Bolio Road – The traffic flow at the intersection of Lawton Road and Private Bolio Road consists of three approaches. All three approaches consist of a combined through/left/right turn lane.

Intersections near POM

Major intersections near the POM are described below.

Taylor Street at Prescott Lane – The Taylor Street and Prescott Street intersection consists of four approaches. The two Taylor Street approaches each consist of a combined through/left/right turn lane. The Prescott Street approach from the east consists of a combined through/right turn lane and an exclusive left turn lane. The Prescott Street approach from the west consists of a combined through/left turn lane and an exclusive right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Franklin Street at High Street – The Franklin Street and High Street intersection consists of four approaches. The Franklin Street approaches both consist of a combined through/left/right turn lane. The lane configuration of the High Street approaches both consist of a combined through/left/right turn lane. The intersection has stop signs for both High Street approaches but there are no stop signs for either Franklin Street approach. Pedestrian crosswalks are provided at all four approaches.

Van Buren Street at Franklin Street – The Van Buren Street and Franklin Street intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Pacific Street at Franklin Street – The Pacific Street and Franklin Street intersection consists of three approaches. The Pacific Street approaches both consist of an exclusive left turn lane and a combined through/right turn lane. The Franklin Street approach from the west consists of a combined through/right turn lane and an exclusive left turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Lighthouse Avenue and Private Bolio Road – The intersection of Lighthouse Avenue and Private Bolio Road consists of three approaches. The approach from the north along Lighthouse Avenue consists of an exclusive through lane and a combined through/right turn lane. The Lighthouse Avenue approach from the south consists of two exclusive through lanes and an exclusive left turn lane. The lane configuration of the Private Bolio Road approach from the west consists of a right turn lane.

Intersections within OMC

Major intersections within the OMC are described below.

First Avenue at Gigling Road – The traffic flow at First Avenue and Gigling Road consists of three approaches. The First Avenue approach from the north consists of a combined through/left/right turn lane. The lane configuration of the Gigling Road approach from the west consists of a combined through/left/right turn lane. The Gigling Road approach from the east consists of an exclusive through lane as well as an exclusive right turn lane. The intersection has stop signs for all three approaches. There are no pedestrian crosswalks on any of the approaches.

Sixth Division Circle at Gigling Road – The traffic flow at Sixth Division Circle and Gigling Road consists of three approaches. The Sixth Division Circle from the south consists of a single combined through/left/right turn lane. The lane configuration of the Gigling Road approaches both consist of a combined through/left/right turn lane. The intersection has stop signs for the Sixth Division Circle approach. The pedestrian crosswalk is provided for only the Sixth Division Circle approach.

General Jim Moore Boulevard at Gigling Road – The traffic flow at General Jim Moore Boulevard and Gigling Road consists of four approaches. The General Jim Moore Boulevard approach from the south consists of an exclusive left turn lane and an exclusive through lane as well as a combined through/right turn lane. The approach from the north on General Jim Moore Boulevard consists of an exclusive lane for each of the left turning and right turning traffic as well as two exclusive lanes for through traffic. The Gigling Road approach from the east has an exclusive lane each for right turning, left turning, and through traffic. The Gigling Road approach from the west has an exclusive lane for left turning and a combined lane for through/right turning traffic. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Monterey Road at Normandy Road – The Monterey Road and Normandy Road intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection has stop signs and pedestrian crosswalks at all four approaches.

General Jim Moore Boulevard at Normandy Road – The traffic flow at General Jim Moore Boulevard and Normandy Road consists of four approaches. The General Jim Moore Boulevard approach from the south consists of an exclusive left turn lane, a through lane, and a combined through/right turn lane. The approach from the north on General Jim Moore Boulevard consists of an exclusive lane for each of the left turning and right turning traffic as well as two exclusive lanes for through traffic. The two Normandy Road approaches each have a combined lane for through/left/right turning traffic. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on both Normandy Road approaches as well as the northern approach of General Jim Moore Boulevard.

California Avenue at Monterey Road – The Monterey Road and California Road intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection has stop signs and pedestrian crosswalks at all four approaches.

Intersections near OMC

Major intersections near the OMC are described below.

Second Avenue at First Street – The Second Avenue and First Street intersection consists of four approaches. The Second Avenue approaches both have a three lane configuration; one exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The First Street approach from the west consists of a single combined through/left/right turn lane. The First Street approach from the east consists of an exclusive right turn lane and a combined through/left turn lane. The intersection has stop signs and pedestrian crosswalks at all four approaches.

First Avenue at Light Fighter Drive and Highway 1 Off-Ramp – The First Avenue and Light Fighter Drive/Highway 1 ramp intersection consists of four approaches. The First Avenue approach from the south consists of two lanes; an exclusive left turn lane and an exclusive right turn lane. The lane configuration of the First Avenue approach from the north consists of three exclusive lanes, one each for left turning, through, and right turning traffic. The Highway 1 off-ramp approach from the west consists of an exclusive through lane and a combined through/right turn lane. The Light Fighter Drive approach from the east consists of an exclusive left turn lane and two exclusive through lanes. The intersection has stop signs for the First Avenue approaches only. There are no pedestrian crosswalks on any approach.

Second Avenue at Light Fighter Drive – The traffic flow at the intersection of Second Avenue and Light Fighter Drive consists of four approaches. The Second Avenue approach from the south consists of a combined lane for through/left/right turning traffic. The Second Avenue approach from the north consists of three exclusive lanes, one each for through/left/right turning traffic. The Light Fighter Drive approaches both consist of an exclusive left turn lane and two exclusive through lanes. The intersection is signalized and has pedestrian signal heads and push buttons for both the Second Avenue approaches as well as the eastern Light Fighter Drive approach. Pedestrian crosswalks are provided on both Second Avenue approaches as well as the eastern approach of Light Fighter Drive.

General Jim Moore Boulevard at Light Fighter Drive – The General Jim Moore Boulevard and Light Fighter Drive intersection consists of four approaches. The General Jim Moore Boulevard approach from the south consists of two exclusive left turn lanes and a combined through/right turn lane. The lane configuration of the northern approach of General Jim Moore Boulevard consists of an exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The Light Fighter Drive approaches both consist of an exclusive left turn lane and a combined through/right turn lane. This is a signalized intersection with a pedestrian signal head and push button for the western approach of Light Fighter Drive.

Monterey Road at Coe Avenue – The traffic flow at the intersection of Monterey Road and Coe Avenue consists of three approaches. The Monterey Road approach from the west consists of an exclusive lane each for through traffic as well as a lane for right turning traffic. The Monterey Road approach from the east consists of an exclusive lane each for through traffic as well and left turn lane. The Coe Avenue approach from the south consists of an exclusive left turn lane as well as an exclusive right turn lane. All three approaches are controlled by stop signs and all three approaches have pedestrian crosswalks.

General Jim Moore Boulevard at McClure Way-Arloncourt Road – The General Jim Moore Boulevard and McClure Way/Arloncourt Road intersection consists of four approaches. The General Jim Moore Boulevard approaches both consist of an exclusive left turn lane, exclusive right turn lane, and two dedicated through lanes. The Arloncourt Road approach from the east consists of a combined left/right turn lane. The McClure Way approach from the west consists of a combined through/left/right turn lane. The intersection has stop signs on all four approaches.

General Jim Moore Boulevard at Coe Avenue – The General Jim Moore Boulevard and Coe Avenue intersection consists of three approaches. The Coe Avenue approach from the west consists of an exclusive lane each for left turning and right turning traffic. The lane configuration of the southern approach from General Jim Moore Boulevard consists of an exclusive left turn lane as well as an exclusive through lane. The lane configuration of the northern approach from General Jim Moore Boulevard consists of an exclusive right turn lane as well as an exclusive through lane.

Fremont Boulevard at Monterey Road – The intersection at Fremont Boulevard and Monterey Road consists of three approaches. The Fremont Boulevard approach from the south consists of an exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The Monterey Road approach from the east consists of a combined through/right turn lane. The Monterey Road approach from the west consists of an exclusive right turn lane, an exclusive left turn lane, and a combined through/left turn lane. The intersection is signalized on all three approaches and there are no pedestrian crosswalks.

Fremont Boulevard at Del Monte Boulevard-Military Avenue – The intersection of Fremont Boulevard and Del Monte Boulevard/Military Avenue consists of four approaches. The Del Monte approach from the southwest consists of an exclusive left turn lane as well as a dedicated right turn lane. The Military Avenue approach from the east consists of a single right turn lane. The Fremont Boulevard approaches both consist of an exclusive through lane and a combined through/right turn lane. The Del Monte and Military Avenue approaches have stop signs. There are no pedestrian crosswalks on any of the approaches.

General Jim Moore Boulevard at Broadway Avenue – The General Jim Moore Boulevard and Broadway Avenue intersection consists of three approaches. The lane configuration for General Jim Moore Boulevard for both approaches consists of a combined through/left/right turn lane. The Broadway Avenue approach from the west consists of a combined left/right turn lane. The intersection has stop signs on all three approaches. Pedestrian crosswalks are not provided on any approach.

General Jim Moore Boulevard at State Highway 218 – The General Jim Moore Boulevard and State Highway 218 intersection consists of three approaches. The General Jim Moore Boulevard approach from the north consists of an exclusive left turn lane as well as a dedicated right turn lane. The State Highway 218 approach from the east consists of a dedicated through lane and a dedicated left turn lane. The State Highway 218 approach from the west consists of a dedicated through lane as well as an exclusive right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided for all four approaches.

3.7.3.4 Existing Intersection Levels of Service

Urban road systems are ultimately controlled by the function of the major intersections. Intersection failure directly reduces the number of vehicles that can be accommodated during the peak demand hours and reduces the total daily capacity of a corridor. As a result of this strong impact on corridor function, it is important to determine how well the major intersections are functioning by determining their LOS.

A LOS is a qualitative measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a scale that is intended to match the perception by motorists of the operation of the intersection. The LOS provides a means for identifying intersections that are experiencing operational difficulties, as well as providing a scale to compare different intersections. The LOS scale represents the full range of operating conditions and it is based on the ability of an intersection or street segment to accommodate the amount of traffic using it. The scale ranges from "A" (indicates little, if any, vehicle delay) to "F" (indicates significant vehicle delay and traffic congestion), as summarized in Table 3.7-2. The LOS computational analysis is guided by the procedures outlined in the Transportation Research Board's Highway Capacity Manual – Special Report 209 using the Highway Capacity Software, version 4.1f.

Table 3.7-2. Descriptions of Traffic LOS

Level of Service	Description	Delay
A	Free flow conditions	Little or no delay
B	Reasonably free flow conditions	Short traffic delays
C	Stable operations	Average traffic delays
D	High density, bordering unstable flow	Long traffic delays
E	Very unstable operations	Very long delays
F	Forced or breakdown flow	Stop and go conditions

Source: Transportation Research Board Committee on Highway Capacity and Quality of Service, 2000

Signalized Intersections

For signalized intersections, research has determined that average stopped delay per vehicle is the best available measure of LOS. Table 3.7-3 identifies the relationship between LOS and average stopped delay per vehicle for signalized intersections. The procedures used to evaluate signalized intersections use detailed information of geometry, lane use, signal timing, peak hour volumes, arrival types, and other parameters. This information is then used to calculate delays and determine the capacity of each intersection. Generally, an intersection is determined to be functioning adequately if operating at LOS C or better.

Table 3.7-3. LOS Criteria – Signalized Intersections

Level of Service	Stopped Delay per Vehicle (sec)
A	< 10
B	10 to 20
C	20 to 35
D	35 to 50
E	50 to 80
F	> 80

Source: Transportation Research Board Committee on Highway Capacity and Quality of Service, 2000

Unsignalized Intersections

Level of service for unsignalized intersections is based on the delay experienced by each movement within the intersection, rather than on the overall stopped delay per vehicle at the intersection. This difference from the method used for signalized intersections is necessary since the operating characteristics of a stop-controlled intersection are substantially different. Driver expectations and perceptions are also entirely different. For two-way stop controlled intersections, the through traffic on the major (uncontrolled) street experiences no delay at the intersection. Conversely, vehicles turning left from the minor street experience more delay than other movements and at times can experience significant delay. Vehicles on the minor street, which are turning right or going across the major street, experience less delay than those turning left from the same approach. Due to this situation, the LOS assigned to a two-way stop-controlled intersection is based on the average delay for vehicles on the minor street approach.

The LOS for all-way stop-controlled intersections is also based on delay experienced by the vehicles at the intersection. Since there is no major street, the highest delay could be experienced by any of the approaching streets. Therefore, the LOS is based on the approach with the highest delay. The LOS criteria for the all-way and two-way stop controlled intersections are shown in Table 3.7-4.

Table 3.7-4. LOS Criteria – Stop Controlled Intersections

Level of Service	Stopped Delay per Vehicle (sec)
A	< 10
B	10 to 15
C	15 to 25
D	25 to 35
E	35 to 50
F	> 50

Source: Transportation Research Board Committee on Highway Capacity and Quality of Service, 2000

POM and OMC Intersections

In order to calculate the LOS, a number of intersections were selected for this EIS traffic analysis based on the availability of traffic count data from previous traffic studies. A total of 10 intersections were identified within the POM boundary (Table 3.7-5) and 12 intersections were identified for the major street network adjacent to the POM (Table 3.7-6). Similarly, 6 intersections were identified within the OMC (Table 3.7-7) and 11 intersections were identified adjacent to the OMC (Table 3.7-8).

The operational characteristics of each intersection were determined from data collected and analyzed for the peak hour periods to ensure the intersection peak volume was represented. Peak periods for the POM were 6 am to 8 am (AM peak hour) and 3:30 pm to 5:30 pm (PM peak hour), while the peak periods for the OMC were 7 am to 9 am (AM peak hour) and 4 pm to 6 pm (PM peak hour).

Table 3.7-5. Existing Intersection LOS – Locations within POM (2010)		
Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Taylor Street / Lawton Road / Mason Road / Rifle Range Road	B	B
Rifle Range Road / SSG Fronins Road	B	B
Patton Avenue / Plummer Street	B	B
Stilwell Road / Kit Carson Road	A	A
Army Street / Private Bolio Road	B	B
Army Street / Kit Carson Road	A	A
Kit Carson Road / Lewis Road	B	B
Lawton Road / Kit Carson Road	E	B
Lawton / Rifle Range Road / Franklin Street	F	D
Lawton Road / Private Bolio Road	C	B

Source: Gannett Fleming, 2010

Table 3.7-6. Existing Intersection LOS – Locations Adjacent to POM (2010)		
Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Lighthouse Avenue / Washington Street / Del Monte Avenue	B	B
Foam Street / Reeside Avenue	A	B
Lighthouse Avenue / Reeside Avenue	B	B
Private Bolio Road / Lighthouse Avenue	B	C
Prescott Avenue / Taylor Street	A	B
Prescott Avenue / Lighthouse Avenue	NA	B
Franklin Street / High Street	C	C
Franklin Street / Pacific Street	C	C
Franklin Street / Van Buren Street	B	A
Munras Avenue / Soledad Drive	B	C
Fremont Street / Aguajito Road	C	D
Fremont Street / Abrego Street	B	C

Source: Gannett Fleming, 2010

Table 3.7-7. Existing Intersection LOS – Locations within OMC (2005)

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
First Avenue / Gigling Road	A	A
Sixth Division Circle / Gigling Road	A	A
General Jim Moore Boulevard / Gigling Road	B	B
Monterey Road / Normandy Road	A	A
General Jim Moore Boulevard / Normandy Road	B	B
California Avenue / Monterey Road	C	D

Source: USACE, 2006

Table 3.7-8. Existing Intersection LOS – Locations Adjacent to OMC (2005)

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec)	LOS	Delay (sec)	LOS
Second Avenue / First Street	8.4	A	7.5	A
First Avenue / Light Fighter Drive	21.8	C	31.5	D
Second Avenue / Light Fighter Drive	7.8	A	5.6	A
General Jim Moore Boulevard / Light Fighter Drive	23.4	C	26.8	C
Monterey Road / Coe Avenue	9.9	A	10.9	A
General Jim Moore Boulevard / McClure Way-Arloncourt Road	64.3	F	15.7	C
General Jim Moore Boulevard / Coe Avenue	3.7	A	1.8	A
Fremont Boulevard / Monterey Road	39.1	D	36.2	D
Fremont Boulevard / Del Monte Boulevard-Military Avenue	2.1	A	47.3	E
General Jim Moore Boulevard / Broadway Avenue	25.9	D	24.5	C
General Jim Moore Boulevard / State Route 218	22.4	C	9.2	A

Sources: Harding Lawson Associates, 2001; USACE, 2006

3.7.3.5 Existing Access Gate Volumes and Operations

POM Access Gates

At the POM there are six ACPs; four are active and two are closed due to mandated AT/FP measures. Data are not available for the two closed locations at Pine Street and Artillery Street. The average daily traffic (ADT) traffic data for the ACPs shown in Table 3.7-9 are based on traffic counts taken during the first and second weeks of August 2007and from data collected before September 11, 2001. The 2007 data were collected by the City of Monterey.

Table 3.7-9. ACP Traffic Volumes – POM (2001 & 2007)

Access Control Point	August 2007				Pre-September 11, 2001
	AM Peak Hour (In)	PM Peak Hour (Out)	Weekday ADT (In)	Weekday ADT (Out)	AM Peak Hour (In)
Franklin Street	446	425	2719	2360	484
Private Bolio Road	176	151	1341	1273	305
Taylor Street	262	278	1676	2833	475
High Street	175	122	754	676	195
Pine Street (closed ACP)	NA	NA	NA	NA	364
Artillery Street (closed ACP)	NA	NA	NA	NA	NA

Sources: City of Monterey, 2007; ECW, 2007

Specific data for each gate used to arrive at the values shown in Table 3.7-9 are discussed below. The daily volumes observed during the first week of August 2007 at the ACPs are also provided.

Franklin Street ACP – The Franklin Street ACP provides the most direct and primary access to the core of the POM. Most of the DLIFLC students living off-post enter the POM at this location. This ACP also provides the most direct access for emergency response vehicles. The street grade on Franklin Street is steep and as such does not lend itself to allow for heavy vehicle/commercial truck traffic. Some heavy vehicle traffic, however, does occur. The ACP includes two inbound lanes and one outbound lane and is staffed by three guards who check visitor identification. Traffic volume data from 2007 for the Franklin Street ACP are provided in Table 3.7-10.

Table 3.7-10. Traffic Volumes – Franklin Street ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	1420	1217	2637
8/05/2007	Sunday	1117	1100	2217
8/06/2007	Monday	2696	2304	5000
8/07/2007	Tuesday	2673	2353	5026
8/08/2007	Wednesday	2678	2241	4919
8/09/2007	Thursday	2646	2448	5094
8/10/2007	Friday	2904	2456	5360
8/11/2007	Saturday	1390	1257	2647
8/12/2007	Sunday	1039	1066	2105
	Weekday ADT	2719	2360	--
	Weekend ADT	1242	1160	--
			AM Peak Hour (6:45 AM – 7:45 PM):	446 Vehicles
			PM Peak Hour (4:15 PM – 5:15 PM):	425 Vehicles

Source: City of Monterey, 2007

Private Bolio ACP – This ACP is located at the unsignalized intersection at Lighthouse Avenue. Traffic from the cities of Monterey and Pacific Grove enters the POM by travelling southbound on Lighthouse Avenue and making a right turn onto Private Bolio Road. The southbound traffic entering the POM does not impede traffic because queues can back up to Lighthouse Avenue without impeding through traffic. Northbound traffic from the Lighthouse Tunnel (from the cities of Seaside and Marina and downtown Monterey) enters the POM by making an uncontrolled left turn from Lighthouse Avenue onto Private Bolio Road. Vehicles making this left turn must find an appropriate gap in the southbound traffic on Lighthouse Avenue. The left turn queue at the intersection of Lighthouse Avenue and Private Bolio can be problematic. The Private Bolio ACP includes one inbound lane (with separated tandem positions) and one outbound lane. The gate is staffed by two guards who check visitor identification, two guards who inspect the vehicles, and one guard stationed at the Visitor Control Center. Traffic volume data from 2007 for the Private Bolio ACP are provided in Table 3.7-11.

Table 3.7-11. Traffic Volumes – Private Bolio ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	695	625	1320
8/05/2007	Sunday	557	450	1007
8/06/2007	Monday	1352	1263	2615
8/07/2007	Tuesday	1370	1227	2597
8/08/2007	Wednesday	1447	1374	2821
8/09/2007	Thursday	1308	1221	2529
8/10/2007	Friday	1230	1282	2512
8/11/2007	Saturday	868	829	1697
8/12/2007	Sunday	528	444	972
	Weekday ADT	1341	1273	--
	Weekend ADT	662	587	--
			AM Peak Hour (7:00 AM – 8:00 PM):	176 Vehicles
			PM Peak Hour (4:30 PM – 5:30 PM):	151 Vehicles

Source: City of Monterey, 2007

Taylor Street ACP – The Taylor Street ACP provides the only direct access from the POM to the cities of Monterey, Pebble Beach, and Pacific Grove. Because of the steep grade on Franklin Street, the majority of heavy vehicles/commercial traffic comes through the Taylor Street ACP. There is potential for the traffic queue to interfere with the traffic signal at Taylor and Prescott Streets. During the PM Peak Hour there does appear to be heavy traffic from Rifle Range Road and Private Bolio Road (where the DLIFLC classrooms are located) to Mason Road (where the dorms are located), which conflicts with vehicles entering the POM from Taylor Street. The ACP includes one inbound lane and one outbound lane and is staffed by one guard who checks privately owned vehicle identification, one guard who checks pedestrian identification, and one guard who performs random inspections. Traffic volume data from 2007 for the Taylor Street ACP are provided in Table 3.7-12.

Table 3.7-12. Traffic Volumes – Taylor Street ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	628	553	1181
8/05/2007	Sunday	573	542	1115
8/06/2007	Monday	1797	1394	3191
8/07/2007	Tuesday	1774	1357	3131
8/08/2007	Wednesday	1796	1311	3107
8/09/2007	Thursday	1308	1685	1685
8/10/2007	Friday	1704	1449	3153
8/11/2007	Saturday	658	598	1256
8/12/2007	Sunday	535	498	1033
	Weekday ADT	1676	2833	--
	Weekend ADT	599	548	--
			AM Peak Hour (11:30 AM – 12:30 PM):	262 Vehicles
			PM Peak Hour (4:30 PM – 5:30 PM):	278 Vehicles

Source: City of Monterey, 2007

High Street ACP – This ACP provides good access for all types of vehicles. The direct route from High Street to the core of the POM is through the residential area to the west of the High Street ACP. This ACP is an important secondary access point for emergency response vehicles to the POM. The ACP includes one inbound lane and one outbound lane and is staffed by one guard who checks privately owned vehicle identification and one guard who checks pedestrian identification. Traffic volume data from 2007 for the High Street ACP are provided in Table 3.7-13.

Table 3.7-13. Traffic Volumes – High Street ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	82	76	158
8/05/2007	Sunday	87	61	148
8/06/2007	Monday	712	685	1397
8/07/2007	Tuesday	838	621	1459
8/08/2007	Wednesday	663	741	1404
8/09/2007	Thursday	765	524	1289
8/10/2007	Friday	792	807	1599
8/11/2007	Saturday	65	75	140
8/12/2007	Sunday	86	81	167
	Weekday ADT	754	676	--
	Weekend ADT	80	73	--
			AM Peak Hour (7:30 AM – 8:30 PM):	175 Vehicles
			PM Peak Hour (4:30 PM – 5:30 PM):	122 Vehicles

Source: City of Monterey, 2007

2009 data collected at the four open ACPs for a POM study were compared to the August 2007 and September 2001 counts collected by the City of Monterey. In general, there was an increase in demands observed at the ACPs between 2001 and 2007. Approximately 41 percent of the traffic demand occurs at the Franklin Street ACP, while only 11 percent use the High Street ACP. The 2009 traffic demands are shown in Table 3.7-14.

Table 3.7-14. ACP Traffic Volumes – POM (2009)

Demand Type	Private Bolio	Franklin Street	High Street	Taylor Street	Combined
Number of Vehicles Processed in Peak Hour	342	611	230	391	1574
Number of Maximum Queued Vehicles in Peak Hour	9	24	2	10	45
Total Existing Peak Hour Demand	351	635	232	401	1619
Proportion of Total AM Peak Hour Demand	22%	39%	14%	25%	--
Total Daily Demand	1392	2353	644	1418	5807
Proportion of Total Vehicle Daily Demand	24%	41%	11%	24%	--

Source: Gannett Fleming, 2010

3.7.3.6 Existing Parking Conditions

Existing parking supply data (current as of April 12, 2007) for the POM and OMC were provided by the POM and are shown in Table 3.7-15.

Table 3.7-15. Existing Parking Supply

Parking Type	Available Spaces
Staff	1,320
Reserved	372
Open	1,634
Visitor	67
Handicap	90
Motorcycle	91
Military/GSA	46
Loading Zone	5
Total Available Parking	3,625

3.7.3.7 Existing Transit Service

Monterey-Salinas Transit (MST), an external bus service, provides bus service within the POM and also between the OMC and POM via bus lines 71-79. Figure 3.7-8 illustrates these nine commuter bus routes. Additionally, it offers bus service offers to and from the OMC, Naval Postgraduate School, and the POM. An internal shuttle system links key areas on POM. The internal shuttle service operates during the morning, midday, and evening time periods.

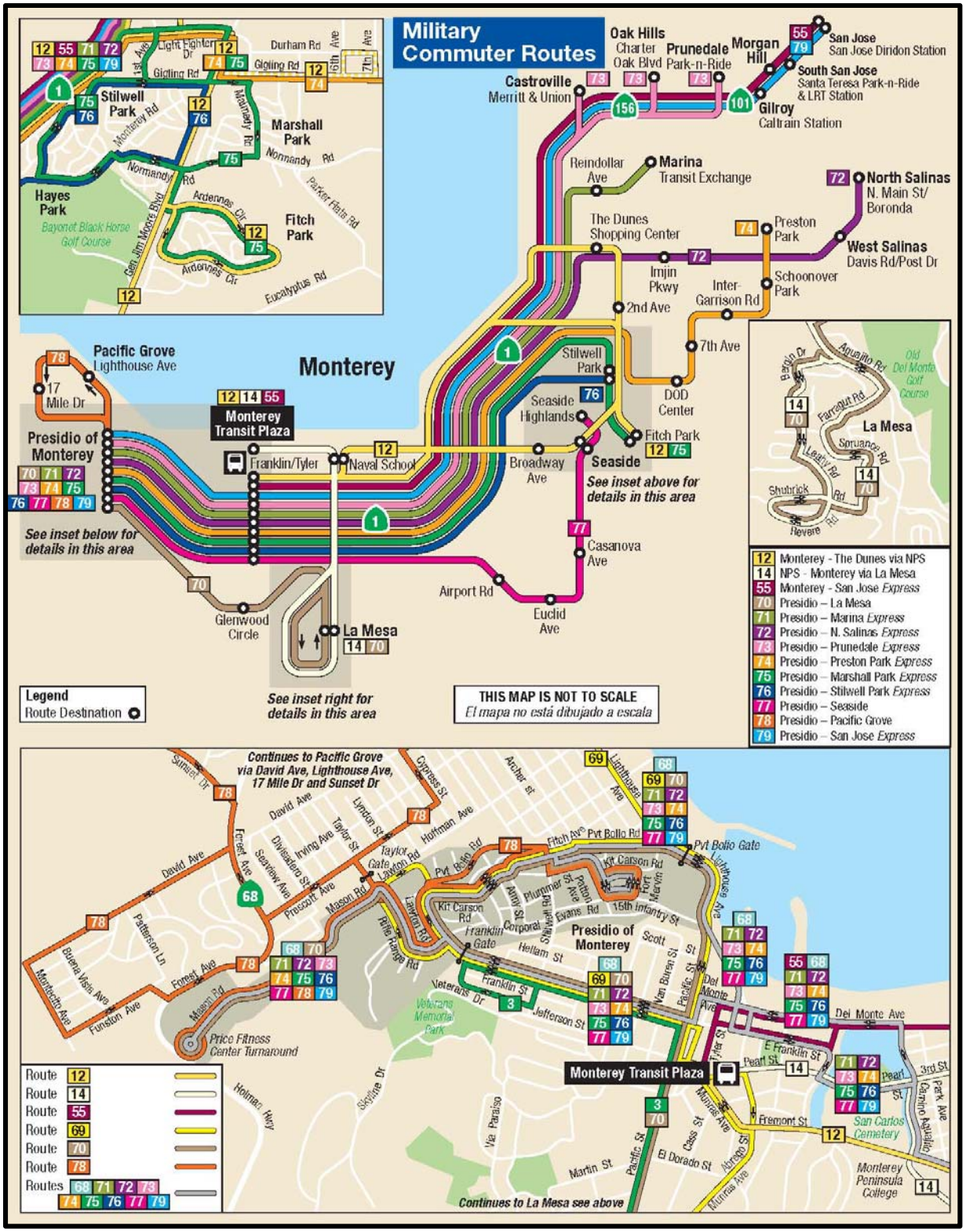

Figure 3.7-8. Monterey-Salinas Transit Routes Serving POM and OMC

Source: MST, 2010

3.7.3.8 Existing Pedestrian Traffic

Pedestrian activity to, from, and within the POM is relatively heavy compared to the region as a whole. The highest concentration of pedestrian activity occurs across Rifle Range Road, where students travel between the barracks and the classrooms before morning classes (beginning at approximately 7:45 am), during the noon lunch period, and after classes (ending at approximately 3:30 pm). There is also considerable pedestrian activity between the POM and the restaurants and retail business on Forest Avenue and to other support areas.

Several pedestrian entrances to the POM are located at the ends of streets that dead-end at the POM boundary, such as Clay Street and Lyndon Street. These entrances are often used by people who live nearby and by some commuters who choose to park offsite. People seeking to access the transit stops along State Highway 68 often use a pedestrian access on Divisadero Street. A fence was erected around the perimeter of the northwest corner of the POM to discourage crossing State Highway 68 at that location. Access to transit stops on State Highway 68 is obtained by way of Divisadero Street and Prescott Avenue. Pedestrian facilities on the POM are non-continuous. Sidewalks are often located solely on one side of a roadway, such as on parts of Mason Road. Crosswalks are provided at some intersections and at mid-block crossing. Formal and informal pedestrian paths provide access to student activity locations. ADA compatibility varies throughout POM; for example, curb ramps have been updated in some areas.

The majority of the existing roadways in the POM and the OMC do not have dedicated bicycle lanes, nor do they allow enough room for vehicles and bicycles to comfortably share the roadway.

3.8 Noise

There are many factors that affect one's perception of noise. These factors include pitch, loudness and the character of the noise. The standard unit of sound amplitude measurement is the decibel (dB). Since the human ear cannot hear all frequencies, a special scale has been devised to relate noise to human sensitivity, the A-weighted decibel scale. The A-weighted decibel (dBA) scale de-emphasizes the low and high end frequencies and emphasizes those frequencies the human ear is able to hear. The following terms are typically used in analyzing noise:

- **L_{eq}:** Equivalent energy level. The A-weighted sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8, and 24 hour measurement periods.
- **L_{max}:** The maximum A-weighted sound level during the measurement period.
- **L_{dn}:** Day-night average level. A 24-hour average L_{eq}, with the addition of 10 dBA to the sound level during the hours of 10 pm to 7 am to account for greater noise sensitivity of people at night.
- **CNEL:** Community Noise Equivalent Level. A 24-hour average L_{eq}, with the addition of five dBA to sound levels from 7 pm. to 10 pm. and the addition of 10 dBA to sound levels from 10 pm. to 7 am. CNEL is widely used in the State of California and is similar to L_{dn}, except it increases noise levels by 5 dBA between 7 pm. and 10pm.

It is widely accepted that most human sound perception can barely detect a change in sound level of 3 dBA.

3.8.1 Study Area

The affected areas with respect to construction and operations noise are the POM and OMC proposed for development in the RPMP plus the immediately surrounding areas. Short-term traffic noise associated with construction and long-term noise from traffic generated by the proposed land uses would potentially affect noise-sensitive land uses along the travel routes.

3.8.2 Regulatory Setting

The following section describes the federal, state, and local noise guidance and regulations applicable to the proposed project.

3.8.2.1 Federal

The Noise Control Act of 1972 (PL 92-574) established a national policy to promote an environment for all Americans free from noise that jeopardizes their health and welfare. The act authorized and directed federal agencies to carry out programs to further the policy declared in the act. Each federal department or agency shall comply with federal, state, interstate and local requirements regarding control and abatement of environmental noise.

U.S. Department of Housing and Urban Development

The U.S. Department of Housing and Urban Development (HUD) has been the lead federal agency setting standards for interior and exterior sound levels for housing. HUD noise standards are outlined in 24 CFR Part 51. This regulation establishes site acceptability standards based on L_{dn} (day-night energy equivalent noise level) noise exposure levels. Although the HUD standards were developed for urban environments, they are useful, in conjunction with local regulations, as general guidelines for residential areas in the RPMP.

Under HUD standards, site acceptability is classified in terms of ranges of L_{dn}. "Acceptable" sites are those where noise levels do not exceed an L_{dn} of 65 dBA. Housing on acceptable sites does not require noise attenuation other than that normally provided in building construction.

"Normally unacceptable" sites are those where the L_{dn} is above 65 dBA but does not exceed 75 dBA. Housing on normally unacceptable sites requires some means of noise abatement, either at the property line or in the building exterior construction, to assure that building interior noise levels are acceptable.

"Unacceptable" sites are those where the L_{dn} is 75 dBA or higher. The term "unacceptable" does not mean that housing cannot be built on these sites, but rather, that more sophisticated building sound attenuation is likely to be needed and that some benefits must exist which outweigh the disadvantages posed by high environmental noise levels.

From a review of the site data, noise exposure at existing POM Installation housing in the area falls into the "acceptable" category (Table 3.8-1).

Table 3.8-1. U.S. Department of Housing and Urban Development Site Acceptability Criteria

Category	Day-Night Energy Equivalent Level (in decibels)
Acceptable	Not exceeding 65 dBA
Normally Unacceptable	Above 65 dBA but not exceeding 75 dBA
Unacceptable	Above 75 dBA

Source: 25 CFR Para. 51.103, Criteria and Standards

U. S. Environmental Protection Agency

In March 1974, U.S. EPA published a document entitled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" (U.S. EPA, 1974). The U.S. EPA has taken the lead among all federal agencies in the study of environmental noise impact. In spite of this, U.S. EPA has not promulgated specific regulations setting limits on general environmental noise levels. The U.S. EPA has promulgated noise limits for specific types of equipment such as air compressors. It more importantly has unified usage of environmental noise descriptors among federal agencies and has produced an extensive log of environmental noise measurements in different types of environmental settings. Also of importance, the U.S. EPA has issued day-night energy equivalent noise levels which represent "…values that protect public health and welfare with a margin of safety" (Table 3.8-2).

Table 3.8-2. Yearly L_{dn} Values that Protect Public Health and Welfare with a Margin of Safety

Effect	Level	Area
Hearing	$L_{eq(24)} \leq 70$ dBA	All areas (at the ear).
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dBA	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other paces in which quiet is a basis for use.
	$L_{eq(24)} \leq 55$ dBA	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$ dBA	Indoor residential areas.
	$L_{eq(24)} \leq 45$ dBA	Other indoor areas with human activities such as schools, etc.

For residential areas, U.S. EPA identifies an outdoors L_{dn} equal to or less than 55 dBA as sufficient to protect public health and welfare with a margin of safety. This level is lower than the HUD "acceptable" limit which has been discussed above. For indoor area such as classrooms, yearly L_{dn} levels equal to or less than 45 dBA are sufficient to protect public health and welfare with a margin of safety.

Federal Highway Administration

Relevant regulations that apply to the RPMP include the Federal Highway Administration (FHWA) noise abatement criteria (NAC) promulgated in 23 CFR Part 772.

The FHWA NAC are based on specific land use categories (Table 3.8-3). These NAC are based on one-hour average L_{eq} noise levels. Traffic noise impacts occur when the predicted traffic noise levels approach or exceed the NAC or when the predicted traffic noise levels substantially exceed the existing noise levels (FHWA, 1980).

Table 3.8-3. FHWA Noise Abatement Criteria		
Activity Category	L_{eq} (1hr) (1) (dBA)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	no standard	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR Part 772

(1) No single hourly average L_{eq} in a 24-hour day can exceed this value.

Land uses along the local and regional travel routes are predominantly Activity Categories B, C, and E. The FHWA noise standards indicate that noise mitigation must be considered when the Horizon Year project levels approach or exceed the stated NAC. In addition, the FHWA noise standards also indicate that noise mitigation must be considered when the Future-Year project levels "substantially" exceed existing noise levels. Typically, noise levels "approach the noise abatement criteria" (23 CFR 72.5.g) is considered to be 1 dBA below the NAC and "substantially" is considered to be a predicted incremental impact equal to or greater than 12 dBA over existing noise levels.

3.8.2.2 State

California Department of Transportation

The FHWA NAC have been interpreted and implemented for transportation construction projects in California by Caltrans. These criteria are included in the October 1998 California Traffic Noise Analysis Protocol (Caltrans, 1998).

3.8.2.3 Local

City of Monterey Noise Ordinance

The City of Monterey noise regulations consist of a set of noise performance standards that apply to all land use classifications in all zoning districts (City of Monterey, 2010).

All uses and activities shall comply with the provisions of the Monterey Noise Regulations (Sections 22-17 and 22-18). Decibel levels shall be compatible with neighboring uses, and no use shall create ambient noise levels which exceed the noise standards, shown in Table 3.8-4.

Table 3.8-4. Maximum Noise Standards by Zoning District		
Zone of Property Receiving Noise	Maximum Decibel Noise Level (dBA)	
OS	Open Space District	60
R	Residential Districts	60
PS	Public and Semi-Public District	60
C	Commercial District	65
I	Industrial Districts	70
PD	Planned Development	Study Required

Duration and Timing. The noise standards shall be modified as follows to account for the effects of time and duration on the impact of noise levels:

- In R districts, the noise standard shall be 5 dB lower between 10 pm. and 7 am.
- Noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the standards above by 5 dB.
- Noise that is produced for no more than a cumulative period of one minute in any hour may exceed the standards above by 10 dB.

City of Pacific Grove

The City of Pacific Grove does not have numerical limits for control of noise. The City does have an ordinance that makes it unlawful to make any loud, unnecessary or unusual noise which disturbs the peace or quiet of any neighborhood or causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area (City of Pacific Grove, 2010). The standards that are considered in determining whether a violation exists include the level of the noise, the intensity of the noise, the level and intensity of the background noise, the time of day or night when the noise occurs and the proximity of the noise to residential sleeping facilities.

City of Seaside

The City of Seaside noise regulations pertaining to construction and operations prohibit the following (City of Seaside, 2010):

- Excessive, unnecessary or unusually loud operation or use of any of the following before 7 am. or after 7 pm daily (except Saturday, Sunday and holidays when the prohibited time shall be before 9 am and after 7 pm):
  - Hammers, hand-powered saws or similar implements; impact wrenches or similar equipment powered by compressed air; tools or pieces of equipment powered by an internal combustion engine such as, but not limited to, chain saws, blowers and lawn mowers; electrically powered tools or equipment such as, but not limited to, saws, drills, lathes or routers; heavy equipment such as, but not limited to, bulldozers, steam shovels, road graders, back hoes; ground drilling and boring equipment; hydraulic crane and boom equipment; portable power generators or pumps; pavement or pile driving equipment.
  - Any construction, demolition, excavation, erection, alteration or repair activity, unless authorized in writing by the building official. Written authorization may be issued in the case of an emergency, or where the building official determines that the peace, comfort and tranquility of the occupants of residential property will not be impaired because of the location or nature of the construction activity. (Ord. 837 §1, 1993; Ord. 820 §1(part), 1992).

Monterey County

In Monterey County, "No person shall, within the unincorporated limits of the County of Monterey, operate any machine, mechanism, device, or contrivance which produces a noise level exceeding eighty-five (85) dBA measured 5 feet there-from. The prohibition in this Section shall not apply to aircraft nor to any such machine, mechanism, device or contrivance which is operated in excess of 2,500 feet from any occupied dwelling unit" (Monterey County, 2010).

3.8.3 Affected Environment

The major sources of noise in the project area are motor vehicle traffic on regional roadways such as U.S. Highway 1 and State Highway 68 and local roadways internal and adjacent to POM and OMC. Additional noise sources include overhead aircraft, construction activities and commercial and residential area activities. The Monterey Peninsula Airport is approximately 3 miles from POM. A 1979 airport noise study indicated POM was outside the 55 CNEL noise contour, meaning the airport did not cause unreasonably high noise levels at POM. However, because POM and OMC are in the vicinity of the airport approach and departure zones, the aircraft noise could be heard at the POM and OMC.

The POM is subject to noise from State Highway 68, which passes by the western boundary of POM. Noise contours developed by Caltrans show noise levels ranging from 50-75 dBA L_{eq} (1 hr), depending on proximity to State Highway 68 (Jones & Stokes, 1994).

Data provided in the U.S. EPA document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety" were used to estimate average ambient daytime and nighttime L_{eq} and L_{dn} noise levels on the POM and OMC (Table 3.8-5). Thus, the L_{dn} noise levels are based on the predominantly educational, office and residential land use characteristics of the sites. The daytime and nighttime L_{eq} noise levels were based on the L_{dn} levels. According to the U.S. EPA document, areas on the POM and OMC would be expected to have an average L_{dn} of 50-60 dBA, with an average daytime L_{eq} of 50-60 dBA and a nighttime L_{eq} of 40-50 dBA. The major variable is proximity to the more heavily traveled roadways on and adjacent to the sites.

Table 3.8-5. Average Ambient Noise Levels for Various Land Uses

Land Use Description	Average L_{dn} (1) (dBA)	Daytime L_{eq} (dBA)	Nighttime L_{eq} (dBA)
Wilderness	35	35	25
Rural Residential	40	40	30
Quiet Suburban Residential	50	50	40
Norman Suburban Residential	55	55	45
Urban Residential	60	60	50
Noisy Urban Residential	65	65	55
Very Noisy Urban Residential	70	70	60

Source: (1) U.S. EPA, 1974
Key:
Daytime L_{eq} = Equivalent energy level from 7 am – 10 pm
Nighttime L_{eq} = Equivalent energy level from 10 pm – 7 am

Noise sensitive receptors include residences, schools, offices, hospitals, religious meetings, and recreation areas. Receptors at the POM include barracks buildings and classrooms. Neighborhoods adjacent to the POM are also sensitive to increased noise levels at the POM. Residences at the OMC can be considered noise sensitive receptors. Existing noise levels at the OMC are generally low because of the residential nature of the area.

3.9 Utilities and Public Services

This section describes existing utilities and public services within the POM Installation, including wastewater, stormwater, solid waste, energy, natural gas, electricity, communications, schools, and hospitals. Water services are described in Section 3.1.

3.9.1 Study Area

The study area includes the POM and OMC.

3.9.2 Regulatory Setting

The following section describes the federal and state rules and regulations applicable to the proposed project.

3.9.2.1 Federal

Wastewater and Stormwater

The Federal Water Pollution Control Act (Public Law 92-500), commonly known as the Clean Water Act (CWA) was promulgated in 1972 following a series of previous legislative efforts to establish water pollution control laws in the United States. CWA Section 402, NPDES Permit Program authorizes the issuance of individual or general permits to control municipal and industrial point source discharges, including those from wastewater and stormwater. The Federal government has full authority to issue NPDES permits but may delegate the permit program to the state. California has the authority to issue NPDES permits.

Solid Waste

The U.S. EPA regulates the management of non-hazardous solid waste according to the Resource Conservation and Recovery Act (RCRA), Subtitle D (U.S. EPA, 2005b). Under RCRA, the U.S. EPA is also in charge of regulating the handling and disposal of hazardous wastes.

Energy

Executive Order 13423 encourages the Federal Government to:

- Improve energy efficiency and reduce greenhouse gas emissions.
- Ensure that (i) at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources, and (ii) to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use.
- Require (i) use of sustainable environmental practices, including acquisition of bio-based, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and (ii) use of paper of at least 30 percent post-consumer fiber content.
- Ensure that (i) new construction and major renovation of agency buildings comply with the Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings set forth in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006), and (ii) 15 percent of the existing Federal capital asset building inventory of the agency as of the end of fiscal year 2015 incorporates the sustainable practices in the Guiding Principles.
- Purchase energy efficient appliances.

3.9.2.2 State

Wastewater and Stormwater

The California Water Code, Sections 13575-13583, contains the Water Recycling Act of 1991, which establishes a statewide goal of recycling one million acre feet of water annually by the year 2010 and encourages retail water suppliers to increase the use of recycled water. The Health and Safety Code, the Water Code, and Title 22 and 17 of the California Code of Regulations (CCR) contain regulations for the treatment, use, and distribution of reclaimed water.

California's primary statute governing water quality and water pollution issues is the Porter-Cologne Act with numerous amendments and additions since initial adoption. The Porter-Cologne Act grants the SWRCB and nine California RWQCBs broad powers to protect water quality and is the primary vehicle for implementation of California's responsibilities under the federal Clean Water Act (CWA). The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants.

Solid Waste

Under the jurisdiction of the California Environmental Protection Agency, the California Integrated Waste Management Board (CIWMB) is charged with managing solid waste. Title 14, Chapter 3, of the CCR, addresses minimum standards for solid waste handling and disposal (CIWMB, 2008).

The California Integrated Waste Management Act (AB 939) requires each county or incorporated city to prepare a Source Reduction and Recycling Element (SRRE) that shows how they will divert 25 percent of all solid waste from landfill or transformation facilities by January 1, 1995, and divert 50 percent of all solid waste by January 1, 2000 (CIWMB, 2008).

3.9.3 Affected Environment

3.9.3.1 POM

Wastewater

The City of Monterey owns and maintains all sewer lines at the POM, with the exception of the laterals, which are owned and maintained by the POM. The wastewater system at the POM consists of building connections, lateral sewers, several major trunk sewers, and two sewage lift stations at the north end of POM with 1,810- and 825-pound lifting capacity. Wastewater is collected from the POM via 78,636 linear feet (LF) (15 miles) of underground wastewater collection lines, which reach up to 24 inches in diameter. Average daily flow from the POM is estimated to be between 0.191 million gallons per day (mgd) and 0.201 mgd. The collection system in the older part of the base was constructed in the 1950s, with the newer part constructed during the mid-1980s (USACE, 2003).

Wastewater from the POM is treated at the Monterey Regional Water Pollution Control Agency (MRWPCA) wastewater treatment plant, under an existing wastewater agreement. The POM does not have a permitted discharge limit. The MRWPCA wastewater treatment plant is located approximately two miles north of the City of Marina. Wastewater discharged from the POM and OMC to the regional treatment plant averaged 30.6 million gallons per year (MG/yr) from 2006 to 2009. The plant has an existing capacity of 29.6 mgd and is permitted to treat up to 27 mgd. The plant currently treats approximately 21 mgd and has a remaining capacity of about 8.6 mgd (Monterey County, 2004a). Water receiving secondary treatment is discharged

2.5 miles into Monterey Bay. The MRWPCA also operates a recycled water facility at the regional treatment plant that provides irrigation water to 12,000 acres of agricultural lands in the northern Salinas Valley.

Stormwater

Stormwater runoff is collected by the existing POM storm drain system and discharged to the Pacific Ocean or Monterey Bay (U.S. Army, 1994a). Some stormwater runoff drains off the POM and enters the storm drain systems of the cities of Pacific Grove and Monterey, which also discharge into the Pacific Ocean or Monterey Bay (U.S. Army, 1984a).

Stormwater runoff from POM is discharged to Monterey Bay through two natural stream channels and five storm drains:

- Drainage channel southwest of the POM dormitories and east of Huckleberry Hill Nature Preserve: an open ditch that runs southwest and exits the POM west of Johnson Street and southwest of the entrance to the POM at Franklin Street.
- Drainage Channel running along the southern border of the POM to Lighthouse Avenue: An open drainage ditch that runs along the southern border of POM from east of the entrance to the POM at High Street to Lighthouse Avenue.
- North POM: a 36-inch reinforced concrete pipe (RCP) that drains the north part of the POM.
- Southern Boundary: a 51-inch RCP that runs along the southern boundary of the POM.
- South-central Portion of the POM: a 24-inch RCP that drains the south central area of the POM in the dormitory area.
- Northwest of the Huckleberry Hill Nature Preserve: a 24-inch RCP that drains the northwest portion of the POM along State Highway 68.
- Northeast of Huckleberry Hill Nature Preserve: a 30-inch RCP that drains into Pacific Grove's storm drain system.

In addition to the main drainage channels and storm drains, a series of smaller storm drains serve specific portions of the base. These smaller drains collect stormwater and discharge to larger drains eventually flowing into the POMs main storm drains previously described above. Several types of piping are used including vitrified clay, steel, concrete, and corrugated steel.

Stormwater discharge into the Bay is regulated by the Central Coast Regional Water Quality Control Board (CCRWQCB) and the SWRCB through the NPDES permit process. There are no stormwater-permitted industrial activities occurring on the POM or OMC. The SWRCB adopted a General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional municipal small separate storm sewer systems, which include governmental facilities such as military bases, public campuses, and prison and hospital complexes. The U.S. Army plans to obtain coverage under a NPDES general permit for stormwater discharges associated with municipal small separate storm sewer systems. This permit would cover the POM as well as the OMC. This permit application has been submitted to the CCRWQCB but has not yet been approved.

Solid Waste

The Monterey City Disposal Service collects solid waste and recyclable materials at the POM. The waste is sent to the Monterey Environmental Park approximately two miles north of Marina and operated by the Monterey Regional Waste Management District (MRWMD, 2007). The Monterey Regional Environmental Park contains a 315-acre permitted sanitary landfill, a Materials Recovery Facility, and a household waste

facility. Based on the current permitted waste capacity and a State-mandated 50 percent recycling rate, the landfill would reach capacity in 2107 (MRWMD, 2007).

There are no major hazardous wastes generated on the POM. Small quantities of hazardous wastes that are generated at the POM are associated with vehicle maintenance, photographic and computer operations, and medical activities. Hazardous waste generated at the POM is managed in compliance with pertinent Federal, State, and local laws and regulations (USACE, 1994).

The POM implements a proactive recycling program, which includes a program to recycle or reuse all materials obtained from the razing of existing buildings. The Integrated Solid Waste Management Plan for the POM describes the following solid waste objectives:

- Efficiently manage solid waste in a manner that protects human health and the environment.
- Comply with applicable Federal, State, and U.S. Army solid waste regulations.
- Reduce the volume of solid waste generated to meet DoD and State waste reduction goals.
- Reduce or recycle materials in the solid waste stream to the maximum extent possible.

Energy

Pacific Gas and Electric (PG&E) provides electricity to the POM. The existing electric power distribution system includes a 4,160-volt, three-phase, four-wire loop primary feeder. Pole-top and pad-mount transformers convert the incoming electricity to normal utilization voltages (110 volts) (ECW, 2007). PG&E can deliver a maximum of approximately 4,500 kilovolt-ampere (kVA) to the POM. The average annual energy usage at the POM and OMC is approximately 86,200 million British thermal units (MBTUs).

Natural Gas

PG&E provides natural gas service to the POM and maintains all associated infrastructure. A high-pressure gas line runs underground along Rifle Range Road and a second gas line crosses the POM near Lighthouse Avenue (ECW, 2007). Natural gas consumption was 105 million cubic feet (mcf) in 1984, and 104 mcf in 1992 (ECW, 2007).

Communications

At the POM, AT&T and Sprint provide telephone and internet services. Cable service is provided by Suddenlink Communications.

Schools

All children of military personnel attend schools within the Monterey Peninsula Unified School District (MPUSD). There are no DoD schools in the area. While two schools, Marshall Elementary and Marshall West, are located in the middle of the OMC, they are located on MPUSD property. Another MPUSD school, La Mesa Elementary, is located in the middle of La Mesa Village.

Marshall Elementary serves students in grades one through five and Marshall West houses a mixture of grade levels, which include 11th and 12th graders at Central Coast Continuation High School, kindergartners from Marshall Elementary, and students from kindergarten through second grade in the Dual Language Immersion program. La Mesa Elementary serves kindergarten through grade six. Table 3.9-1 summarizes the elementary, middle, and high schools that serve the POM and OMC.

Table 3.9-1. Schools Serving POM and OMC	
POM / DLIFLC	OMC
Bay View Elementary, Monterey, CA Kindergarten – 6th grade	Marshall Elementary, Seaside, CA Kindergarten – 5th grade
Colton School, Monterey, CA Kindergarten – 8th grade	Fitch Middle School, Seaside, CA 6th grade – 8th grade
Monterey High School, Monterey, CA 9th grade – 12th grade	Seaside High School, Seaside, CA 9th grade – 12th grade
La Mesa Elementary, Monterey, CA Kindergarten – 6th grade	

In order to quantify the impact of federally-connected pupils on MPUSD schools a federal survey was conducted on September 25, 2008. The findings, reported for both elementary and secondary schools, are summarized in Table 3.9-2 below. This table also provides an idea of the total enrollment in area schools.

Table 3.9-2. Federally Connected Student Enrollment in MPUSD Schools (2008-2009)					
Schools	Parent in Uniformed Services		Civilian Parent (works and/or lives on Federal Property)	Total Federally Connected Pupils	Non-Federally Connected Pupils
	Living on Federal Property	Living in Private Homes			
Bay View	14	20	39	73	271
Crumpton	0	9	56	65	347
Del Rey Woods	0	1	5	6	521
Foothill	5	20	25	50	478
Highland	0	1	8	9	407
La Mesa	418	21	25	464	113
Marina Del Mar	3	3	6	12	263
Marina Vista	0	5	4	9	340
Marshall	288	37	62	387	255
Olson	1	12	10	23	406
Ord Terrace	5	9	1	15	625
Secondary Schools					
Colton	71	15	51	137	654
Fitch	46	6	45	97	530
King	0	2	8	10	719
Los Arboles	1	2	28	31	573
Monterey High	51	24	115	190	1,319
Seaside High	25	9	67	101	1,117
Central Coast	1	0	2	3	144
Marina High	0	6	31	37	353

Currently, both Marshall and La Mesa Elementary schools are over-enrolled. Despite this, MPUSD has been closing schools in the district over the past five years and plans to close another elementary school in 2010. Unless numbers of students increase dramatically, this trend is not expected to change (Rothstein, 2009).

There are also public charter schools, private and parochial schools that serve the area (MARCOA, 2007).

3.9.3.2 OMC

Wastewater

The wastewater collection system at the OMC is operated by MCWD. The MRWPCA regional wastewater treatment plant treats waste transported by this system. The wastewater collection system consists of a combination of gravity flow lines and force mains ranging from 2 to 30 inches in diameter. Like the water distribution system, it has operational deficiencies and requires constant maintenance. MCWD is responsible for all maintenance associated with the wastewater collection system (USACE, 2005b). The OMC does not have a permitted discharge limit. Wastewater discharged from the POM and OMC to the regional treatment plant averaged 30.6 MG/yr from 2006 to 2009.

Stormwater

The stormwater drainage system at the OMC includes natural channels and constructed storm drain systems. Drainage patterns are influenced by the topography of the area; they are not well developed because most rainfall runoff directly infiltrates the sand and gravelly soils that dominate this area (Jones & Stokes, 1992).

The storm drain system at the OMC was initially built in the 1940s as a separate system from the sanitary sewer lines. The storm drain system consists of an extensive system of storm sewer branches that feed into major lines running either directly to the ocean or to inland drainage systems. Portions of the storm drain system have been replaced over time; storm drain failures do however, continue to occur. The only ongoing maintenance performed at this time is the periodic clearing of sediment and debris from culverts (Jones & Stokes, 1992).

The drainage system of the OMC collects surface water runoff from the housing and recreational areas, motor pools, maintenance yards, and industrial facilities. Runoff mainly discharges at four ocean outfalls located west of State Highway 1. A few small storm drain outfalls also empty stormwater runoff into depressions and open fields within the Main Garrison of the former Fort Ord (Jones & Stokes, 1992). The stormwater system also serves lands that have been transferred to local reuse agencies.

There are no open drainage channels located within the OMC (Jones & Stokes, 1992). Main storm drains, as well as a series of smaller storm drains serve individual portions of the OMC. Two types of piping are used at the OMC, corrugated metal and concrete. In general, the pipes serve individual buildings, or groups of buildings, and range from 12 to 36 inches in diameter. Storm drains serving the OMC convey stormwater to the percolation pond and remaining ocean outfall located on the Fort Ord Dunes State Park, west of State Highway 1. Stormwater discharges to the Pacific Ocean from the OMC are not regulated under the NPDES.

The U.S. Army plans to obtain coverage under a NPDES general permit for stormwater discharges associated with municipal small separate storm sewer systems. This permit would cover the OMC as well as the POM. This permit has been submitted to the CCRWQCB but has not yet been approved.

Solid Waste

The Monterey City Disposal Service collects solid waste generated on former Fort Ord. The waste is collected weekly and trucked to the Monterey Regional Waste Management District's landfill in Marina. In 2009, approximately 3,825 tons of solid waste was collected from the OMC. Recycling is also provided at the former Fort Ord with weekly curbside pickup for the housing units. All solid waste and recyclables are sent to the Monterey Environmental Park. Refer to Section 3.9.3.1 above for a description of the Monterey Environmental Park.

Energy

PG&E provides electricity to the OMC and maintains and owns all associated infrastructure. The average combined energy usage at the POM and OMC is approximately 86,200 MBTUs per year. Usage at the OMC only includes common buildings and facilities such as the DPW, fire department, police department and General Stilwell Community Center. Independent commercial facilities such as the commissary, post exchange, and gas station are individual accounts paid by the user.

Natural Gas

PG&E provides natural gas services to OMC and owns/maintains all associated infrastructure. Two main lines traverse the OMC; a 16-inch diameter high pressure line that parallels State Highway 1; and a 10-inch diameter high pressure line that extends east to west across the former Fort Ord (USACE, 2005b). A substation located on the OMC is operated by PG&E through an easement. Natural gas is regulated through metering stations. The estimated total natural gas consumption for the OMC housing areas in 2002 was 1,351,339 total therms (USACE, 2005b).

Communications

Cable service for the OMC is provided by Suddenlink Communications. Most of the housing on the OMC has been turned over to private agencies; therefore residents can choose from a variety of internet and phone providers including AT&T and Verizon.

Schools

See description above for the POM.

3.10 Hazardous, Toxic, and Radioactive Wastes

This section describes the methods used to identify hazardous, toxic, and radioactive wastes (HTRW) associated with the POM and known HTRW sites within the project area.

3.10.1 Study Area

The study area is encompassed by the physical site boundaries of the POM and OMC. The POM consists of 392 acres and is located between the City of Pacific Grove on the west and the City of Monterey on the east. The OMC consists of 859 acres and is located northeast of POM within the boundary of the former Fort Ord which was inactivated in 1994. Together, the POM Installation consists of approximately 1,251 acres of land. The detailed descriptions of these boundaries are described in Chapter 1.

3.10.2 Regulatory Setting

Regulation of hazardous materials, and treatment and disposal of hazardous and toxic wastes are designed to protect human health and the environment. The USACE policy regarding HTRW sites is presented in Engineering Regulation 1165-2-132 and was developed in response to the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. The term HTRW includes any material listed as a "hazardous substance" under the CERCLA, "hazardous wastes" under the Resource Conservation and Recovery Act (RCRA), "hazardous substances" identified under the CAA, "toxic pollutants" designated under the CWA, "hazardous air pollutants" designated under the CAA, and "imminently hazardous chemical substances or mixtures" under the Toxic Substance Control Act (USACE, 1992).

The objective of the U.S. Army guidance is to outline procedures to facilitate early identification and appropriate consideration of HTRW problems. This policy for cost-shared projects stipulates that the non-federal sponsor must ensure cleanup of a USACE civil works project. When HTRW problems are identified, response actions must be acceptable to U.S. EPA and applicable state regulatory agencies. The USACE policy also requires that each civil works project must include a phased and documented review to provide early identification of known and potential HTRW sites that may be affected by a proposed federal project. The lead state regulatory agency in the environmental restoration program for the POM is the San Francisco Bay Region of the California Regional Water Quality Control Board, and the Department of Toxic Substances Control, agencies within the California Environmental Protection Agency. Locally, the lead regulatory agency for hazardous waste management is the Monterey County Department of Health - Environmental Health Division.

The HTRW regulatory requirements include the following components.

3.10.2.1 CERCLA of 1980

CERCLA of 1980 (42 USC 9601 et seq.) regulates hazardous materials releases into the environment that occurred before 1986. Along with the Superfund Amendments and Reauthorization Act of 1986, it established the Superfund program to clean up hazardous waste sites. DoD's implementing program for Superfund is the Installation Restoration Program and is limited to cleanups in the United States, however, international agreements, status of forces agreements and U.S. government policy have been used in the past to conduct cleanup activities overseas, in accordance with DoDI 4715.8.

3.10.2.2 Toxic Substances Control Act of 1976

Toxic Substances Control Act of 1976 (15 USC 2601 et seq.) implements restrictions on certain chemical substances, including; chlorofluorocarbons, polychlorinated biphenyls, and asbestos. The law imposes restrictions to protect human health and environmental exposure to these highly toxic substances, requires chemical testing, and regulates the release of these chemicals into the environment.

3.10.2.3 RCRA of 1976

RCRA of 1976, with amendments, establishes regulations to characterize hazardous waste and requirements for the transporting, storing and disposing of hazardous waste. RCRA places "cradle to grave" responsibility for hazardous waste on the generator of the waste. Universal wastes are hazardous wastes that are more common and pose a lower risk to people and the environment than other hazardous wastes. Examples of common hazardous wastes are florescent lighting tubes that may contain mercury and potential polychlorinated biphenyls in florescent light fixture ballasts. Federal and State regulations identify universal wastes and provide rules for handling, recycling, and disposing of them (40 CFR Part 273; 22 CCR 66273.1

et seq.). All universal wastes are hazardous wastes but are managed under less stringent standards than other hazardous wastes.

3.10.2.4 Federal Hazardous Materials Transportation Law of 1988

Federal Hazardous Materials Transportation Law of 1988 (49 U.S. Codes 100 et seq.), as amended, authorizes the U.S. Department of Transportation to issue interstate and intrastate regulations regarding the transportation of hazardous material and waste. The transport of hazardous waste applies to packaging, handling, labeling, marking, placarding, and transporting on public roads.

3.10.2.5 Petroleum Storage Tanks

The federal and state underground storage of hazardous substances (UST) requirements govern the management, operation, removal, and remedial action of USTs (40 CFR Part 280; 23 CCR 2610 et seq.). The USTs must include automated monitoring devices for leak detection, annual third-party testing, cathodic protection, and overfill warning devices. Releases from USTs follow a protocol of remedial investigation, environmental sampling and a feasibility study to implement a remedial action plan to remedy the environmental release.

The California Aboveground Petroleum Storage Act requires the owner or operator of a tank facility, with an aggregate storage capacity greater than or equal to 1,320 gallons of petroleum, to prepare and implement a spill prevention control and countermeasure plan in accordance with federal law.

3.10.2.6 Lead-based Paint

Federal, state, and local regulations regulate the management of lead-based paint (LBP), LBP additives, and LBP hazards. The Army policy is to manage LBP in place unless it presents an imminent health threat as determined by the installation medical officer or unless operational, economic, or regulatory requirements dictate its removal. Army policy also imposes requirements to reduce the release of lead, lead dust, or LBP into the environment from deteriorating paint surfaces, building maintenance, or other sources on Army installations or on Army-controlled property.

Wastes are characterized to determine whether they are classifiable under applicable regulations as hazardous, special, or solid. The DoD developed guidelines for residential property and LBP requirements (DoD, 1999). The procedures in the guide are used primarily to address the requirements of Title X, the Residential Lead-based Paint Hazard Reduction Act, a portion of the Housing and Community Development Act of 1992. This guide addresses housing built before 1960, and between 1960 and 1978, child-occupied facilities, and other target housing.

The POM Installation has developed a Lead-based Paint Hazard Management Plan to prevent human exposure to lead hazards through proactive policies which comply with all applicable laws and regulations. The LBP plan applies to lead-containing paint which is present in housing and non-housing buildings (USACE, 1998b).

Army policy is to manage LBP in place, unless it presents an imminent health threat, as determined by the installation medical officer or unless operational, economic, or regulatory requirements dictate its removal. Army policy also imposes requirements to reduce the release of lead, lead dust, or LBP into the environment from deteriorating paint surfaces, building maintenance, or other sources on U.S. Army installations or on U.S. Army-controlled property (USACE, 1998b).

3.10.2.7 Asbestos

The federal National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations establishes performance standards for the demolition and renewal of buildings with asbestos-containing material (ACM) (40 CFR Part 61). Federal, state, and local MBUAPCD rules and policies address not disturbing the potentially friable material and removal standards in renovation and demolition situations. Asbestos may become a friable material (crumbling with a potential for airborne release of asbestos fibers). During demolition, maintenance, repair, remediation, or renewal of buildings, asbestos can be released into the air. Asbestos fibers can be released from various building materials, such as pipe and boiler wrap and other insulating materials and acoustic ceiling tiles (USACE, 2006). The POM Installation has developed the Asbestos Management Plan to prevent human exposure to asbestos hazards through proactive policies which comply with all applicable laws and regulations (USACE, 1998a).

3.10.2.8 Radon

There are no federal regulations requiring radon testing. California law requires radon testing and mitigation plans for new construction. Building permits are not issued until compliance is met (California Health and Safety Code 105430). The effects of human exposure to radon are uncertain primarily because it is difficult to isolate the effects to particular radiation sources. It is now widely accepted that effects of radiation can occur at any dose, no matter how small; a theory called the linear no-threshold hypothesis. According to this theory, there is no level of exposure below which no adverse effect occurs. If the theory is correct, all exposure to radiation presents some health risk. The risk of lung cancer caused by exposure to radon through its inhalation is currently a topic of concern.

The U.S. Army has implemented a Radon Reduction Program to determine and control the levels of radon exposure of military personnel and their dependents. The Army has completed testing of most of its facilities as part of this program.

The U.S. Army policy provides for ongoing radon management efforts. In accordance with AR 200-1, the Army maintains and updates records of completed radon assessments and includes radon testing results with real property and housing data to notify tenants and transferees of elevated radon levels. Army policy provides that indoor radon levels in newly constructed units and units converted to housing or continuously occupied structures (such as hospitals) located in high-radon level areas are to be tested prior to occupancy. Where elevated levels of radon are encountered, Army facilities managers are to adhere to abatement measures. In addition, AR 200-1 requires that radon be measured in newly constructed U.S. Army facilities.

3.10.3 Affected Environment

Facility needs at the POM Installation are met through renovation of existing facilities, leasing, or construction of new facilities. The required construction of facilities require demolition or land disturbance prior to construction, as well as considerations of USTs, LBP, asbestos, and radon.

Each construction project may involve some use of hazardous materials or the generation of hazardous wastes. Facilities hazardous material and hazardous waste issues include:

- Demolition, construction or renovation of existing facilities, including UST replacement and disposal
- Lead-based paint removal/disposal
- Asbestos-containing material abatement/disposal
- Radon

The goals of the Army hazardous material and hazardous waste program is to (a) reduce risk to public health and the environment, (b) prevent pollution, and (c) comply with applicable regulations. Army policies and regulations require that the generation of hazardous or toxic wastes must be avoided, reduced, or eliminated.

Facility operations activities and installation training missions require provisions of storage facilities for hazardous wastes. The installation's use, storage, and disposal of construction materials and wastes are controlled by existing comprehensive Army policies, regulations, and guidelines. These activities are subject to federal, state, and local ordinances, statutes, and regulations.

Numerous maintenance activities at POM and the OMC require the use, storage, and disposal of hazardous materials. An example of this activity is operating the housing maintenance office and the recreation areas where a wide variety of chemicals, like paint, pesticides, herbicides, cleaning chemicals, and other cleaning solvents are used in small quantities. Repair and the use of vehicles and small engine units, including small trucks, lawnmowers, and leaf blowers are common occurrence in these areas.

Specially trained staff applies pesticides to common facilities and individual housing units, as requested. Residents are allowed to use commercial off-the-shelf products, as necessary. No estimates are available on the locations, volumes, extent, strength, persistence, or toxicity of materials applied by residents. Other than the normal use of hazardous products, there are known HTRW sites where spills and significant impacts to the environment have occurred. These known HTRW sites at the POM and OMC are described in this section.

3.10.3.1 POM

A preliminary assessment was prepared when the POM was added to the CERCLA National Priority List (NPL). The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation. The sites identified from the preliminary assessment were categorized as either known spill or dumping areas, USTs scheduled for removal, or areas where measures were needed to prevent spills. Once housekeeping measures were improved most sites required no further action and no longer posed an environmental hazard.

Installation Restoration Program

The DoD has developed the Installation Restoration Program to facilitate investigation and cleanup of contaminated sites associated with military installations. The POM Installation Restoration Program was initiated in 1986 with the discovery of contamination from a former 4-acre landfill, also referred to as POM-05 (Figure 1.5-5). The POM was listed on the NPL in 1992.

For POM-05, the primary contaminants of concern were metals and pesticides that were affecting soil and surface water. Remedial actions were completed in 1995. The landfill was closed, capped and graded per the requirements of CERCLA and the California water quality and solid waste landfill regulations. Closure is the process during which a landfill or disposal site, or a portion thereof, is no longer receiving waste and is being prepared for post-closure maintenance according to an approved plan and construction schedule. Monthly inspections and repairs were part of the long-term monitoring program for the landfill. Long-term monitoring of the site is on-going.

Under CERCLA, the U.S. EPA may delete a NPL site if it determines that no further response is required to protect human health or the environment. The POM was delisted and is no longer on the CERCLA NPL list. Although no longer a CERCLA NPL listed site, the California closure and post-closure maintenance requirements remain applicable for POM-5 (23 CCR Division 3, Chapter 15; 14 CCR Chapter 3, Article 7.8). There are no other Installation Restoration Program sites, unexploded ordnance sites, or other sites that are

hazardous in nature that would limit development on the installation. All required remedial actions at the POM have been completed (USACE, 2009).

Petroleum Storage Tanks

Since 1988, 25 USTs containing petroleum products have been removed. These sites have been closed with the regulatory agencies approvals and require no further action. Aside from the closed USTs, one compartmentalized tank remains in service at the Building 230 Army, AAFES service station. The tank is in compliance with UST testing, maintenance, and monitoring regulations.

Electronic Database Search

An additional source of environmental information is the SWRCB Geotracker. Geotracker is a database and geographic information system that provides online access to environmental data. It tracks regulatory data about leaking underground fuel tanks, Spills-Leaks-Investigations-Cleanups, and Landfill sites (SWRCB, 2010). This searchable electronic database was used to identify other HTRW locations at the POM installation. The database confirmed the only environment activity within POM is the landfill monitoring (Table 3.10-1).

Table 3.10-1. POM – Geotracker Database Search Results

Geotracker ID	Site Name	Cleanup Status	Address	City	Latitude	Longitude
T0605300200	Building 650	Completed - Case Closed	Unknown	Presidio of Monterey	36.6049789	-121.9098506
T0605300328	Presidio- Monterey	Completed - Case Closed	Bldg. 832 2nd Phase	Presidio of Monterey	36.6049789	-121.9098506
L10001178873	Monterey Presidio landfill	Open	Monterey Presidio	Monterey	36.601881	-121.914396
T0605311482	Presidio of Monterey	Open - Verification Monitoring	P.O. Box 5004	Monterey	36.6029365	-121.9180298
T0605300143	AAFES Gas Station Bldg 230	Completed - Case Closed	Bldg 230 Presidio of Monterey	Presidio of Monterey	36.60643338	-121.9038125
T0605300069	Building 270 (Tanks 1-5)	Completed - Case Closed	Bldg 270 Fitch & Private Bolio Rd	Presidio of Monterey	36.6062	-121.9037
T0605300067	Building 610	Completed - Case Closed	Bldg 610 Presidio of Monterey	Presidio of Monterey	36.6062	-121.9037
T0605300065	Building 422	Completed - Case Closed	Bldg 422 Presidio of Monterey	Presidio of Monterey	36.6062	-121.9037
T0605300383	U.S. Coast Guard	Completed - Case Closed	100 Lighthouse Avenue	Monterey	36.6079461	-121.8957792

Source: SWRCB, 2010

3.10.3.2 OMC

Installation Restoration Program

The OMC is within the boundaries of the former Fort Ord. The former Fort Ord was listed on the NPL in 1990. Approximately two hundred sites were investigated and grouped together into 16 remedial categories to accelerate the cleanup process (USACE, 2007). Included in the approximately 200 potentially contaminated sites investigated, there are 4 groundwater contaminant plumes (Operable Unit-1, Operable Unit-2, Sites 2/12, and Operable Unit Carbon Tetrachloride Plume) with three active groundwater treatment facilities. The contaminant plumes are located north of the California State University of Monterey Bay and about 1.5 miles north of the OMC boundary. The plumes contain chlorinated solvents and are oriented in a northwest and southeast direction (USACE, 2007). These plumes are not migrating toward the RPMP short- and long-range planning areas. Cleanup activities for these HTRW sites at the former Fort Ord have been completed or are in the process of being remediated (CA7210020676).

Of the contaminated sites and contaminant plumes, Sites 10, 11, 21, and Munitions Response Sites 24B, 24C, 24D, 24E, and 39 are located within or immediately adjacent to the OMC boundary in close proximity to the proposed projects in the RPMP short- and long-range plans (Figure 3.10-1 and Figure 3.10-2, respectively). These sites are discussed further below.

The remaining sites are not within the OMC boundary or not in close proximity to proposed projects in the RPMP short- or long-range plan. Consequently, they are not discussed further but are shown in the following figures for reference.

Site 10 – former Burn Pit was addressed in the Interim Action Sites Record of Decision [ROD] (U.S. Army, 1994b). Site 10 is a former burn pit approximately 160 feet south of the Fort Ord Fire Station in the Main Garrison. The site was an unlined, rectangular pit (approximately 45 feet long, 25 feet wide, and 2 feet deep) into which flammable liquids were placed, ignited, and subsequently extinguished for firefighting training. A 2-inch diameter pipe apparently was used to regulate fluid levels in the pit, and a narrow drainage ditch exits the pit to the south. The southern portion of the 2-inch-diameter pipe is buried within surface soils. The pit is no longer in use and is partially overgrown with grass. All of the contaminated soil was removed in 1996.

Site 11 – (FTO-010 – AAFES Service Station was identified requiring no further remedial action and listed in the No Action Sites ROD (U.S. Army, 1995). The No Action Sites ROD defined the criteria and process to qualify as a site requiring no further remedial action.

Site 21 – 4400/4500 Block Motor Pool East is located in the Joe Lloyd Way development and addressed in the Interim Action Sites ROD. This site was identified as containing limited areas of shallow soil contamination. The site was used for motor vehicle service, maintenance, and storage. Potential areas of concern included a 400-gallon gasoline fuel spill near Building 4495 that occurred in 1979, six oil/water separators, a concrete-lined canal and its unpaved discharge area, nine wash racks and nine grease racks, and twenty current and former UST. For Site 21, the contaminated soil was completely excavated for disposal and replaced with clean fill (U.S. Army, 1994b). The cleanup of this site was completed in 1996.

Munitions Response Site 24B – Practice Hand Grenade Range was identified as a practice hand grenade area. During sampling in 1997, an expended grenade fuse was found; however, no munitions and explosives were found. The site was identified in the No Action Sites ROD as requiring no further action. This area is currently developed as housing in Fitch Park 2A.

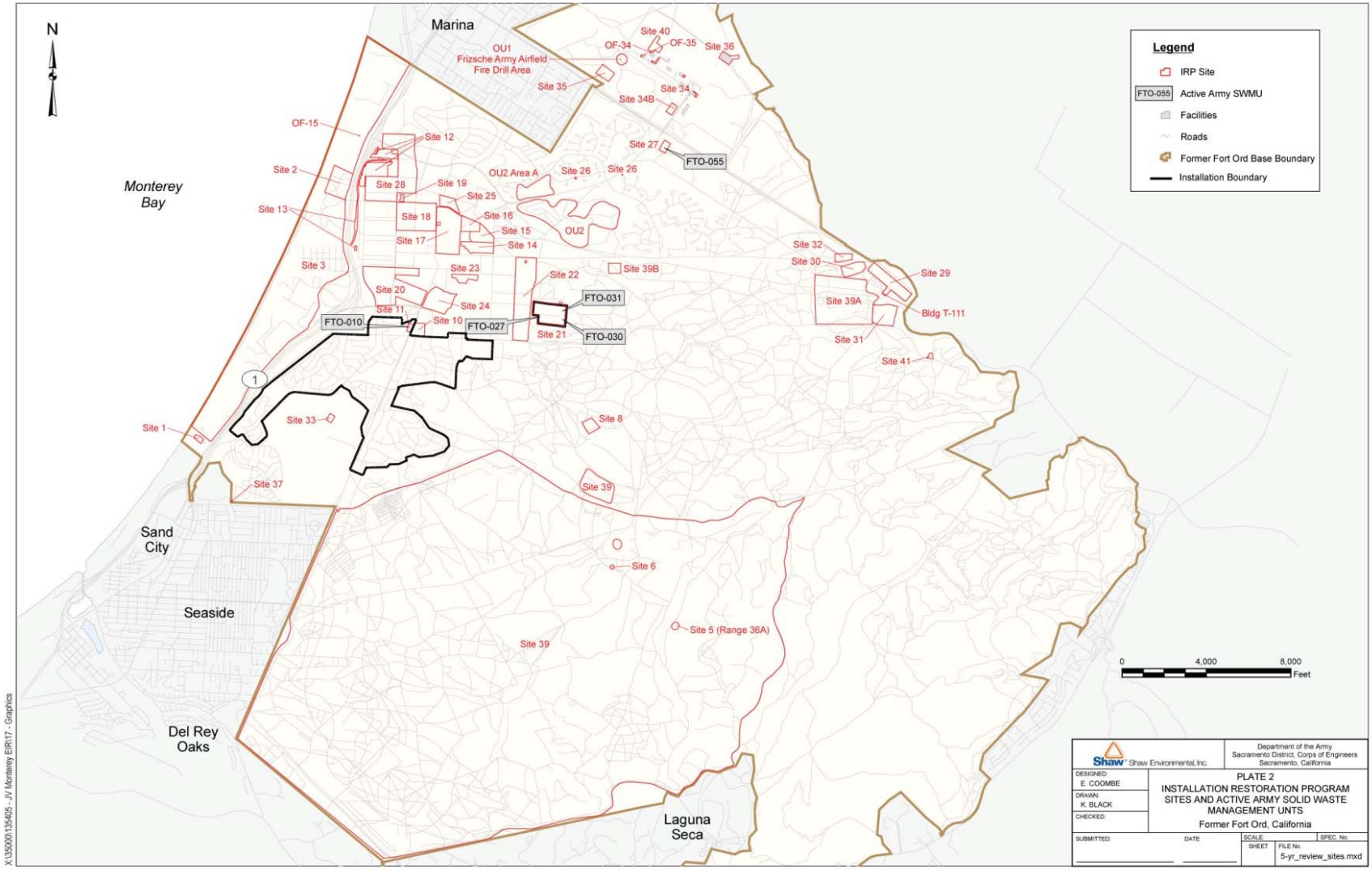

Figure 3.10-1. OMC – Installation Restoration Program Sites

Source: USACE, 2007

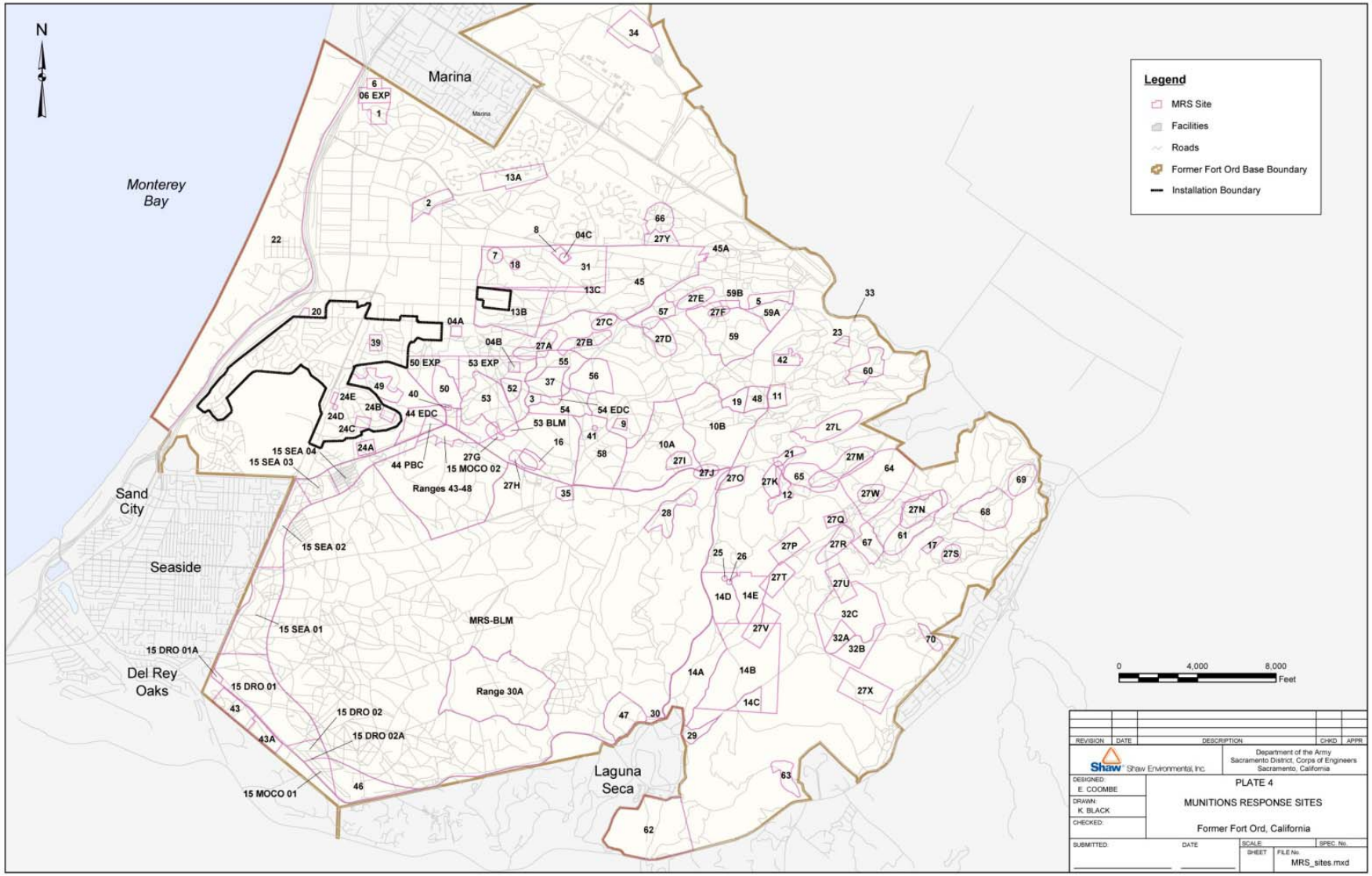

Figure 3.10-2. OMC – Munitions Response Sites

Source: USACE, 2007

Munitions Response Site 24C – Live Hand Grenade Range was identified as a live hand grenade range. Sampled in 1997, no unexploded ordnance was found; however, 3 munitions debris items and grenade fragments were recovered in this area. The site was identified in the No Action Sites ROD as requiring no further action. This area is currently developed as housing in Moore's Landing.

Munitions Response Site 24D – Booby Traps was identified as a booby trap area on a 1945 training map. Disturbed areas are present on the 1941 through 1951 aerial photographs. One fragment was identified during sampling in 1997; however, there were no munitions and explosives recovered in Munitions Response Site 24D. The site was identified in the No Action Sites ROD as requiring no further action. This area is currently developed as housing in Fitch Park 2B.

Munitions Response Site 24E – Practice Rifle Grenade Range was identified as a practice rifle grenade range on a 1945 training map. Disturbed areas are present on the 1949 and 1951 aerial photographs. One piece of fragment was identified during sampling in 1997; however, no unexploded ordnance was found and no other munitions debris was recovered. The site was identified in the No Action Sites ROD as requiring no further action. This area is currently developed as housing in Fitch Park 2B.

Munitions Response Site 39 – Mine and Booby Trap Area is located east of the future Emergency Services Center. The Emergency Service Center is part of the RPMP long-range plan under Alternative 1 and 2. The 1957 and 1958 Fort Ord Training Areas & Facilities maps note this Mine and Booby Trap Area. There were no military munitions recovered during sampling in 1997. The site was identified in the No Action Sites ROD as requiring no further action. This area is currently developed as housing in Marshall Park.

Hazardous Waste Storage

A variety of hazardous wastes are generated from normal maintenance and operations of the U.S. Army programs at the OMC. Hazardous waste generators on OMC collect and bring waste to the Directorate of Environmental and Natural Resources Hazardous Waste 90-day accumulation site before the waste is transported to an approved RCRA disposal facility (USACE, 2006).

Two hazardous waste satellite accumulation areas and one 90-day hazardous waste accumulation area are located within the OMC boundary (Figure 3.10-3). There is also one small quantity hazardous waste generator on OMC.

Building 4495 is the Hazardous Waste Accumulation Area at OMC and is located on the southeast corner of 8th Avenue and Joe Lloyd Way (Figure 3.10-2). The Building 4495 is a 90-day waste accumulation location where hazardous wastes are packaged and prepared for transport to off-site disposal facilities (U.S. Army, 1994b; USACE, 2006). Satellite accumulation points are hazardous waste generating points accumulating at or near the point of generation. The hazardous waste may be accumulated in containers with minimal storage and handling requirements. When a sufficient quantity of hazardous waste is accumulated, the waste is transported to the Hazardous Waste Accumulation Area within 3 days. No environmental concerns have been reported for these hazardous waste generators or the 90-day waste accumulation area (U.S. Army, 2007).

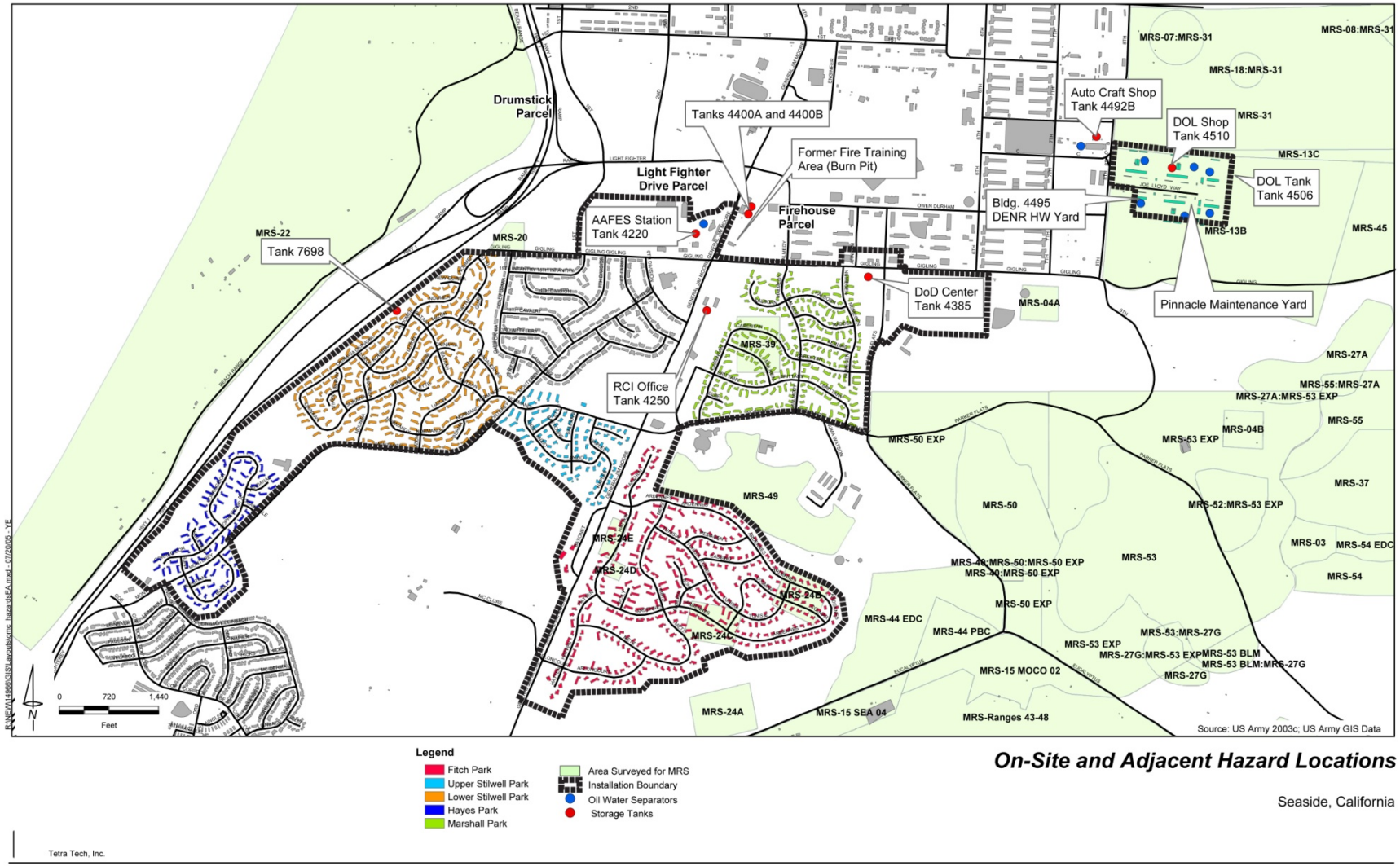

Figure 3.10-3. OMC – Aboveground Storage Tanks
Source: USACE, 2006

Petroleum Storage Tanks

Within the project boundary are seven aboveground storage tank (AST) locations (Figure 3.10-3). A 1,000-gallon diesel AST is located at the DoD Center (Building 4385) for the emergency backup generators. A 500-gallon diesel AST is located at the sewer lift station (Building 7698) for the generator. There are also two diesel ASTs (1,000 gallon and 160 gallon) located at the Fire Station (Building 4400) and two DOL fuel tanks (300 gallon diesel and 300 gallon gasoline) at Building 4506.

The RCI Office Tank 4250 is a 500-gallon diesel AST and is located south of the proposed Veterans America (VA) Clinic and Parking Buildable Area and north of the future Emergency Services Center under Alternative 1 and 2 (Figure 3.10-2). The VA Clinic and Emergency Services Center are part of the long-range plan under Alternatives 1 and 2.

Tanks also include the AAFES Station waste oil tank (Building 4220) and the Directorate of Logistics Shop (Building 4510) (USACE, 2006).

There are no other current or historical ASTs within the study area. No leaks, releases, or any other environmental concerns have been reported for these tanks.

Lead-based Paint and Asbestos

An asbestos survey of over 3,000 non-housing units (e.g., retail stores, office buildings, lavatories, dining halls, barracks, general purpose buildings, vehicle maintenance and storage, oil storage, bus/taxi stations and ammunition bunkers) at OMC was conducted from 1989 to 1995. Friable and non-friable asbestos-containing materials (ACM) was found on tanks and pipe insulation, HVAC vibration joint cloths, exhaust flues, acoustic ceiling treatment, floor tile, linoleum and associated mastics, and debris in the buildings. Locations containing ACM were triaged from removal to routine inspection (USACE, 1997).

According to the POM Lead-based Paint Management Plan prepared in 1998, a lead-based paint survey was conducted in 364 housing units at the POM and OMC. This survey utilized the U.S. Housing and Urban Development (HUD) standards wherein all painted surfaces were tested and either encapsulated or disposed as hazardous waste materials.

Radon

A radon survey was conducted from 1989 to 1990. The surveys included assessment of approximately 2,900 housing and office buildings basewide at OMC. Building with radon levels above 4 picocurie/liter would be retested periodically for 1 year. Buildings with radon levels above 8 picocurie/liter are required to undergo remediation. All radon concentrations measured in the survey were below the recommended public health thresholds.

Electronic Database Search

An additional source of environmental information is the SWRCB Geotracker (SWRCB, 2010). This searchable electronic database was used to identify other HTRW locations at the OMC installation and identified sites that have been completed or undergoing environmental remediation (Table 3.10-2).

Except for the CERCLA NPL sites previously discussed, the database identified the Mariana Coast Water District leaking underground diesel tank (T0605394134) as the only environmental issue in close proximity to the proposed construction projects. The tank was located near northeast corner of the proposed VA Clinic and Parking Buildable Area. The clinic and parking is a proposed project in the long-range plan under Alternative 1 and 2. The leaking underground diesel tank was remediated to the regulatory agencies satisfaction in 1994.

Table 3.10-2. OMC – Geotracker Database Search Results

Geotracker ID	Site Name	Cleanup Status	Address	City	Latitude	Longitude
L10009419286	Fort Ord - Fort Ord UST Soil Remediation	Completed - Case Closed	519th Motorpool Area	Fort Ord	36.6242	-121.780801
T0605300004	Fort Ord - 14th Engineers Motor Pool	Open - Site Assessment	7th Ave	Fort Ord	36.6242	-121.780801
T0605300157	Fort Ord - Building 511	Open - Site Assessment	Bldg 511 Fort Ord	Fort Ord	36.6242	-121.780801
T0605392397	Fort Ord - Fort Ord	Open - Remediation	Unknown	Marina	36.64431932	-121.7994976
DOD100196700	Fort Ord - Fort Ord - * BW	Open - Remediation	Unknown	Monterey	36.64383725	-121.8016434
T0605394134	Marina Coast Water District	Completed - Case Closed	Gigling Rd & Noumea Rd	Marina	36.643981	-121.802883
DOD100219900	Fort Ord - Fort Ord - Site 39	Open - Remediation	General Jim Moore Blvd.	Monterey	36.61194514	-121.815033
T0605300145	Fort Ord - Building 1483	Completed - Case Closed	Bldg 1483 5th Ave & 8th St	Fort Ord	36.6502591	-121.8007617
T0605300146	Fort Ord - Building 550a, Radio Tower	Completed - Case Closed	Bldg 550a Fort Ord	Fort Ord	36.6502591	-121.8007617
T0605300193	Building 3803 (Site 24, Deh Ya)	Completed - Case Closed	Bldg 3803 North-South Rd	Fort Ord	36.6502591	-121.8007617
T0605300191	Building 3016a	Completed - Case Closed	Bldg 3016a 3rd Ave	Fort Ord	36.6502591	-121.8007617
T0605300190	Building 2253 (Site 19)	Completed - Case Closed	Bldg 2253 8th St	Fort Ord	36.6502591	-121.8007617
T0605300189	Building 4493.3 & 4493.5	Completed - Case Closed	Bldg 4493 8th Ave	Fort Ord	36.6502591	-121.8007617
T0605300198	Building 4590	Completed - Case Closed	Bldg 4590 7th Ave	Fort Ord	36.6502591	-121.8007617
T0605300047	Fort Ord Golf Course	Completed - Case Closed	Bldg 4110 Fort Ord	Fort Ord	36.6502591	-121.8007617
T0605300063	Building 550a (Fritzche Army Air Field)	Completed - Case Closed	Bldg 550a Fort Ord	Fort Ord	36.6502591	-121.8007617
T0605300102	Building 550a, Radio Tower	Completed - Case Closed	Bldg 550a Fort Ord	Fort Ord	36.6502591	-121.8007617
T0605300197	Former Building 1685	Completed - Case Closed	Bldg 1685 3rd Ave	Fort Ord	36.6502591	-121.8007617
T0605300162	Fort Ord - Building 4225	Open - Site Assessment	Bldg 4225 Fort Ord	Fort Ord	36.6502591	-121.8007618
T0605300005	Fort Ord - 707 Maintenance Yard	Completed - Case Closed	707 Inter Garrison Rd	Fort Ord	36.655093	-121.7933404
L10006198832	Fort Ord - Fort Ord Sanitary Landfill	Open - Remediation	Fort Ord	Fort Ord	36.66160294	-121.7778683
DOD100221900	Fort Ord - Fort Ord - OU2	Open - Remediation	Unknown	Monterey	36.6620849	-121.7793274
T0605317203	Marina Coast Water District	Completed - Case Closed	Schoonover	Marina	36.659301	-121.761789
DOD100220500	Fort Ord - Fort Ord OU1 (Fritzsche Army Airfield Fire Drill Area, On-Site Plume)	Open - Remediation	Unknown	Marina	36.68356338	-121.7807007
DOD100204800	Fort Ord - Fort Ord - Sites 2 and 12	Open - Remediation	Unknown	Monterey	36.66297995	-121.8150759
T0605300108	Building 4493-4	Completed - Case Closed	Bldg 4493 8th Ave	Fort Ord	36.6820555	-121.7958287
DOD100196800	Fort Ord - Fort Ord - OUTCP	Open - Remediation	Unknown	Monterey	36.67447706	-121.7777824

Source: SWRCB, 2010

3.11 Public Health and Safety

This section describes existing public health and safety concerns with regard to wildfires or other safety hazards, emergency services, and emergency evacuation routes.

3.11.1 Study Area

The study area includes the POM and OMC and the surrounding vicinity.

3.11.2 Regulatory Setting

3.11.2.1 Federal

The Garrison commander is charged with the health and safety of the people living and working on the POM Installation. This section focuses on health and safety as related to wildfire hazard, flooding, tsunamis, evacuation routes, unexploded ordinances, and emergency services. There are other federal regulations and issues pertaining to public health and safety at the POM Installation that are related to the domestic drinking water supply, wastewater management, air pollution control, hazardous waste management, and noise. These other public health related resource areas are not addressed in this section but are evaluated in detail elsewhere in Section 3.

3.11.3 Affected Environment

3.11.3.1 Fire Hazard

The POM Fire Department implements a fire suppression and prevention program at the POM Installation and applies the National Fire Code requirements. Every new and existing building or structure is required to be constructed, arranged, equipped, maintained, and operated to provide a reasonable level of life safety, property protection, and public welfare from actual and potential fire hazards, explosions or other conditions. A fire prevention inspection and education program is currently being applied at the POM Installation which includes prevention for urban structures and wildfires.

POM

The Huckleberry Hill Nature Preserve is undeveloped with thick vegetation and has therefore been designated as a fire hazard area (City of Monterey, 2005; Harding ESE, 2001). The only fire breaks in the Preserve are a series of existing roads. Each year, the California Department of Forestry helps to remove flammable brush from the Preserve under the direction of the City of Monterey (Harding ESE, 2001).

OMC

Although the OMC is heavily developed, it is adjacent to the former Fort Ord, an area highly susceptible to wildfires. Several portions of the OMC with vegetation and all lands surrounding the OMC are designated as fire hazard areas (City of Seaside, 2004). Several major fires have occurred on the former Fort Ord in the past five years. Only one fire break exists at the OMC on the eastern side of the Fitch Park housing area (Harding ESE, 2001).

3.11.3.2 Flooding

POM

The POM is designated by Federal Emergency Management Agency as Zone C, an area of minimal flooding (City of Monterey, 2005). This site is not within the 100-year floodplain.

OMC

The OMC has been designated by the Federal Emergency Management Agency as Zone B, subject to inundation by a 100- to 500-year flood event (City of Seaside, 2004). The OMC is not located within the 100-year floodplain (U.S. Army, 2008).

3.11.3.3 Tsunamis and Rising Sea Level

A tsunami is a massive wave that is created by an earthquake or an underwater disturbance. Because of its proximity to active faults and the coast, many areas of Monterey County have the potential to be impacted by a tsunami. The Monterey County Operational Area Tsunami Incident Response Plan divides the County into 10 different regions and describes local evacuation routes and low lying areas that would need to be evacuated (Monterey County, 2007).

Rising sea levels are a concern from global climate change. Both the POM and OMC are greater than 10 feet above current high tide levels and therefore not a risk to rising sea levels.

POM

According to the County's response plan, the POM is completely outside the tsunami evacuation zone. However, in the event of a tsunami, the U.S. Coast Guard would shift operations to the POM as the existing Coast Guard Station would need to be evacuated. Additionally, the POM could open up roads to aid in the evacuation. If the Lighthouse Avenue tunnel is closed due to flooding, the roads through the POM would become the best means for traffic ingress and egress between the City of Monterey and points north and west (Monterey County, 2007).

OMC

The OMC is unlikely to be substantially affected by a tsunami. The former Fort Ord area (now containing parcels transferred to the cities of Marina, Seaside, and Del Rey Oaks, California State University Monterey Bay, and California State Parks) is near the coast but contains high bluffs that would reduce the potential for inundation from a tsunami. According to the County's response plan, there are no evacuation areas within the former Fort Ord, with the exception of the beach that is under the jurisdiction of the California Department of Parks and Recreation.

3.11.3.4 Emergency Evacuation Routes

POM

According to the City of Monterey General Plan, State Highway 1 and State Highway 68 have been designated as evacuation routes in the event of an emergency (City of Monterey, 2005). Roads in the vicinity of the POM that are designated as "access roads to the evacuation routes" include:

- Pacific Street
- Prescott Avenue
- Lighthouse Avenue
- Del Monte Avenue
- Franklin Street

OMC

According to the City of Seaside General Plan, the following roads in the vicinity of the OMC have been designated as evacuation routes (City of Seaside, 2004):

- State Highway 1
- Gigling Road
- Light Fighter Drive
- General Jim Moore Boulevard

3.11.3.5 Unexploded Ordinance

POM

The DoD developed the Installation Restoration Program to facilitate investigation and cleanup of contaminated sites associated with military installations. The POM Installation Restoration Program was initiated in 1986. The investigation and findings are discussed in Section 3.10. There were no known unexploded ordnance identified the POM.

OMC

The OMC is within the boundaries of the former Fort Ord. Because of past military activities, the former Fort Ord area was investigated for unexploded ordnance. The former Fort Ord was listed in the federal facility NPL in 1990. Approximately 200 sites were investigated and grouped together into 16 remedial categories to accelerate the cleanup process (USACE, 2007). The investigation and findings for unexploded ordinance is discussed in Section 3.10.

The OMC does not contain unexploded ordnance. The areas with the highest density of unexploded ordnance are within unincorporated portions of Monterey County. The southeastern portion of the City of Seaside also has the potential to contain unexploded ordnance (City of Seaside, 2004).

3.11.3.6 Emergency Services

POM

Police services at the POM are provided by the Presidio of Monterey Police Department. The Monterey Fire Department provides emergency fire services to the POM. The Presidio of Monterey U.S. Army Health Clinic (Building 422) provides medical services for military personnel at the Defense Language Institute and the Naval Postgraduate School, as well as military family members and the civilian work force.

OMC

Police services at the OMC are provided by the Presidio of Monterey Police Department. The OMC Fire Department provides fire services to the OMC. The Presidio of Monterey U.S. Army Health Clinic provides medical services for all military personnel at the OMC.

3.12 Socioeconomics

This section describes existing socioeconomic conditions in the region.

3.12.1 Study Area

The study area includes Monterey County and the cities of Monterey, Pacific Grove, Seaside, Marina, and Del Rey Oaks because these areas have the potential to be affected by the actions described in the RPMP.

3.12.2 Regulatory Setting

There are no specific regulations that are applicable to socioeconomics.

3.12.3 Affected Environment

The employment, income, and industrial earnings typical to the area are discussed below.

3.12.3.1 Population and Income

Monterey County

In 2008, Monterey County had a population of about 429,000, an increase of 5,000 people from 2007. The county's population is projected to reach 476,000 by 2020 (EDD, 2007). According to the 2000 U.S. Census, Monterey County's population was 56 percent white, 4 percent black or African American, 1 percent Native American, 6 percent Asian, 1 percent Pacific Islander, and the remaining classified as other or more than one race.

In 2006, total personal income in Monterey County was about $15.6 million or $38,373 per capita (BEA, 2008a). From 1996 to 2006, the average annual growth rate of per capita personal income in Monterey County was 4.4 percent. In 2006, median family income was $55,045 and 11 percent of families lived below the poverty level (U.S. Census Bureau, 2006).

City of Monterey

The population of the City of Monterey was 30,121 in 2007 (AMBAG, 2008c). In 2000, Monterey's population was 81 percent white, 3 percent black or African American, 0.6 percent Native American, 7 percent Asian, 0.3 percent Pacific Islander, and the remaining classified as other or more than one race (U.S. Census Bureau, 2000a).

In 1999, median family income was $58,757 and 4.4 percent of families lived below the poverty level (U.S. Census Bureau, 2000a).

City of Pacific Grove

The population of Pacific Grove was 15,444 in 2007 (AMBAG, 2008c). In 2000, Pacific Grove's population was 88 percent white, 1.1 percent black or African American, 0.6 percent Native American, 4.5 percent Asian, 0.3 percent Pacific Islander, and the remaining classified as other or more than one race (U.S. Census Bureau, 2000a).

In 1999, median family income was $50,254 and 3.0 percent of families lived below the poverty level (U.S. Census Bureau, 2000a).

City of Seaside

The population of Seaside was 34,641 in 2007 (AMBAG, 2008c). In 2000, Seaside's population was 49.2 percent white, 12.6 percent black or African American, 1 percent Native American, 10.1 percent Asian, 1.3 percent Pacific Islander, and the remaining classified as other or more than one race (U.S. Census Bureau, 2000a).

In 1999, median family income was $41,393 and 12.1 percent of people lived below the poverty level (U.S. Census Bureau, 2000a).

3.12.3.2 Industry

Monterey County

Table 3.12-1 shows the industry earnings in Monterey County from 2001 to 2006. Top earning industries in 2006 were government and government enterprises, forestry, fishing, and related activities, and retail trade. From 2001 to 2006, government and government enterprises earnings grew the most in absolute terms, by about $727 million. Management of companies and enterprises earnings fell about $49 million from 2001 to 2006. In terms of percentage, the fastest growing industries from 2001 to 2006 were wholesale trade (40 percent increase), transportation and warehousing (33 percent increase), and forestry, fishing, and related activities (33 percent increase) (BEA, 2008b).

Table 3.12-1. Industry and Industry Earnings, Monterey County, 2001 to 2006 ($1000s)

Industry	2001	2002	2003	2004	2005	2006
Forestry, fishing, and related activities	745,097	791,428	892,074	1,048,072	1,063,875	1,106,076
Mining	25,324	25,566	26,138	26,855	28,819	34,808
Construction	493,237	509,534	556,322	582,109	624,986	667,465
Manufacturing	537,436	546,851	560,951	605,823	664,935	631,099
Wholesale trade	319,511	378,982	417,412	432,626	502,560	536,226
Retail trade	690,207	720,971	707,913	719,672	789,479	810,321
Transportation and warehousing	153,911	161,464	166,098	195,534	217,597	230,596
Information	196,685	174,380	181,507	182,264	192,986	222,479
Finance and insurance	335,719	348,301	382,767	331,655	371,810	394,974
Real estate and rental and leasing	186,447	193,269	217,877	235,916	254,411	259,357
Management of companies and enterprises	187,280	178,732	203,473	128,329	151,155	154,333
Administrative and waste services	212,022	214,296	212,299	220,739	239,871	250,662
Educational services	69,427	73,851	74,702	80,934	83,027	84,872
Health care and social assistance	578,605	614,381	669,933	711,818	734,933	773,751
Arts, entertainment, and recreation	153,202	162,458	171,503	172,031	170,474	182,236
Accommodation and food services	436,450	452,157	457,536	502,455	524,695	541,944
Other services, except public administration	241,595	257,133	264,666	280,786	293,888	298,873
Government and government enterprises	1,886,927	2,057,739	2,190,643	2,315,302	2,460,932	2,614,664

Source: BEA, 2008b

City of Monterey

Table 3.12-2 shows the annual sales figures and number of establishments of the major industries in the City of Monterey. Health care and social assistance had the most establishments, while wholesale trade generated the highest amount of sales for the city.

Table 3.12-2. Major Industries in Monterey, 2002

Industry	Number of Establishments	Sales ($1000s)
Wholesale trade	55	1,031,179
Retail trade	254	427,420
Information	49	NA
Real estate, rental, and leasing	103	78,734
Professional, scientific, technical services	261	211,078
Administrative, support, waste management and remediation service	91	80,143
Educational service	13	4,509
Healthcare and social assistance	264	510,155
Arts, entertainment, and recreation	33	73,133
Accommodation and food services	225	310,599
Other services (except public administration)	101	60,939

Source: U.S. Census Bureau, 2002

City of Pacific Grove

Table 3.12-3 shows the annual sales figures and number of establishments of the major industries in the City of Pacific Grove. Retail trade had the most establishments and generated the highest amount of sales for the city.

Table 3.12-3. Major Industries in Pacific Grove, 2002

Industry	Number of Establishments	Sales ($1000s)
Wholesale trade	12	50,622
Retail trade	104	131,325
Information	7	NA
Real estate, rental, and leasing	26	11,610
Professional, scientific, technical services	46	16,866
Administrative, support, waste management and remediation service	27	15,498
Educational service	1	NA
Healthcare and social assistance	47	35,394
Arts, entertainment, and recreation	7	NA
Accommodation and food services	79	63,503
Other services (except public administration)	31	8,537

Source: U.S. Census Bureau, 2002

City of Seaside

Table 3.12-4 shows the annual sales figures and number of establishments of the major industries in the City of Seaside. Retail trade had the most establishments and generated the highest amount of sales for the city.

Table 3.12-4. Major Industries in Seaside, 2002

Industry	Number of Establishments	Sales ($1000s)
Wholesale trade	16	13,909
Retail trade	93	565,311
Information	5	NA
Real estate, rental, and leasing	13	9,749
Professional, scientific, technical services	11	NA
Administrative, support, waste management and remediation service	32	12,140
Educational service	2	NA
Healthcare and social assistance	23	10,211
Arts, entertainment, and recreation	8	8,405
Accommodation and food services	56	40,145
Other services (except public administration)	58	27,438

Source: U.S. Census Bureau, 2002

3.12.3.3 Employment

Monterey County

Table 3.12-5 shows industry employment and compensation in Monterey County from 2001 to 2006. During that period, government and government enterprises employed the most people in Monterey County. Forestry, fishing, and related activities; retail trade, and accommodation and food services also had high employment numbers. Real estate, rental, and leasing had the largest increase in employment and management of companies had the largest decrease in employment from 2001 to 2006 (BEA, 2008b).

Table 3.12-5. Industry Employment and Compensation, Monterey County, 2001 to 2006

Industry	2001		2002		2003		2004		2005		2006	
	Jobs	Compensation ($)	Jobs	Compensation ($)	Jobs	Compensation ($)	Jobs	Compensation ($)	Jobs	Compensation ($)	Jobs	Compensation ($)
Forestry, fishing, and related activities	26,050	596,559	26,500	634,294	28,160	698,951	31,036	872,127	30,851	899,897	29,692	925,350
Mining	407	18,788	397	20,915	413	19,750	382	19,571	369	19,497	376	21,871
Utilities	695	45,746	652	49,889	623	55,027	510	53,241	541	54,423	552	54,802
Construction	10,255	336,459	9,915	346,550	10,051	377,903	10,160	376,628	10,329	372,704	11,016	411,232
Manufacturing	10,501	472,481	9,148	415,965	8,627	401,486	7,996	413,582	7,352	414,846	6,949	366,028
Wholesale trade	5,484	270,773	5,940	299,114	6,150	320,479	5,799	315,800	5,924	362,696	6,047	385,714
Retail trade	22,233	533,535	22,258	562,688	22,189	573,115	22,029	596,181	21,781	608,459	21,725	619,855
Transportation and warehousing	3,893	116,140	3,834	122,037	3,701	117,991	3,722	138,390	3,699	152,286	3,768	161,659
Information	3,499	176,160	2,950	152,347	2,986	163,372	2,876	165,663	3,017	178,951	2,899	208,804
Finance and insurance	6,952	290,498	6,821	307,337	6,617	342,683	6,064	291,728	6,312	325,850	6,370	356,413
Real estate and rental and leasing	7,754	80,128	7,962	83,928	8,803	87,070	8,954	92,963	9,539	98,734	10,411	106,445
Professional and technical services	11,126	281,720	11,081	295,777	10,947	301,247	11,236	353,202	11,001	367,738	11,725	406,726
Management of companies and enterprises	4,037	186,412	4,015	178,316	4,260	203,207	1,772	128,594	1,963	151,129	1,912	154,354
Administrative and waste services	9,090	178,120	8,876	168,782	8,636	163,418	7,842	167,704	8,063	188,178	7,896	195,583
Educational services	2,948	67,514	3,022	71,436	2,959	71,917	2,956	77,695	2,903	79,756	3,045	81,344
Health care and social assistance	13,783	464,071	13,707	491,352	14,444	545,960	14,195	571,989	14,124	595,651	14,362	627,075
Arts, entertainment, and recreation	4,565	68,512	4,817	84,673	4,706	91,361	4,719	92,062	4,554	86,597	4,703	95,664
Accommodation and food services	19,916	410,019	19,390	424,907	18,907	428,121	19,625	470,278	20,283	494,668	20,095	509,851
Other services, except public administration	11,487	185,989	11,819	198,629	11,879	209,071	11,908	228,385	11,796	235,546	11,955	239,427
Government and government enterprises	35,274	1,886,927	36,128	2,057,739	36,650	2,190,643	35,553	2,315,302	35,364	2,460,932	35,774	2,614,664

Source: BEA, 2008b

City of Monterey

Table 3.12-6 shows industry employment in the City of Monterey. Accommodation and food services and health and social services industries employed the most people, 25.3 and 20.7 percent of total employment, respectively (U.S. Census Bureau, 2002).

Table 3.12-6. City of Monterey Employment, 2002

Industry	Employment	Percent (%)
Manufacturing	959	4.5
Wholesale trade	361	1.7
Retail trade	2,497	11.8
Information	1,947	9.2
Real estate, rental and leasing	568	2.7
Professional, scientific, and technical services	1,824	8.6
Administrative, support, and waste management services	1,548	7.3
Educational services	99	0.5
Health and social services	4,379	20.7
Arts, entertainment, and recreation	703	3.3
Accommodation and food services	5,346	25.3
Other services (except public administration)	881	4.2

Source: U.S. Census Bureau, 2002

City of Pacific Grove

Table 3.12-7 shows industry employment in the City of Pacific Grove. Accommodation and food services and retail trade industries employed the most people, 35.5 and 21.8 percent of total employment, respectively (U.S. Census Bureau, 2002).

Table 3.12-7. Pacific Grove Employment, 2002

Industry	Employment	Percent (%)
Wholesale trade	88	2.7
Retail trade	717	21.8
Information	NA	NA
Real estate, rental and leasing	94	2.9
Professional, scientific, and technical services	280	8.5
Administrative, support, and waste management services	231	7.0
Educational services	NA	NA
Health and social services	588	17.9
Arts, entertainment, and recreation	NA	NA
Accommodation and food services	1,169	35.5
Other services (except public administration)	124	3.8

Source: U.S. Census Bureau, 2002

City of Seaside

Table 3.12-8 shows industry employment in the City of Seaside. Retail trade and accommodation and food services industries employed the most people, 45.7 and 23.3 percent of total employment, respectively (U.S. Census Bureau, 2002).

Table 3.12-8. Seaside Employment, 2002

Industry	Employment	Percent (%)
Wholesale trade	81	2.4
Retail trade	1,542	45.7
Information	68	2.0
Real estate, rental and leasing	83	2.5
Professional, scientific, and technical services	NA	NA
Administrative, support, and waste management services	209	6.2
Educational services	NA	NA
Health and social services	232	6.9
Arts, entertainment, and recreation	88	2.6
Accommodation and food services	786	23.3
Other services (except public administration)	285	8.4

Source: U.S. Census Bureau, 2002

3.13 Environmental Justice

Environmental justice addresses the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. In particular, minority and low-income populations should not be disproportionately affected by a project.

Fair treatment means that "no group of people, including racial, ethnic, or socioeconomic groups, shall bear a disproportionate share of negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies" (CEQ, 1997b; U.S. EPA, 1998). The goal of this "fair treatment" is not to shift risks among populations, but to identify potential disproportionately high and adverse effects and identify alternatives that may mitigate these impacts.

This section examined the potential effects on these populations from proposed construction under the RPMP.

3.13.1 Study Area

To determine the study area, the term "affected area" must be defined. A minority population may be present if the minority population percentage in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis. For this analysis, the affected area is that area the RPMP short- and long-range projects would or may have an effect upon. The affected area for a minority population is compared to the next larger geographic area. The study area analyzed for environmental justice impacts consists of the cities of Seaside, Monterey, Marina, Pacific Grove, Carmel-by-the-Sea, Del Rey Oaks, and Sand City, which are adjacent to the POM Installation.

3.13.2 Regulatory Framework

3.13.2.1 Federal Laws

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations, directs all federal agencies to meet environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects of their federal action(s) on minority and low-income populations. Each federal agency must analyze the environmental effects including human health, economic, and social effects of their action(s).

3.13.2.2 State Laws

California law defines environmental justice as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (California Government Code 65040.12(e)). The state law designates the Governor's Office of Planning and Research (OPR) as the coordinating agency in State government for environmental justice programs. The State law also requires OPR to develop guidelines for incorporating environmental justice into general plans (California Government Code 65040.12).

3.13.3 Affected Environment

The minority and low-income populations in the cities within the study area were compared to the demographics of Monterey County to identify if they were "meaningfully greater" than the population percentages within the county.

The minority and low-income demographics in the area potentially affected by the RPMP projects were identified using the 2000 U.S. Census Bureau data. For the purposes of an environmental justice screening, race, ethnic origin, and poverty status were obtained for Monterey County and the nearby cities (Table 3.13-1). The cities of Seaside and Marina have an aggregate minority population of greater than 50 percent. The proportion of individuals living below the poverty level within these two cities was similar to that found in Monterey County. The U.S. Census Bureau data identified a high percentage of individuals living below the poverty level in Sand City; the percentage was twice that found in Monterey County and in the nearby cities (Table 3.13-1).

Table 3.13-1. Monterey County Demographics

Demographics	Monterey County	City of Seaside	City of Monterey	City of Marina	City of Pacific Grove	City of Carmel-by-the-Sea	City of Del Rey Oaks	Sand City
Total Population	401,762	31,696	29,674	25,101	15,522	4,081	1,650	261
White	55.9%	49.2%	80.8%	43.7%	88.0%	94.6%	86.4%	71.3%
Black or African American	3.7%	12.6%	2.5%	14.3%	1.1%	0.4%	1.6%	5.0%
American Indian or Alaska Native	1.0%	1.0%	0.6%	0.7%	0.6%	0.3%	0.8%	3.1%
Asian	6.0%	10.1%	7.4%	16.3%	4.5%	2.3%	5.2%	1.5%
Native Hawaiian or other Pacific Islander	0.4%	1.3%	0.3%	2.1%	0.3%	0.1%	0.0%	0.0%
Some other race	27.8%	18.4%	3.9%	14.8%	1.8%	0.9%	2.5%	14.6%
Two or more Races	5.0%	7.3%	4.4%	8.0%	3.7%	1.3%	3.5%	4.6%
Hispanic or Latino (of any race)	46.8%	34.5%	10.9%	23.2%	7.1%	2.9%	6.6%	27.6%
Median household income	$48,305	$41,393	$49,109	$43,000	$50,254	$58,163	$59,423	$34,375
Per capita income	$20,165	$15,183	$27,133	$18,860	$31,277	$48,739	$30,035	$15,455
Individuals below poverty level	13.5%	12.1%	7.8%	13.1%	5.4%	6.6%	5.0%	27.9%

Source: U.S. Census Bureau, 2010

Note: Shaded cells in the table identify data meeting the environmental justice definition of a minority or low income population.

3.14 Visual, Scenic, and Aesthetic Resources

This section describes the existing visual, scenic and aesthetic resources within the project study area. Generally defined, aesthetic resources are those natural resources, landforms, vegetation, and man-made structures in the environment that generate one or more sensory reactions and evaluations by the observer, particularly pleasurable response. These sensory reactions are traditionally categorized as visual, auditory, and olfactory responses. The visual sense is usually the predominant reaction of the observer.

3.14.1 Study Area

The study area consists of all portions of the POM and the OMC.

3.14.2 Regulatory Setting

Installation Design Guide

The POM's IDG establishes standards for the visual, scenic and aesthetic quality of development in the project study area. The IDG is a component of the RPMP that promotes the use of consistent architectural themes and standards for U.S. Army facilities and infrastructure. The IDG is used as a reference to acquire recommendations and U.S. Army standards on the design of all facilities, new roads, road widening, parking, sidewalks and other pedestrian paths, bicycle paths, access control points, site furnishing selection and placement, signage selection and placement, lighting selection and placement, utility corridor selection, and utilities.

The IDG outlines goals and objectives applied to all U.S. Army facilities as well as goals and objectives specific to development activities at the POM and the OMC. The goals and objectives are used to shape standards and general guidelines for the design issues of site planning, architectural character, colors and materials, vehicular and pedestrian circulation, and landscape elements, including plant material, seating, signage, lighting, and utilities. These design guidelines incorporate sustainable design, quality of design, anti-terrorism measures, low maintenance measures, historical and cultural considerations, durability, safety, and compatibility.

3.14.3 Affected Environment

3.14.3.1 POM

The POM's visual character is unique because of a large intact Historic District, the natural forests in and around the Huckleberry Hill Nature Preserve, the presence of a military cemetery and the Mission or Spanish elements in newer buildings. Additionally, the POM is situated adjacent to the cities of Monterey and Pacific Grove, and is visible from public roads and private homes in these cities.

The POM is situated on a sloping hillside above the City of Monterey, and ranges in elevation from approximately 770 feet above sea level at its highest point in the western part of the installation, to approximately 30 feet above sea level at its lowest elevation to the east. The POM overlooks Monterey Bay, which is the most prevalent view from the installation. Photos 1 and 2 show views of the bay from the POM Historic District.

Photo 1. View of Monterey Bay from POM

Photo 2. Sloat Monument and Monterey Bay from POM

The POM contains five areas that can be categorized according to their visual layout and history. These areas from east to west, are identified as: the Historic Preserve, the Archaeological District (Lower Presidio); the Parade Ground (Soldier's Field); Fitch Hill; the Main Campus; and Presidio Knoll (USACE, 2005b). Presidio Knoll, the location of the Huckleberry Hill Nature Preserve, is the most prominent visual feature of the POM. This area consists of a large, dense forest of Monterey pine trees covering a steeply sloped hill. The peak of the knoll is one of the highest points on the Monterey Peninsula. Presidio Knoll is an undeveloped nature preserve at elevations above 550 feet and is developed at lower elevations. Buildings occupying this portion of the POM include the Price Fitness Center, GIF II and other instructional buildings along with supporting infrastructure.

The Main Campus area contains most of the facilities that are devoted to instruction. Buildings occupying this portion of the POM are of various heights and architectural styles, but the primary design theme is international. Most of the buildings in the Fitch Hill and Parade Ground areas were constructed between 1903 and 1940. Other buildings in these areas have Spanish Revival and historic (i.e., World War II) design themes. Photographs 3 and 4 show existing classrooms on the main campus and illustrate the varying architecture and age of the buildings.

Photo 3. Older Classrooms at POM

Photo 4. Newer Classrooms at POM

The existing housing and barracks at the POM also vary in age and architecture. The following photographs show existing residences on the POM. Photo 5 shows an older barracks building that does not have any unique architectural features or visual qualities. Photo 6 shows newer residences that provide more aesthetic value than the older barracks.

Photo 5. Older Barracks Buildings at POM

Photo 6. Newer Barracks Buildings at POM

3.14.3.2 OMC

The OMC is immediately east of State Highway 1 along Monterey Bay. The OMC is relatively flat, in a transition area on the northwest edge of the Salinas Valley that is formed by low hills ranging in elevation from 100 to 450 feet mean sea level. The predominant topography of the area reflects geomorphology typical of the dune sand deposits that underlie the western and northern portions of the former Fort Ord. In these areas the ground surface slopes gently west and northwest, draining toward Monterey Bay.

The OMC consists largely of older residential neighborhoods. Housing at the OMC is uniform in color, size, and landscaping; many units have peeling paint, and some appear to be in disrepair. Some houses at OMC have views of the ocean. Structures at the OMC are more spread out than the POM and roads are wider. Photo 7 shows the entrance to the OMC from Monterey Road. Photo 8 shows an OMC residential community.

Photo 7. Entrance to OMC

Photo 8. OMC Residential Community

Immediately south of the OMC are the Bayonet and Black Horse golf courses and a large former military family housing area, consisting of homes occupied by residents of Seaside. Other neighborhoods, schools, and small parks in Seaside are also south of the OMC. The golf courses largely separate Seaside and the OMC. The areas to the east and immediately north of the OMC are more sparsely developed with neighborhoods and schools and in accordance with the Program Comment for Cold War Era Unaccompanied Personnel Housing (1946-1974) that was prepared by the Advisory Council and adopted by the US Army on May 21, 2007.

The portion of State Highway 1 that passes the OMC is eligible for designation as a state scenic highway. There are no lands suitable for Class III Special Interest Areas on the OMC.

3.15 Historic and Cultural Resources

This section describes the existing historic and cultural resources within the project study area. Generally defined, historic and cultural resources may be districts (groups of related buildings, sites, or structures), buildings (a shelter of any form for human activity), sites (archaeological sites or locations of important events), structures (not created for human habitation), or objects (small in scale and usually created or constructed by humans).

The term cultural resources encompass several types of resources, including archaeological, architectural, and traditional cultural properties. Archaeological sites include both prehistoric and historic deposits, as well as submerged resources. Architectural properties are buildings, bridges, and infrastructure. Traditional cultural properties are those locations of importance to a particular cultural group.

Cultural resources are defined as historic properties in the National Historic Preservation Act (NHPA), as cultural items in the Native American Graves Protection and Repatriation Act (NAGPRA), as archaeological resources in the Archaeological Protection Act of 1979 (ARPA), as sacred sites (to which access is provided under the American Indian Religious Freedom Act) in Executive Order 13007, and as collections and associated records in 36 CFR Part 79, Curation of Federally Owned and Administered Collections.

3.15.1 Study Area

The study area consists of all portions of the POM and the OMC.

3.15.2 Regulatory Setting

The importance of maintaining historic and cultural resources in the region is reflected in the Federal and local general plans that define goals, policies, and regulations that are established to guide development in the region.

3.15.2.1 Federal

National Historic Preservation Act

The NHPA requires federal agencies to consider potential impacts to cultural resources that are listed, nominated, or eligible for listing to the NRHP; designated a National Historic Landmark; or valued by modern Native Americans for maintaining their traditional culture. The regulations, commonly referred to as the Section 106 process, describe the procedures for identifying and evaluating historic properties; assessing the effects of federal actions on historic properties; and consulting to avoid, reduce, or minimize adverse effects. Section 106 requires federal agencies to consult with the appropriate SHPO if their undertaking may affect such resources. An undertaking refers to a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out by or on behalf of a federal agency; those carried out with federal financial assistance; and those requiring a Federal permit, license or approval. Protection of Historic and Cultural Properties (36 CFR Section 800 [1986]) provided an explicit set of procedures for federal agencies to meet their obligations under the NHPA, which includes inventorying of resources and consultation with SHPO.

Section 106 does not require the preservation of historic properties, but ensures that the decisions of federal agencies concerning the treatment of these places result from meaningful considerations of cultural and historic values and of the options available to protect the properties. The Proposed Action is an undertaking as defined by 36 CFR Section 800.3 and is subject to Section 106. The U.S Army will initiate the process of consultation with the SHPO regarding cultural resources listed on or eligible for inclusion to the NRHP and the effect of proposed federal action to these resources prior to the signing of the NEPA ROD.

Archeological Resources Protection Act of 1979 and the Antiquities Act of 1906

The ARPA defines archeological resources as any material remains of past human life or activities that are of archeological interest. This Act requires that federal permits be obtained before cultural resource investigations are initiated on federal land and that the investigators consult with the appropriate federally recognized Native American tribes prior to initiating archaeological studies on sites of Native American origin.

The Antiquities Act of 1906 established a system of permits for conducting archaeological and paleontological investigations on federal land and specified penalties for noncompliance. Some antiquities permits issued under this law remain in effect. New permits are now issued under ARPA and its implementing regulations (43 CFR Part 7).

The 2004 Integrated Cultural Resources Management Plan (ICRMP) for the POM and OMC outlines the requirements for ARPA and the Antiquities Act compliance at the POM Installation. Standard Operating Procedure No. 3 of the ICRMP provides the policy and detailed procedures for paleontological and archeological resources found on federal lands. All paleontological and archeological remains, deposits, and sites on the installation are protected from appropriation, excavation, injury or destruction. The ICRMP policy and procedures are provided to:

- Ensure that military police, installation legal staff, the installation Public Affairs Office, and the Environmental Division staff are all familiar with the requirements and applicable civil and criminal penalties under ARPA.
- Establish a program to increase public awareness of the significance of the archeological resources on the installation and the need to protect such resources.

Programmatic Agreement Regarding Routine Maintenance of Historic Properties at POM

On June 16, 1993, a Programmatic Agreement (PA) was completed between the U.S. Army, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer, in accordance with the Federal regulations implementing Section 106 and Section 110 of the NHPA. The 1993 PA continues in use per an informal agreement between POM and California State Historic Preservation Office (SHPO). The PA allows the U.S. Army to complete routine maintenance, repair, and replacement in kind of historic properties in the historic district without any further SHPO consultation, if all requirements in the PA are adhered to. Any actions outside the PA require separate SHPO consultation. The PA requires special cultural resources training for those supervising any work on historic properties and requires completion of an annual report that documents all routine maintenance that has occurred as part of the PA.

Integrated Cultural Resources Management Plan

Department of Defense Instruction 4751.3 requires installations to develop an ICRMP as an internal compliance and management tool to integrate cultural resources management with ongoing mission activities. The POM Installation's ICRMP was completed in December 2004 and will guide cultural resources management through 2010 (U.S. Army, 2004). It provides guidance on the management of cultural resources and ensures the POM Installation is in compliance with existing laws, including the NHPA. It also describes procedures to implement if cultural resources are discovered on-site.

3.15.3 Affected Environment

3.15.3.1 POM

Table 3.15-1 presents a list of the important historical periods of the POM Installation.

Table 3.15-1. Important Historic Periods – POM Installation

Historic Period	Date	Description
Prehistoric Era	circa 4000 B.C. to 1770	Native Americans lived in the Monterey Bay area for many millennia. Archaeological sites representing many of those years are found at the Lower POM.
Early European Exploration: Spanish/Mexican Period	1770 – 1846	After settling Mexico and Central America, Spanish rulers began to explore California; Mexican period of governance over California.
California Mission Settlement at Monterey	1770	Spanish expeditions to the New World, construction of presidio and chapel by Franciscans in Monterey in 1770.
Beginning of the American Period/Statehood	1820 – 1900	Mexico lifts laws banning foreign trade; discovery of gold in 1848 brings Americans west to settle; upper California becomes territory of the United States in 1848; 1850 California is admitted to the United States as 31st State.
Presidio of Monterey	1902 – 1939	U.S. troops stationed at POM during Spanish-American war, construction of installation buildings, training facilities.
World War II	1940 – 1945	New construction and remodeling, development of surrounding communities.
Presidio of Monterey	1946 – Present	Opening of DLIFLC in 1946; Further development of U.S. Army Language School; new tenants move to POM; develop new classrooms, housing, demolish old buildings in the Lower Presidio.

Source: U.S. Army, 2004

Cultural and historic resources at the POM include known archaeological sites, historic buildings, structures, landscapes, monuments, and properties associated with the different historical periods of use. Special interest areas at the POM include the Historic District, El Castillo Historic District, and the scenic overlook at the Sloat Monument. The POM Historic District contains over 119 historic architectural and landscape features dating back to the early 1900s, when it was a cavalry-infantry-artillery cantonment. The district contains the parade grounds, Officers' Row, and the cavalry quarters. The El Castillo Historic District is in the southeast portion of the POM. In 1971, this area was nominated to the National Register of Historic Places and was designated as a historic preserve. The Sloat Monument commemorates the July 7, 1846 landing of Commodore John Sloat, who helped to claim California for the United States.

The POM ICRMP describes six archeological sites and approximately 102 buildings, a historic road system, and monuments that are incorporated within a historic landscape district at the Presidio. The archeological sites identified in the POM ICRMP are the prehistoric Native American village site, the Spanish fort El Castillo, Fort Mervine built by the U.S. Army, and the gravesite of Alex Nino that is considered to be the location of the first non-Native American burial in Monterey.

There are 124 historic resources (buildings, structures, and landscapes) identified at the POM, as shown on Figure 3.15-1. These buildings and surrounding features (some categories overlap) comprise of:

- 102 contributing resources
- 22 non-contributing resources
- 18 landscape zones
- 1 NRHP-eligible stand-alone resource
- 7 NRHP-registered monuments
- 3 historic properties
- 11 historic roads

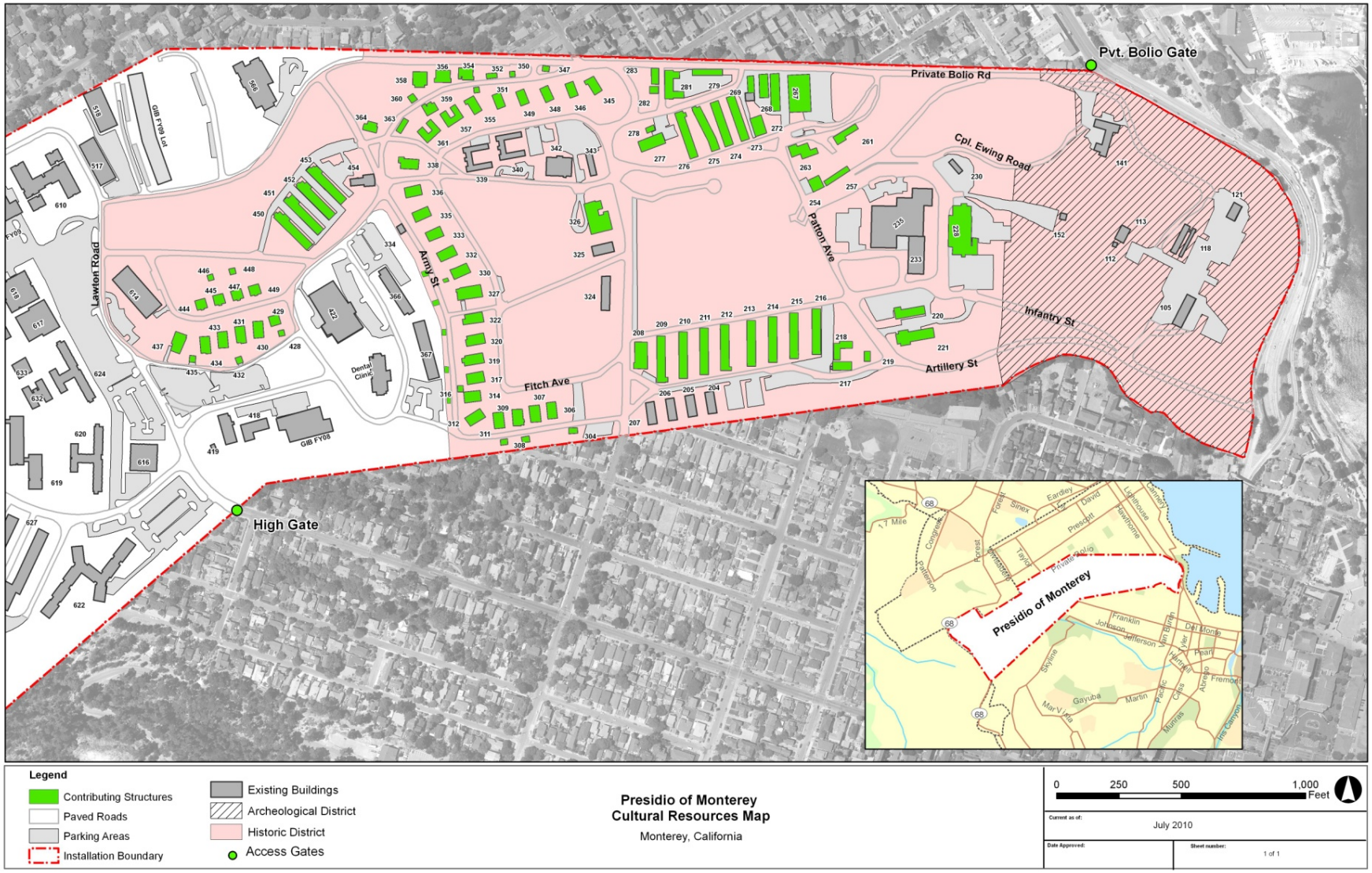

Figure 3.15-1. Historic District with Contributors and Non-Contributors

The Lower Presidio Historic Park is leased by the U.S. Army to the City of Monterey and contains multiple known archeological sites and historical structures. The Presidio of Monterey Museum is at the park and contains exhibits of Monterey's various periods of development, including the indigenous period, which highlights the area's native populations through the Spanish and Mexican periods and up to present day. Because of the important role of the military in Monterey between 1902 and today, the majority of the museum is dedicated to the development of the Presidio as a training base.

3.15.3.2 OMC

The OMC is the U.S. Army-retained land on former Fort Ord. Fort Ord has been associated with the POM since 1917 when it was used as a field training site to train cavalry. Fort Ord was used for intensive training during World War I and II, Korea, Vietnam, and by the 7th Infantry Division in Panama.

Based on an archeological survey completed in 1993, the POM ICRMP identified limited evidence of Native American settlement and use at the former Fort Ord. The ICRMP also identified multiple structures potentially eligible for the National Register of Historic Places located on sites that have since been transferred, as a part of the BRAC process, to non-Army owners. At the OMC there are no known archaeological deposits. The OMC contains buildings that are approaching 50-years old and thus becoming potentially eligible for historic status. A determination of eligibility is forthcoming, however it appears these buildings will not be considered as candidates for nomination to the National Register of Historic Places.

3.16 Resources Not Evaluated in Detail

The following resources are not discussed in detail because the proposed action would have no effect on these resources.

3.16.1 Agricultural Resources

There are no agricultural resources within the study area or surrounding the study area that would be affected by the proposed action.

3.16.2 Indian Trust Assets

Indian Trust Assets (ITAs) are defined as legal interests in property held in trust by the United States government for Indian tribes or individuals, or property protected under United States law for Indian tribes and individuals. Federal agencies are required to take responsibility for protection and maintenance of ITAs. There are no ITAs within the study area or surrounding the study area that would be affected by the proposed action.

The U.S. Army has contacted the California Native American Heritage Commission (NAHC) for a list of Federal Tribal contacts. There were no federally recognized Native American Tribes identified by the NAHC that reside within Monterey County. Although there is no federally recognized tribe residing in Monterey County, the Santa Ynez Band of Chumash Indians Native American Tribe (residing in San Luis Obispo County) has interests in Monterey County but not at the POM or OMC. Compliance with the NHPA, Section 106 requirement has been completed in this regard (POM, 2010b).

3.16.3 Recreation

Except for Huckleberry Hill Preserve and Lower Presidio Park, recreation facilities on the POM are available only for military personnel. Public access to the Huckleberry Hill Preserve is gained through Veteran's Memorial Park in the City of Monterey. The public cannot enter the preserve legally by crossing U.S. Army property. The proposed action would not change public access to the nature preserve. Construction activities would not affect recreation at the Lower Presidio Park, which is leased to the City of Monterey. There would be no impact to the public's use of, or access to, the park as a result of the proposed action. The proposed action would not affect any existing public recreation facilities.

Construction activities under the proposed action would not affect existing recreation facilities at the POM. A new indoor swimming pool is proposed at the Price Fitness Center, which would be a benefit to recreation for military personnel and families; it would not be open to the public.

The OMC does not have formal outdoor recreation areas. Land on former Fort Ord adjacent to the OMC does provide public recreational opportunities including golfing, hiking, mountain biking, horseback riding, and nature study. Construction would not affect the use of the recreation areas because they are outside of the OMC, away from construction activities. A teen center is proposed for construction at the OMC, which would be a benefit to military families; it would not be open to the public.

There would be negligible impacts to public recreation facilities; therefore, recreation is not further evaluated.

3.16.4 Department of Defense American Indian and Alaska Native Policy

The DoD Annotated American Indian and Alaska Native Policy (October 27, 1999), a component of DoD Policy 14710.02, governs DoD interactions with federally-recognized tribes. The policy outlines DoD trust obligations, communication procedures with tribes on a government-to-government basis, consultation protocols, and actions to recognize and respect the significance that tribes ascribe to certain natural resources and properties of traditional cultural or religious importance. The policy requires consultation with federally recognized tribes for proposed activities that could significantly affect tribal resources or interests.

The U.S. Army has contacted the California Native American Heritage Commission for a list of Federal Tribal Contacts. There are no federally recognized tribes with interest at either the POM or the OMC.

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4. ENVIRONMENTAL CONSEQUENCES AND MITIGATION

4.1 Water Supply

This section describes the environmental consequences of the RPMP development alternatives on the water supply. Effects on the potable water supply would be considered significant if the proposed projects created a total demand that exceeded the available supply. Projected water needs compared to the available supplies under each alternative are discussed here, with additional details provided in Appendix A, Revised Water Impact Analysis.

4.1.1 No Action Alternative

Under the No Action Alternative, the new FY11 GIB would be constructed at the POM, but construction proposed as part of the RPMP would not occur. A water permit for the new FY11 GIB has been secured from MPWMD to supply the estimated 7.7 AFY of water needed for the project (MPWMD, 2006). After the GIB is brought online, the POM would still have approximately 29 AFY of water available, as summarized in Table 4.1-1. Construction would not occur at the OMC under the No Action Alternative so water demands would be unchanged from the existing conditions.

Table 4.1-1. No Action Alternative – Water Availability Summary

Type	POM (AFY)	OMC (AFY)
Water demand, existing conditions (2010)	183.6	1,220.4
New demand:		
Short-range construction (2011 – 2015)	7.7	0
Long-range construction (2016 – 2030)	0	0
Total water demand, No Action Alternative	191.3	1,220.4
Water available	220	1,577
Excess or shortfall (1)	28.7	356.6

(1) Excess or shortfall = Water available – Water demand

Under the No Action Alternative, the overall water demand would increase at the POM and be unchanged at the OMC. Because the available water supply would continue to exceed the estimated water demand at each site, this alternative would have less than significant impacts to the potable water supply.

4.1.2 Alternative 1: POM-centric

Alternative 1 places all future primary and support facilities for the DLIFLC within the POM boundaries to maintain a central campus-like atmosphere. The new buildings would include barracks, classrooms, and training facilities. Over the 20-year planning horizon for the RPMP, the new facilities would increase the total demand at the POM from about 191 AFY (under the No Action Alternative) to 227 AFY, as shown in Table 4.1-2. This total takes into account approximately 32 AFY of water credits that are scheduled to be

available after existing outdated barracks are razed at the POM to provide needed space for the new buildings. This would allow sufficient supply to meet the anticipated needs of the short-range construction projects. However, only some of the long-range projects could be built as there would be an overall supply shortfall of approximately 6.7 AFY at the POM.

Table 4.1-2. Alternative 1 (POM-centric) – Water Availability Summary

Type	POM (AFY)	OMC (AFY)
Baseline demand, No Action Alternative	191.3	1,220.4
New demand:		
Short-range construction (2011 – 2015)	25.2	0
Long-range construction (2016 – 2030)	42.2	27.2
Demand reduction, facility demolition	(31.9)	0
Total water demand, Alternative 1	226.7	1,247.6
Water available	220	1,577
Excess or shortfall (1)	(6.7)	329.4

(1) Excess or shortfall = Water available – Water demand

Construction at the OMC under Alternative 1 would be made up of long-range projects that consist of community and other support centers. The new development would increase the projected water demand at the OMC to 1,248 AFY. Approximately 329 AFY of the OMC water rights would remain available after the projects are completed (Table 4.1-2).

Alternative 1 would increase the estimated water needs at the POM and OMC by 35 AFY and 27 AFY, respectively, as compared to the No Action Alternative. These estimates were determined from a programmatic level analysis using conceptual designs of the new buildings, as described in the Revised Water Impact Analysis (Appendix A). Detailed project level analyses would be required to determine the final water demands for this alternative. Under Alternative 1, the projected total demand at the POM would exceed the available water supply, resulting in a significant and unavoidable water supply impact. Projected water demands at the OMC under this alternative would not exceed the site's available supply, so the effects were considered less than significant.

4.1.3 Alternative 2: POM and OMC

Under Alternative 2, the short-range projects planned for the POM would be unchanged from Alternative 1, but some long-range buildings would be relocated. Barracks Phases II and III and three long-range GIBs originally located at the POM would be transferred to the OMC. This redistribution would allow the U.S. Army to take advantage of the available water credits at the OMC and use them to meet a larger portion of the future water demands, as shown in Table 4.1-3. Fewer existing buildings would be razed at the POM because of the reduced space requirements under Alternative 2, so only about 17 AFY of water credits would be released. Combined, these changes allow for sufficient water to be available to meet the projected needs of the POM under this alternative.

Shifting future buildings to the OMC would increase the projected demand by about 37 AFY compared to Alternative 1. The OMC water credits would be sufficient to absorb this increase and still retain about 293 AFY for development beyond the RPMP planning horizon (Table 4.1-3).

Table 4.1-3. Alternative 2 (POM and OMC) – Water Availability Summary		
Type	POM (AFY)	OMC (AFY)
Baseline demand, No Action Alternative	191.3	1,220.4
New demand:		
Short-range construction (2011 – 2015)	25.2	0
Long-range construction (2016 – 2030)	5.5	63.9
Demand reduction, facility demolition	(17.4)	0
Total water demand, Alternative 2	204.6	1,284.3
Water available	220	1,577
Excess or shortfall (1)	15.4	292.7

(1) Excess or shortfall = Water available – Water demand

Alternative 2 would increase the water needs at the POM and OMC by an estimated 13 AFY and 64 AFY, respectively, compared to the No Action Alternative. Dividing the future development between the POM and OMC appears to have balanced the projected demands with the available water in both the short- and long-range. Because supply would be sufficient to meet the projected Alternative 2 water demands, the effects were considered less than significant. These programmatic level estimates, however, were based on conceptual building designs so an overall shortfall may be realized once detailed water analyses are competed. Implementing the mitigation measures described in Section 4.1.5, though not required based on the programmatic analysis, could reduce the possibility of future significant impacts.

4.1.4 Comparative Analysis of the Alternatives

Table 4.1-4 lists the effects of each of the alternatives and compares them to the No Action Alternative. The effects of Alternative 2 to the potable water supply were considered less than significant. The effects from Alternative 1, however, would be significant and unavoidable. Although enough water would be available to meet the estimated demands of the short-range projects at the POM, the impacts were considered significant and unavoidable. The currently available mitigation measures would not provide adequate additional supply or reduce the demand sufficiently to negate the overall shortfall of Alternative 1. The mitigation measures needed to provide an assured long-term supply to allow for construction of all the long-range projects are currently future possibilities and not known mitigation measures, as described in Section 4.1.5.

Table 4.1-4. Water Supply – Comparative Analysis of Alternatives			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Projected water demand exceeds available supply at POM	Less than Significant	Significant and Unavoidable	Less than Significant
Projected water demand exceeds available supply at OMC	Less than Significant	Less than Significant	Less than Significant

4.1.5 Potential Mitigation

The following measures would be implemented to reduce impacts to the potable water supply:

WS-1: Water conservation measures and BMPs identified in the 2004 Presidio of Monterey and Ord Military Community Water Management Plan would be implemented in all new facilities. These include water saving devices, such as waterless urinals and low-flow toilets, and landscaping with drought tolerant native vegetation. Implementation of these conservation measures would reduce the water needs associated with the new buildings. Enacted alone, however, this measure would be unlikely to reduce impacts under Alternative 1 to less than significant.

WS-2: Rainwater collection systems would be installed in all new buildings. Runoff from the roofs and courtyards would be stored in cisterns for use in the buildings' low-flow toilets. Reusing stormwater would offset a portion of the potable water demand from the new buildings. Enacted alone, however, this measure would be unlikely to reduce impacts under Alternative 1 to less than significant.

WS-3: Purple piping for recycled water would be installed in all new buildings in anticipation of a future recycled water supply for the POM and OMC. Recycled water availability is independent of drought conditions and represents one of the few "new" water sources available in the Monterey area. Recycled water could be used to meet non-potable water demands such as landscape irrigation and toilet flushing, thereby decreasing potable water demands. Implementing this measure would prepare the OMC and POM for a potential future water source; however, this measure would not affect the identified water supply impacts until a recycled water source becomes available.

4.1.5.1 Future Mitigation Measures

The following are possible measures that can be considered by the U.S. Army as part of their efforts to assure a long-term water supply for the POM and OMC. These are possibilities for the future and are not currently known mitigation measures. Further details are provided in Appendix A, Revised Water Impact Analysis.

Water transfer – Because water rights above the projected need at the OMC are available, the U.S. Army could explore the feasibility of transferring a portion of the OMC's water rights to the POM to reduce the POM's projected supply shortfall under Alternative 1. A water transfer could involve reassigning a portion of the U.S. Army's water rights with MCWD (purveyor to the OMC) to Cal Am (purveyor to the POM). A water transfer would increase the supply of water available to the POM without disrupting the supply/demand balance at the OMC, thereby potentially reducing the water supply impacts of Alternative 1 to less than significant.

Water trade – The U.S. Army could consider an interim water supply project while a long-term water supply is developed. One option uses the fact that Cal Am serves both the City of Seaside and the POM. A portion of the OMC water rights would be traded to the City of Seaside to augment the City of Seaside's water supply. In turn, the City of Seaside would trade a portion of its Cal Am water supply allocation to the POM. This intermediate measure could potentially provide sufficient water to the POM to reduce the water supply impacts of Alternative 1 to less than significant.

Regional water project buy-in – The U.S. Army could consider contracting additional water from its current water purveyors. Both Cal Am and MCWD are participating in regional water supply projects that could potentially have water supplies available to the POM and OMC if and when the regional projects are brought online. Many of these projects have submitted environmental documentation or are in the construction stage. Depending on the additional water amount contracted by the U.S. Army, implementing this measure could potentially reduce the impacts under Alternative 1 to less than significant. This measure, however, would be effective only after a regional water supply project is realized.

4.2 Geology, Soils, and Mineral Resources

This section evaluates potential effects to geology, soils, and mineral resources from the RPMP alternatives. Effects are evaluated based on whether RPMP actions would increase risks to human health and safety of seismic events or increase soil erosion. As described in Section 3.2, the POM or OMC are not at risk to liquefaction and landslides. In addition, mineral resources are not being mined at the POM and construction activities would not occur near the known mineral resources sites. There are no known mineral resources at OMC. This section does not evaluate further the effects related to liquefaction, landslides, or mineral resources.

4.2.1 No Action Alternative

Under the No Action Alternative, construction of a new GIB and associated parking lot would occur in FY11 at the POM and no construction would occur at the OMC. The new GIB construction would occur within existing parking or paved areas. Due to construction occurring in areas that are previously developed as well as areas with minimal slope soil erosion will be reduced. Mitigation measure GS-1 (Section 4.2.5) provides BMPs to minimize and/or reduce impacts to soil erosion. Therefore, impacts related to erosion and loss of topsoil under the No Action Alternative would be less than significant.

The POM is in a seismically active area and people living there are at risk from earthquakes. Population growth at the POM Installation under the No Action Alternative would put more people at risk to earthquake damages. Existing buildings would remain the same, some of which may not meet current seismic design guidelines. Under the No Action Alternative, these buildings would not be retrofitted to prevent seismic damages and would increase risks to public safety from earthquakes. This impact would be significant and unavoidable.

4.2.2 Alternative 1: POM-centric

4.2.2.1 Short-range Projects

Short-range projects are proposed to begin construction by FY11. All short-range projects would occur on the POM.

Barracks Phase I and Phase IV

The Barracks Phase I and Phase IV projects involve demolition of existing buildings and construction of new buildings. Portions of the Barracks Phase I project would be constructed on undeveloped lands just north of the nature preserve, while portions of the Barracks Phase IV project would be constructed on undeveloped land east of Building 652. Both projects would require removal of trees and some excavation and grading for the new buildings and parking lots. The Barracks Phase I project would be about 165,000 square feet and the Barracks Phase IV project would be about 155,000 square feet; a portion of both projects would be constructed on already exposed soils. Construction activities on undeveloped lands would result a greater loss of topsoil to a greater extent than developed areas, resulting in exposed soil subject to wind and water erosion. Both the FY11 and FY15 barracks would be constructed on steep slopes (>25%). The potential for soil erosion would be potentially significant. Mitigation measure GS-1 (Section 4.2.5) provides BMPs to minimize and reduce impacts to soil erosion and potential slope failure to less than significant.

Construction of the new barracks would occur on sloped lands that may require grading or cutting into the hillside. Although building designs would be completed by qualified engineers who would consider slope stabilization needs, the potential for soil erosion from the steep slopes would be potentially significant. Adherence to the NPDES stormwater construction permit and Section 438 of the EISA, combined with the

required SWPPP and soil protection BMPs to minimize impacts could reduce impact potential to less than significant.

Construction of the new barracks would conform to current DoD building codes and standard design guidelines for seismic hazards. Many of the existing barracks were built more than 40 years ago and do not meet existing seismic standards. Replacing the old barracks with modern barracks that increase seismic safety would reduce risks from earthquakes to military personnel living at the POM. This would be a beneficial impact over the No Action Alternative.

Renovation Building 326

The majority of construction activities would occur within the building and no excavation is expected. No soil erosion impacts are expected for building renovations.

Impacts to seismic risks would be the same as described for the Barracks Phase I and Phase IV projects.

4.2.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin between FY16 and FY30, depending on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at a programmatic level of detail. This section describes general impacts on geology and soil resources of proposed construction associated with the long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

General construction activities that could increase erosion include demolition of existing pavement, removing trees, excavation, grading, removing existing utilities, landscaping, and installation of new site utilities. In general, construction on undeveloped areas would result in greater soil erosion potential than redevelopment or new construction in developed, or paved, areas. Soil erosion and fugitive dust effects would be temporary and could be reduced by using common dust suppression techniques, such as spraying the ground with water or using non-toxic soil binders. Water-induced erosion can be reduced similarly by implementing stormwater pollution prevention BMPs.

Building renovations would result in no soil erosion impacts. The renovation would occur within the buildings; no excavation or stockpiling of soil would be necessary.

Under Alternative 1, the majority of long-range projects would occur at the POM and several would be constructed at the OMC. All of the proposed long-range projects at the POM would occur on already developed lands; therefore, the potential for soil erosion during construction is relatively low than if all construction were to occur on undeveloped parcels. Several of the proposed long-range projects occurring at the OMC would occur on vacant, undeveloped parcels. There would be increased potential for soil erosion at these sites and this would be considered potentially significant. Mitigation measure GS-1 would reduce this impact to less than significant.

Construction of the new buildings at the POM would occur on sloped lands that may require grading or cutting into the hillside. Building designs would be completed by qualified engineers and would consider slope stabilization needs. Additionally adherence to the NPDES stormwater construction permit and Section 438 of the EISA, combined with the required SWPPP and soil protection BMPSs minimize potential environmental impacts to less than significant.

Construction of the new barracks and general instruction buildings would conform to current DoD building standards and standard design guidelines for seismic hazards. Replacing the old buildings with modern

buildings that meet current seismic standards would reduce risks from earthquakes to the military population and visitors at the POM Installation. This would be a beneficial impact over the No Action Alternative.

4.2.3 Alternative 2: POM and OMC

4.2.3.1 Short-range Projects

Impacts from soil erosion and seismic risks associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.2.3.2 Long-range Projects

Under Alternative 2, the majority of long-range projects would occur at the OMC. Several of the proposed long-range projects at the OMC would occur on vacant, undeveloped parcels. Construction activities that could increase erosion include demolition of existing pavement, removal of trees, excavation, grading, removal of the existing utilities, landscaping, and installation of new site utilities. In general, construction on undeveloped areas would result in greater soil erosion potential than redevelopment or new construction in developed or paved areas. The potential for soil erosion would be considered significant. Mitigation measure GS-1 would reduce this impact to a less than significant level.

Building renovations would result in no impacts to soil erosion. The renovations would occur within the buildings and would not require excavation or stockpiling of soil.

Construction of the new barracks and general instruction buildings would conform to current DoD building codes and standard design guidelines for seismic hazards. Replacing the old buildings with modern buildings that meet current seismic standards would reduce risks from earthquakes to the military population and visitors at the POM Installation. This would be a beneficial impact over the No Action Alternative.

4.2.4 Comparative Analysis of the Alternatives

Table 4.2-1 lists the effects of each of the alternatives and compares them to the No Action Alternative. Alternatives 1 and 2 would have similar impacts to geology and soils.

Table 4.2-1. Geology, Soils, and Mineral Resources – Comparative Analysis of Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Potential for increased soil erosion during construction	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Potential for adverse effects from seismic activity	Significant and Unavoidable	Beneficial Impact	Beneficial Impact

4.2.5 Potential Mitigation Measures

GS–1: Each construction project would prepare a Permit Registration Document for submission to the SWRCB that would include a Notice of Intent, Risk Assessment, Site Map, SWPPP, a signed certification statement, and payment of fees. The findings of the Risk Assessment will determine the hazards associated with the site conditions and establish the specific compliance conditions of the permit. The SWPPP is required to be developed prior to construction to address the control of pollutant discharges using BMPs

selected for the specific project and to address stormwater monitoring. The BMPS include but are not limited to as follows:

- schedule construction sequences to minimize land disturbance during rainy and dry seasons,
- provide soil stabilization to steep slope areas,
- provide sediment controls to intercept and slow down stormwater flows,
- cover stockpiled soil,
- using dust suppressants such as watering soils and unpaved roadways,
- preserve existing vegetation where no construction activities are planned and wherever possible, and
- replant/revegetate all exposed disturbed areas immediately upon completion of construction.

Following the completion of the development project, the site must meet the conditions for Termination of Coverage by certifying the site has been stabilized and there is no potential for construction-related stormwater discharges. On September 2, 2012, the new post-construction standards will be in effect and post-construction and long-term maintenance plans will be required.

Military installations are now required to apply EISA requirements to projects that are larger than 5,000 square feet. Construction activities at the POM Installation will adopt a Low Impact Development (LID) practices per Section 438 of the EISA. LID techniques will be applied to the extent practical in replicating the pre-development natural hydrology of an area by utilizing small-scale stormwater management design measures that mimic natural processes that slow, filter, infiltrate and detain runoff. These measures help insure that receiving waters are not negatively impacted by changes in runoff temperature, volumes, durations and flow rates. Several LID BMPs include but are not limited to as follows:

- permeable pavement,
- rain ardens, bioretention and infiltration planters,
- vegetated swales,
- green roofs,
- integration of native riparian buffers and
- rain water harvesting or reuse where permissible.

4.3 Air Quality

This section evaluates the air quality impact analysis conducted for the RPMP alternatives. Significant air quality impacts would occur if any of the predicted emissions from the alternatives exceed applicable federal, state, or local air quality thresholds. Emissions were evaluated for project construction and included construction vehicle exhaust, worker trips, delivery and haul truck trips, fine site grading, paving, and architectural coating activities. Natural gas combustion for heating, landscaping activities, use of consumer products, architectural coating, and vehicular trips were evaluated for project operations. These operational emissions were not considered for existing buildings that are scheduled for renovation because there would be no net change in emissions. It is assumed that trips taken by additional residents are a maximum of 5

miles each way. The URBEMIS 2007 version 9.2.4 air quality model was used to quantify all construction and operational emissions.

The U.S. EPA's final general conformity regulations (40 CFR Part 93 Subpart B) apply to all federal actions, with the exception of those covered under transportation conformity, in a nonattainment or maintenance area. If the total of direct and indirect emissions of the relevant criteria pollutants and precursor pollutants caused by the federal action equal or exceed certain de minimis rates, then the federal agency is required to make a determination of general conformity. The North Central Coast Air Basin (NCCAB) is in attainment for all criteria pollutants at the federal level. No statement of general conformity is required. If the location where the action is to occur has not been designated an NAAQS nonattainment or maintenance area, then no further scrutiny is required and no documentation is required (U.S. Army, 2003a).

The MBUAPCD has established the emissions thresholds listed in Table 4.3-1 to evaluate the significance of a project's air quality impacts. The thresholds are based on daily emission rates from both construction and operations. If any of the thresholds are exceeded, than the project would be considered significant for that pollutant. MBUAPCD has not adopted a significance threshold for GHG.

Table 4.3-1. MBUAPCD Significance Thresholds

Pollutant	Pounds per Day
Construction	
PM_{10}	82
Operations	
CO	550
VOC	137
NO_X	137
SO_X	150
PM_{10} (1)	82

Source: MBUAPCD, 2008b

(1) The District's 82 lb/day operational phase threshold of significance applies only to onsite emissions and project-related exceedances along unpaved roads.

4.3.1 No Action Alternative

Under the No Action Alternative, construction of one GIB at the POM would occur in FY11. No other construction or renovation of buildings at POM or OMC would take place. The FY11 GIB project construction emissions are summarized in Table 4.3-2 and operational emissions are summarized in Table 4.3-3. The PM_{10} construction emissions from the project in FY11 are expected to exceed the daily construction emission significance threshold; therefore, mitigation would be required. Mitigation measure AIR-1 would reduce this impact to a less than significant level.

Table 4.3-2. Unmitigated Construction Emissions from No Action Alternative							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2010	33	5	25	0	83	18	3,092
2011	31	384	19	0	2	1	3,091
MBUAPCD Threshold	NA	NA	NA	NA	82	NA	NA
Annual Emissions (tons per year)							
2010	1	<1	1	0	1	<1	89
2011	3	4	2	0	<1	<1	278

Note: Values shown in **bold** exceed the threshold of significance.
Emissions shown in 2010 because the government FY11 starts in October 2010.

Table 4.3-3. Unmitigated Operational Emissions from No Action Alternative							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2011	4	2	3	0	<1	<1	4,121
MBUAPCD Threshold	550	137	137	150	82	NA	NA
Annual Emissions (tons per year)							
2011	1	<1	1	-	-	-	752

Note: Values shown in **bold** exceed the threshold of significance.
Emissions shown in 2010 because the government FY11 starts in October 2010.

4.3.2 Alternative 1: POM-centric

4.3.2.1 Short-range Projects

Short-range projects are planned for construction from FY11 through FY15. All short-range projects would occur on the POM. The project construction emissions are summarized in Table 4.3-4. All projects quantified and the calculations associated with project construction and operations are listed in Appendix C, Air Quality Emissions. Construction PM_{10} emissions from short-range projects would range between 2 and 64 lbs per day and would not exceed MBUAPCD significance thresholds for PM_{10}; therefore, construction air quality impacts from short-range projects would be less than significant.

Table 4.3-4. Unmitigated Construction Emissions from Short-range Projects							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2010	55	9	68	0	64	16	8,613
2011	46	96	38	0	3	3	5,038
2012	36	5	25	0	31	7	3,534
2014	63	10	67	0	63	15	12,125
2015	47	150	32	0	2	2	6,630
MBUAPCD Threshold	NA	NA	NA	NA	82	NA	NA
Annual Emissions (tons per year)							
2010	2	<1	3	0	2	<1	347
2011	3	3	2	0	<1	<1	347
2012	<0.01	<1	<0.01	0	<0.01	<0.01	<1
2014	3	<1	3	0	1	<1	450
2015	6	4	2	0	<1	<1	385

Note: Emissions shown in 2010 because the government FY11 starts in October 2010.

Table 4.3-5 lists the operational emissions from the short-range projects in peak pounds per day and tons per year. It is assumed that all operational-related trips are a maximum of 5 miles each way, and default assumptions in the URBEMIS model were used to estimate operational emissions. Only project-related emissions are presented in Table 4.3-5, or the increment between the No Action Alternative and the action alternatives. If a specific phase of the project included the construction of a new building in conjunction with the demolition of an existing building, then only the difference between operational emissions of the demolished building and the new construction were determined. Increases in vehicular emissions were determined for the additional military personnel housed in new barracks; it was assumed that current military personnel are already making trips to existing buildings and addition of buildings would not increase their vehicle emissions. Additionally, if a proposed phase only included the renovation or other improvements to an existing building that did not include the addition of any new building space, then it was assumed that no net increase in vehicular trips or other project operations would occur.

Operational emissions from short-range projects would not exceed MBUAPCD significance thresholds for criteria pollutants; therefore, operational air quality impacts from short-range projects would be less than significant. Operations emissions calculated for short-range projects and long-range projects under Alternative 1 are considered conservative because the assumed trip rates do not fully account for the compact nature of the POM. Operational emissions from vehicle trips are likely overestimated and may be less during actual project operations.

Table 4.3-5. Unmitigated Operational Emissions from Short-range Projects							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2011	41	9	6	0	4	1	3,254
2012	41	9	6	0	4	1	3,254
2013	41	9	6	0	4	1	3,254
2014	41	9	6	0	4	1	3,254
2015	57	20	9	0	11	2	8,738
MBUAPCD Threshold	550	137	137	150	82	NA	NA
Annual Emissions (tons per year)							
2011	45	9	6	0	5	1	3,624
2012	45	9	6	0	5	1	3,624
2013	45	9	6	0	5	1	3,624
2014	45	9	6	0	5	1	3,624
2015	85	19	12	0	10	2	7,654

4.3.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin between FY16 and FY30, depending on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at a programmatic level of detail. This section describes general impacts on air quality of proposed construction associated with the long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progress.

Information on building projects construction start and end dates are not available at this time; therefore, for analysis purposes, it is assumed that long-range projects are constructed at the beginning of the currently proposed construction schedule. For example, it was assumed that buildings that are scheduled to be constructed or renovated between FY16 and FY20 would be constructed starting in FY16. This is a conservative assumption made for the purposes of analyzing potential air quality impacts and may not represent the actual construction schedule of the long-range projects that would be constructed between FY16 and FY30, depending on available funding and other considerations. The only exception to this assumption is the construction of Barracks Phase III, which was assumed to occur after the construction of the Barracks Phase II.

There are 20 long-range projects for which construction emissions were quantified. Table 4.3-6 lists the peak daily and total annual emissions from construction of the long-range projects. All projects and the calculations associated with construction and operation are listed in Appendix C, Air Quality Emissions. Construction emissions that would occur in FY16 and FY20 would exceed the MBUAPCD threshold of significance for PM_{10} and would need to be mitigated.

Table 4.3-6. Unmitigated Construction Emissions from Long-range Projects							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2016	87	242	111	0	125	30	19,525
2017	45	117	55	0	71	16	14,186
2018	22	15	13	0	43	9	3,537
2019	22	101	12	0	1	1	3,626
2020	29	320	22	0	85	18	5,501
2025	26	205	23	0	48	11	6,644
MBUAPCD Threshold	NA	NA	NA	NA	82	NA	NA
Annual Emissions (tons per year)							
2016	6	5	5	0	3	1	1,039
2017	3	3	2	0	2	<1	573
2018	3	1	2	0	1	<1	432
2019	1	2	1	0	<1	<1	211
2020	2	4	2	0	1	<1	414
2025	2	3	2	0	1	<1	488

Note: Values shown in **bold** exceed the threshold of significance.

Table 4.3-7 lists the operational emissions from the long-range projects in peak pounds per day and annual tons. It is assumed that all operations-related trips are a maximum of 5 miles each way, and new construction would have additional landscaping, heating, and VOC-containing product needs. Only project-related emissions are included in the analysis, or the increment between the No Action Alternative and the proposed project. If a specific phase of the project included the construction of a new building in conjunction with the demolition of an existing building, then only the difference between operational emissions of the demolished building and the new construction were determined. Increases in vehicular emissions were determined for the additional military personnel housed in new barracks; it was assumed that current military personnel are already making trips to existing buildings and addition of buildings would not increase their vehicle emissions. Additionally, if a proposed phase only included the renovation or other improvements to an existing building that did not include the addition of any new building space, then it was assumed that no net increase in vehicular trips or other project operations would occur.

Operational emissions from long-range projects do not exceed MBUAPCD significance thresholds for criteria pollutants; therefore, operational air quality impacts from long-range projects are less than significant.

Table 4.3-7. Unmitigated Operations Emissions from Long-range Projects							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2016	5	1	1	0	<1	<1	945
2017	61	15	9	0	9	2	7,754
2018	61	15	9	0	9	2	7,754
2019	61	15	9	0	9	2	7,754
2020	67	18	13	0	9	2	12,009
2021	67	18	13	0	9	2	12,009
2022	67	18	13	0	9	2	12,009
2023	67	18	13	0	9	2	12,009
2024	67	18	13	0	9	2	12,009
2025	67	18	13	0	9	2	12,009
2026	67	18	13	0	9	2	12,009
2027	67	18	13	0	9	2	12,009
2028	67	18	13	0	9	2	12,009
2029	67	18	13	0	9	2	12,009
2030	67	18	13	0	9	2	12,009
MBUAPCD Threshold	550	137	137	150	82	NA	NA
Annual Emissions (tons per year)							
2016	1	<1	<1	0	<1	<1	172
2017	10	3	2	0	2	<1	1,410
2018	10	3	2	0	2	<1	1,410
2019	10	3	2	0	2	<1	1,410
2020	11	3	2	0	2	<1	2,186
2021	11	3	2	0	2	<1	2,186
2022	11	3	2	0	2	<1	2,186
2023	11	3	2	0	2	<1	2,186
2024	11	3	2	0	2	<1	2,186
2025	11	3	2	0	2	<1	2,186
2026	11	3	2	0	2	<1	2,186
2027	11	3	2	0	2	<1	2,186
2028	11	3	2	0	2	<1	2,186
2029	11	3	2	0	2	<1	2,186
2030	11	3	2	0	2	<1	2,186

Fugitive Dust from Construction

Alternative 1 has the potential to exceed existing air quality thresholds for fugitive dust (PM_{10} and $PM_{2.5}$) from construction vehicles and equipment and soil disturbance. Due to the close proximity of the POM to neighborhoods, this impact would be potentially significant. Mitigation measure AIR-1 would reduce this impact to a less than significant level.

4.3.3 Alternative 2: POM and OMC

4.3.3.1 Short-range Projects

Construction and operations-related air quality impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1. Impacts would be less than significant.

4.3.3.2 Long-range Projects

Under Alternative 2, the same long-range projects would occur at the OMC rather than at the POM under Alternative 1. The same level of construction activity is expected at the OMC under Alternative 2 as would occur at the POM under Alternative 1. The emissions from long-range project construction and operations in Table 4.3-6 and Table 4.3-7 would be the same for Alternative 2. Air quality impacts for the long-range projects would be less than significant.

Fugitive Dust from Construction

Similarly to Alternative 1, the Alternative 2 long-range projects could exceed existing air quality thresholds for PM_{10} from construction vehicles and equipment. Mitigation measure GS-1 would reduce this impact to a less than significant level.

4.3.4 Comparative Analysis of the Alternatives

Table 4.3-8 lists the effects of each of the alternatives and compares them to the baseline emissions, which are assumed to be zero. All alternatives would be below the existing air quality thresholds established by the MBUAPCD for construction and operation after mitigation. Construction would generate a substantial amount of fugitive dust, and both alternatives would have potentially significant fugitive dust impacts, but these would be mitigated to less than significant levels with the mitigation measure GS-1.

The long-range construction projects under both Alternative 1 and 2 were analyzed at a programmatic level. The analysis spread out the long-range construction projects over a period of eleven years in order to bring emissions below MBUACPD air quality thresholds. The schedule for construction of the long-range projects is currently unknown and would depend on funding and other considerations. If the construction of the long-range projects (Alternative 1 or 2) occur in less than eleven years, there may be substantial air quality impacts. Additional environmental analysis would be required for the long-range projects when construction schedules are known to determine potential air quality impacts.

There would be additional vehicle trips between the POM and OMC under Alternative 2, but the additional vehicle emissions would not be significant.

Table 4.3-8. Air Quality – Comparative Analysis of the Alternatives			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Construction impacts would exceed applicable air quality thresholds	Less than Significant with Mitigation	Less than Significant	Less than Significant
Operation impacts would exceed applicable air quality thresholds	No Impact	Less than Significant	Less than Significant
Construction impacts would result in substantial fugitive dust	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

4.3.5 Potential Mitigation Measures

Construction emission impacts from the No Action Alternative and long-range projects could be reduced to below the significance threshold by the following mitigation measures.

AIR-1: Applying water to surfaces during soil disturbances could reduce construction emission impacts to less than significant. Applying water to surfaces three times a day would reduce PM_{10} and $PM_{2.5}$ emissions by 61 percent (default URBEMIS model assumption). Table 4.3-9 shows the construction emissions from the No Action Alternative after mitigation, and Table 4.3-10 shows the mitigated construction emissions from long-range projects. Construction emissions from short-range projects were less than significant and therefore do not need to be mitigated.

	Table 4.3-9. Mitigated Construction Emissions from No Action Alternative						
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2010	33	5	25	0	33	8	3,092
2011	31	384	19	0	2	1	3,091
MBUAPCD Threshold	NA	NA	NA	0	82	NA	NA
Annual Emissions (tons per year)							
2010	1	<1	1	0	1	<1	89
2011	3	4	2	0	<1	<1	278

Note: Emissions shown in 2010 because the government FY 2011 starts in October 2010.

Table 4.3-10. Mitigated Construction Emissions from Long-range Projects							
Project Year	CO	ROG/VOC	NO_X	SOx	PM_{10}	$PM_{2.5}$	CO_2
Peak Daily Emissions (pounds per day)							
2016	87	242	111	0	73	19	19,525
2017	45	117	55	0	71	16	14,186
2018	22	15	13	0	17	4	3,537
2019	22	101	12	0	1	1	3,626
2020	29	320	22	0	34	8	5,501
2025	26	205	23	0	20	5	6,644
MBUAPCD Threshold	NA	NA	NA	150	82	NA	NA
Annual Emissions (tons per year)							
2016	6	5	5	0	2	1	1,039
2017	3	3	2	0	2	<1	573
2018	3	1	2	0	<0.01	<0.01	432
2019	1	2	1	0	<1	<1	211
2020	2	4	2	0	1	<1	414
2025	2	3	2	0	1	<1	488

Mitigation measure GS-1 in Section 4.2.5, Geology, Soils, and Mineral Resources would help to reduce fugitive dust (PM_{10} and $PM_{2.5}$) during construction to less than significant levels. The mitigation measure GS-1 includes BMPs to reduce erosion and stormwater runoff, including covering all stockpiles, using dust suppressants, and revegetating all disturbed areas after construction.

4.4 Vegetation and Wildlife

This section describes the environmental consequences of the RPMP alternatives on vegetation and wildlife. A Biological Assessment is currently being completed for the RPMP and will be submitted to USFWS to initiate consultation under Section 7 of the ESA. A Biological Opinion (BO) on the RPMP is expected in the fall of 2011. This vegetation and wildlife analysis assumes all areas disturbed during construction would be re-vegetated after construction is complete. This assumption is consistent with the NPDES stormwater construction requirements. As noted in the affected environment, no wetlands exist at the POM and OMC; therefore there would be no impacts to wetlands and they are not discussed further in this section. Impacts to vegetation and wildlife would be considered significant if the proposed action would:

- Substantially cause direct or indirect impacts on individuals or populations of plant species listed or proposed for listing as threatened or endangered under Federal or State endangered species legislation.
- Substantially diminish a regionally or locally important plant species.
- Result in a substantial infusion of exotic plant or animal species.

4.4.1 No Action Alternative

Under the No Action Alternative, construction of a GIB at the POM would occur in FY11 within existing parking or paved areas and there would be no change to vegetation and wildlife. There would be no project

activities at the OMC under the No Action Alternative. Consequently, there would be no impact to the vegetation and wildlife at the OMC.

4.4.2 Alternative 1: POM-centric

4.4.2.1 Short-range Projects

Barracks Phase I and Phase IV

The Barracks Phase I and Phase IV projects would entail construction of new barracks and associated parking lots in FY11 and FY15, respectively. One of the new barracks and two parking lots for the Barracks Phase I project would be located on undeveloped land north of the Huckleberry Hill Nature Preserve area, while the other barracks and parking lot would be located in areas where there is existing development (buildings, paved areas, or parking areas). The FY11 projects may require moving the Huckleberry Hill Nature Preserve fence line and decreasing the size of the preserve. At this planning stage, the future location of the fence line is not known. Barracks Phase IV would be constructed within the Ravine Site that consists of undeveloped land. Associated parking lots would be constructed within both undeveloped and developed areas. Six alternate sites at the POM were reviewed for biological impacts before the Ravine Site was selected to be a feasible site.

Yadon's Piperia: The Barracks Phase I footprint would require the direct removal of approximately 16 Yadon's piperia plants; however, more are likely to be affected by the excavation, slope stabilization and access roads that would be necessary for these facilities. In addition, habitat modification associated with the project (e.g., the removal of trees, required fuel modification and force protection around buildings) could impact other Yadon's piperia populations. As noted in the affected environment, Yadon's piperia is a federally endangered plant species that occurs in several locations at the POM as determined from the U.S. Army's May 2010 biological plant survey (Figure 3.4-1). This impact would be potentially significant, and removal would be conducted in consultation with USFWS. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

Monterey Pine: Monterey pine, which is considered rare or endangered in California by the CNPS, occurs mainly in the Huckleberry Hill Nature Preserve and surrounding areas. The Barracks Phase I and Phase IV projects have the potential to adversely affect Monterey pine through the removal of the trees or through damage to the root system during construction.

The approximate limit of construction for the Barracks Phase I project is six acres, and the number of trees to be removed ranges from 685 to 800. Construction of the Barracks Phase IV project would cover approximately 5 acres, with approximately 300 trees to be removed. It should be noted that not all the trees to be removed are healthy and mature (having a diameter at breast height (DBH) of greater than 6 inches). This impact would be potentially significant. Mitigation measure BIO-2 and BIO-3 would be required to reduce this impact to less than significant.

Hooker's Manzanita: Hooker's manzanita is considered rare or endangered in California by the CNPS and a Species at Risk by the U.S. Army. This species occurs primarily in the understory of the Monterey pine forest on Huckleberry Hill Nature Preserve, and has been planted in median strips and other landscaped areas (POM, 2008b; Figure 3.4-4). Adverse impacts may occur to a number of Hooker's manzanita plants during construction of the Barracks Phase I and Phase IV projects. The Barracks Phase I and Phase IV projects would encroach on approximately 1.9 acres and 0.2 acres, respectively, of Hooker's Manzanita habitat. This impact would be potentially significant. Mitigation measure BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

Small-Leaved Lomatium: Small-leaved lomatium, listed by the CNPS as a plant of limited distribution, occurs at the POM primarily in the understory of the Monterey pine forest on Huckleberry Hill Nature Preserve (Figure 3.4-3). The Barracks Phase I project would encroach on approximately 0.03 acres of small-leaved lomatium habitat.

Other Special Status Plant Species: In addition to those special status plants discussed above, there is potential for other special status plant species to occur at the POM (Table 3.4-1). A potentially significant impact could occur if previously unknown special status plants are removed or disturbed during construction of Alternative 1. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Special Status Animal Species: There is potential for several special status animal species to occur at the POM (Table 3.4-1). Potentially significant impacts could occur during construction of Alternative 1 if special status animals are harmed or disturbed. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Migratory Birds: Over 100 species of migratory birds are known to occur at the POM, including sensitive species such as the sharp-shinned hawk and olive-sided flycatcher. All native migratory birds are protected under the MBTA. Potential impacts could occur during construction of Alternative 1 if active nests are present in or near construction areas. This impact would be potentially significant. Mitigation measures BIO-8 and BIO-9 would be required to reduce this impact to less than significant.

Additional lighting that would be installed under Alternative 1 could also impact migratory birds nesting at the POM, particularly in the Huckleberry Hill Nature Preserve. Although this additional visual disturbance could cause some birds to relocate from the area, this impact is not anticipated to be significant.

Introduction of Exotic Species: The introduction of exotic species, particularly invasive plant species, would have an adverse effect on native and sensitive plant species at the POM and the OMC, as invasive plants quickly out-compete native species. There is potential for the introduction of invasive plant seeds or plant parts during construction of Alternative 1 in areas where sensitive species occur. Implementation of mitigation measures BIO-4 would reduce this impact to less than significant.

Renovation Building 326

Renovation of Building 326 (Weckerling Center) would occur inside the building and on developed lands and would not affect vegetation or wildlife. There would be no impact.

4.4.2.2 Long-range Projects

Under Alternative 1, construction would occur in many areas of the POM as well as a small number of locations at the OMC. Although most long-range projects are located in developed areas, there is potential for impacts to special status plants occurring within construction areas located in undeveloped lands such as during construction of the State Highway 68 Gate discussed below. Impacts could occur through clearing and grading, and the disturbance of areas for staging of construction equipment and other activities. Similar impacts could occur with the long-range Indoor Swimming Pool project on the south side of Price Fitness Center. Although the Indoor Swimming Pool project is within a developed area, the project would require the removal of approximately 45 Yadon's piperia plants. The proposed projects may result in the permanent loss of habitat area for some plant species.

In addition, there could be short-term, temporary adverse impacts to wildlife during construction. Construction noise would displace wildlife that can move away from the area, such as deer and birds. Disturbance may alter feeding, nesting, and resting habits of wildlife, particularly birds. Potential impacts to less mobile species would include contact with construction vehicles that may injure or kill wildlife, reducing

local population numbers. The proposed project may also result in the permanent loss of habitat for some wildlife species.

Potential impacts are discussed for each special-status species below.

POM

A new State Highway 68 Gate and ACP would be constructed over a corner of the existing Huckleberry Hill Nature Preserve. The project footprint would be approximately six (6) acres and construction would require moving the nature preserve fence and reducing acreage of the preserve. Potentially significant impacts could occur to special status plant species located within the project footprint, as discussed below.

Yadon's Piperia: Approximately 15 plants were found during the U.S. Army's May 2010 biological plant survey that could be adversely affected during construction. Nine Yadon's piperia plants were found within the Highway 68 ACP footprint and six plants were located in the nature preserve area adjacent to the proposed ACP footprint. The survey was conducted late in the season when most plants are in the dormancy stage. This impact would be potentially significant and removal would be conducted in consultation with USFWS. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to potentially reduce this impact to less than significant.

Monterey Pine: Construction of the Highway 68 Gate would entail removal of 1.7 acres of Monterey pines. This impact would be potentially significant. Mitigation measure BIO-2 and BIO-3 would be required to potentially reduce this impact to less than significant.

Hooker's Manzanita: Construction of the Highway 68 Gate would entail removal of 1.6 acres of Hooker's manzanita plants. This impact would be potentially significant. Mitigation measure BIO-1, BIO-7 and BIO-8 would be required to potentially reduce this impact to less than significant.

Maritime Chaparral: Maritime chaparral is a sensitive vegetation community, in which many endemic and special status plant species occur including rare plants of the genus Arctostaphylos (manzanita). This vegetation community is severely threatened by development. Construction of the State Highway 68 Gate would require the removal of 0.1 acre of maritime chaparral, which would be a potentially significant impact. Mitigation measure BIO-1, BIO-7, and BIO-8 would be required to potentially reduce this impact to less than significant.

Other Special Status Plant Species: In addition to those special status plants discussed above, there is potential for other special status plant species to occur at the POM. A potentially significant impact could occur if previously unknown special status plants are removed or disturbed during construction of long-range projects associated with Alternative 1. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Special Status Animal Species: There is potential for several special status animal species to occur at the POM (Table 3.4-1). Potentially significant impacts could occur during construction of long-range projects under Alternative 1 if special status animals are harmed or disturbed. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Migratory Birds: Over 100 species of migratory birds are known to occur at the POM, including sensitive species such as the sharp-shinned hawk and olive-sided flycatcher. All native migratory birds are protected under the MBTA. Potential impacts could occur during construction of Alternative 1 if active nests are present in or near construction areas. This impact would be potentially significant Mitigation measures BIO-8 and BIO-9 would be required to reduce this impact to less than significant.

Introduction of Exotic Species: The introduction of exotic species, particularly invasive plant species, would have an adverse effect on native and sensitive plant species at the POM and the OMC, as invasive plants

quickly out-compete native species. There is potential for the introduction of invasive plant seeds or plant parts during construction of long-range projects associated with Alternative 1 in areas where sensitive species occur. Implementation of mitigation measures BIO-4 would reduce this impact to less than significant.

OMC

Except for the cantonment fence, long-range projects that would occur at the OMC under Alternative 1 are proposed for areas where special status plants are not known to occur. Construction of the cantonment fence around the perimeter of the OMC could adversely impact special status species, as described below.

Monterey Spineflower: Small populations of Monterey spineflower, a Federally-threatened species, occur at the OMC (Figure 3.4-5). Impacts to Monterey spineflower could occur during construction of the cantonment fence in the three locations along the perimeter of the OMC where this species occurs. This is a potentially significant impact. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

Sandmat Manzanita: Sandmat manzanita is a Federal species of concern that occurs behind the Fitch Park Housing Area along the perimeter of the southeast portion of the OMC (Figure 3.4-7). Impacts to sandmat manzanita could occur during construction of the cantonment fence in this location. This is a potentially significant impact. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

Monterey Ceanothus: Monterey ceanothus, a Federal species of concern, also occurs behind housing units along the perimeter of the southeast portion of the OMC (Figure 3.4-6). Impacts to Monterey ceanothus could occur during construction of the cantonment fence in this location. This is a potentially significant impact. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

Virgate Eriastrum: Virgate eriastrum is considered a species of limited distribution by the CNPS and occurs in three locations along the eastern perimeter of the OMC (Figure 3.4-8). Impacts to Virgate eriastrum could occur during construction of the cantonment fence in these locations. This is a potentially significant impact. Mitigation measures BIO-1, BIO-7 and BIO-8 would be required to reduce this impact to less than significant.

California Tiger Salamander: The California tiger salamander, a Federally-threatened species, has the potential to occur in upland habitat at the OMC, especially within the Joe Lloyd Way area. There is the potential for adverse impacts to this species during construction of the cantonment fence in this area. Injury or mortality could occur to salamanders migrating through the construction area. Further, permanent loss of upland habitat for the salamander would occur. These impacts would be potentially significant. Mitigation measures BIO-5, BIO-6, and BIO-7 would reduce these impacts to a less than significant level.

Other Special Status Plant Species: In addition to those special status plants discussed above, there is potential for other special status plant species to occur at the OMC (Table 3.4-1) although none were found during recent surveys (ICFJ&S, 2009). A potentially significant impact could occur if previously unknown special status plants are removed or disturbed during construction of long-range projects associated with Alternative 1. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Special Status Animal Species: There is potential for several special status animal species to occur at the OMC (Table 3.4-1). Potentially significant impacts could occur during construction of long-range projects under Alternative 1 if special status animals are harmed or disturbed. Mitigation measure BIO-8 would be required to reduce this impact to less than significant.

Migratory Birds: Migratory birds, including sensitive species such as the loggerhead shrike, the California horned lark, and the burrowing owl, may use the OMC for foraging and breeding. Under the MBTA, migratory birds and their nests are protected. Although unlikely due to the developed nature of the proposed construction areas under Alternative 1, potential impacts could occur if active nests are present. This impact would be potentially significant Mitigation measures BIO-8 and BIO-9 would be required to reduce this impact to less than significant.

Introduction of Exotic Species: The introduction of exotic species, particularly invasive plant species, would have an adverse effect on native and sensitive plant species at the POM and the OMC, as invasive plants quickly out-compete native species. There is potential for the introduction of invasive plant seeds or plant parts during construction of Alternative 1 in areas where sensitive species occur. Implementation of mitigation measures BIO-4 would reduce this impact to less than significant.

4.4.3 Alternative 2: POM and OMC

4.4.3.1 Short-range Projects

Short-range project impacts would be the same as those described under Alternative 1. Mitigation measures would reduce impacts to a less than significant level.

4.4.3.2 Long-range Projects

Under Alternative 2, several long-range projects would occur at the POM, but most projects would occur at the OMC. The impacts of the long-range projects at the POM would be the same as those described above for Alternative 1. In the same manner, construction of long-range projects at the OMC under Alternative 2 would occur within existing developed areas and/or within areas where special status plant species are not known to occur. Therefore, impacts of the long-range projects at the OMC would be the same as those described above for Alternative 1.

4.4.4 Comparative Analysis of the Alternatives

Table 4.4-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.4-1. Vegetation and Wildlife – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Impacts to special status species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Impacts to migratory birds	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Introduction of exotic species	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation

4.4.5 Potential Mitigation

Mitigation measures would be required to address impacts to vegetation and wildlife at the POM and OMC under both Alternative 1 and Alternative 2. Potential mitigation measures include:

BIO-1: Conduct focused botanical surveys to identify the presence and location of individual special status plants with potential to occur within construction areas at the POM and OMC including but not limited to Yadon's piperia, Hooker's manzanita, small-leaved lomatium, Monterey spineflower, and virgate eriastrum. If present, plants should be enumerated, photographed, and conspicuously flagged and/or fenced to maximize avoidance as well as to determine the total number of individuals affected. Timing of field surveys and flagging should correspond with the blooming period when this species is most conspicuous and easily recognizable. Complete consultation with USFWS regarding impacts to Yadon's piperia and implement Biological Opinion recommendations, as required. Employ biological monitors at all construction sites prior to any soil disturbance or excavation. Consult with the USFWS as necessary should these species be observed at construction sites. Establish preserve areas to protect large populations of Yadon's piperia in undeveloped areas such as west of Building 630 at the POM (MACTEC, 2005).

BIO-2: The contractor would adhere to the Tree Protection Procedures that have been adapted by the POM Installation from the City of Monterey:

1. All cut, fill and/or building foundations shall be located a minimum of 3.0 times the diameter of the tree away from the outside edge of the trunk of all trees scheduled for preservation. However, the minimum distance permitted shall be 6' - 0", away from the outside edge of the trunk for all trees of a trunk diameter less than 2' - 0". The diameter of a tree shall be measured at 4', 6" above the surrounding grade DBH.
2. All trees scheduled for preservation shall be temporarily fenced during construction. Fencing shall be installed prior to any ground disturbance activities at the site. Generally, fencing shall be located at the edge of the root zone. The root zone is determined to be that area located out a distance 15 times the trunk diameter in all directions. At no time shall the fencing be located closer than 3' - 0" away from the outside edge of the trunk or further than 3' - 0" away from the approved building wall line, foundation, retaining wall, or grade cut, whichever provides the greater distance from the tree trunk. Fencing shall consist of chain link or plastic link fence. Fencing shall be rigidly supported and maintained during all construction periods at a minimum height of 4' - 0", above grade. Fenced areas shall not be used for material stockpile, storage or vehicle parking. Dumping of materials, chemicals, or garbage shall be prohibited within the fenced area. Fenced areas shall be maintained in a natural condition and not compacted. All trees required to be fenced shall be clearly marked with a spot of paint. The paint marking is required to alert government inspectors that the subject tree or tree(s) are to be fenced at all times during construction. Removal of fencing shall be approved by the U.S. Army Garrison, DPW-Environmental Division.
3. Prior to the start of construction, all Monterey Pine trees scheduled for preservation within 100 feet of the project area will be treated for bark beetles using standard practices recommended by the installation's ISA-certified arborist. Unseasoned lumber or newly-cut pine trees give off a fragrance which attracts the beetles to the site. The plastic wrap and spray are used to control beetle attacks. Plastic wrap shall remain on the tree throughout the construction period.
4. Utility and drain lines shall be located outside the root zone of all trees scheduled for preservation. In cases where alternative routes are not available, utility conduit, pipe, wire and drain lines shall be tunneled under major roots. Major roots are determined to be those that exceed two inches in diameter. In no case shall utility lines be permitted within six feet of the trunk.
5. All approved construction work within the root zone of trees scheduled for preservation shall observe the following minimum tree protection practices:

- Hand trenching at point or line of grade cuts closest to the trunk to expose major roots 2" in diameter or larger. In cases where rock or unusually dense soil prevents hand trenching, mechanical equipment may be approved by the DPW-Environmental Division, provided that work inside the drip line is closely supervised by the applicant to prevent tearing or other damage to major roots.
- Exposed major roots shall be cut with a saw to form a smooth surface and avoid tears or jagged edges.
- Absorbent tarp or heavy cloth fabric shall be placed over new grade cuts where roots are exposed and secured by stakes. Two to four inches of compost or woodchip mulch shall be spread over the tarp to prevent soil moisture loss. The tarp should be thoroughly wetted at least twice per week to insure constant moisture levels until backfilling occurs. In very dry climate conditions, additional watering may be required to maintain a constant moisture level. This program of watering shall be maintained through all phases of construction including delays and other periods of inactivity.
- Decks located within the root zone of trees scheduled for preservation shall be of post and beam construction to eliminate any need for root pruning or removal.
- On-grade patios or paving that cover more than one-third of the feeder zone of pine trees or oak trees shall be constructed of permeable materials that allow aeration and water penetration. Patios and paving shall be combined with any other non-permeable surface or structure for purposes of calculating the one-third coverage standard. A maximum 80 percent compaction for permeable surfaces shall be allowed. The paving design shall specify this restriction.
- Planting beneath trees scheduled for preservation shall take into consideration watering requirements of the tree to prevent damage from over or under watering. Planting beneath native oak trees is of special concern and should be avoided. At a minimum, all new irrigation should be directed away from the trunks of oak trees. Installing lawn or other planting that requires frequent watering insures a slow death for oak trees due to their sensitivity to over watering and susceptibility to oak root fungus. Over-watering may also damage native Monterey pines.

BIO-3: All Monterey pines scheduled for removal would be clearly flagged. Native trees at both POM and OMC must be replaced at a 2:1 ratio in accordance with the INRMP. Trees at POM would include Monterey pine and coast live oak. Coast live oaks are native trees at OMC. All Monterey pines not scheduled for removal would be protected as described in mitigation measure BIO-2.

BIO-4: Approved native plant species would be used to re-vegetate areas disturbed during construction. Measures would be taken to avoid the introduction of exotic or invasive plant species. Prior to entering the project area, workers should inspect their clothing, including shoes, all vehicles, and equipment for invasive plant seeds or plant parts. If found, compressed water or air should be used within a designated containment area to remove pathogens, invasive plant seeds, or plant parts. Any invasive plant seeds or plant parts found in the containment area would be gathered, placed in plastic bags and taken to an appropriate disposal facility.

BIO-5: Prior to the implementation of construction activities, a biologist would conduct surveys to determine the presence/absence of California tiger salamander within the construction zone. If California tiger salamanders are present, USFWS would be consulted before construction begins to determine what measures should be implemented to avoid impacts to these species.

BIO-6: To prevent impacts to California tiger salamander, temporary exclusion fencing would be installed around the proposed project boundaries (including access roads, staging areas, etc.) prior to the start of construction activities. The fencing would be made of suitable material, buried at the bottom to be effective, and installed with oversight by a qualified biologist monitor. The fencing would be continuously maintained

until all construction activities are completed. After construction is complete, the exclusion fencing would be removed.

BIO-7: Limit work within habitat occupied by special-status plant and wildlife species to existing access roads and to the minimal area practical. Staging areas, spoils storage, and equipment/vehicle parking should occur in designated areas outside of occupied habitat if feasible.

BIO-8: Conduct training of construction personnel prior to construction regarding the biological resources present at the proposed project site. The training would be developed and provided by a qualified biologist familiar with the sensitive plant and wildlife species that may occur in the project area and would provide educational information on the natural history of these species, required mitigation measures to avoid impacts, and penalties for not complying with biological mitigation requirements. All project personnel would be required to receive training before they start working.

BIO-9: To avoid violations of Federal and State migratory bird protections and prevent impacts to migratory bird species, project construction would be timed to occur outside the breeding bird season, which occurs generally from March 1st through August 31st and as early as February 1st for raptors. If construction must occur during the migratory bird nesting season, two biological surveys shall be conducted, one 15 days prior and a second 72 hours prior to construction that would remove or disturb suitable nesting habitat. The surveys shall be performed by a biologist with experience conducting breeding bird surveys. The biologist shall prepare survey reports documenting the presence or absence of any protected native bird in the habitat to be removed and any other such habitat within 300 feet of the construction work area (within 500 feet for raptors). If a protected native bird is found, surveys would be continued in order to locate any nests. If an active nest is located, construction within 300 feet of the nest (500 feet for raptor nests) would be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting.

4.5 Land Use

This section describes the environmental consequences for land use in the study area. Land use impacts would be considered significant if the RPMP alternatives resulted in conflicts with adjacent and surrounding land uses by generating degradation or disturbances that diminish the quality of adjacent land uses or caused conflicts with existing land use plans, policies, or regulations.

4.5.1 No Action Alternative

Under the No Action Alternative, land uses at the POM Installation would continue to follow the existing master plan developed in 1983. Construction of a new GIB in FY11 at the POM would be consistent with existing land uses. No construction would occur at the OMC. The No Action Alternative would not conflict with any existing land uses or planning documents. There would be no impacts to land use under the No Action Alternative.

4.5.2 Alternative 1: POM-centric

The RPMP provides the direction for the orderly development and maintenance of the real property assets of the POM Installation. This includes land, facilities and infrastructure. The planning process follows the professional practice of community planning as implemented by all DoD services and agencies and provides the POM with the vision and framework for long- and short-term real property development. The vision of the RPMP for the POM with respect to land use is to increase building density in already developed areas, avoid impact to undeveloped property through reuse of already developed areas, and implement measures to limit sprawl within the POM.

4.5.2.1 Short-range Projects

Barracks Phase I and Phase IV

The Barracks Phase I and Phase IV projects would replace existing barracks with new barracks, and would entail construction of new parking lots. The barracks projects would have a new footprint that would cover some of the undeveloped land to the west; however, all lands within the footprint are zoned as Troop. The Troop designation includes on-post unaccompanied personnel housing with related support facilities and activities, which is consistent with the new barracks projects. The Barracks Phase I project may require moving the Huckleberry Hill Nature Preserve fence line. At this planning stage, the future location of the fence line is not known. Altering the location of the nature preserve fenceline would change the size and shape of the area that is currently open to the public under the lease agreement with the City of Monterey. Additionally the Environmental Assessment completed for the 1984 POM Master Plan indicated no new construction would occur on the remainder of Presidio Knoll. If it is determined that the fenceline of Huckleberry Hill Preserve needs to be moved it will therefore reduce the size of the preserve resulting in less than significant impacts to recreational use and open space as well altering the current land use plans and lease agreements.

Renovation Building 326

Building 326 renovation comprised of interior renovations and upgrades would be carried out to support services at the POM Installation. No new buildings would be constructed. There would be no changes to land use.

4.5.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin between 2016 and 2030, depending on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at the programmatic level of detail. This section describes general land use impacts associated with long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

Construction of all long-range projects under Alternative 1 would occur primarily on Federal property within the POM Installation. Coordination with other government agencies regarding land use policies would be required. Construction of the Highway 68 ACP, as currently proposed, would require realigning the fenceline of the nature preserve. The precise realignment would be determined during the design and engineering of that project. Altering the location of the fenceline would reduce the size of the area currently open to the public under the lease agreement with the City of Monterey. Additionally the Environmental Assessment completed for the 1984 POM Master Plan indicated no new construction would occur on the remainder of Presidio Knoll. Long-range project information on the future location of the fence line is only conceptual at this planning phase, but if it is determined that the fenceline needs to be moved it will therefore reduce the size of the preserve resulting in less than significant impacts to recreational use and open space as well altering the current land use plans and lease agreements. The proposed projects comply with land use designations at the POM and OMC, as guided by U.S. Army Regulation 210-20 Real Property Master Planning for Army Installations.

4.5.3 Alternative 2: POM and OMC

This section describes the environmental consequences of Alternative 2 on land use.

4.5.3.1 Short-range Projects

Land use impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.5.3.2 Long-range Projects

Land use impacts associated with the long-range projects under Alternative 2 would be the same as Alternative 1.

4.5.4 Comparative Analysis of the Alternatives

Table 4.5-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.5-1. Land Use – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Changes to existing or planned land uses	No Impact	Less than Significant	Less than Significant
Conflicts with local land use policies	No Impact	Less than Significant	Less than Significant

4.5.5 Potential Mitigation

Potential mitigation could include expanding the size of the Huckleberry Hill Nature Preserve on the west side of Buildings 649 and 650 so that no net loss of preserve area and public access is incurred.

4.6 Population and Housing

This section evaluates potential effects to population and housing from the RPMP alternatives. Effects are evaluated based on the potential for the alternatives to increase the population and/or create a new demand for housing. It is important to note that the military personnel stationed at the POM Installation are there to receive foreign language training. Therefore, the population projections represent the maximum number of military personnel the POM Installation must be able to accommodate each year. Most of the population is not permanent. The students require only temporary housing during their training and they are re-assigned once their training is complete. Each quarter, the DoD assigns baseline population projections that are derived from the Structure and Manpower Allocation System, the U.S. Army Authorization Document System, and other sources. The installation must provide services for this population. Even without approval and implementation of the RPMP, the installation population would still increase as required by DoD.

4.6.1 No Action Alternative

4.6.1.1 Population

Military personnel stationed at the POM Installation are there temporarily to be trained in foreign languages. Most military personnel are stationed between 6 weeks and 24 months, depending on the language training that is required. It is difficult to determine an exact population for the POM and OMC because the

population fluctuates monthly depending on the language training classes offered and the number of accompanying family members.

Under the No Action Alternative, the population would increase. The DLIFLC, the main tenant at the POM, provides foreign language instruction in support of national security requirements. The POM Installation must provide adequate facilities for all soldiers sent to the DLIFLC. Attendance at the DLIFLC and the overall installation population are determined by the DoD. PEP for foreign language training, as mandated by the DoD, requires a reduction in student to teacher ratios. This ratio at the DLIFLC is being reduced from 10:2 to 6:2 to meet the PEP requirement. More teachers would be required at the POM to support a growing student population. In addition to more students and teachers, it is expected that more family members would accompany military personnel to the POM Installation. The population of military personnel anticipated to be assigned under the No Action Alternative would total 18,500 by 2030 (Table 2.4-1). In the past, the DoD requirement has generally been well below the PEP projected population.

4.6.1.2 Housing

New housing facilities would not be constructed under the No Action Alternative. Barracks capacity and the number of housing units at the POM and OMC would not change from the affected environment (Section 3.6.3). Under the No Action Alternative, housing would not be adequate to accommodate the expected increases of military personnel and families. Because of limited housing and inadequate facilities, military personnel would need to find housing off-post. Neighborhoods in the surrounding areas already have high occupancy rates, limited housing availability, and expensive rental prices. Some of the military population may not be able to afford nearby housing and would need to move to areas farther away from the POM Installation. Although it is expected that all military personnel would be able to find housing, living in housing far away from the POM or OMC would reduce the overall quality of life for the military personnel. The No Action Alternative would increase the demand for housing in the local communities surrounding the POM Installation. The expected residency numbers at the POM, OMC, and off-post under the No Action Alternative are shown in Table 2.4-2.

4.6.2 Alternative 1: POM-centric

4.6.2.1 Population

Population growth on the POM Installation under Alternative 1 would be the same as the No Action Alternative (see Table 2.4-1). Construction of the projects would not induce additional population growth above the No Action Alternative. As mentioned earlier, attendance at the DLIFLC is determined by the DoD. The DoD assigns the POM Installation a maximum population for each fiscal year and the installation must provide services for this population. There would be no impacts to population at the POM or OMC under Alternative 1.

4.6.2.2 Housing

Specific housing improvements are proposed in the short- and long-range projects that would affect housing at the POM under Alternative 1. As there are no housing projects planned at the OMC under this alternative, existing housing would be unchanged from the No Action Alternative.

In the short-range, existing barracks Building 629 would be demolished and the Barracks Phase I buildings would be constructed in its place. The existing residents would be temporarily displaced to another barracks building while the new barracks are being built. Military personnel could then move back when the new barracks are complete. Displacement effects would be temporary and would not affect long-term housing conditions at the POM. The Barracks Phase IV project would entail construction of new barracks but no demolition of existing barracks. The Barracks Phase I and Phase IV projects would provide a total of 720

beds, as shown in Table 4.6-1. The new barracks would have modern facilities and provide an upgraded living environment for the military personnel. The new barracks would be a beneficial impact to housing at the POM.

Table 4.6-1. Barracks Capacity under Alternative 1

Location	Barracks	Status	Change from No Action Alternative (beds)	Capacity under Alternative 1 (beds)
POM	Building 630	Existing	None	364
POM	Other barracks (1)	Existing	None	1,297
Short-range projects				
POM	Building 629	Demolished	(344)	0
POM	Phase I	New	320	320
POM	Phase IV	New	400	400
Long-range projects				
POM	Building 622	Demolished	(402)	0
POM	Building 627	Demolished	(528)	0
POM	Phase II	New	360	360
POM	Phase III	New	320	320
		TOTAL	126	3,061

Note: Barracks are not currently located at OMC and none are proposed under Alternative 1.
(1) Other barracks include Buildings 645, 647-652, 829, 831-833, 835, 836, 840 and 841.

Detailed planning and construction of the long-range projects would begin after funding becomes available. Because detailed plans are not available, this EIS analyzed impacts of long-range projects at a programmatic level of detail and only general impacts to housing resources from the proposed construction are described. Complete supplemental environmental documentation would be needed as the planning and design of the projects progress.

Four long-range projects would affect housing at the POM. The Barracks Phase II and Phase III projects would require demolition of existing barracks Building 627, while existing barracks Building 622 would be demolished and replaced with the Joint Services Headquarters Building and the multi-level parking structure at Rifle Range Road. The new Phase II and Phase III barracks would provide a total of 680 beds and demolition of Buildings 622 and 627 would remove 930 beds (Table 4.6-1). The new barracks would have modern facilities and provide an improved living environment for the military personnel, which would be a beneficial impact to housing at the POM.

After implementation of Alternative 1, the barracks at the POM would have a total of 3,061 beds. Many existing barracks, with capacity totaling 1,661 beds, would remain the same as the No Action Alternative. Three barracks would be demolished and four new ones built, providing a net increase of 126 beds at the POM over the No Action Alternative. Alternative 1 would benefit housing conditions at the POM.

Single-family housing at the POM and OMC under Alternative 1 are expected to be the same as the No Action Alternative. The expected housing numbers at the POM, OMC, and off-post under Alternative 1 are shown in Table 2.5-1. Alternative 1 would provide new housing at the POM Installation and reduce demands for housing in nearby communities, which would be a beneficial impact. Construction of the new barracks combined with the existing housing would meet the demand as projected by the population figures. As a result, there would be no impacts to housing.

4.6.3 Alternative 2: POM and OMC

4.6.3.1 Population

Population growth under Alternative 2 would be the same as the No Action Alternative. Construction of the projects would not induce population growth above that of the No Action Alternative. As mentioned earlier, attendance at the DLIFLC is determined by the DoD. The DoD assigns the installation a maximum population for each fiscal year and the installation must provide services for this population. There would be no impacts to population at the POM and OMC under Alternative 2.

4.6.3.2 Housing

Housing improvements are proposed for the POM and OMC in the short- and long-range projects. Short-range housing impacts under Alternative 2 would be the same as Alternative 1. Under Alternative 2, new housing would be constructed at the POM as part of the short-range projects, but none under the long-range projects. Demolition of Building 622 would still occur to make space for the new Joint Services Training Center and the multi-level parking structure. Total barracks capacity at the POM under this alternative would support 2,909 military personnel (Table 4.6-2).

Table 4.6-2. Barracks Capacity under Alternative 2

Location	Barracks	Status	Change from No Action Alternative (beds)	Capacity under Alternative 2 (beds)
POM	Building 627	Existing	None	528
POM	Building 630	Existing	None	364
POM	Other barracks (1)	Existing	None	1,297
Short-range projects				
POM	Building 629	Demolished	(344)	0
POM	Phase I	New	320	320
POM	Phase IV	New	400	400
Long-range projects				
POM	Building 622	Demolished	(402)	0
		Total at POM	(26)	2,909
Long-range projects				
OMC	Phase II	New	360	360
OMC	Phase III	New	320	320
		Total at OMC	680	680

Note: Barracks not currently located OMC and none are proposed in the short-range under Alternative 2.
(1) Other barracks include Buildings 645, 647-652, 829, 831-833, 835, 836, 840 and 841.

The Barracks Phase II and Phase III projects would be built at the OMC under Alternative 2. Demolition of barracks Building 627 would not be needed. This would also reduce the need for phased construction and temporary space assignments during construction. The OMC would have new barracks with 680 beds for military personnel (Table 4.6-2). Under Alternative 2, there would be a net increase of 654 beds as compared to the total barracks capacity in the No Action Alternative. The new barracks would have modern facilities and provide an upgraded living environment for the military personnel, which would be a beneficial impact to housing.

Single-family housing at the POM and OMC under Alternative 2 is expected to be the same as the No Action Alternative. The expected housing numbers at the POM, OMC, and off-post under Alternative 2 are shown in Table 2.6-1. This alternative would provide new housing at the POM Installation and reduce demands for housing in nearby communities in the long-term, which would be a beneficial impact to housing. The new barracks combined with the existing housing would meet the projected demand from the increased population. As a result, Alternative 2 would benefit housing conditions at the POM Installation.

4.6.4 Comparative Analysis of the Alternatives

Table 4.6-3 lists the effects of each of the alternatives and compares them to the No Action Alternative. Population growth would be the same under all alternatives. Alternatives 1 and 2 would improve housing conditions over the No Action Alternative.

Table 4.6-3. Population and Housing – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Increased population at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Improved housing facilities at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Reduced demand for housing off-post	Significant and Unavoidable	Beneficial Impact	Beneficial Impact

4.6.5 Potential Mitigation

Mitigation measures are not necessary.

4.7 Traffic and Transportation

This section presents the potential impacts of the project alternatives on the transportation system. A discussion of the analysis methodology for each alternative is provided that includes detailed analyses of trip generation, trip distribution, and trip assignments. The proposed actions in Alternative 1 and Alternative 2 were compared to the No Action Alternative, which acted as the baseline for the traffic analysis. The significance criteria used to determine if the potential impacts of the alternative would be significantly different from the baseline were whether the alternative would:

- Cause an increase in traffic that would be substantial in relation to the existing load and capacity of a roadway.
- Cause an increase in safety hazards on area roadways.
- Cause substantial deterioration of the physical condition of area roadways.

Mitigation strategies to be considered in response to the potential impacts are also provided. Additional details on the potential traffic impacts are provided in Appendix B, Revised Traffic Impact Study.

4.7.1 No Action Alternative

One new building (FY11 GIB) is scheduled to be constructed under the No Action Alternative. A transportation study was completed for the POM in 2010 that included a trip generation analysis. The trip generation analysis concluded that the FY11 GIB has the potential to add 178 trips to the AM Peak Hour and 195 trips to the PM Peak Hour traffic volumes of the surrounding transportation system (Gannett Fleming, 2010). The trip estimates were determined using the Institute of Transportation Engineers, Land Use Code for Junior/Community Colleges.

Due to the proximity of the new GIB to the Taylor Street and Franklin Street ACPs, it was assumed that all additional traffic would be distributed to these two gates at percentages proportional to the existing AM Peak Hour demands at each ACP. Therefore, 39 percent of the additional traffic (69 vehicles in the AM Peak Hour and 76 vehicles in the PM Peak Hour) would use the Taylor Street ACP, while the remaining 61 percent (109 vehicles in the AM Peak Hour and 119 vehicles in the PM Peak Hour) would use the Franklin Street ACP. This assumed that none of the new traffic that would be generated would travel through the Private Bolio ACP or the High Street ACP.

Under the No Action Alternative, there would be a less than significant impact to the transportation system. Internal roadway circulation, intersection capacity, and roadway capacity would not be adversely affected. The proportional increase in traffic resulting from the No Action Alternative is minor compared to existing roadway volumes found within the POM and the capacity of internal POM roadways. Definable safety hazards, or deterioration of roadway surfaces, would not be present as a result of the No Action Alternative.

4.7.2 Alternative 1: POM–centric

Under Alternative 1, new barracks would be constructed at the POM in the short- and long-range to replace existing outdated barracks with upgraded facilities. New support facilities and parking structures are also planned for the long-range. Combined, these projects would potentially impact the traffic flow within the POM by increasing delays associated with internal POM intersections, adding additional traffic on the internal POM roadway system, and changing the internal distribution of traffic flow due to the construction of parking structures. When compared to the No Action Alternative, impacts to the transportation system are considered to be less than significant if mitigated.

As short-range projects are not planned at the OMC in the short-range, traffic conditions would be unchanged from the No Action Alternative. Long-range projects would occur at the OMC, but impacts to traffic conditions would similarly be considered less than significant with mitigation.

4.7.2.1 Short-range Projects

According to the Army Restationing Plan, the POM is expected to experience a uniformly distributed 14 percent increase to its internal roadways in the short-range. This uniformly distributed 14 percent increase incorporates the potential impacts that may occur from implementing the proposed projects. This increase was validated by a trip generation analysis, which determined future LOS for intersections within the POM. The estimated LOS values shown in Table 4.7-1 reflect the 14 percent increase to all roadways and intersection volumes. Intersections that show a decrease in LOS without any mitigation are noted within the table.

Table 4.7-1. Future Intersection LOS – Locations within POM

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Taylor Street / Lawton Road / Mason Road / Rifle Range Road	C (1)	B
Rifle Range Road / SSG Fronins Road	B	C (1)
Patton Avenue / Plummer Street	B	B
Stilwell Road / Kit Carson Road	B (1)	A
Army Street / Private Bolio Road	B	B
Army Street / Kit Carson Road	A	B (1)
Kit Carson Road / Lewis Road	B	B
Lawton Road / Kit Carson Road	F (1)	C (1)
Lawton / Rifle Range Road / Franklin Street	F	D
Lawton Road / Private Bolio Road	E (1)	C (1)

Source: Gannett Fleming, 2010

(1) Indicates a decrease in LOS as compared to existing LOS.

For intersections outside of the POM, future year LOS was determined in the 2010 POM traffic study. The estimated LOS, summarized in Table 4.7-2, reflect a 14 percent increase to all roadways and intersection volumes (Gannett Fleming, 2010). Intersections that show a decrease in LOS without any mitigation are indicated within the table.

Table 4.7-2. Future Intersection LOS – Locations outside POM

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Lighthouse Avenue / Washington Street / Del Monte Avenue	B	B
Foam Street / Reeside Avenue	A	B
Lighthouse Avenue / Reeside Avenue	B	B
Private Bolio Road / Lighthouse Avenue	B	C
Prescott Avenue / Taylor Street	A	B
Prescott Avenue / Lighthouse Avenue	NA	B
Franklin Street / High Street	C	D (1)
Franklin Street / Pacific Street	C	C
Franklin Street / Van Buren Street	A	B (1)
Munras Avenue / Soledad Drive	B	C
Fremont Street / Aguajito Road	C	E (1)
Fremont Street / Abrego Street	B	C

Source: Gannett Fleming, 2010

(1) Indicates a decrease in LOS as compared to existing LOS.

4.7.2.2 Long-range Projects

Because there is insufficient detail to assess the potential impacts of the long-range projects on the area transportation system, the trip generation, distribution, assignment and impact analyses could not be undertaken at the project level. Many of the long-range projects have the potential to alter traffic patterns and also elevate traffic volumes. Future parking structures where none currently exist would change traffic distribution by creating a location where vehicles would congregate to enter and leave the structure. Accordingly, access to individual parking structure sites must be well planned and useable. Because the building details are not available at the present time, comprehensive individual traffic studies would be needed at the time of project development to specifically identify potential impacts associated with these projects. The long-range projects were evaluated at the programmatic level and some potential impacts were included indirectly through the ambient background growth of 14 percent discussed above.

The potential long-term impacts to traffic distribution at State Highway 68 from the addition of the new primary Highway 68 ACP was assessed in the recent 2010 POM traffic study (Gannett Fleming, 2010). This new ACP would be located at the intersection of State Highway 68 and SFB Morse Drive, at the POM West Campus boundary. For implementation of this new ACP, State Highway 68 would have to be widened and a turn-lane added. The study determined that constructing this new ACP would shift traffic demands at the remaining ACPs. About 50 percent of the traffic volume from the Franklin Street ACP and 50 percent from the Taylor Street ACP is expected to shift to the new Highway 68 ACP. Applying this potential shift to existing volumes gives a planning level assessment of the traffic demands that could occur with construction of the new ACP, as shown in Table 4.7-3.

Table 4.7-3. Projected Traffic Demand after Highway 68 ACP Completion

Condition	Private Bolio ACP	Franklin Street ACP	Taylor Street ACP	New Highway 68 ACP	Combined
Number of Vehicles Processed in Peak Hour	342	306	196	730	1574
Number of Maximum Queued Vehicles in Peak Hour	9	12	5	19	45
Total Existing Peak Hour Demand	351	318	201	749	1619
Suggested ACP Lanes	2	2	1	3	6

Source: Scenario 3 of POM traffic study (Gannett Fleming, 2010)

Traffic demands and the corresponding queues would decrease at both the Franklin Street ACP and the Taylor Street ACP. These traffic demand estimates, however, are conservative since the 2010 POM traffic study also included closure of the High Street ACP, while Alternative 1 does not. Thus, the traffic demand and potential queues may actually be less than the values shown in Table 4.7-3 if the High Street ACP was to remain open.

The potential number of queued vehicles at a new Highway 68 ACP could be on the order of 19 vehicles (under existing traffic conditions) up to 22 vehicles (future with 14 percent ambient traffic growth). The queuing of these vehicles may be a significant concern if not mitigated as vehicles would stack onto State Highway 68.

Support facilities, but no new housing or classrooms, are planned at the OMC under Alternative 1. Potential traffic impacts from the long-range projects at the OMC would be of concern due to an increase in traffic volumes on the OMC roadway system, the potential introduction of delay to OMC intersections, and the overall re-distribution of traffic due to parking structures, new support facilities, and ACPs. Internal OMC

roadways, and associated intersections, may exhibit an increase in traffic volumes due to the re-location of existing facilities and the construction of new facilities. The potential containment fencing and development of ACPs may also result in the diversion of traffic and a re-distribution of existing traffic flows. In addition to this re-distribution of traffic, vehicle queuing at ACP locations may spill back onto adjacent access roads if not properly designed.

When compared to the No Action Alternative, impacts to the transportation system are considered to be less than significant if mitigated.

4.7.3 Alternative 2: POM and OMC

As the majority of the projects proposed under Alternative 1 in the short- and long-range are identical to that proposed under Alternative 2, the potential traffic impacts would be the same. The only differences would be that traffic impacts would be alleviated at the POM under this alternative because the Barracks Phase II and Phase III projects would now be constructed at the OMC instead. The traffic conditions at the OMC would be affected by those new buildings but also by construction of the new cantonment fence, which would make the OMC a closed facility like the POM.

4.7.3.1 Short-range Projects

Under Alternative 2, the POM is expected to experience the same uniformly distributed 14 percent increase to its internal roadways and intersections as under Alternative 1 (Table 4.7-1). This increase incorporated the potential impacts that may occur from implementing the proposed projects. The future LOS increases anticipated for intersections outside of the POM would also be the same as under Alternative 1 (Table 4.7-2).

When compared to the No Action Alternative, impacts to the transportation system are considered to be less than significant if mitigated.

4.7.3.2 Long-range Projects

Similarly to Alternative 1, insufficient details were available to assess the potential impacts of the long-range projects on the area transportation system, so trip generation, distribution, assignment and impact analyses could not be undertaken at the project level. Comprehensive traffic studies would need to be undertaken at the time of project development once detailed plans are completed for the long-range projects. On a qualitative level, potential traffic impacts become greater at the OMC due to the placement of the Barracks Phase II and Phase III buildings and three GIBs that were previously identified at the POM. Traffic impacts would be reduced in this scenario at the POM and elevated at the OMC.

The potential traffic impacts identified for Alternative 1 would also be relevant for Alternative 2 in that ACP gate queuing, traffic volume increases, and traffic re-distribution activities would commence with the level of development projects expected. During project development and design, details would be needed for lane configuration, ACP locations, ingress and egress to parking structures, and updates to baseline traffic conditions.

When compared to the No Action Alternative, impacts to the transportation system are considered to be less than significant if mitigated.

4.7.4 Comparative Analysis of the Alternatives

Table 4.7-4 lists the effects of each of the alternatives and compares them to the No Action Alternative. As shown, Alternatives 1 and 2 would have similar impacts to traffic and transportation.

Table 4.7-4. Traffic and Transportation – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Increased traffic volumes on internal POM and OMC roadways	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Increased delay on internal POM and OMC intersections	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Increased vehicle queuing at ACP locations	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Introduction of safety hazards on internal POM and OMC roadways	No Impact	Less than Significant	Less than Significant
Substantial deterioration of physical roadway conditions	No Impact	Less than Significant	Less than Significant

4.7.5 Potential Mitigation

Mitigation measures were identified that would reduce the impacts of the environmental consequences presented in Table 4.7-4 from significant and unavoidable to less than significant. These mitigation measures are presented below.

T-1: Create two shuttle bus runs between OMC and POM during the AM and PM Peak Hour times. The objective is to reduce peak hour travel by 80 trips. The U.S. Army would also maintain records of ridership levels and share this information with the City of Monterey annually.

T-2: The U.S. Army would pay its fair share to the Del Monte Widening Capital Improvement Project.

T-3: The U.S. Army would prepare a traffic analysis and construct capacity improvements on Del Monte Avenue to offset potential impacts.

T-4: The 2010 Comprehensive Transportation Study (Gannett Fleming, 2010) contained a multitude of short-term, medium-term, and long-term recommendations to mitigate future growth impacts associated with the proposed POM projects. These improvements ranged from simple signing and pavement marking improvements to intersection lane expansion and additions, and, in some cases, removal of unnecessary intersection legs. Collectively, the 126 mitigation projects identified in the 2010 traffic study would mitigate the noted deterioration in levels of service at internal intersections within the POM. Due to the extensive number of projects recommended, the reader is referred to the actual 2010 Comprehensive Transportation Study for further details.

Traffic mitigation necessary for the development of a new Highway 68 ACP may be extensive. Because access to the POM would be from State Highway 68, Caltrans involvement and approval would be required. This type of project would require an environmental impact report. Additionally, right-of-way along State Highway 68 would be required for a potential deceleration lane in the northwesterly direction, and a left-turn deceleration lane in the southeasterly direction. The following mitigation measures may be necessary to construct a Highway 68 ACP to serve the POM.

T-5: Prepare an environmental impact report or EIS to comply with CEQA or NEPA, respectively, and other environmental requirements to develop the new ACP.

T-6: As part of the environmental impact report or EIS, develop a detailed traffic engineering study and microsimulation model to identify operational issues with the new potential ACP.

T-7: Negotiate with Caltrans to acquire new right-of-way for ingress and egress needs to serve the new ACP.

4.8 Noise

This section addresses potential noise impacts associated with construction of the RPMP alternatives. There are two principal criteria for evaluating noise impacts of a project: 1) evaluating the increase in noise levels above the existing ambient levels as a result of the project, and 2) compliance with relevant standards and regulations.

Construction noise can be heard at construction sites and nearby areas, including instruction buildings, barracks, and communities outside the POM Installation. Trucks hauling construction materials along both local and regional roadways also generate construction noise. Table 4.8-1 presents the types of construction equipment expected to be used for the alternatives. The L_{max} sound levels represent typical maximum noise that normally occurs during full power operation of the equipment. These levels typically only occur for a short duration, since the equipment is not operated at full power for an entire workday.

Table 4.8-1. Construction Equipment and Noise Levels

Equipment Types	L_{max} @ 50' (dBA)
Scrapers	81
Bulldozers	82
Haul Trucks	76
Excavator	81
Small Crane	81
Loaders	79

Source: U.S. Bureau of Reclamation, December 2006

Noise energy dissipates in the air and noise levels drop over distance. In general, noise levels drop about 6 dB as the distance doubles. Noise would also be dissipated by objects, walls, hills, buildings, etc. Table 4.8-1 indicates bulldozers would have a noise level of 82 dB at a distance of 50 feet. Assuming a 6 dB decrease with doubling of distance, noise levels would reduce to 76 dB at 100 feet, 70 dB at 200 feet and so on.

4.8.1 No Action Alternative

Under the No Action Alternative, construction of a GIB at the POM would occur in FY11. Construction would increase noise levels at and in the vicinity of the construction site during the period of construction. Equipment required for demolition and construction generally includes, but is not limited to, small and large bulldozers, backhoes, scraper, paver, loaders, and loaded trucks. Based on estimates in Table 4.8-1, the dozers would generate the highest noise levels relative to other construction equipment, about 82 dBA at 50 feet. Assuming a 6 dB decrease with doubling of distance, noise levels would reduce to 58 dB at 800 feet and 52 dB at 1,600 feet, which is around the 55 dBA criteria for residential areas. Therefore, sensitive noise receptors within about 1,200 feet of the GIB project would be adversely affected by construction noise. There would be no construction at the OMC under the No Action Alternative.

Long-term noise impacts could occur from increased travel to and from the POM Installation due to population growth. Because housing availability would remain the same at the POM Installation, military personnel and families would need to find alternative housing off-post, which could increase commutes and associated noise levels in nearby areas. In order to project an appreciable noise level increase of 3 dBA or greater, traffic volumes would need to double relative existing traffic volumes. Expected population growth would not result in doubling of traffic volumes; therefore, noise increases from traffic would not increase substantially over ambient levels.

4.8.2 Alternative 1: POM-centric

4.8.2.1 Short-range Projects

Short-range projects are proposed to begin construction by 2011. All short-range projects would occur on the POM.

Barracks Phase I and Phase IV

Construction activities would increase noise levels at and in the vicinity of the construction sites. Construction noise would only occur during the period of construction. Traffic noise levels could increase from construction workers' vehicles and haul trucks. Although construction noise impacts would be temporary for the construction period, the construction period would last several years and thus noise disruptions to the educational mission of the POM would be likely any time during construction.

The Barracks Phase I and Phase IV projects require demolition of existing buildings and construction of new barracks. Equipment required for demolition and construction generally includes, but not limited to, small and large bulldozers, backhoes, scraper, paver, loaders, and loaded trucks. Based on estimates in Table 4.8-1, the dozers would generate the highest noise levels relative to other construction equipment, about 82 dBA at 50 feet. Assuming a 6 dB decrease with doubling of distance, noise levels would reduce to 58 dBA at 800 feet and 52 dBA at 1,600 feet, which is around the 55 dBA criteria for residential areas. Therefore, sensitive noise receptors within about 1,200 feet of the Barracks Phase I and Phase IV projects would be adversely affected by construction noise.

The Barracks Phase I project would occur at undeveloped lands north and east of the nature preserve, at the current site of Building 629, and at the parking lot to the south of Building 629. Sensitive receptors within 1,200 feet of the construction site include Buildings 622, 627, 629, 645, 646, 647, 648, 649, 650, 651, 652, 660, as well as the classrooms across Rifle Range Road. Construction noise could disturb military personnel and activities in the barracks and classrooms. The Veterans Memorial Park is just south of the existing barracks. Visitors at the park could be adversely affected by construction noise. Noise mitigation would be necessary to reduce noise levels during construction activities. Mitigation measures N-1, N-2, N-3, and N-4 would reduce the short-term noise impacts to less than significant.

The Barracks Phase IV project would occur west of Building 660 and in the ravine south of the parking lot that is located south of Buildings 629 and 627. Sensitive receptors within 1,200 feet include Buildings 622, 627, 629, 645, 646, 647, 648, 649, 650, 651, 652, 660, as well as the classrooms to the east across Rifle Range Road. Construction noise could disturb military personnel and activities in the classrooms. Noise mitigation would be necessary to reduce noise levels during construction activities. Mitigation measures N-1, N-2, N-3, and N-4 would reduce the short-term noise impacts to less than significant.

Long-term noise impacts could occur from increased travel to and from the new barracks. In order to project appreciable noise level increase of 3 dBA or greater, traffic volumes would need to double relative to the No Action Alternative traffic volumes. The new barracks would not result in doubling of traffic volumes; therefore, noise increases from traffic would not increase substantially over ambient levels.

Renovation Building 326

Renovation activities are not as intensive as demolition and reconstruction and would not require heavy construction equipment. Primary noise sources would be from drilling, hammering, cutting, and hauling. Noise would occur intermittently during the renovations. At the operator's ear, a hammer would generate noise levels of about 85 dBA. Because of the existing walls acting as noise barriers, noise would likely attenuate more than if the construction occurred outdoors. It is assumed that sensitive noise receptors within 500 feet could be significantly affected by noise levels from renovations.

Building 326 is the Weckerling Center in the Historic District at POM. Buildings 325 and 343 are within 500 feet of the Weckerling Center and sensitive receptors inside or near the building could be affected by renovation noise. Mitigation measures N-1, N-2, N-3, and N-4 would reduce the short-term noise impacts to less than significant.

4.8.2.2 Long-range Projects

This section describes general impacts on noise of proposed construction associated with the long-range projects. Detailed planning and construction of long-range projects would begin between 2014 and 2030, depending on funding availability. Because building design details are not available, this EIS analyzes impacts of long-range projects at a programmatic level of detail. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

Demolition and new construction of buildings would temporarily increase noise levels at the POM Installation. Because of the high building density at the POM, noise associated with demolition and new construction projects at the POM would affect nearby sensitive receptors, as there are some within 1,200 feet of all proposed projects. Construction noise would occur only during the construction period. Larger buildings, such as the proposed new GIBs, would require more construction and likely generate noise for a longer time period than smaller construction or renovation projects. Noise mitigation would be necessary to reduce noise levels during construction activities.

Most of the proposed buildings for renovations have sensitive receptors within 500 feet; therefore, noise from the renovation activities could cause disturbances to those receptors. Noise mitigation would be necessary to reduce short-term noise impacts during renovation activities.

Security fence upgrades involve replacing portions of the exiting fences around the perimeter of the POM. The fence upgrades could affect residential areas outside the POM because of their close proximity to the POM. Construction activities associated with the fence upgrades would not be major and likely include a small backhoe, a bobcat, and primarily manual labor. A backhoe would generate noise levels similar to a bulldozer; therefore, noise receptors within 1,200 feet of the fence could be adversely affected by increased noise levels. Noise mitigation would be necessary to reduce the short-term noise impacts during construction activities.

Alternative 1 includes construction of long-range projects at the OMC that would increase noise levels. The OMC area is less dense than the POM; however, most of it is residential with low ambient noise levels. Most proposed construction projects would likely have sensitive noise receptors within 1,200 feet. Equipment required include, but are not limited to, small and large bulldozers, backhoes, scraper, paver, loaders, and loaded trucks. Noise mitigation would be necessary to reduce the short-term noise impacts during construction activities.

The cantonment fence could affect sensitive noise receptors both inside and outside the OMC property. Construction would include installation of 10 miles of a new perimeter fence around the OMC. Activities require some excavation and dozing and transport of fence materials to the site. Construction is not expected to involve major equipment as the fence would be installed in portions. Houses along the perimeter of the

fence would be adversely affected by noise levels during the construction period. Noise mitigation would be necessary to reduce noise levels during construction activities. Mitigation measures N-1, N-2, N-3, and N-4 would reduce noise impacts to less than significant. Some stretches of the fence would not have sensitive receptors within 500 feet and noise mitigation would not be necessary.

Long-term noise impacts could occur from increased travel to and from the POM and OMC. In order to project appreciable noise level increase of 3 dBA or greater, traffic volumes would need to double relative to the No Action Alternative traffic volumes. Alternative 1 is not expected to result in doubling of traffic volumes; therefore, noise increases from traffic would not increase substantially over ambient levels.

4.8.3 Alternative 2: POM and OMC

4.8.3.1 Short-range Projects

Noise impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.8.3.2 Long-range Projects

Noise impacts from implementation of long-range projects under Alternative 2 would be similar to Alternative 1. Under Alternative 2, the new GIBs and Barracks Phase II and III projects would be constructed at the OMC. Sensitive noise receptors within 1,200 feet proposed construction projects would be adversely affected by construction noise. As with Alternative 1, construction of the cantonment fence could affect sensitive noise receptors both inside and outside the OMC property. Houses along the perimeter of the fence would be adversely affected by noise levels during the construction period. Construction noise impacts would be temporary and occur during the construction period. Noise mitigation would be necessary to reduce the short-term noise impacts during construction activities.

Traffic noise levels could increase from construction workers' vehicles and haul trucks. Construction traffic would be temporary. Long-term traffic impacts could occur from increased travel to and from the POM and OMC. In order to project appreciable noise level increase of 3 dBA or greater, traffic volumes would need to double relative to the No Action Alternative traffic volumes. Alternative 2 is not expected to result in doubling of traffic volumes; therefore, long-term noise impact increases from traffic would not increase substantially over ambient levels.

4.8.4 Comparative Analysis of the Alternatives

Table 4.8-2 lists the effects of each of the alternatives and compares them to the No Action Alternative. Noise impacts under Alternatives 1 and 2 would be similar because both alternatives involve the same general construction activities that generate noise. Under Alternative 1, short-term construction noise would be centralized at the POM, which has more nearby sensitive receptors susceptible to noise impacts than the OMC because of the higher building density of the area. Noise impact would be mitigated under each alternative.

Table 4.8-2. Noise – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Temporary noise increases from construction activities	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation
Long-term noise increases from increased travel to and from the POM and OMC	Less than Significant	Less than Significant	Less than Significant

4.8.5 Potential Mitigation

The following mitigation measures would reduce noise impacts from the project alternatives.

N-1: Appropriate level of sound attenuation would be utilized or constructed to meet local ordinances, whenever possible. A potential sound attenuation measure that could be considered is temporary sound barriers near the construction activity noise source.

N-2: The construction contractor would be responsible for maintaining equipment to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures).

N-3: Construction would take place during weekday, daytime hours (Monday through Friday from 7 am to 5 pm). In addition to the above mitigation measure, POM currently promotes quiet hours during the normal work week for some construction projects. This could include quiet hours between 6 and 10 AM on specific work days, if requested by affected staff.

N-4: Provide public notification of the project to local area neighborhoods and post a sign that provides a phone number for the public to call to register complaints about construction-related noise problems.

4.9 Utilities and Public Services

This section evaluates potential effects to utilities and public services from the RPMP alternatives. Effects are evaluated based on the potential for the RPMP to increase the demand on existing utilities and public services and/or create a new demand for utilities and public services. Utilities and public services evaluated in this section include stormwater, wastewater, solid waste, electric, gas, communication and public schools. Impacts to water services are discussed in Section 4.1.

4.9.1 No Action Alternative

Under the No Action Alternative, construction of a new GIB would occur in FY11 which would include construction of new utilities. No construction would occur at the OMC and there would be no replacement of old or installation of new utilities in other buildings at the POM or the OMC. At both the POM and OMC, facilities are deteriorating with age. Many of the utilities and HVAC systems are not properly functioning and the technology is outdated. These conditions would continue under the No Action Alternative.

The POM Installation's population would increase under the No Action Alternative, which could put extra pressure on utility systems, solid waste management and treatment capacity. The POM Installation would coordinate with utility providers on increased demands and available capacity.

Increased numbers of military families at the POM and OMC under the No Action Alternative would increase demands on public schools. The DoD does not have schools in the area; therefore, military children would need to attend MPUSD schools. MPUSD schools are generally over-enrolled and more students would result in a potentially significant impact. Most military personnel at the installation are temporary residents, therefore, demands for public school services would constantly be changing according to the number of military children currently at the POM. There may be times when demands would not be significant. The POM Installation, through its U.S. Army student enrollment liaison officer, would coordinate with the MPUSD to support potential increases in school enrollment of military children.

Construction of the FY11 GIB would increase impervious cover that would increase stormwater quantity and reduce stormwater quality.

4.9.2 Alternative 1: POM-centric

4.9.2.1 Short-range Projects

Short-range projects are proposed to begin construction by 2011. The short-range projects would occur on the POM. Overall there would be an increase in impervious cover that would increase stormwater quantity and reduce stormwater quality without mitigation measures.

Barracks Phase I and Phase IV

The Barracks Phase I project would include demolition of existing buildings and construction of new barracks with a total capacity of 164,960 square feet. Construction would involve removal of the existing utilities and installation of new site utilities. The Barracks Complex Phase IV project includes construction of new barracks with a total capacity of 155,200 square feet. Supporting facilities for all structures would be utilities, exterior lighting, walks, curbs, gutters, parking, storm drainage, and information and entry surveillance systems. New sewer lines and storm drains would benefit utilities. New laterals would be connected to existing main sewer lines and drainage channels at the POM Installation. At this level of analysis, it is assumed these facilities have the capacity because most new construction would replace aged and deteriorated infrastructure. The impact to wastewater and stormwater would be less than significant.

PG&E would continue to provide electric and gas services to the new barracks. New construction would be LEED certified; therefore, it is expected that energy demands would decrease or remain similar to existing conditions. AT&T and Sprint would continue to provide telephone and internet services. Impacts to electric, gas, and communication services would be less than significant.

Construction activities would result in some solid waste during the construction period. Construction crews would dispose of or recycle construction waste in accordance with local and state requirements. Waste that is considered hazardous waste cannot be recycled and must be disposed as discussed in Section 4.10 Hazardous, Toxic, and Radioactive Wastes. Increased population at the new barracks would also result in increased solid waste. There would be a net increase of 12 beds in the Phase I and Phase IV projects. This is not expected to cause a significant increase in solid waste.

Military personnel in the barracks are typically at the POM by themselves without families. Therefore, the new barracks would not result in any increased demands for local schools.

Renovation Building 326

Renovation of Building 326 includes only cosmetic refurbishment, interior redesign, and structural improvements; no utility work is needed. Construction activities would result in some solid waste during the construction period. Construction crews would dispose of or recycle construction waste appropriately.

4.9.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin between 2014 and 2030, depending on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at the programmatic level. This section describes general impacts on utilities and public services of proposed construction associated with the long-range projects.

Construction of new buildings under the long-range projects would involve installation of new utilities such as electricity, gas, communications, sewer, and storm drainage. The POM Installation would coordinate with utility companies and other relevant agencies before construction to locate existing utilities, coordinate on new utilities, and provide notification of any interruptions in services. Buildings would be LEED certified and would have reduced energy demands. It is expected that PG&E would have capacity to provide gas and electric services. There would be increased demand for communication services, including telephone, internet, and cable. The current utility providers are expected to meet this additional demand.

Renovations of existing buildings under the long-term projects would not change demands to existing utilities. Some utility infrastructure would be replaced with new components, which would be a benefit. LEED features would be incorporated into renovations where possible, which would reduce energy demands.

Further analysis would need to be completed on the existing capacity of wastewater and storm drain systems and the new demands under the long-range projects. Potential adverse impacts include additional stormwater runoff from increased impervious surface area, overuse of existing facilities, storm drain overflows, increased wastewater flows, leaks or sewer overflows. The POM Installation has a contracted amount for wastewater flows to the local wastewater treatment plan. Further analysis may indicate that the POM Installation must renegotiate contracts in the long-term. Replacing aged infrastructure that has leaks or limited capacity could reduce potential long-term effects to wastewater services.

Construction activities would result in some solid waste during the construction period. Construction crews would dispose of or recycle construction waste in accordance with local and state requirements. Increased population would also result in increased solid waste; however, it is not expected to adversely affect solid waste management or exceed the capacity of the Monterey Regional Waste Management District landfill. The POM Installation would coordinate with landfill staff regarding projected quantities of waste requiring disposal and recycling.

Increased numbers of military families at the POM and OMC would increase demands on public schools. Population growth under Alternative 1 would be the same as the No Action Alternative. The long-range projects do not propose new family housing at the POM or OMC. New barracks under Alternative 1 would support temporary residency of individual military personnel without accompanying families. Therefore, the long-range projects would not affect demands for public schools over the baseline No Action Alternative demand.

4.9.3 Alternative 2: POM and OMC

4.9.3.1 Short-range Projects

Utilities and public services impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.9.3.2 Long-range Projects

Utilities and public services impacts associated with the long-range projects under Alternative 2 would be the same as Alternative 1.

4.9.4 Comparative Analysis of the Alternatives

Table 4.9-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.9-1. Utilities and Public Services – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Increased electricity, gas, and communication service demands for POM and OMC	Less than Significant	Less than Significant	Less than Significant
Increased solid waste	Less than Significant	Less than Significant	Less than Significant
Increased demand on wastewater and storm drain distribution systems	Less than Significant	Less than Significant	Less than Significant
Increased demand on public schools	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable

4.9.5 Potential Mitigation

Mitigation is not necessary for utilities and public services. Further analysis of the long-term projects may indicate potentially significant impacts. The POM Installation would work with utility agencies, such as PG&E, the MRWPCA, Monterey County Disposal Service, and the MRWMD, to coordinate relocation, new, or interruptions to utility and public services.

4.10 Hazardous, Toxic, and Radioactive Wastes

This section describes environmental consequences from known HTRW sites within the project area. Mitigation measures would be proposed for any aspect of the action that would impact or release hazards to the environment.

4.10.1 No Action Alternative

Under the No Action Alternative, rehabilitation of existing buildings would not occur at the POM or OMC. Only the GIBs and a parking lot would be constructed at the POM as part of the RPMP (Figure 2.4-1). Short-term generation of hazardous waste from general construction materials (e.g., paints, adhesives, and petroleum products) would occur and would be managed by the contractors and disposed of in accordance with manufacturer's specifications and hazardous waste regulatory standards. The Hazardous Waste Accumulation Area Building 4495 at OMC could manage contractor waste, if necessary; however, contractors are responsible for managing and disposing of their own hazardous waste at the POM installation.

The proposed GIB and parking lot construction at POM is a short-range plan in the RPMP. These structures are approximately 1,500 feet northeast of POM-05 (former landfill) and are proposed for construction in FY11. The construction activities would not impact the POM-05 landfill cap or the on-going monitoring.

There are no proposed RPMP short- or long-range construction projects at OMC under the No Action Alternative.

Therefore, there would be no significant environmental consequences to HTRW at the POM installation under the No Action Alternative.

4.10.2 Alternative 1: POM-centric

4.10.2.1 Installation Restoration Program

There are two formerly contaminated sites that are in close proximity to the proposed projects in the RPMP short- and long-term plan.

The Barracks Phase I (Project No. 53789) at POM would be located immediately south of the former landfill boundary, also referred to as POM-05 (Figure 2.4-1 and Figure 2.5-1). The structures would be constructed under the RPMP short-range plan in FY11. Although the barracks and parking lot would not be placed over POM-05 site, design and construction measures would be taken to prevent damage to the existing cap and drainage structure. The final landfill cap design included a cover layer that formed a containment and moisture barrier directly overlying the waste mass. This protects the contents from invasive moisture and protects the public from exposure. A final layer covering the preceding elements is the vegetative soil layer that provides erosion control and some additional moisture protection. If this structure is disturbed there is the potential for emission of landfill gases and the percolation of stormwater into the landfill waste. The proposed parking lot would be designed to maintain the structural integrity of the landfill cap. Waste material within the landfill cells would not be removed or exposed and any construction activity would be conducted to avoid compromising the landfill cap. Proposed land use and any landfill cap changes would be submitted to the state and local regulatory agencies for approval.

Site 10 – former Burn Pit is north of the future VA Clinic and Parking Buildable Area at OMC under Alternative 1 and part of the RPMP long-range plan. Site 10 is a former burn pit approximately 160 feet south of the Fort Ord Fire Station in the Main Garrison. The pit is no longer in use and is partially overgrown with grass. In 1996, all of the contaminated soil was removed. Site 10 no longer poses a threat to human health, the environment, or construction project.

4.10.2.2 Lead-based Paint and Asbestos

Under Alternative 1, rehabilitation of existing buildings would occur at the POM.

The LBP encountered in the building rehabilitation process would follow the DoD LBP guidance and POM Installation Lead-based Paint Plan. A hazard assessment followed by abatement measures would be completed, if necessary. After lead-based paint control and hazard abatement measures have been completed, affected structures must undergo a clearance examination to ensure that all abatement activities have been conducted properly. Short-term minor adverse and long-term minor beneficial effects would be expected if hazardous materials are present in and around the housing units, including ACM and LBP that would be removed from the housing units or encapsulated during demolition.

The ACM encountered in the rehabilitation process would be assessed and managed in accordance with the Monterey Bay Unified Air Pollution Control District Rule 424 - National Emissions Standards for Hazardous Air Pollutants and the POM Installation Asbestos Management Plan. Surveys for asbestos must be conducted prior to demolition or renovation activities that would disturb ACMs. If asbestos must be handled during remodeling, demolition, or construction, the work needs to be done by workers trained in the proper procedures or a certified asbestos removal company.

Rehabilitation of existing buildings is not proposed at the OMC under the RPMP short- or long-range plan.

New construction at POM would occur in RPMP short- and long-range plans; new construction at OMC would occur only in the RPMP long-range plan. Similar to the No Action Alternative, short-term generation of hazardous waste from general construction materials (e.g., paints, adhesives, and petroleum products) hazardous materials would occur and would be managed by the contractors and disposed in accordance with manufacturer's specifications and hazardous waste regulatory standards. The Hazardous Waste

Accumulation Area Building 4495 at OMC and could manage contractor waste as stated for the No Action Alternative.

In addition to the above materials, potentially hazardous materials that would likely be on-site during construction and renovation include paints, asphalt, and fuels and motor oils for construction vehicles.

Essentially inert materials under normal conditions could be hazardous in specific circumstances. Wood and dry concrete can generate airborne particulates as it is cut or sanded. Workers would wear personal protection equipment when performing these tasks to protect against these adverse effects. Wood and other construction materials are also flammable. Dedicated smoking areas would be established and open flames would be prohibited near flammable materials to reduce the risk of fire. Adhering to these precautions would eliminate adverse effects when dealing with these materials.

Alternative 1 would not result in considerable and unavoidable adverse impacts. Management practices would be implemented to avoid a risk or health hazard associated with hazardous materials storage and use and hazardous waste generation and disposal. Over the long term, replacing older housing units containing potentially hazardous building materials with new units containing less hazardous materials would have beneficial effects.

4.10.3 Alternative 2: POM and OMC

The environmental consequences at the former landfill, POM-05, for Alternative 2 are similar to Alternative 1. The proposed parking lot would be engineered and designed to maintain the structural integrity of the landfill cap. Waste material within the landfill cells would not be removed or exposed and any construction activity would be conducted to avoid compromising the landfill cap.

Rehabilitation of existing buildings is proposed at the OMC under the RPMP short- and long-range plan. The Installation Restoration Program Sites 10, 11, 21, and Munitions Response Sites 24B, 24C, 24D, 24E, and 39 are located within or immediately adjacent to the OMC boundary. In the 1990s, these sites were assessed for risk to human health and the environment. During the environmental investigation the sites were either not contaminated with a hazardous waste or the sites were contaminated and remediated with no further risk to human health. The Installation Restoration Program sites would not impact the future projects in the RPMP short- and long-range plan.

The risks to construction workers and future residents from ACM and LBP exposure due to rehabilitation of existing buildings and the use of potentially hazardous materials during construction and renovation activities would be similar to that already described in Alternative 1.

Similarly to Alternative 1, potentially hazardous materials likely to be on-site for new construction and building renovation would include paints, asphalt, and fuels and motor oils for construction vehicles. Proper hazardous materials handling, worker safety precautions, and hazardous waste management practices described in Alternative 1 would also apply to Alternative 2.

4.10.4 Comparative Analysis of the Alternatives

Table 4.10-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.10-1. Hazardous, Toxic, and Radioactive Wastes – Comparative Analysis of the Alternatives			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Contaminant release from modified landfill cap	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Release of asbestos-containing materials or lead based paint to the environment	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation
Impacts in using hazardous substances during construction	No Impact	Less than Significant with Mitigation	Less than Significant with Mitigation

4.10.5 Potential Mitigation

The following measures would be implemented to reduce impacts from known HTRW:

HW-1: The ACM and LBP removed from building rehabilitation work would be managed according to local, state, and federal requirements. The DoD guidelines for management of LBP apply. The POM's Asbestos Management Plan to prevent human exposure to asbestos hazards would be implemented. The ACM would be managed and disposed in accordance with the Monterey Bay Unified Air Pollution Control District rules and policies.

HW-2: For construction projects that may affect the POM-05 landfill cap, modifications to the closure and postclosure maintenance plans would be developed. Proposed land use changes and development plans would be submitted to the local regulatory and land use agencies, San Francisco Bay Regional Water Quality Control Board, and California Integrated Waste Management Board for approval. The plans would address the proposed parking lot design, mitigation of potential impacts, and monitoring resulting from construction on the cap.

HW-3: Compliance with the NPDES General Construction Permit for storm water practices would be necessary from the San Francisco Bay Region of the RWQCB. This would also require development of a SWPPP that outlines BMPs for the hazardous materials handling and hazardous waste disposal in accordance with RCRA that would be implemented to reduce water quality impacts associated with storm water runoff and erosion.

4.11 Public Health and Safety

This section evaluates potential effects to public health and safety from the RPMP alternatives. The alternatives are evaluated based on whether they would result in increased dangers of wildfires or other safety hazards to the population or if they would increase demands for emergency services and affect emergency evacuation routes. The POM and OMC are not within a 100-year floodplain; therefore, flooding would not be a safety hazard and is not further discussed in this section. The POM and OMC do not contain unexploded ordnances. Construction activities would not result in increased dangers from unexploded ordnances; therefore, they are not further evaluated.

4.11.1 No Action Alternative

Under the No Action Alternative, construction of a GIB would occur in FY11 at the POM and no construction would occur at the OMC. Construction activities at the POM would not affect any public health and safety of any local civilian residents. Because the general public is not allowed on the POM, construction activities would pose no risk to their public health and safety. However, construction activities such as use of vehicles and equipment could pose safety risks to military personnel on the POM. Temporary construction fencing and pedestrian controls, detours, and signage is used to alert personnel of construction zones and ensure public safety while reducing the demands for emergency services. This impact would be less than significant.

The GIB would be constructed in an already developed area and there would be no increased risk of wildfires. The POM is outside of the potential tsunami hazard zone. There would be no impact on evacuation routes or emergency service vehicles and routes.

The population at the POM Installation is expected to increase under the No Action Alternative, which could increase demands on public health and safety services. If the POM Installation cannot provide adequate emergency services to all military personnel, they may need to rely on services from the surrounding communities such as police, fire, doctors, and other health care services.

4.11.2 Alternative 1: POM-centric

4.11.2.1 Short-range Projects

Short-range projects are proposed to begin construction by 2011. All short-range projects would occur on the POM.

Barracks Phase I and Phase IV

The Barracks Phase I and Phase IV projects involve demolition of existing buildings and construction of new buildings. Portions of the Barracks Phase I project would be constructed on undeveloped lands just north of the nature preserve, while portions of the Barracks Phase IV project would be constructed on undeveloped land east of Building 652.

Construction of the Barracks Phase I and Phase IV projects at the POM would not affect any public health and safety of any local civilian residents. Because the general public is not allowed on the POM, construction activities would pose no risk to their public health and safety. However, construction activities such as use of vehicles and equipment could pose safety risks to military personnel on the POM Installation. Appropriate fencing, detours, and signage would be used to alert personnel of construction zones and ensure public safety. This impact would be less than significant.

Construction would require removal of trees, grading, and excavation. Because of its proximity to open land and trees, construction of the barracks could increase the potential for fires and increase public safety risks from fires. Construction crews would implement BMPs to reduce the potential for fires during the construction period and would keep fire suppression equipment on-site. After construction, the new buildings would not pose any dangers to public health and safety. This impact would be less than significant.

The POM is outside the potential risk zone for a tsunami. In the event of a tsunami, the POM Installation may open roads to aid in evacuation. Construction of the new barracks would not affect evacuation plans in the event of a tsunami. There would be no impact on emergency evacuation routes.

The planning horizon for this EIS is 25 years. Although global warming may contribute to a small rise in sea levels, sea level rise would not threaten any of the facilities at the POM or OMC.

The Barracks Phase I and Phase IV projects would result in a net increase of 126 beds for additional military personnel over the No Action Alternative. The POM Installation provides its own emergency services and could accommodate this increase. This would not result in an increase in demand for emergency services outside the POM Installation. There would be no impact to emergency services.

Renovation Building 326

Building renovations would occur within existing building and would not involve activities that could start fires. Construction would not increase risks of wildfires or other safety hazards. Building renovations would not increase demands on emergency services. There would be no impacts to public health and safety from proposed building renovations.

4.11.2.2 Long-range Projects

Detailed planning followed by construction of long-range projects would begin in FY16. The scheduling of the projects would depend on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at a programmatic level of detail. This section describes general impacts on public health and safety of proposed construction associated with the long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

Construction activities at the POM under Alternative 1 would not affect any public health and safety of any local civilian residents. Because the general public are not allowed on the POM, construction activities would pose no risk to their public health and safety. However, construction activities such as use of vehicles and equipment could pose safety risks to military personnel on the POM Installation. Temporary construction fencing and pedestrian controls, detours, and signage would be used to alert personnel of construction zones and ensure public safety. This impact would be less than significant.

Construction activities at the OMC under Alternative 1 could affect public health and safety of local civilian residents. Because members of the public can enter the OMC, construction activities such as the use of equipment and vehicles would pose a risk to public health and safety. Temporary construction fencing and pedestrian controls, detours, and signage would be used to alert the public of construction zones and keep them away from dangerous areas. This impact would be less than significant.

The Huckleberry Hill Nature Preserve is undeveloped with thick vegetation and has been designated as a fire hazard area. The only fire breaks in the Preserve are a series of existing roads. Most of the proposed long-range projects at the POM are at a substantial distance from the nature preserve in areas that are already developed. Construction would not increase the potential for wildfires.

Although the OMC is heavily developed, it is adjacent to the former Fort Ord, an area highly susceptible to wildfires. Because of its proximity to an undeveloped and vegetated area, construction activities could increase the potential for fires and increase public safety risks from fires. Construction crews would implement best management practices to reduce the potential for fires during the construction period and would keep fire suppression equipment on-site. After construction, the projects would not pose any dangers to public health and safety.

The POM is outside of the potential tsunami hazard zone and the OMC is unlikely to be affected by a tsunami because of the high bluffs. In the event of a tsunami, the POM Installation may open roads to aid in evacuation. Construction of the long-range projects would not affect evacuation plans in the event of a tsunami. There would be no impact on these evacuation routes.

Future growth would increase demands for emergency services at the POM and OMC. Population growth under Alternative 1 is expected to be the same as the No Action Alternative. Because the POM Installation provides its own emergency services, there would be no impacts to emergency services off-post. A new emergency services center is proposed under Alternative 1, which would provide additional emergency services to the POM Installation. The new center would be a benefit to public health and safety. The new security fence, cantonment fence, and increased controls at the ACPs would also provide additional safety to residents at the POM and OMC.

4.11.3 Alternative 2: POM and OMC

4.11.3.1 Short-range Projects

Public health and safety impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.11.3.2 Long-range Projects

Public health and safety impacts associated with the long-range projects under Alternative 2 would be the same as Alternative 1.

4.11.4 Comparative Analysis of the Alternatives

Table 4.11-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.11-1. Public Health and Safety – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Pose a risk to public health and safety through the use of construction vehicles, equipment, and general construction activities	Less than Significant	Less than Significant	Less than Significant
Increase the dangers to public health and safety from wildfires or tsunamis	No Impact	Less than Significant	Less than Significant
Impede planned evacuation routes	No Impact	No Impact	No Impact
Impede emergency service vehicles and routes	No Impact	No Impact	No Impact
Increase the demand for emergency services off-post	No Impact	No Impact	No Impact

4.11.5 Potential Mitigation

No mitigation measures are necessary for public health and safety.

4.12 Socioeconomics

This section evaluates temporary and long-term socioeconomic impacts of the RPMP alternatives. Construction activities would create temporary jobs and generate additional economic activity within the region during the period of construction. Long-term socioeconomic effects could occur from increased spending by students, teachers, and family members living at the POM Installation.

4.12.1 No Action Alternative

Under the No Action Alternative, construction of a GIB would occur in FY11. This would entail purchasing and transport of materials and labor to design and construct the building. Labor includes employment of engineers, construction supervisors, and general construction laborers. Construction spending and labor would result in economic effects, such as increased jobs, wages, and economic output in the regional economy. Materials purchased locally would result in direct and secondary effects within the regional economy, which would be a temporary benefit.

Under the No Action Alternative, the student to teacher ratio would decrease relative to existing conditions, and resulting in new teaching positions. The new civilian faculty positions would have a long-term positive impact on employment and salaries in the region. Increased student population at the POM Installation under the No Action Alternative would also contribute to additional spending and economic output in the region. New residents would purchase goods and services within the nearby cities, supporting economic activity in the area. Students that choose to live off-post and occupy vacant homes would also support the regional economy.

4.12.2 Alternative 1: POM-centric

4.12.2.1 Short-range Projects

The short-range projects proposed at the POM would result in temporary beneficial impacts to the economy. Construction of the new Barracks Phase I and Phase IV projects at the POM would involve purchasing and transport of materials and hiring labor to design and construct buildings. This would include employing engineers, construction supervisors, and general construction laborers. Construction spending and hiring labor would result in economic effects, such as increased jobs, wages, and economic output in the regional economy. The estimated costs of the Barracks Phase I and Phase IV projects are $68 million and $49 million, respectively. Materials purchased locally would result in direct and secondary effects within the regional economy, which would be a temporary benefit. The new barracks may also provide permanent employment by hiring staff to operate and maintain the buildings. These economic impacts, however, would likely be minor.

Renovations would not likely require substantial labor or materials for construction. The time period for renovations is generally also shorter than for new construction projects. The estimated cost of the Building 326 renovation project is $3 million. Materials purchased locally would result in direct and secondary effects within the regional economy, which would be a temporary benefit. The proposed renovation activities would provide minor employment benefits in the region.

4.12.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin after funding becomes available. Because building details are not available, this EIS analyzed the impacts of the long-range projects at a programmatic level of detail and only general impacts on the regional economy are described. Supplemental environmental documentation would need to be completed as the planning and design of the projects progresses.

Construction of the long-range projects would provide regional economic benefits from construction spending and labor. Long-range projects are expected to be constructed between 2016 and 2030; however, construction would likely be periodic over the years. Output, employment, and wages would increase in the region during the construction period. Construction laborers would spend money in the region and generate economic activity.

Similarly to the No Action Alternative, the student to teacher ratio under Alternative 1 would decrease relative to existing conditions, resulting in new teaching positions. The new civilian faculty positions would have a long-term positive impact on employment and wages in the region. Increased student population at the POM Installation under Alternative 1 would also contribute to additional spending and economic output in the region. New residents would purchase goods and services within the nearby cities, supporting economic activity in the area. Impacts under Alternative 1 from the increased population would be the same as the No Action Alternative.

4.12.3 Alternative 2: POM and OMC

Socioeconomic impacts associated with the short- and long-range projects under Alternative 2 would be the same as Alternative 1.

4.12.4 Comparative Analysis of the Alternatives

Table 4.12-1 lists the effects of each alternative and compares them to the No Action Alternative.

Table 4.12-1. Socioeconomics – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Temporary increases in economic activity from construction spending and labor	Beneficial Impact	Beneficial Impact	Beneficial Impact
Long-term increases in employment from hiring teachers	Beneficial Impact	Beneficial Impact	Beneficial Impact
Long-term increases in economic activity in the region from increased student population	Beneficial Impact	Beneficial Impact	Beneficial Impact

4.12.5 Potential Mitigation

Mitigation measures are not necessary as the RPMP alternatives would benefit the regional economy.

4.13 Environmental Justice

This section addresses the potential for environmental justice impacts that could result from disproportionately high and adverse human health or environmental effects on minority or low-income populations from the proposed RPMP alternatives.

According to the CEQ guidelines for environmental justice analyses, the government (U.S. Army) must demonstrate that the proposed project or alternatives under consideration would not cause impacts that are "disproportionately high and adverse," either directly, indirectly, or cumulatively (CEQ, 1997b). To make a finding that disproportionately high and adverse effects would likely fall on a minority or low-income population, three conditions must be met simultaneously:

- There must be a minority or low-income population in the affected area.
- A high and adverse impact must exist.
- The impact must be disproportionately high and adverse on the minority or low-income population.

The first step in conducting an environmental justice analysis was to define minority and low-income populations. Based on these guidelines, a minority population is present in a project study area if either of these conditions occurs (U.S. EPA, 1998):

- The minority population of the affected area exceeds 50 percent.
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

By the same rule, a low-income population exists if the study area is composed of 50 percent or more people living below the poverty threshold, as defined by the U.S. Census Bureau, or is significantly greater than the poverty percentage of the general population or other appropriate unit of geographic analysis.

The second step of an environmental justice analysis was to determine if a high and adverse impact would occur. The CEQ guidance indicates that when determining whether the effects are high and adverse, agencies are to consider whether the risks or rates of impact "are significant (as employed by NEPA) or above generally accepted norms."

The final step was to determine if the impact on the minority or low-income population would be disproportionately high and adverse. Although the published guidelines did not define the term "disproportionate," for the EIS analysis, a disproportionate impact was assumed to mean an impact that would appreciably exceed the risk or rate to the general population.

Identified through the U.S. Census Bureau data, the cities of Seaside and Marina have large percentages of minorities, 50.7 and 56.3 percent, respectively. The percentages of individuals living below the poverty level in these cities were similar to the Monterey County value. However, the percentages within the cities of Seaside and Marina were twice that of the cities of Pacific Grove and Monterey (U.S. Census Bureau, 2010). Consequently, the populations of the cities of Seaside and Marina met the definition of an area with a minority and low-income population that should be analyzed for environmental justice impacts.

The U.S. Census Bureau data identified a high percentage of individuals living below the poverty level in Sand City. Although the population of Sand City is less than 300, almost 28 percent live below the poverty level. That percentage is twice that found in Monterey County or in nearby cities. Consequently, the population in Sand City meets the definition of an area with a low-income population that should be analyzed for environmental justice impacts.

The cities of Seaside, Marina, and Sand City were considered to be impact zones for environmental justice considerations.

4.13.1 No Action Alternative

Under the No Action Alternative, the RPMP would not be approved, and the anticipated future population growth would place greater pressures on neighboring areas to provide housing or services that are deficient at the POM and OMC. As the POM Installation has been located in the Monterey region since World War II, the pressures of the military personnel on the area's low-income housing has also been present since then. Therefore, the potential effects of the anticipated population growth would not be substantially different from the existing low-income housing conditions. Many of the potential effects that may impact the minority or low-income communities are analyzed or assessed using the same analytical tools that are currently used in the development of this EIS. As presented in this EIS, the potential impacts to the environmental components, such as air quality, noise, water supply, socioeconomics, and traffic would not be appreciably more severe or greater in magnitude (disproportionately high and adverse) on the minority or low-income communities in Marina, Seaside, and Sand City. There would be no impacts to the populations in Marina, Seaside and Sand City under the No Action Alternative.

4.13.2 Alternative 1: POM-centric

The short-range projects would occur at the POM. Similarly to the No Action Alternative, potential impacts to the human and natural resources would be not appreciably more severe or greater in magnitude on the minority or low-income communities of Marina, Seaside, and Sand City as a result of implementing the Alternative 1 projects. Because the cities of Marina, Seaside, and Sand City are located on the western boundary of the former Fort Ord, potential impacts would be more likely to occur at the OMC than at the POM. Considering there are no short-range plans for OMC in Alternative 1, impacts to the minority or low-income populations in these cities would be unlikely. There would be no environmental justice impacts to the populations in Marina, Seaside and Sand City under this alternative.

Both construction and operation impacts from the long-range projects would be beneficial, providing regional economic benefits from construction spending and labor as well as from long-term positive impacts on employment and wages in the region from increases in the teacher and student populations. Because of the proximity of the Marina, Seaside, and Sand City to the OMC, potential impacts to the minority or low-income populations in these cities would be more likely to result from RPMP long-range plans for the OMC than for POM.

Based on the above discussion and analyses of the environmental components throughout this EIS, Alternative 1 would not cause disproportionately high and adverse effects on any minority or low-income populations as per Executive Order 12898 regarding environmental justice. There would be no adverse impacts to the minority or low-income populations in Marina, Seaside and Sand City under Alternative 1.

4.13.3 Alternative 2: POM and OMC

Environmental justice impacts associated with the short- and long-range projects under Alternative 2 would be the same as Alternative 1. Implementing Alternative 2 would also result in a positive economic impact to the region. Because several long-range projects would be located at the OMC instead of the POM under Alternative 2, OMC would be located closer to the impact zone. As a result, the increased economic activity would be more likely to occur near the cities of Marina, Seaside, and Sand City and they would likely experience a beneficial environmental justice impact.

Based on the above discussion and analysis, Alternative 2 would not cause disproportionately high and adverse effects on any minority or low-income populations as per Executive Order 12898 regarding environmental justice. There would be no adverse impacts to the minority or low-income populations in Marina, Seaside and Sand City under Alternative 2.

4.13.4 Comparative Analysis of the Alternatives

Table 4.13-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.13-1. Environmental Justice – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Disproportionately high and adverse effects to a minority or low-income population.	No Impact	No Impact	No Impact

4.13.5 Potential Mitigation

No mitigation measures are necessary.

4.14 Visual, Scenic, and Aesthetic Resources

This section describes the environmental consequences for visual, scenic, and aesthetic resources in the study area. Effects on visual, scenic, and aesthetic resources are evaluated on whether project alternatives would affect the visual character of the area, obstruct existing views, alter scenic vistas, or result in conflict or inconsistency with any applicable visual, scenic or aesthetic resource policy. Visual changes to the interiors of existing buildings are not considered impacts; only changes visible from the exterior are analyzed.

4.14.1 No Action Alternative

Under the No Action Alternative, construction of a GIB would occur in FY11. The GIB would be constructed in an already developed area and the current visual features of the area would not change. Impacts to visual, scenic, and aesthetic resources under the No Action Alternative would be less than significant.

4.14.2 Alternative 1: POM-centric

4.14.2.1 Short-range Projects

Table 4.14-1 summarizes the size and number of floors for the new barracks. During renovation, demolition, and construction there would be short-term adverse impacts to the visual features of the sites and their surroundings. These effects would be visible from adjacent communities. Short-term adverse impacts on visual resources would be limited to the duration of construction activities.

Table 4.14-1. Alternative 1 – Proposed Building Heights and Sizes for Short-range Projects

Action	Size (Square Feet)	Building Height (# of floors)
Short-range Projects at the POM		
Barracks Phase I	164,960	5-6
Renovation Building 326	18,403	NA
Barracks Phase IV	155,200	5-6

Barracks Phase I and Phase IV

The Barracks Phase I project would replace existing barracks with new barracks. One barracks building would be constructed north of the nature preserve along with a single level parking lot to the north of the new barracks. A single level terraced parking lot would be constructed south of Building 660. In addition, one administrative facility would replace Building 629, and one dining facility and two parking lots would modify the existing parking lot west of Buildings 627 and 629. The barracks building would have a new footprint that would cover some of the undeveloped land north of the Huckleberry Hill Nature Preserve. Building construction would require the removal of trees in this area, which would change existing views at the POM. The visual impacts would be minimized to the extent possible based on the design criteria for activities at the POM.

The Barracks Phase IV project would entail construction of a new barracks building on undeveloped land east of Building 652 and one parking lot west of Building 660, which would replace the existing single level lot with a three story parking structure.

The Barracks Phase I and Phase IV projects would consist of buildings of five to six stories in height that would be very noticeable from adjacent barracks and the central campus. The new barracks buildings would occupy previously undeveloped land containing Monterey pine trees and other vegetation, a potentially significant impact to visual and aesthetic resources. However, the proposed locations for the new barracks buildings were chosen over alternative sites because they have fewer numbers of trees and other plants that would need to be removed. In addition, visual impacts would be minimized to the extent possible using design criteria established for the POM. As a result, impacts to the visual character at the POM Installation would be less than significant.

The Barracks Phase I and Phase IV projects would not impede scenic views of Monterey Bay from neighborhoods outside the installation. The new buildings would be designed to be more compatible with the surrounding area than the existing barracks. Further, the location of the proposed barracks would not be likely to impede views of the coast. Impacts to scenic views would be less than significant.

Renovation Building 326

Renovation of Building 326 includes only cosmetic refurbishment, interior redesign, and structural improvements. Interior renovations would not be visible from the outside and would not result in any visual impacts. Visual impacts from these actions would be less than significant.

4.14.2.2 Long-range Projects

Detailed planning and construction of long-range projects would depend on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at a programmatic level of detail. The military would follow building design criteria that would factor in any potential for visual impact for the long-range projects. This section describes general visual, scenic, and aesthetic impacts associated with the long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

The long-range projects that could have visual effects include construction of new buildings, parking structures, fences, barracks, recreation facilities, and access control points. During renovation, demolition, and construction, there would be short-term adverse impacts to the visual features of the sites and their surroundings. These effects would be visible from adjacent communities. Short-term adverse impacts on visual resources would be limited to the duration of construction activities.

Table 4.14-2 lists proposed size and number of floors for long-range projects. The new fencing would replace existing fencing currently at the POM. While it may be taller than the existing fencing, it is not expected to substantially change the visual character of the site and would not obstruct views from existing neighborhoods. New access control points would consist of new guard stations and reconfiguration of the road and barriers. This would slightly change the visual character of the area as new structures would be built. Demolition of existing buildings may occur to make space for new classrooms and barracks. In most cases, new buildings would replace old buildings in the same general location. There would be some changes to the visual appearance of the area. Visual impacts would be minimized to the extent possible using design criteria established for the POM. Impacts to the visual character at the POM Installation would be less than significant.

New parking structures could be several stories high; new GIBs could be up to 6 floors. Depending on their size and location, multi-level buildings at the POM might obstruct views of the ocean from surrounding neighborhoods. Buildings would be designed to fit into the existing visual character of the proposed location;

however, because of the high-density of the area, buildings may need to be constructed with multiple stories to accommodate the necessary size. In the design phase of the new buildings, the POM Installation would consider, to the extent possible, potential visual impacts and visual obstructions of the surrounding neighborhoods. New buildings at the POM could permanently detract from existing views and scenic vistas from areas outside the POM; therefore, at a preliminary level of analysis, visual impacts to existing vistas is considered potentially significant. When additional building details and locations are available, supplemental environmental analysis would be required to further analyze visual impacts.

It is not expected that any views from the OMC would be affected by the long-range projects planned at the OMC. The OMC area is level and does not provide scenic views of the Pacific Ocean. There are no neighborhoods surrounding the proposed construction sites that would have views obstructed by the long-range projects. There would be no visual impacts from construction at the OMC.

Table 4.14-2. Alternative 1 – Proposed Building Heights and Sizes for Long-range Projects

Action	Size (Square Feet)	Building Height (# of floors)
Long-range Projects at the POM		
Classroom Renovation I	76,634	3
Access Control Point (Highway 68)	NA	NA
Access Control Point (Private Bolio)	NA	NA
Access Control Point (Taylor St)	NA	NA
Access Control Point (High St)	NA	NA
Access Control Point (Franklin St)	NA	NA
Security Fence Upgrade	24,000 Lineal Feet	NA
Water Diversion	NA	NA
Install Elevators	NA	NA
Joint Services Training Center	12,600	Unavailable
Joint Services Headquarters Building	11,900	Unavailable
Multi-Level Parking Structure (Lawton)	Unavailable	3
Barracks Phase II	165,971	4
Barracks Phase III	139,160	4
General Instructional Building	25,000	1
General Instructional Building	110,000	6
General Instructional Building	110,000	6
General Instructional Building	110,000	6
Multi-Level Parking Structures (Cpl Evans)	Unavailable	3
Multi-Level Parking Structure (Private Bolio)	Unavailable	3
Multi-Level Parking Structure (Rifle Range)	Unavailable	3
Classroom Renovation II	75,320	3
Indoor Swimming Pool	10,000	1

Table 4.14-2. Alternative 1 – Proposed Building Heights and Sizes for Long-range Projects

Action	Size (Square Feet)	Building Height (# of floors)
Long-range Projects at the OMC		
Cantonment Area Fence	52,800 Linear Feet	NA
Emergency Services Center	33,141	Unavailable
Administrative Support Center	88,567	Unavailable
Stilwell Community Center	40,000	Unavailable
VA Clinic and Parking	Unavailable	Unavailable
Teen Center	11,325	Unavailable
Replacement Child Development Center	23,530	Unavailable

Alternative 1 would be implemented according to the IDG. The IDG outlines goals and objectives that shape standards and general guidelines for the design issues of site planning, architectural character, colors and materials, vehicular and pedestrian circulation, and landscape elements, including plant material, seating, signage, lighting, and utilities. These design guidelines incorporate sustainable design, quality of design, anti-terrorism measures, low maintenance measures, historical and cultural considerations, durability, safety, and compatibility. To the degree possible, given the constraints generated by the U.S. Army's IDG requirements and available funding, these concerns would be taken into consideration as a part of project design. Alternative 1 is not anticipated to result in any conflict or inconsistency with the IDG.

4.14.3 Alternative 2: POM and OMC

This section describes the environmental consequences of Alternative 2 on visual, scenic, and aesthetic resources.

4.14.3.1 Short-range Projects

Visual, scenic, and aesthetic impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.14.3.2 Long-range Projects

While Alternative 2 has similar projects as Alternative 1, many long-range projects would be constructed at the OMC rather than the POM. Table 4.14-3 lists proposed number of floors for new buildings. New buildings would be designed to fit into the visual character of the OMC. Because the OMC is more spread out than the POM, new buildings may not be designed to have as many floors as their counterparts located at the POM. The proposed GIBs at the OMC would have up to 3 floors, as currently planned. Further in contrast to the POM, there are not scenic views from neighborhoods within and surrounding the OMC. Therefore, new buildings would not obstruct existing scenic views of the Pacific Ocean, Monterey Bay or other areas of high scenic value. Visual impacts at the OMC under Alternative 2 would be less than significant.

Remaining long-range project constructed at the POM under Alternative 2, including the access control points, security fence, parking structures, and other building renovations would have the same visual impacts as Alternative 1. Depending on the size and location of the new parking structures, views from surrounding neighborhoods may be obstructed, which would be a potentially significant impact. When additional building details and locations are available, supplemental environmental analysis would be required to further analyze visual impacts.

Table 4.14-3. Alternative 2 – Proposed Building Heights and Sizes for Long-range Projects

Action	Size (Square Feet)	Building Height (# of floors)
Long-range Projects at the POM		
Classroom Renovation I	76,634	3
Access Control Point (Highway 68)	NA	NA
Access Control Point (Private Bolio)	NA	NA
Access Control Point (Taylor St)	NA	NA
Access Control Point (High St)	NA	NA
Access Control Point (Franklin St)	NA	NA
Security Fence Upgrade	24,000 Lineal Feet	NA
Water Diversion	NA	NA
Install Elevators	NA	NA
Joint Services Training Center	12,600	Unavailable
Joint Services Headquarters Building	11,900	Unavailable
Multi-Level Parking Structure (Lawton)	Unavailable	3
General Instructional Building	25,000	1
Multi-Level Parking Structures (Cpl Evans)	Unavailable	3
Multi-Level Parking Structure (Private Bolio)	Unavailable	3
Multi-Level Parking Structure (Rifle Range)	Unavailable	3
Classroom Renovation II	75,320	3
Indoor Swimming Pool	10,000	NA
Long-range Projects at the OMC		
Cantonment Area Fence	52,800 Lineal Feet	NA
Emergency Services Center	33,141	Unavailable
Administrative Support Center	88,567	Unavailable
Stilwell Community Center	40,000	Unavailable
VA Clinic and Parking	Unavailable	Unavailable
Barracks Phase II	165,971	4
Barracks Phase III	139,160	4
General Instructional Building	110,000	3
General Instructional Building	110,000	3
General Instructional Building	110,000	3
Teen Center	11,325	Unavailable
Replacement Child Development Center	23,530	Unavailable

4.14.4 Comparative Analysis of the Alternatives

Table 4.14-4 lists the effects of each of the alternatives and compares them to the No Action Alternative. Implementation of the long-range projects at the POM could result in significant impacts to scenic views, depending on the location and size of the proposed buildings and structures. Building design details are not completed; impacts to scenic views could be significant. Additional environmental analysis would be required to address the visual impacts of the long-range projects.

Table 4.14-4. Visual, Scenic, and Aesthetic Resources – Comparative Analysis of the Alternatives

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Short-range projects would affect scenic vistas from surrounding neighborhoods	Less than Significant	Less than Significant	Less than Significant
Short-range projects would substantially alter the existing visual character of an area	Less than Significant	Less than Significant with Mitigation	Less than Significant with Mitigation
Long-range projects at POM would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant with Mitigation	Less than Significant
Long-range projects at OMC would affect scenic vistas from surrounding neighborhoods	No Impact	Less than Significant	Less than Significant
Long-range projects at POM would substantially alter the existing visual character of an area	No Impact	Less than Significant with Mitigation	Less than Significant
Compliance with existing Installation Design Guide	No Impact	No Impact	No Impact

4.14.5 Potential Mitigation

There would be some visual impacts to adjacent residences from construction of the proposed alternatives. These impacts cannot be avoided, but would be minimized to the extent practicable. Proposed mitigation measures include, but are not limited to, minimizing the removal of mature healthy Monterey pines; using aesthetically attractive landscaping; planting additional native vegetation to serve as a visual buffer; selecting natural exterior colors more compatible with the surrounding area and installing decorative fencing. Outdoor utility equipment would be shielded to the maximum extent practicable to minimize visual and aesthetic impacts.

Mitigation measures may be available to reduce impacts but at this time not enough details are known regarding the design and location of projects to propose mitigation. Additional environmental analysis would be required to address the visual impacts of the long-range components.

4.15 Historic and Cultural Resources

This section describes the environmental consequences for historic and cultural resources in the study area. Effects on historic and cultural resources are evaluated for alterations of a historic property or archaeological resource in a way that adversely affects the characteristics that could qualify the resource for inclusion in the NRHP. An effect is considered adverse when it diminishes the integrity of the resource's location, design, setting, materials, workmanship, feeling or association.

4.15.1 No Action Alternative

Under the No Action Alternative, construction of a GIB would occur at the POM in FY11. The proposed structure and parking lot are being constructed outside of the existing historic and archaeological districts. Given the planned compliance with the U.S. Army's IDG and ICRMP, there would be no adverse effect on historic or cultural resources in the study area. Excavation during construction could result in the discovery of unknown archaeological resources in the study area. Implementation of mitigation measures CR-1, CR-2, and CR-3, as described in Section 4.15.5, would reduce this impact to a less than significant level.

4.15.2 Alternative 1: POM-centric

4.15.2.1 Short-range Projects

Short-range projects are proposed to begin construction by 2011. The short-range projects would occur on the POM.

Barracks Phase I and Phase IV

There are no known existing cultural resources on the sites of the proposed barracks construction. The proposed structures are being constructed outside of the existing historic and archaeological districts. The design features of the barracks projects would comply with the U.S. Army's IDG and ICRMP. Section 3.15 describes the IDG and ICRMP as they relate to cultural and historic resources. Given the planned compliance with the U.S. Army's IDG and ICRMP, the new barracks projects would not result in any adverse effect on historic or cultural resources in the study area. Excavation during construction could result in the discovery of unknown archaeological resources in the study area. Implementation of mitigation measures CR-1, CR-2, and CR-3 would reduce this impact to a less than significant level.

Renovation Building 326

Building 326 is a contributing factor within the POM Historic District, a culturally significant area within the POM Installation. The ICRMP developed specific guidelines for construction activities within the Historic District including:

- Routine maintenance should comply with the SHPO programmatic agreement and the Preservation and Maintenance Manual for the POM Historic District.
- New construction projects located in the POM Historic District would comply with Section 106 of the NHPA.
- Renovation activities at Building 326 would adhere to these guidelines. It is assumed that all renovations would fall under the definition of routine maintenance, repair, or replacement according to the PA and would therefore not require additional SHPO consultation. However, if building construction would involve extensive renovation, SHPO consultation would be needed. It is anticipated that the renovation could be conducted without affecting the historical characteristics and therefore no adverse effect would occur.

4.15.2.2 Long-range Projects

Detailed planning and construction of long-range projects would begin between 2014 and 2030, depending on funding availability. Because building details are not available, this EIS analyzes impacts of long-range projects at a programmatic level. This section describes general impacts on cultural resources of proposed construction associated with the long-range projects. The POM Installation would need to complete supplemental environmental documentation as the planning and design of the projects progresses.

The long-range projects include construction of new buildings and facilities and renovations of existing buildings. The POM has six archeological sites and the historic district containing approximately 102 significant buildings and monuments. The OMC has few cultural resources. A determination of eligibility will be performed on buildings nearing the 50-year age but it appears unlikely any meet the criteria. The design features of the long-range projects would comply with the U.S. Army's IDG, ICRMP, and SHPO PA. The PA only covers the POM Historic District and lower POM archaeological area. Projects elsewhere may require consultation with California SHPO prior to implementation. Consultation would occur as necessary and would be required for renovations to existing properties within the Historic District. Because construction of any project under Alternative 1 would comply with accepted plans and consultation for the POM, the projects would not affect existing cultural and historic resources. Due to the potential for encountering undiscovered resources, construction associated with building renovations would include the mitigation measures stated in Section 4.15.5 to reduce the potential for effects to those resources.

Construction associated with new buildings and facilities would require excavation. Excavation during construction could result in the discovery of unknown archaeological resources in the study area. Implementation of mitigation measures CR-1, CR-2 and CR-3 would reduce this impact to a less than significant level. It is not expected that renovation activities would expose cultural or historic resources because most construction would occur inside existing buildings or in developed areas adjacent to the buildings.

4.15.3 Alternative 2: POM and OMC

4.15.3.1 Short-range Projects

Historical and cultural impacts associated with the short-range projects under Alternative 2 would be the same as Alternative 1.

4.15.3.2 Long-range Projects

Under Alternative 2, some projects that would be constructed within the POM under Alternative 1 would be constructed at the OMC. The design features of the long-range projects would comply with the U.S. Army's IDG, ICRMP, and SHPO PA, in consultation with SHPO if needed, to prevent potential impacts to cultural and historic resources. The SHPO PA only covers the POM Historic District and lower POM archaeological area. RPMP projects outside of the historic district and archaeological area may require consultation with California SHPO. These projects include: Barracks Phase I, Phase II, Phase III, and Phase IV, Classroom Renovation I and II, Security Fence Upgrade, Access Control Points at Highway 68 and Taylor Street, Joint Service Headquarters Building, Multi-level Parking Structures (Rifle Range and Lawton), GIBs (68730, 68882, and 68883), and Indoor Swimming Pool. Separate environmental compliance documents would be developed for those projects not addressed in the agreement. Mitigation measures developed during consultation would be used to reduce any effects to a non-significant level.

Construction associated with new buildings and facilities would require excavation and grading. Excavation and grading could result in the discovery of unknown archaeological resources in the study area. Implementation of mitigation measures CR-1, CR-2 and CR-3 would reduce this impact to a less than significant level. It is not expected that renovation activities would expose cultural or historic resources because construction would occur inside existing buildings or in developed areas adjacent to the buildings.

4.15.4 Comparative Analysis of the Alternatives

Table 4.15-1 lists the effects of each of the alternatives and compares them to the No Action Alternative.

Table 4.15-1. Historic and Cultural Resources – Comparative Analysis of the Alternatives			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Impacts to Historic or Cultural Resources	Less than Significant with Mitigation	Less than Significant with Mitigation	Less than Significant with Mitigation

4.15.5 Potential Mitigation

The following measures would be implemented to reduce impacts on historic and cultural resources.

CR-1: In the event that cultural resources are encountered, construction activities in the vicinity of the resource shall cease until a qualified archaeologist evaluates the artifacts.

CR-2: If human remains are encountered, the provisions of the Native American Graves Protection and Repatriation Act of 1990 would be followed.

CR-3: When impacts to newly discovered archeological sites cannot be avoided, archeological mitigation would be implemented in consultation with the SHPO. This may include archival research and inventory, architectural or archeological testing and evaluation, intensive documentation, and monitoring.

4.16 Growth Inducing

The potential of the proposed project to significantly or adversely affect the environment is required by NEPA to be examined in an EIS. The potential impacts can be either direct or indirect. Indirect effects include growth inducing effects, which are effects related to induced changes in the pattern of land use, population density, or growth rate, or to related effects on air, water, or other natural systems, including ecosystems (40 CFR 1508.8(b)).

Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement, for instance, would result if implementing a project resulted in any of the following:

- Substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises).
- A construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services (e.g., infrastructure, schools, services) to support the temporary new employment demand.
- Removal of an obstacle to additional growth and development, such as removing a constraint on a public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

4.16.1 No Action Alternative

Because the military personnel assigned to the POM Installation for training is determined by the DoD, the population at the POM Installation would increase regardless of construction of new housing.

The No Action Alternative served as the baseline to evaluate whether the RPMP proposed alternatives would result in direct or indirect growth inducing impacts. Under the No Action Alternative, no new housing would be constructed at the POM or OMC. The population growth, however, would still occur since DLIFLC attendance and POM Installation military population are determined by the DoD. The population of military

personnel is anticipated to increase by about 9 percent between 2010 and 2030, as discussed in Chapter 2. As also mandated by the DoD, the student to teacher ratio is to be decreased from 10:2 to 6:2, which would result in an increase to the teacher population. There would also be corresponding increases to the number of military family members and civilian employees living at the POM or OMC.

Although the anticipated population increase could put pressure on the neighboring communities to provide for housing and services that are deficient at the POM and OMC, similar pressure from the communities would counteract this potential for growth. The Monterey area has limited water supply availability and new development would require long planning horizons by the municipalities. The only project (FY11 GIB) occurring under the No Action Alternative already has a secured water permit. The construction efforts for the GIB project would likely create substantial short-term employment opportunities to indirectly stimulate the economy but would not create appreciable direct or indirect growth inducing effects.

4.16.2 Alternative 1: POM-centric

Alternative 1 was evaluated based on the potential of this alternative to induce growth from construction of new housing or as a result of substantial economic growth beyond the No Action Alternative. The projected population under Alternative 1 would be the same as under the No Action Alternative.

Barracks Phase I and Phase IV would be constructed at the POM in the short-range and Barracks Phase II and Phase III would be constructed in the long-range. Compared to the No Action Alternative, barracks capacity from the construction and replacement of existing barracks is anticipated to increase by 126 beds under Alternative 1 (Table 4.6-1). The proposed capacity increase would only serve to accommodate the anticipated increase in military personnel mandated by the DoD. The new barracks would reduce the demand for off-post housing and result in a beneficial impact to the nearby communities. Development of single-family housing is not part of the RPMP and is not expected to increase or induce direct growth under Alternative 1 as compared to the No Action Alternative.

Although construction of the new barracks and other long-range projects under Alternative 1 would involve purchasing and transporting materials and hiring engineers, construction supervisors, and general construction laborers to design and construct the buildings, the construction spending would not result in substantial economic effects to the local economy. Labor and materials would be available within the region to meet the needs of the proposed projects and additional new housing or services within the neighboring communities would not be needed. Substantial economic impacts would potentially be noticeable if, for example, substantial amounts of outside resources were needed to be brought in. There would be no appreciable economic impacts from Alternative 1 as compared to the No Action Alternative.

The reduced student to teacher ratio would result in new teaching positions. Although there would be an increase in the demand for goods and services, the increase would not be substantial enough to foster population and economic growth in the nearby communities. There would be no significant indirect growth impacts from changes to the faculty population under Alternative 1 when compared to the No Action Alternative. The current military personnel are anticipated to increase by 869 by FY13 (Table 2.4-1). While the anticipated military personnel-faculty ratio is expected to decrease from 10:2 to 6:2, this reduced ratio would result in a faculty increase of about 290 by FY13. Housing available to POM Installation civilians at the RCI and Monterey County would be available to this future faculty increase without inducing growth. Alternative 1 would not indirectly create the need for additional housing and services or remove any obstacles to encourage new growth.

4.16.3 Alternative 2: POM and OMC

Similarly to Alternative 1, the potential of Alternative 2 to induce growth from new housing construction or from economic growth as a result of the anticipated population increase was evaluated using the No Action Alternative as the baseline.

The population growth under Alternative 2 would be the same as under the No Action Alternative. Similarly to Alternative 1, the barracks capacity under Alternative 2 would also increase, but by a net increase of 654 beds (Table 4.6-2). Barracks Phase I and Phase IV would still be constructed at the POM, but Barrack Phase II and Phase III would now be located at the OMC. The increase in barracks capacity would only provide accommodation for the anticipated increase in military personnel mandated by the DoD. Barracks capacity under Alternative 2 would meet future demands but would not induce growth.

Development of single-family housing is not part of the RPMP. The single-family housing capacity under Alternative 2 would be the same as compared to the No Action Alternative.

Alternative 2 would include construction of new barracks and other long-range projects that involve purchasing and transport of materials and hiring of labor to design and construct the buildings. Construction spending and labor, however, would not result in substantial economic effects to the neighboring communities since, like Alternative 1, the labor and materials would be available within the region and would not require substantial increases in housing or services to meet construction induced growth. The construction activities would not result in appreciable impacts as compared to the No Action Alternative.

An increase in the number of teachers would also be expected under Alternative 2 as compared to the No Action Alternative. Similarly to Alternative 1, the increased demand for goods and services by the new faculty population would not result in substantial economic growth in the region. The alternative would create the need for additional housing and services similar to Alternative 1.

4.16.4 Comparative Analysis of the Alternatives

The projected population under Alternative 1 or Alternative 2 would be the same as the No Action Alternative. Housing would not be developed under the No Action Alternative to meet the new population demands on the DLIFLC. The increase in barracks capacity under both action alternatives would only serve to accommodate the anticipated increase in military personnel mandated by DoD. Constructing new barracks would not increase demand for off-post housing. Similarly, construction spending under Alternative 1 or Alternative 2 would not result in substantial economic growth in the local economy since materials and labor would be available locally and substantial long-term outside resources would not need to be brought in. The alternatives would not result in short-term employment opportunities that could indirectly stimulate the need for additional housing and services.

Although the teacher population is anticipated to increase, the corresponding increased demands for goods and services would not be substantial enough to foster population and economic growth in the nearby communities. Table 4.16-1 compares the effects of the action alternatives to the No Action Alternative.

Table 4.16-1. Growth Inducing – Comparative Analysis of the Alternatives			
Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Induce growth from construction of housing	No Impact	No Impact	No Impact
Induce substantial economic growth	No Impact	No Impact	No Impact

4.16.5 Potential Mitigation

Mitigation measures are not necessary.

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5. CUMULATIVE EFFECTS AND OTHER DISCLOSURES

5.1 Cumulative Effects

Cumulative effects are those environmental effects that, on their own, may not be considered adverse, but when combined with similar effects over time, result in substantial adverse effects. Cumulative effects are an important part of the environmental analysis because they allow decision makers to look not only at the impacts of an individual proposed project, but the overall impacts to a specific resource, ecosystem, or human community over time from many different projects. This section describes the cumulative effects analysis for the two alternatives proposed in the RPMP and also describes the regulatory basis, analysis methodology, and other projects considered in the analysis to assess the potential cumulative effects for each resource.

5.1.1 Regulatory Basis

While NEPA and its implementing regulations do not specifically list cumulative effects for inclusion in the environmental consequences section of an EIS, the CEQ NEPA regulations require an analysis of direct and indirect effects and states that "effects" could be "… ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative" (40 CFR 1508.8). Additionally, the CEQ NEPA regulations state that when determining the scope of an EIS, cumulative actions must be considered with the proposed actions (40 CFR 1508.25). Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such actions (40 CFR 1508.7).

5.1.2 Methodology

This cumulative effects analysis has been prepared in accordance with CEQ's Considering Cumulative Effects under the NEPA and considers past, present, and reasonably foreseeable future actions that may affect the ecosystems, resources, or human communities in and around the project area (CEQ, 1997a). A list of such projects is presented in Section 5.1.3 below. The timeframe for the cumulative effects analysis extends to Year 2030 as the actions proposed in the RPMP are all expected to be constructed and in operation by this time. The geographic scope of this analysis includes the POM and OMC, and, for certain resource areas, the cities adjacent to the POM or OMC to address potential cumulative effects.

5.1.3 Related Projects

There are many related past, present, and future projects that could occur in the area of the POM Installation by 2030. This list of projects has been compiled from numerous resources and though coordination with various agencies. Table 5.1-1 presents the list of cumulative projects considered in the EIS analysis.

Table 5.1-1. Cumulative Actions		
Project / Action	Description	Expected Start Date
Fort Ord Reuse Authority, Fort Ord Reuse Plan and Capital Improvement Program	The comprehensive Fort Ord Reuse Plan was adopted in 1997 and included development of commercial, residential, recreation, and open space areas. The Capital Improvement Program identified projects to be implemented through 2020, including transportation, storm drain, habitat, public facilities, building removal, and water and wastewater projects.	2001
FY 08, 09 and 11 GIBs at POM	General instructional buildings and associated parking lots construction during 2008, 2009, and 2011 at the POM. Additional project details provided in Section 1.3.	2008
RCI Program	New and replacement housing and support facilities for military personnel at the OMC.	2006
Seaside Projects at Main Gate (1)	Mixed-use project includes resort-style, open-air retail environment with walkways and public space. The proposed project encompasses approximately 56 acres of former Fort Ord land just east of Highway 1, north of Lightfighter Drive, and adjacent to the California State University Monterey Bay campus. Other project components include a 250 room hotel/conference center with spa.	Date not set
Seaside West Broadway Urban Village (1)	Mix of residential (market rate and affordable for sale and rental) units with ground-floor retail and commercial uses to create a new downtown. The study area includes West Broadway Avenue between Del Monte Boulevard and Fremont Boulevard and is approximately bounded by Olympia Avenue, Elm Avenue, Imperial Street, Canyon Del Rey and Harcourt Avenue.	Date not set
Seaside Surplus II Planning Area (1)	Consists of approximately 90 acres of vacant and underutilized properties just south of California State University Monterey Bay on former Fort Ord. A Specific Plan will be prepared to help guide the site's development. Potential uses under exploration include mixed-used, educational-serving development.	Date not set
City of Seaside Del Monte Blvd Reconstruction Project (1)	Reconstruction of the north- and south-bound lanes of Del Monte Boulevard.	2009
Seaside General Plan (1)	Planned circulation, intersection, roadway, pedestrian and regional roadway improvements and Jim Moore Blvd Connection. Residential and mixed-use development in the Seaside East area.	2004
Cal Am Seaside Water Mains Replacement Program (1)	Evaluate entire Monterey Distribution System, replace 4" steel pipe with 8" PVC pipe, repair leaks.	2009
City of Monterey State Highway 68 (Holman Highway) Widening and Upgrade Project (2)	Widen and upgrade State Highway 68 from two lanes to three/four lanes beginning approximately 0.2 kilometers (0.1 miles) west of the Community Hospital of Monterey Peninsula entrance to State Highway 1 and State Highway 68 junction. Improvements to State Highway 1 southbound off-ramp and on-ramp are also included.	2009
Street Resurfacing (Slurry/Cape Seal) 2009 for City of Monterey and Presidio Municipal Services Agency (2)	Project consists of crack sealing, placing of slurry seal and/or cape seal, associated striping removal and replacement of painted street markings on a number of streets and parking lots in the City of Monterey, POM, OMC and Camp Roberts-SATCOM.	2009
City of Monterey Street Reconstruction 2009 (2)	Street segments to be reconstructed will be on Abrego, Munras, Soledad, and Eldorado Streets. Also included is the installation and rehabilitation of sewer mains, storm drain catch basin reconstruction, and street lighting.	2009
David/Prescott Corridor Improvement Traffic Study (2)	Measures to address traffic speed and pedestrian safety on these streets.	2009

Table 5.1-1. Cumulative Actions		
Project / Action	Description	Expected Start Date
City of Monterey Neighborhood Improvement Projects (2)	Small-scale projects throughout the City of Monterey including maintenance, replacement, safety repairs, erosion control measures, and drainage improvements.	2009
City of Monterey Capital Improvement Projects (2)	Multiple projects including underground utility upgrades, storm drains, sewer line replacements, seismic upgrades, walkway construction, efficiency upgrades, and traffic and parking improvements.	2009
Central Coast Veterans Cemetery (2)	Proposed 178 acre site including 78-acre cemetery serving Monterey, Santa Cruz, Santa Clara and San Benito counties, a habitat restoration area, and a development parcel.	Date not set
Coastal Water Project (3)	Made up of multiple projects to provide additional water to Cal Am customers. Three project alternatives: Moss Landing Project (Cal Am proposed project), North Marina Project, or Monterey Regional Water Supply Project, that would include some combination of a new seawater desalination plant, surface water treatment plant, pipelines, storage facilities, and an aquifer storage and recovery system.	2015
Seaside Basin Aquifer Storage and Recovery (ASR) (3)	Excess surface water flows from the Carmel River during the rainy season will be diverted and injected via two ASR injection/extraction wells into the Seaside Area Subbasin for storage and later recovery. Phase I (920 AFY) complete; remainder added to Coastal Water Project (380 AFY).	Date not set
Sand City Desalination (3)	Brackish water from beach collector well would be treated with reverse osmosis and the brine injected into the Seaside Area Subbasin. Project supply expected to offset current demands and to meet future demands.	2009
Pebble Beach Recycled Water Project Expansion (3)	An existing recycled water project provides an average of 664 AFY for irrigation. Expansion project would increase supply by 136 AFY to 800 AFY total.	Date not set
Unaccounted-for Water Recovery (3)	Implement system improvements to reduce average unaccounted-for water within Cal Am system by 2 percent of total production.	Date not set
Salinas Valley Water Project (4), (5)	Project goal to reduce groundwater demand with designs to improve flood protection, halt seawater intrusion, improve water release and storage, and allow use of combined river and recycled water for farm irrigation. Project includes modifications to Nacimento Dam spillway and installation of rubber dam and diversion facility on Salinas River near City of Marina.	2010
Regional Urban Water Augmentation Project (4)	Project to develop an augmentation water supply of recycled and/or desalinated water for MCWD (2,400 AFY for former Fort Ord, 300 AFY to replace idle desalination plant supply) and Monterey Peninsula (300 AFY). Three project alternatives: 100 percent recycled wastewater, 100 percent desalinated water, or 50 percent of each.	2010
Del Monte Forest Area Land Plan Amendments and Zoning Changes (6)	Pebble Beach Company proposal to build out remaining vacant land in the Pebble Beach area of the Del Monte Forest (Pebble Beach Lot Program). Proposal for 403 residential units on 685 acres, an 18-hole golf course, and expansion of existing driving range	2005

(1) City of Seaside, 2009
(2) City of Monterey, 2009
(3) ESA, 2009
(4) Byron Buck & Associates, 2005
(5) The Herald, 2009
(6) Monterey County, 2005

5.1.4 Analysis of Potential Effects

This section describes potential cumulative effects of the alternatives when considered with the projects listed above in Section 5.1.3.

5.1.4.1 Water Supply

Cal Am and MCWD, the water purveyors to the POM and OMC, respectively, also provide potable water to other customers within the Monterey area, such as the cities of Monterey, Seaside, and Pacific Grove. Agreements are in place that outline the existing water rights and allocations, but actual available water supply depends on legal and physical availability, i.e., in order for the U.S. Army to use its so far unused water rights, the water companies have to first generate that additional water. Cal Am and MCWD are fully aware of the current and projected demands of its customers and are involved in developing regional water supply projects aimed to provide water to meet those anticipated demands. Additionally, Cal Am must also replace current water diversions above its legal right and allocation, as mandated in SWRCB Order 95-10 and the Seaside Area Subbasin Adjudication (Section 3.1).

The combined water demands from OMC, POM, and the other Cal Am and MCWD customers would result in cumulative impacts to water supply, affecting the size, scope, and implementation schedule of future water supply projects and affecting the overall availability of water in the Monterey region. As Cal Am and MCWD have determined their customers' projected water needs, the regional water supply projects currently in development by the purveyors and cooperating agencies already take into account the cumulative water demands of the region. Each water project is responsible for determining and mitigating any significant water supply impacts resulting from the project so that substantial cumulative impacts would not occur. Many of the water projects summarized in Table 5.1-1 are either in the construction or environmental documentation preparation stages.

Construction of the FY08, FY09, and FY11 GIBs would have potential for water supply impacts. However, water supply planning efforts, discussed in Section 4.1.5 would minimize the potential for adverse water supply impacts.

5.1.4.2 Geology, Soils, and Mineral Resources

In addition to the RPMP alternatives, the POM Installation is constructing a new GIB at the POM in FY11. The GIB would have similar impacts to geology and soils as the RPMP alternatives. Construction of the new building includes BMPs to reduce potential erosion impacts and seismic damages. There would be no cumulative impacts to geology and soils from the new GIB and RPMP alternatives at the POM.

No new construction is planned at the OMC other than that proposed under the RPMP alternatives. There would be no cumulative effects to geology and soils.

5.1.4.3 Air Quality

In addition to the RPMP action alternatives, the POM Installation is constructing one new GIB at the POM in FY11 under the No Action Alternative. The GIB construction and various building renovations would have similar impacts to air quality under the RPMP alternatives. Construction of the new building includes BMPs to reduce emissions of PM_{10} from fugitive dust.

The MBUAPCD CEQA Air Quality Guidelines (2008) state that if a project is consistent with the current Air Quality Management Plan (AQMP), then cumulative impacts would not occur. The proposed project would not exceed the population growth and emissions trends in the AQMP; therefore, there would be no cumulative impacts to air quality from the new GIB and RPMP alternatives at the POM.

No new construction is planned at the OMC other than those proposed under the RPMP alternatives. No cumulative air quality effects would occur.

5.1.4.4 Vegetation and Wildlife

In conjunction with other actions occurring in the region, Alternative 1 and Alternative 2 are considered to have a less than significant impact to vegetation and wildlife at the POM and OMC with the implementation of appropriate mitigation measures and consultation with USFWS. For instance, the locations of Barracks Phases I and IV buildings were selected to avoid special-status plants to the extent possible. Six alternate sites at the POM were reviewed before the Ravine Site was considered to be a feasible building site. Removal or replacement of Monterey pine trees would be minimized during construction at the Ravine Site compared to other available sites on the POM. The proposed new chapel and joint services training center were consideration but eliminated from the RPMP to avoid potential biological impacts at potential construction locations.

Other ongoing and future construction projects would be required to implement mitigation measures to address any potential impacts to biological resources. For example, upgrades to the POM's current water supply system in the future to comply with fire regulations may require disturbance within an area of existing Yadon's piperia habitat, which would require mitigation measures. Therefore, no substantial cumulative effects from Alternative 1 or Alternative 2 on vegetation and wildlife are expected.

5.1.4.5 Land Use

Future planned projects at the POM and OMC would comply with land use guidelines for the Federal property. All proposed projects would follow land use designations as defined within the Army Regulation 210-20 Real Property Master Planning for Army Installations. There would be no cumulative impacts to land use.

5.1.4.6 Population and Housing

Under the cumulative condition, there would be limited new development at the POM and no new developments at the OMC. Cumulative projects at the POM do not include new housing projects; therefore, housing conditions would remain the same and there would be no cumulative impacts. The RPMP alternatives would improve housing by demolishing old barracks and constructing new buildings with modern technology and improved housing services and accommodations. Cumulative projects recently completed at the OMC include housing development that supports increased population at the OMC. Housing at the OMC has been improved over existing conditions, which is a cumulative benefit. RPMP alternatives would contribute to cumulative benefits to improve housing as new barracks are constructed. Recently completed housing projects at the OMC have reduced the need for military personnel and families to seek housing in nearby cities, which is also a cumulative benefit.

The FY08, FY09, and FY11 GIB projects are in response to the increasing student and teacher population at the POM. This increased student/teacher population would increase pressures on existing housing and barrack spaces until replacements and upgrades are completed.

5.1.4.7 Traffic and Transportation

In addition to the RPMP action alternatives, one new GIB would be constructed at the POM in FY11 under the No Action Alternative. The GIB construction and various building renovations would have similar impacts to traffic and transportation as under the RPMP alternatives.

Cumulative projects related to transportation resources also include the City of Seaside Del Monte Boulevard Reconstruction Project and the City of Monterey State Highway 68 (Holman Highway) Widening and

Upgrade Project. The Del Monte Reconstruction Project would improve road conditions from the OMC to the POM through the City of Seaside. The State Highway 68 project would improve traffic through the City of Monterey around the POM. The cities have also identified several projects to improve traffic conditions in the Capital Improvement Programs and Generals Plan that are in preliminary planning stages. City of Seaside projects include improvements at the following intersections: Second Avenue/First Street; Second Avenue/Light Fighter Drive; General Jim Moore Boulevard/Light Fighter Drive; General Jim Moore Boulevard/Gigling Road; General Jim Moore Boulevard/Normandy Road; General Jim Moore Boulevard/Coe Avenue/Eucalyptus Road; and General Jim Moore Boulevard/Broadway Avenue. City of Monterey projects propose improvements to Lighthouse and Foam Avenues and David and Prescott Avenues. These projects would help alleviate traffic delays in areas surrounding the POM Installation under the cumulative condition. There would be no cumulative effects to traffic and transportation.

The FY08, FY09, and FY11 GIB projects are in response to the increasing the student and teacher population at the POM. This increased student/teacher population would increase traffic volumes on, and adjacent to, the POM. The traffic impacts are discussed in Section 4.7.

5.1.4.8 Noise

In addition to the RPMP alternatives, a new GIB will be constructed at the POM under the POM EA for GIBs FY08, FY09 and FY11. The GIB would have similar short-term noise impacts from construction activities as the RPMP alternatives. Construction of the new building includes noise mitigation measures. There would be no cumulative impacts to noise from the new GIB and RPMP alternatives at the POM. No new construction is planned at the OMC beyond those proposed under the RPMP alternatives. Traffic volume increase, which would also occur under No Action, may increase street noise levels during the rush hour periods. The traffic noise increase is not expected to be noticeable, however.

5.1.4.9 Utilities and Public Services

Under the cumulative condition, there would be limited new development at the POM. Cumulative projects on the POM, given considerations for energy and water use reductions and replacement of aging facilities, would not result in cumulative impacts to public utilities and services. The POM Installation would work with utility agencies, such as PG&E, the MRWPCA, Monterey County Disposal Service, and the Monterey Regional Waste Management District, to coordinate relocation, new, or interruptions to utility and public services.

Recently completed residential and commercial development projects at the OMC, that did not replace existing developments, have resulted in increased demands for utilities and public services. However, those projects have been permitted to comply with local requirements and thus have not taxed the public services. Like those at the OMC, upcoming projects at the POM are not expected to result in cumulative impacts to stormwater, wastewater, electric, gas or communication services.

Increased population at the new developments would also increase demands for public school services from MPUSD. Additional tax revenues from residents would support school services, but budgetary concerns for public schools would remain. The RPMP alternatives propose new barracks that would support soldiers without accompanying families. It is expected that some military with families with school age students would be rotated through the school systems with each military language class at the POM. Once the military student populated has stabilized, the public school districts would need to adjust to the percentage of military-related students that would be present during any school year. Once the adjustment is made, no cumulative impacts would be expected.

5.1.4.10 Hazardous, Toxic, and Radioactive Wastes

For the No Action and action alternatives, construction of new buildings includes the use of construction materials that may contain hazardous materials. The use of hazardous materials would result in similar impacts for all the alternatives. Proper hazardous materials handling, worker safety precautions, and hazardous waste management practices would apply to all the alternatives.

There would be an increased use of construction material containing hazardous materials; however, management of hazardous materials and disposal of hazardous waste in accordance with federal, state, and local requirements would minimize impacts to less than significant. There would be no cumulative impacts to HTRW from the new construction of GIBs and RPMP alternatives at the POM. With the implementation of necessary regulations the RPMP projects are not expected to result in any cumulative HTRW impacts.

5.1.4.11 Public Health and Safety

Cumulative projects would involve similar construction activities as the alternatives discussed above. These projects would also have the potential to result in public health and safety impacts; however, each project, including the proposed project, is responsible for implementing measures to protect public health and safety. With implementation of proper safety measures and coordination between agencies, the projects are not expected to contribute to any cumulative public health and safety impacts. There would be no cumulative impacts or increased danger of wildfires or other safety hazards to the population or increased demand for emergency services or affect the emergency evacuation routes.

5.1.4.12 Socioeconomics

Under the cumulative condition, a new GIB would be constructed at the POM. Local construction projects are also planned at the former Fort Ord. Construction associated with these developments would have similar socioeconomic impacts as the proposed RPMP alternatives, including increasing employment and spending in the region. Economic impacts from construction would be temporary and would only occur during the construction period.

Population in nearby cities has not changed substantially the past few years and it is expected to remain fairly static in the future. Industry output and employment have also been relatively stable over the years. The local economies in the surrounding areas are not expected to change under the cumulative condition. Increased housing at the POM Installation to support the long-term population growth would not change socioeconomic conditions in nearby cities. Increased population at the POM Installation would result in more spending in the region, which would benefit the local economy.

5.1.4.13 Environmental Justice

The cities of Marina, Seaside, and Sand City were identified as areas with a minority or low-income population that should be analyzed for environmental justice impacts. The potential impacts to the human and natural resources would not be appreciably more severe or greater in magnitude on the minority or low-income communities within these cities. Both construction and operation impacts in the long-term would be beneficial, providing regional short-term economic benefits from construction spending and labor and long-term positive impacts on employment and wages in the region from the projected increases in the teacher and student populations. Implementation of the alternatives would not cause disproportionately high and adverse effects on a minority or low-income population. Therefore, there would be no significant adverse cumulative effects considering the related projects in Section 5.1.3.

5.1.4.14 Visual, Scenic, and Aesthetic Resources

Cumulative projects at the POM include a new GIB and several proposed renovations to existing buildings. All construction projects would follow the IDG design guidelines and would maintain the overall visual character of the POM Installation. The POM Installation decreased the number of floors of the new GIB during the design phase so not to obstruct scenic views from surrounding areas. As a result, there would be no cumulative visual impacts at the POM. This includes both the short- and long-term projects included in the RPMP.

Cumulative projects at the OMC would be compatible with the visual character of the OMC and would not obstruct scenic views of surrounding neighborhoods. No cumulative visual impacts are anticipated at the OMC.

5.1.4.15 Historic and Cultural Resources

Implementation of any of the alternatives would not generate significant impacts on cultural or historic resources. Other ongoing and future construction projects in and around the area could uncover previously unknown cultural or historic resources; however each project proponent would be responsible for mitigating for cultural resources impacts. The RPMP actions would be mitigated and would be coordinated with SHPO; therefore they would not contribute to cumulative effects. No cumulative impacts on historic or cultural resources are anticipated as a result of implementation of any of the RPMP Alternatives.

5.1.4.16 Growth Inducing

Under the No Action Alternative, housing conditions at the POM and OMC for military personnel would not improve to meet demands. Military personnel assigned to the POM Installation for training is determined by the DoD, the population at the POM Installation would increase regardless of construction of new housing. The RPMP alternatives would improve housing by demolishing old barracks and constructing new building with modern technology and by improving housing services and accommodations.

The population of military personnel and family members at the POM Installation is anticipated to total 18,500 from FY12 to FY30 with a maximum population of 19,300 in FY11 (Table 2.4-1). Cumulative projects at the OMC include new housing development that would support the increased population at the OMC. Housing projects at the POM and OMC would reduce the need for military personnel and families to seek housing in nearby cities. By meeting the housing pressures on the POM Installation, off-post housing pressures would be reduced and result in a beneficial impact. The RPMP alternatives would not contribute to cumulative growth inducing effects above the No Action Alternative.

5.2 Irreversible and Irretrievable Commitment of Resources

An EIS must contain a discussion of the irreversible and irretrievable commitment of resources that would result from the proposed action if it was implemented (42 USC 4332; 40 CFR 1502.16). This EIS discusses the irreversible and irretrievable commitment of resources that would be involved with the implementation of the RPMP. Irreversible commitments are decisions impacting non-renewable resources such as soils, natural habitat, or commitments that cannot be reversed during the phases of the project. The irretrievable commitment of resources refers to the loss of production or use of natural resources and represents lost opportunities for the period when the resource cannot be used.

The No Action Alternative would expand facilities through construction on an existing developed parcel, but would not impact undeveloped parcels at POM or OMC. Under Alternative 1, and similarly under Alternative 2, facility expansion at both the POM and OMC would occur through the demolition of existing

buildings and construction on undeveloped parcels. None of the alternatives would conflict with the existing land use plans or policies of the POM Installation or with local land use polices.

Use of resources such as construction materials during the construction of a project is irreversible, since these resources cannot be recovered once they have been committed to a project. Implementation of the LEED certification for facility construction, however, would minimize the impact by employing efficient methods, including reuse or recycling of the construction materials, use of energy and water efficient systems, and improved indoor environmental quality.

Implementation of the RPMP would create short-term adverse environmental impacts during construction and over the life of the proposed facilities. Construction activities would involve the consumption of natural resources such as the earthen borrow material, concrete, and petroleum fuels, which would be a permanent commitment of non-renewable natural resources.

5.3 Significant and Unavoidable Adverse Effects

The term "significant and unavoidable adverse effect" refers to the environmental consequence of an action that cannot be avoided by redesigning the project, changing the nature of the project, or implementing mitigation measures. NEPA regulations require a discussion of any adverse impacts that cannot be avoided (40 CFR 1502.16).

The potentially significant adverse effects were evaluated and discussed in Chapter 4 of this report. The impact analyses identified potentially significant impacts in the alternatives with regard to multiple resource areas. Mitigation measures were identified that would reduce many of the potentially significant impacts to less than significant. Significant and unavoidable impacts, however, were identified for four resource areas, as summarized in Table 5.3-1.

Table 5.3-1. Significant and Unavoidable Impacts

Environmental Consequence	No Action Alternative	Alternative 1: POM-centric	Alternative 2: POM and OMC
Water Supply Projected water demand exceeds available supply at POM	Less than Significant	Significant and Unavoidable	Less than Significant
Geology, Soils, and Mineral Resources Potential for adverse effects from seismic activity	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Increased population at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Improved housing facilities at the POM and OMC	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Population and Housing Reduced demand for housing off-post	Significant and Unavoidable	Beneficial Impact	Beneficial Impact
Utilities and Public Services Increased demand on public schools	Significant and Unavoidable	Significant and Unavoidable	Significant and Unavoidable

The projected population growth under the action alternatives would be the same as under the No Action Alternative. The military population is projected to increase by about nine percent between 2010 and 2030. There would be corresponding increases in the number of family members and civilian employees. New housing would not occur under the No Action Alternative, so there would potentially be pressures on

off-post communities to provide additional housing and community services for the increasing population. As new housing and support facilities would be constructed under the action alternatives, the effects to population would be potentially beneficial as these off-post pressures would be alleviated. Replacing outdated barracks with modern facilities would increase the quality of life of the military personnel. New buildings would also meet current seismic building standards and decrease the potential for adverse seismic effects. As the family population increases under the No Action Alternative and the action alternatives, the demand for public school services would increase. The children of military and civilian families would attend MPUSD.

5.4 Relationship between Short-term Uses of the Environment and Maintenance and Enhancement of Long-term Productivity

This section describes the relationship between short-term and long-term environmental effects, such as short-term adverse impacts that would result in long-term beneficial impacts, and vice versa (40 CFR 1502.16). At issue is whether short-term effects would be counterbalanced by the long-term effects. The discussion includes effects that may narrow the range of beneficial uses of the environment or pose long-term risks to health and safety.

5.4.1 No Action Alternative

The No Action Alternative consists of constructing one new GIB and parking lot over existing parking areas. The alternative would not involve the development and construction of new facilities on undeveloped parcels or the replacement of underutilized or older facilities. Existing undeveloped areas would remain open parcels. Construction of the GIB would involve short-term uses of capital, labor, fuels, and construction materials. The construction could result in short-term disruptions to the traffic flow and decrease parking availability, but the project would provide improved educational services to the current and future student and faculty populations.

Except for the parking lot for the FY11 GIB, improvements to traffic flow and construction of new parking structures would not take place under the No Action Alternative. As a result of the anticipated increase in population, traffic and congestion would increase and available parking would decrease.

The AT/FP measures cannot be fully implemented at the POM under current conditions and the measures would not be fully implemented under the No Action Alternative.

5.4.2 Alternative 1: POM-centric

Alternative 1 would involve construction of new facilities on undeveloped parcels and the replacement of underutilized or older facilities at the POM and OMC. This alternative would include short-term uses of capital, labor, fuels, and construction materials. Long-term productivity of the resources would be achieved through LEED certification for facility construction, which would include reuse or recycling the construction materials, use of energy and water efficient systems, and improved indoor environmental quality.

Designs of new facilities for the POM and OMC would fully implement the AT/FP measures. Fencing, hardened construction (explosive resistance), and security measures would be incorporated into the building and infrastructure designs.

Personnel and family housing and the fulfillment of the primary mission of the DLIFLC would be met and a sustainable and culturally based foreign language education, training, and evaluation program would be provided. This would ensure the success of the defense language program and enhance national security.

For both the short- and long-range projects, soil erosion from the construction activities would result in a greater loss of topsoil on undeveloped parcels than on already developed areas. Bare soils would be temporarily exposed and subject to wind and water erosion. These short-term impacts could be mitigated, while still providing the facilities needed to meet the long-term needs of the POM Installation.

Short-term construction noise could disturb military personnel and the activities occurring in the barracks and classrooms. Residents would be adversely affected by noise levels during the construction period. Noise mitigation (e.g., engineering controls and limited construction hours) would be necessary during construction and building renovation activities. Sensitive noise receptors would be within 1,200 feet of the new GIBs and Barracks Phase I and IV new construction projects and would be adversely affected by the construction noise. Noise would also occur during the Building 326 renovations. Because of the existing walls acting as noise barriers, noise would likely attenuate more than construction occurring outdoors. Sensitive noise receptors within 500 feet could be significantly affected by noise levels from renovations.

5.4.3 Alternative 2: POM and OMC

Similarly to Alternative 1, Alternative 2 would involve construction of new facilities and the demolition and replacement of underutilized or older facilities at the POM and OMC. Some construction would occur on undeveloped areas. This alternative would include short-term uses of capital, labor, fuels, and construction materials. Long-term productivity of the resources would be achieved through LEED certification for facility construction, such as reuse or recycling of construction materials, use of energy and water efficient systems, and improved indoor environmental quality.

Designs for the new facilities at the POM and OMC would fully implement the AT/FP measures. Fencing, hardened construction (explosive resistance), and security measures would be incorporated into the building and infrastructure designs.

Personnel and family housing demands and the fulfillment of the primary mission of the DLIFLC would also be met under Alternative 2. The continuance of a sustainable defense language program at the POM Installation would be achieved.

Similarly to Alternative 1, soil erosion from the construction activities would result in a greater loss of topsoil on undeveloped parcels than on already developed areas because bare soils would be temporarily exposed and subject to wind and water erosion. These short-term impacts could be mitigated while still providing the facilities needed to meet the long-term needs of the POM Installation.

Short-term noise impacts from implementing the long-range projects under Alternative 2 would be similar to Alternative 1. Sensitive noise receptors at the new GIBs and Barracks Phase I and IV projects would be within 1,200 feet of the new GIBs and Barracks Phase II and III new construction projects and would be adversely affected by the construction noise. Noise impacts would also occur during the Building 326 renovations. Sensitive noise receptors within 500 feet could be significantly affected by noise levels from renovations. Noise mitigation (e.g., engineering controls and limited construction hours) would be necessary during construction activities).

5.5 Other Disclosures—Anti-Terrorism/Force Protection

In the current environment of heightened national security and terrorism, establishing and incorporating security and anti-terrorism design principles into an installation's planning process is paramount. A baseline level of protection is established for inhabited buildings and security and anti-terrorism design requirements are integrated with other requirements into the master facility plan.

The UFC 4-020-01 is a manual that supports the planning of military facilities by establishing security and anti-terrorism design criteria. An important security control measure is "standoff distance" because pressures resulting from an explosive blast decrease rapidly with distance. Protection against explosives is increased by maximizing the standoff distance (safety buffer zone). The general design strategy, therefore, is to provide as much standoff distance between protected facilities and potential locations for vehicles, such as parking areas and roadways, and areas that could be accessible by vehicles.

If adequate standoff distances are not "reserved," the necessary open areas could be built up and would not be available should the area become needed in a higher threat environment. Without adequate standoff distances, other design strategies and security engineering controls would be necessary. For obvious security reasons, these strategies cannot be discussed further in this document. Additionally, the master planning implications of these standards are not intended to be resolved immediately, but should be considered as a blueprint for facilities and installations that can evolve through time.

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6. COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS

6.1 Applicable Laws and Regulations

The statutes in NEPA establish a specific environmental impact analysis process and require a public review and disclosure. Early scoping with other agencies identified various environmental review and consultation requirements that may apply to the proposed action. The early scoping led to the integration of other regulatory processes into this document. Along with the scoping process, the EIS is required to list all the federal permits, licenses, and other entitlements which must be obtained in implementing the proposal (40 CFR 1502.25.b). In addition, the U.S. Army identified several applicable state and local statutes, regulations, ordinances, and plans.

Table 6.1-1 lists the applicable laws, regulations, and executive orders and their methods of compliance. The applicable federal permits are summarized in Section 6.2.

Table 6.1-1. Applicable Laws and Regulations

Laws and Regulations	Method of Compliance
FEDERAL	
National Environmental Policy Act of 1969	EIS
Clean Air Act	EIS
Clean Water Act	NPDES Permit
Noise Control Act of 1972	EIS
Endangered Species Act	Section 7 Consultation with USFWS
Migratory Bird Treaty Act	EIS, Mitigation Monitoring Plan
National Historic Preservation Act of 1966	NHPA Section 106 Consultation with SHPO
Archeological Resources Protection Act of 1979 and the Antiquities Act of 1906	Consultation with SHPO
Coastal Zone Management Act of 1972	California Coastal Commission Consistency Determination
Section 438 of the Energy Independence and Security Act of 2007	Project Design
Executive Order 11514 Protection and Enhancement of Environmental Quality	EIS
Executive Order 13112, Invasive Species and Landscaping	EIS, Mitigation Monitoring Plan
Executive Order 11990, Protection of Wetlands	EIS
Executive Order 12898, Environmental Justice	EIS
Executive Order 13423 - Strengthening Federal Environmental, Energy, and Transportation Management	EIS
Executive Order 13101, Greening the Government through Waste Prevention, Recycling, and Federal Acquisition	EIS

Table 6.1-1. Applicable Laws and Regulations	
Laws and Regulations	Method of Compliance
Executive Order 13123, Greening the Government through Efficient Energy Management	EIS
Executive Order 13148, Greening the Government through Leadership in Environmental Management	EIS
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	EIS
Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use	EIS
Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance	EIS
Army Regulation 200-2 Environmental Analysis of Army Actions (32 CFR Part 651)	EIS
Army Regulation 210-20 Real Property Master Planning for Army Installations	EIS
STATE	
California Clean Air Act	EIS
Monterey Bay Unified Air Pollution Control District Rules and Regulations	EIS
Porter-Cologne Water Quality Control Act (California Water Code)	EIS, Waste Discharge Requirements
Porter-Cologne Water Quality Control Act (California Water Code) Integrated Waste Management Act	Modified landfill closure and post-closure maintenance plan
Alquist-Priolo Earthquake Fault Zoning Act	EIS
Seismic Hazards Mapping Act	EIS
California Endangered Species Act	EIS, Mitigation Monitoring Plan
California Fish and Game Code – Migratory Bird Protection	EIS, Mitigation Monitoring Plan
LOCAL	
Monterey County Preservation of Oak and Other Protected Trees	EIS, Mitigation Monitoring Plan
City of Seaside General Plan	EIS
Monterey County General Plan	EIS
City of Seaside Noise Regulations (Municipal Code 9.12)	EIS
City of Pacific Grove Unlawful Noise Code (Municipal Code 10.60)	EIS
Monterey County Noise Ordinances (MCC 10.60.030)	EIS

6.2 Permits and Coordination Required

This section describes the potential federal environmental permits the project may require. These requirements may be revised as supplemental documentation is completed and project details are further developed.

National Pollutant Discharge Elimination System, General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (NPDES No. CAS000002)

The NPDES program is a part of the federal CWA. California is federally authorized to implement the CWA. The NPDES permit regulates point source discharges to waters of the U.S. and nonpoint storm water discharges including storm water from construction activities. California has developed a construction general permit for projects exceeding one acre or more of disturbed soil. Stormwater discharges and non-stormwater discharges are prohibited unless authorized in this general permit. The U.S. Army will prepare and submit a Permit Registration Document for submission to the SWRCB that will include a Notice of Intent, Risk Assessment, Site Map, Storm Water Pollution Prevention Plan (SWPPP), a signed certification statement, and fees. The findings of the Risk Assessment will determine the hazards associated with the site conditions (i.e., Risk Level 1, 2, or 3) and establish the specific compliance conditions of the permit. Development of the SWPPP is required prior to construction to address the control of pollutant discharges using best BMP selected for the specific project and to address stormwater monitoring. Beginning in September 2012, the new post-construction standards will be in effect and post-construction and long-term maintenance plans will be required.

Endangered Species Act, Section 7 Consultation

Formal consultation is required under section 7 of the Environmental Site Assessments (ESA) for federal projects where the project is likely to jeopardize the continued existence of any proposed or listed species or result in the destruction or adverse modification of a critical habitat. The lead agency (U.S. Army) would consult with the USFWS for terrestrial and freshwater species. Procedures for interagency cooperation concerning endangered species are found in 50 CFR Part 402. The USFWS is required to conclude formal consultation within 90 days, although it can be extended by mutual consent of the agencies involved. Within 45 days of the conclusion of formal consultation, a BO must be completed. The BO would find either that the project: (1) is not likely to jeopardize or adversely affect the species/critical habitat and that no further action is required and the proposed project can proceed (i.e., No Jeopardy Opinion); or (2) is likely to jeopardize or adversely affect an endangered species or critical habitat and the project must be stopped unless alternatives to avoid or mitigate any impact can be found or an exemption is granted by the Endangered Species Committee through formal consultation procedures (i.e., Jeopardy Opinion).

National Historic Preservation Act, Section 106 Consultation

The U.S. Army will initiate the process of consultation with the SHPO regarding historic and cultural resources on the National Registry and the effect of the proposed federal action before the NEPA ROD is signed. The law requires federal agencies to consult with the Advisory Council prior to any undertaking that would affect a property on or eligible for the National Register. Pursuant to sections 106 and 110(f), as amended, federal actions are required to take into account the effects of activities on any historic properties included on or eligible for inclusion on the National Register. If, at any point, the conclusion is reached that cultural resources are not present or would not be affected, no further investigation is necessary. The criteria applied to evaluate eligibility and possible adverse effects are presented in 36 CFR 60.4. The evaluation is carried out by the lead agency in consultation with the SHPO, with input from professional archaeologists/historians, Native Americans, and other concerned parties. The process normally includes a Needs Determination, a preliminary review of several factors and consultations to determine the need to conduct a more comprehensive survey, the Cultural Resource Survey.

Porter-Cologne Water Quality Control Act (California Water Code) and the Integrated Waste Management Act

Changes in postclosure land use for the landfill that may affect public health and safety would be subject to the provisions of this regulation. Closure and postclosure maintenance plans ensure that landfill closure and postclosure maintenance and the eventual reuse of disposal sites will conform to state performance standards and minimum substantive requirements. The Disposal Site Standards for Closure and Postclosure regulations apply to closed landfills proposing new postclosure activities that may jeopardize the integrity of the site or pose a potential threat to public health and safety (14 CCR 17760.b.2). The minimum substantive standards for the closure include final cover, postclosure monitoring, monitoring of specific chemical constituents and land use restrictions for landfill site. Modification or changes to the closure and postclosure maintenance plans would be submitted to the San Francisco Region of the RWQCB and the CIWMB for approval. Approval of the plan modification would be obtained before making any changes to the landfill cap.

Coastal Zone Management Act

The federal Coastal Zone Management Act authorizes the National Oceanic Atmospheric Administration to make grants to states to develop coastal zone management programs in order "to preserve, protect, develop and where possible, to restore or enhance the resources of the nation's Coastal Zone...." Each coastal management plan must identify coastal zone boundaries, define permissible land and water uses within the coastal zone, inventory and designate areas of particular concern within the coastal zone, identify means by which the state proposes to exert control over land and water uses, establish guidelines for priorities of uses with particular areas, and describe the organizational structure proposed to implement the management program.

Consequently, California promulgated the California Coastal Act requiring each local coastal jurisdiction to prepare a local coastal program, consisting of a land use plan and an implementation program. The Monterey County Coastal Implementation Plan was certified on January 12, 1988.

Federal lands are excluded from the Coastal Zone Management Act. Under the federal Coastal Zone Management Act, "The boundary of a State's coastal zone must exclude lands owned, leased, held in trust… [by the Federal Government]" (15 CFR 923.33.a). However, federally conducted activities on excluded lands that have spillover impacts on non-excluded lands, water use, or natural resources of the coastal zone will require a consistency determination. The requirements for consistency determinations are established in the NOAA regulations (15 CFR 930 et seq).

Executive Order 13007 Indian Sacred Sites

Executive Order 13007 directs federal land (any land or interests in land owned by the United States, including leasehold interests held by the United States, except Indian trust lands) managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites (any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe [an Indian or Alaska Native tribe, band, nation, Pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to Public Law No. 103-454, 108 Stat. 4791, an "Indian" refers to a member of such an Indian tribe] or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion) provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

The American Indian Religious Freedom Act (42 U.S. Code Section 1996)

The American Indian Religious Freedom Act established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites.

The Native American Graves Protection and Repatriation Act (25 U.S. Code Sections 3001– 3013)

The Native American Graves Protection and Repatriation Act requires consultation with Native American Tribes prior to excavation or removal of human remains and certain objects of cultural importance. This act requires that if a discovery occurred in connection with an activity including, but not limited to, construction, the person shall cease the activity in the area of discovery, make a reasonable effort to protect the items discovered before resuming such activity, and provide notice under this subsection. The head of the appropriate agency must then locate the appropriate federally recognized Indian tribe and determine the appropriate next course of action.

In the event that human remains are discovered during of this undertaking, the U.S. Army is responsible for complying with applicable laws, regulations, and standards pertaining to such discoveries. Such laws and standards include The Native American Graves Protection and Repatriation Act and its implementing regulation Title 43 CFR Part 10; the Advisory Council on Historic Preservation's Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects; California Health and Safety Code Section 7050.5; and California Public Resources Code Section 5097.98.

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7. CONSULTATION AND COORDINATION

7.1 Public Involvement

This section describes the public involvement activities that have occurred during the development of this document.

7.1.1 Public Scoping

On January 6, 2009, the U.S. Army published a NOI in the FR to prepare an EIS for the POM RPMP. The U.S. Army held two public scoping meetings to solicit input on the preparation of the EIS. The first meeting was held at the Stilwell Community Center at OMC on Tuesday January 27, 2009. The second scoping meeting was held at the Monterey Institute of International Studies in the City of Monterey on Wednesday January 28, 2009. Scoping comments were accepted during both scoping meetings and throughout the comment period, which ended on February 19, 2009. Verbal comments and five written comments were received from federal, state, and local agencies and the general public. The key issues arising during the scoping period were:

- Traffic impacts from increase in growth
- Preservation of open spaces
- Potential impacts to surrounding communities
- Potential aesthetic impacts of proposed alternatives
- Use of Green Buildings
- Storm water impacts
- Potential wastewater increases and system capacity
- Air quality impacts
- Vegetation and wildlife impacts

7.2 Agency Coordination

The U.S. Army solicited coordination early in the EIS process from various agencies and the public. Early coordination is considered to provide the best opportunity for meaningful input from other agencies. It allowed the U.S. Army to provide the public and agencies with essential project information and inform them of future opportunities for input. Additionally, some agencies have cooperative agreements to work closely with the functional groups within the POM Installation.

The following list presents the agencies involved in development of the EIS. Coordination efforts are ongoing and additional agencies may be consulted during project implementation.

- California State Historic Preservation Officer
- City of Monterey, Office of the Mayor
- City of Pacific Grove
- City of Seaside, Resource Management Services/Planning Division
- Monterey Bay Unified Air Pollution Control District, Planning and Air Monitoring Division
- U.S. Environmental Protection Agency, Region IX, Environmental Review Office
- U.S. Fish and Wildlife Service, Ventura Office

7.3 Distribution List

The following lists comprise federal, state, local, non-governmental organizations, and businesses that were notified of the proposed federal action.

7.3.1 Federal, State and Local Agencies

The following federal, state, and local agencies and federal cooperating agencies and public representatives were notified of the proposed action and will receive a copy of the document or a notice of the availability of the document (Table 7.3-1).

Table 7.3-1. Public Agencies Notified of Proposed RPMP Action

Department of the Army, Presidio of Monterey	Monterey Bay Unified Air Pollution Control District
U.S. Army, Installation Management Command West	Monterey County Health Department
17th Congressional District, Office of Congressman Sam Farr	Monterey County Water Resources Agency
15th Senate District	Monterey Peninsula Unified School District
Association of Monterey Bay Area Governments	Monterey Peninsula Water Management District
California Coastal Commission	Monterey Regional Water Pollution Control Agency
California Department of Fish and Game, Central Coast Region	Monterey Salinas Transit Agency
California Department of Parks and Recreation	Naval Post Graduate School, Director of Engineering
California Regional Water Quality Control Board	California State Historic Preservation Office
City of Del Rey Oaks	Transportation Agency of Monterey County
City of Marina	U.S. Army Corps of Engineers
City of Monterey	U.S. Environmental Protection Agency, Region IX
City of Pacific Grove	U.S. Fish and Wildlife Service, Ventura Office
City of Seaside	
County of Monterey	

7.3.2 Non-governmental Organizations and Businesses

The U.S. Army also contacted and coordinated with multiple non-governmental organizations and businesses in the preparation of this document. The following is a list of organizations that were notified of the proposed action and will receive notice of the availability of the document.

- California Native Plant Society
- Sierra Club, Ventana Chapter
- Pacific Gas and Electric Co., Watsonville Service Center
- San Jose Construction Co., Inc.
- California American Water Company

7.3.3 Document Availability

A copy of this document will also be available for review at the following public libraries:

- Monterey Public Library
  Civic Information Center
  625 Pacific Street
  Monterey, CA 93940-2821
  Tel: (831) 646-3932
- Seaside Public Library
  550 Harcourt Avenue
  Seaside, CA 93955
  Tel: (831) 899-2055

Additionally, the notice of availability and this document may be downloaded and reviewed at the official website for the Presidio of Monterey at: http://www.monterey.army.mil/dpw

Within forty-five (45) days from the notice of availability, comments to this document may be sent to Mr. Robert Guidi. Any questions or comments concerning the document may be sent to Mr. Guidi by email or fax.

- Attn: Robert Guidi
  U.S. Army Garrison, Presidio of Monterey
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8. LIST OF PREPARERS

8.1 List of Preparers

Table 8.1-1 presents the list of preparers for this EIS.

Table 8.1-1. List of Preparers	
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Gina Veronese, CDM Resource Economist • Socioeconomics • 6 years of experience in planning and economic analysis of development projects and programs	Jennifer Chen, P.E., Brown and Caldwell Civil Engineer • Water Supply • 8 years experience in water and wastewater planning and analysis
Stacy Porter, CDM Environmental Planner • Utilities and Public Services • 4 years of experience in environmental planning and water resources projects	Wellington Yee, Brown and Caldwell Regulatory Compliance Specialist • Hazardous, Toxic, and Radioactive Waste • 15 years of experience in NEPA documentation and hazardous waste/Superfund environmental documentation
Jennifer Jones, CDM Environmental Scientist • Biological Resources • 16 years of experience in biological resources	Hank Boucher, CDM Environmental Planner • Noise • 31 years of experience in noise assessments
Jeffrey Key, P.E., CDM Transportation Engineer • Traffic and Transportation Analysis • 17 years of experience in urban transportation/traffic planning and engineering	Karl Hopfensperger, CDM Geologist • Geology and Soils • 5 years of experience in geology
Gwendolyn Pelletier, CDM Air Quality Scientist • Air Quality • 10 years of experience in air quality resources	Chris Park, CDM Environmental Planner • Land Use, Cultural Resources, Recreation, Population and Housing • 3 years of experience in environmental planning and water resources projects
Asami Tanimoto, CDM Air Quality Scientist • Air Quality • 3 years of experience in air quality resources	

8.2 List of Contributors

Table 8.2-1 presents the list of contributors for this EIS.

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APPENDIX A: REVISED WATER IMPACT ANALYSIS

Technical Memorandum

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A Joint Venture

Prepared for: U.S. Army Corps of Engineers and Presidio of Monterey

Project Title: Presidio of Monterey Real Property Master Plan, Environmental Impact Statement

Project No: 135405-600

Technical Memorandum No. 1

Subject: Revised Water Impact Analysis

Date: November 9, 2010

To: Shellie Sullo, U.S. Army Corps of Engineers Project Manager

From: Bryan Plude, P.E., Brown and Caldwell Project Manager

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Limitations:

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1. INTRODUCTION

Potable water for the Presidio of Monterey Installation (POM Installation) in Monterey, California is predominantly from groundwater supplied from two aquifers (Carmel Valley and Salinas Valley Basins) and provided by two water purveyors (California American Water Company and Marina Coast Water District). The Monterey region has limited water sources and available supplies are restricted by adjudication of the Seaside Area Subbasin of the Salinas Valley Basin and the state-mandated restrictions on diversion from the Carmel Valley Basin. These conditions have led to a complex and politically sensitive water environment.

Future development planned for the POM Installation is constrained by this limited water availability. Short- and long-range growth alternatives to meet the installation's mission statement are described in the POM Installation's 2010 Real Property Master Plan (RPMP). The alternatives reflect that the two sites within the POM Installation, the Presidio of Monterey (POM) and the Ord Military Community (OMC), have different water needs and water supplies. A corresponding Environmental Impact Statement (EIS) is being prepared to evaluate the environmental impacts of the alternatives in the RPMP. A copy of this memorandum will be included with the EIS.

Because POM is home to the Defense Language Institute Foreign Language Center (DLIFLC), existing and future facilities are mainly for the teaching, care, and housing of students and their families. The POM is within the jurisdiction of the Monterey Peninsula Water Management District and through an agreement, a total of 199.365 acre feet per year (AFY) of water are allocated to the POM. An additional 20.6 AFY of water was permitted for construction of four buildings, resulting in a total of 220 AFY of water available to the POM. POM water usage has also decreased by 27.912 AFY through replacement of older washers to high efficiency clothes washers in 2005. The site is largely built out and currently has about 36.4 AFY of uncommitted water credits available for new construction beyond the 2011 facilities. Planned construction at the POM under Alternative 1 cannot be realized unless additional reliable water supplies are secured.

The OMC is what remains of the former Fort Ord after the Base Realignment and Closure Act (BRAC) of 1990 transferred ownership of much of the Fort Ord property (and its corresponding water credits) to nearby cities. Of the 6,600 AFY allocated to former Fort Ord, 1,691 AFY were retained by the OMC and the remainder transferred to the local cities by the Fort Ord Reuse Authority (FORA). An additional 114 AFY were later transferred from the OMC through the City of Seaside Land Swap Agreement, leaving OMC with a total of 1,577 AFY of water rights. As compared to the POM, the OMC has a larger potential for development because its larger amount of available water can be readily used to meet future demands.

Anticipated water impacts from the RPMP development alternatives, as described in Section 3, were evaluated using reports and studies compiled from the POM Installation Directorate of Public Works (DPW), local water agencies, and the California Department of Water Resources (DWR). The analysis included reviews of the existing and projected water usage, water availability, and conservation and reuse opportunities. This memorandum presents the major findings from evaluating the source documents together with the development alternatives in the RPMP.

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2. EXISTING CONDITIONS

The existing water sources at the POM and OMC and their corresponding legal constraints are described here.

2.1 Population

The existing and projected populations for the POM Installation are shown in Table 2-1. An estimated 10% increase is anticipated from 2010 to 2011 followed by a slight decrease in population from 2012 and beyond. The population projections are made up of military personnel assigned to the POM Installation and do not include military dependents or civilian contractors and employees. In addition to an expected increase in student population, a U.S. Army initiative for a smaller student-to-teacher ratio would also increase the number of faculty. The projected population is estimated to stabilize around 2012, while construction of new facilities is expected to occur beyond that into 2030.

Future water consumption was estimated based on the type and size of the planned facilities (discussed in Section 3) instead of demand factors based on total population. Because population estimates were available, the estimated 0.4% growth rate assumed in the 2006 water needs assessment (Malcolm Pirnie, 2006) was not used.

Table 2-1. Projected Population

Fiscal Year	Total Population (1)
2010	9,570
2011	10,485
2012	10,086
2013 – 2020	10,088

Source: 2009 Army Stationing and Installation Plan (ASIP) values, Bob Guidi (POM DPW, March 2009).
(1) Military population living at the POM, OMC, or off-post.

2.2 Water Sources

Three types of water sources (surface water, groundwater, and stormwater) are available to meet demands at the POM and OMC, as described in this section.

Two regional water management agencies have jurisdiction over the water supplies for the POM and OMC. The Monterey County Water Resources Agency (MCWRA) regulates surface and groundwater drawn from the Salinas River and Salinas Valley Basin. The Monterey Peninsula Water Management District (MPWMD) is responsible for water drawn from the Carmel River and Carmel Valley Basin, as well as groundwater pumped from the Seaside Area Subbasin.

2.2.1 Surface Water

Permanent surface water features, like streams and lakes, are not present on the POM or OMC. The nearest feature to the POM is one intermittent stream along the POM's southeastern boundary. Because of the dune characteristics at the OMC, infiltration rates are high in the sand and gravelly soils and surface water runoff is minimal. Onsite surface water is not a stable and reliable direct water source for the POM or OMC.

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2.2.2 Groundwater

Groundwater pumped from the two groundwater basins (Salinas Valley Basin and Carmel Valley Basin) provides almost all of the potable water to the Monterey region. The Carmel Valley Basin is located southwest of the POM, while the OMC is located above the Seaside Area Subbasin and near the adjacent 180/400 Foot Aquifer Subbasin of the Salinas Valley Basin. Instead of direct pumping from the aquifers via onsite wells, POM and OMC receive water services from two purveyors, the California American Water Company (Cal Am) and the Marina Coast Water District (MCWD). Cal Am provides water to customers within the MPWMD, which includes the POM. MCWD supplies water to the OMC.

Cal Am's supply network includes groundwater wells installed along the Carmel River and wells drawing from the Seaside Area Subbasin. Of the total 2006 usage by MPWMD customers (18,791 AFY), Cal Am supplied three-quarters of this total (14,663 AFY) through mostly groundwater, with only about 40 AFY from surface water diversions (USACE, 2007). POM usage accounts for less than 2% of Cal Am's total supply.

Ownership, and with it, operation, maintenance, and development, of the water facilities at the OMC was transferred to MCWD by FORA as part of the BRAC process. Water supply to MCWD is primarily from groundwater wells drawing from the Salinas Valley Basin. However, MCWD works with both the MCWRA and MPWMD because MCWD draws water from both the Salinas Valley Basin and the Seaside Area Subbasin. MCWD pumped 4,685 AFY in 2004 (USACE, 2007), which is less than 1% of the approximate annual withdrawal (500,000 AFY) from the groundwater basin (BBA, 2005). Of this, OMC usage in 2005 accounted for approximately one-fifth of the total MCWD supply.

Both the Salinas Valley and Carmel Valley groundwater basins are overdrawn, leading to significant restrictions to current and future water supplies. This has encouraged cooperation between agencies to develop new regional supplies. The legal constraints, such as basin adjudication, to the groundwater supply are discussed further in Section 2.3. Regional water projects are discussed in Section 4.

2.2.3 Stormwater

Most stormwater at the POM and OMC is collected via the storm drain systems and discharged into the Pacific Ocean or Monterey Bay. Stormwater, however, could be collected and reused to reduce the potable water demand. Rainwater harvesting systems that collect runoff from the roofs and courtyard decks and then stores it in cisterns can be installed in buildings. Because rainfall is seasonal, the system could be sized to store a sufficient quantity of water for use in a building's low-flow toilets throughout the year. The rain collection system will be installed in the fiscal year (FY) 2011 general instruction building (GIB).

2.3 Legal Constraints

The Seaside Area Subbasin Adjudication and the California State Water Resources Control Board (SWRCB) mandate have restricted the amount of water allowed to be drawn from the Salinas River and Carmel River systems, respectively. These regulatory limitations have significantly restricted the water supply available for current and future demands in the Monterey area.

2.3.1 State Water Resources Control Board Order 95-10

The Carmel Valley Groundwater Basin (DWR Basin #3-7) is narrow and shallow, with relatively permeable alluvial deposits that are unconfined and only 50 to 100 feet thick (DWR, 2003). As a result, groundwater pumping has a rapid and significant impact on minimum surface water flows and the fishery resources in the Carmel River (surface water and groundwater are interconnected). To address complaints of over-pumping filed by Carmel River Steelhead Association, Residents Water Committee, Sierra Club, and the California Department of Parks & Recreation, the SWRCB adopted Order 95-10 in 1995. Order 95-10 stated that Cal Am was diverting 10,730 AFY from the Carmel River without a valid water right. Consequently, Cal Am

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was required to reduce its pumping by that amount, which was 76% of Cal Am's annual usage (14,106 AFY) in the 1980s (AMBAG, 2002). Cal Am was thus forced to find an alternate water source.

In the interim, Cal Am has implemented water conservation measures to reduce demand and has increased its pumping from the Seaside Area Subbasin to supplement its water supply. However, the Seaside Area Subbasin has since been adjudicated and pumping from that aquifer restricted. Cal Am has been exploring potential regional water projects in order to develop a new reliable water supply for its customers, one of which is the POM. At the forefront is the Coastal Water Project, which would produce 11,730 AFY; 10,730 AFY to replace Cal Am's Carmel River diversions and 1,000 AFY to replace its Seaside Area Subbasin diversions. This regional project is described further in Section 4.

2.3.2 Seaside Area Subbasin Adjudication

The State of California is not authorized by the California Water Code to manage groundwater (DWR, 2004). In California, landowners share ownership of subsurface water as tenants in common. The distribution is based on the correlative rights doctrine, which limits a landowner's right to a common groundwater source to a reasonable share, which is typically based on how much of the overlying land the landowner possesses. In some basins, the amount of water that can be extracted under that correlative right has been defined by a court. In other basins, where each landowner's correlative right has not been defined, groundwater may be managed by agencies that obtain their authority from the Water Code, or there may be little or no management. Landowners or other parties overlying some groundwater basins in California have turned to the courts to settle disputes over how much groundwater can rightfully be extracted by each landowner. The litigants pay for court-directed studies to arrive at an equitable distribution of the groundwater available each year. In the court decision, the court appoints a Watermaster to oversee the court judgment and to specify how much each party can extract. The Seaside Area Subbasin (DWR Basin #3-4.08) is an example of a basin under court adjudication.

The Seaside Area Subbasin was adjudicated in 2006 (Case No. M66343) due to overdraft conditions in the Salinas Valley Basin (AMBAG, 2002). Long-term pumping to meet demands in the Monterey area had caused a long-term decline in water levels, which resulted in seawater intrusion in some groundwater aquifers of the Salinas Valley Basin. The conditions were exacerbated when Order 95-10 limited the available supply from the Carmel Valley Basin, resulting in increased production in the nearby Seaside Area Subbasin (AMBAG, 2002). The adjudication decision mandated that groundwater pumping had to decrease until the defined operating yield of the subbasin (5,600 AFY) reached the natural "safe yield" of 3,000 AFY (MIRWMP, 2007). A Watermaster comprised of 9 local entities was formed to oversee the basin. Regional water projects have been developed for the Salinas Valley Basin, as discussed in Section 4.

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3. EXISTING AND PROJECTED WATER USAGE

Water needs for the development alternatives presented in the 2010 RPMP were estimated based on information provided in the 2006 Final Water Needs Assessment (Malcolm Pirnie, 2006). The water needs were updated using the current construction schedule and facilities plan as well as with the water conservation savings determined by MPWMD. POM and OMC water consumption and availability data up to 2005 were summarized in the water needs assessment. Water usage was updated to current 2010 conditions using recent information for their 2005 through 2009 building projects. Projected demands for the short-range (FY 2011 – 2015) and long-range (FY 2016 – 2030) were then evaluated, as discussed in this section.

Because only programmatic level details are available for the long-range projects, only rough water needs estimates could be made for the new facilities at the POM and OMC. RPMP proposed projects (e.g., new barracks and offices) that are anticipated to increase or decrease the water demands were analyzed. Projects such as fence upgrades and building renovations were not included as they would not affect the water demands. More detailed water projections and additional environmental documents evaluating the potential impacts would need to be prepared in the future as plans for the long-range projects progress.

3.1 Existing Water Usage

Water use at the POM has decreased since 1976 largely as a result of conservation measures and water management programs. Available demand data from 1976 to 2005 showed that usage varied from 197 to 307 AFY. Demands vary seasonally, with consumption highest in the summer and lowest in the winter. Total demand during FY 2005 (198.6 AF), a non-drought year, was the second lowest within the 30-year data period. Water use that year was higher only than the FY 1991 total when drought restrictions were in effect. The POM's demand decreased further in 2005 with the replacement of hundreds of commercial and regular clothes washers with high efficiency washers (MPWMD, 2010a), as shown in Table 3-1. Combined with the increased demand from construction of a dental clinic in 2005 and two new GIBs in 2008 and 2009 (Table 3-2), the estimated demand under existing conditions totaled about 183.6 AFY, as shown in Table 3-3. Because 2005 consumption was significantly lower than previous years, more recent usage data should be reviewed before detailed water projections are developed for the proposed projects.

Table 3-1. Existing Conditions – Water Savings

Site	Replacement Year	Facility	Size	Water Reduction Multiplier	Demand Reduction (AFY)
POM	2005	Commercial clothes washers replaced with high efficiency clothes washers	233 washers	0.117 AFY/washer	(27.172)
POM	2005	Clothes washers replaced with high efficiency clothes washers	74 washers	0.01 AFY/washer	(0.74)
				POM Subtotal	**(27.912)**
OMC	NA	None	NA	NA	NA
				OMC Subtotal	**0**

Source: Documentation of Water Use Credit for High Efficiency Clothes Washers, Presidio of Monterey (MPWMD, 2010a).

Note: Existing conditions = July 2010

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Table 3-2. Existing Conditions – Demand above 2005 Usage					
Site	**Construction Year**	**Facility**	**Size**	**Water Use Multiplier**	**Water Need (AFY)**
POM	2005	Dental clinic	11,001 SF	0.0002 AFY/SF	2.2
POM	2008	General instruction building (FY 2008 GIB)	100,000 SF	0.00007 AFY/SF	7.0
POM	2009	General instruction building (FY 2009 GIB)	53,000 SF	0.00007 AFY/SF	3.7
				POM Subtotal	**12.9**
OMC	2009	RCI – Kidney replacement units	392 units	0.5 AFY/residence	196
OMC	2009	RCI – Southern Fitch market rate units	188 units	0.5 AFY/residence	94
OMC	2009	RCI – Upper Stillwell workforce housing	120 units	0.5 AFY/residence	60
OMC	2009	RCI – recreation center (1)	22,625 SF	0.00003 AFY/SF	0.7
OMC	2009	RCI – recreation center pool	3,375 SF	0.0002 AFY/SF surface area	0.7
				OMC Subtotal	**351.4**

Source: Final Water Needs Assessment (Malcolm Pirnie, 2006); includes MPWMD water use multipliers.

(1) Calculation error in Table 3-6 of water needs assessment. The recreation center water demand of 6.8 AFY should be 0.679 AFY; corrected amount used here.

Table 3-3. Existing Conditions – Water Availability Summary		
Type	**POM (AFY)**	**OMC (AFY)**
2005 annual usage (1)	198.6	869
New demand (2006 - 2010):		
Dental clinic and GIBs (FY 2008 and FY 2009)	12.9	0
RCI housing and facilities	0	351.4
Demand reduction (water savings) (2)	(27.9)	0
Total existing demand	**183.6**	**1,220.4**
Water rights (3)	199.4	1,691
Water permits (4)	20.6	0
Water transfer (City of Seaside Land Swap)	0	(114)
Total water available	**220**	**1,577**
Excess or shortfall (5)	**36.4**	**356.6**

(1) Final Water Needs Assessment (Malcolm Pirnie, 2006).

(2) From high efficiency clothes washer replacement in 2005.

(3) POM allocation from MPWMD. OMC water rights retained from former Fort Ord.

(4) POM water permits for dental clinic and three GIBs (FY 2008, 2009, and 2011). FY 2011 GIB construction is included in the No Action Alternative.

(5) Excess or shortfall = Water available - Water demand

Water at the POM is supplied by Cal Am within the jurisdiction of the MPWMD. The total water supply allocated to the POM by the MPWMD was 199.365 AFY before water permits were approved for the dental clinic and three GIBs. The permits increased the total available supply at the POM to 220 AFY (Table 3-3). The FY 2008 and FY 2009 GIBs have been completed and put into use. The third GIB, originally slated for FY 2010, was rescheduled to FY 2011 and would be included in the No Action Alternative.

Water service at the OMC was transferred when Fort Ord was closed and water is now provided by MCWD. It is difficult to track historical usage at the OMC since most customers are unmetered and because the DPW stopped collecting family housing demand data in 2003. Total OMC consumption in 2005 was estimated to be 869 AFY, which comprised of usage from residential (763.5 AFY), Operations and Maintenance facilities

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(40.7 AFY), Defense, Finance and Accounting Services (62.26 AFY), and the U.S. Army Reserve Center (2.62 AFY). Since then, the Residential Communities Initiative (RCI) has replaced some existing family housing and constructed additional housing and recreation facilities to support growth at the OMC. Water commitments for RCI projects total about 1,115 AFY, but a large portion (763.5 AFY) was from housing replacement and was not considered new demand. Only about one-third of the RCI total (351.4 AFY) was attributed as new demand (Table 3-2). The OMC retained 1,691 AFY of water rights from the 6,600 AFY held by Fort Ord. Of this, 114 AFY was transferred as part of the City of Seaside Land Swap Agreement, which reduced the amount of water available at the OMC to 1,577 AFY. There are approximately 36.4 AFY and 356.6 AFY of water currently available to meet the future demands at the POM and OMC, respectively (Table 3-3).

3.2 No Action Alternative

The No Action Alternative considers the effects to water supply and demand that would occur without the future development of Alternatives 1 or 2. This would include facility construction or demolition that is already planned and approved and that would move forward at the POM or OMC in the short-term. One new GIB is slated for FY 2011 at the POM that would increase water usage by about 7.7 AFY. This project has a secured water permit as discussed in Section 3.1. There are no projects planned at the OMC under the No Action Alternative so conditions would remain the same as under existing conditions. The estimated new water demand for the POM is listed in Table 3-4 and a summary of water availability at the POM and OMC under the No Action Alternative is provided in Table 3-5.

Table 3-4. No Action Alternative – Water Commitments

Site	Construction Year	Facility	Size	Water Use Multiplier	Water Need (AFY)
POM	2011	General instruction building (FY 2011 GIB)	110,000 SF	0.00007 AFY/SF	7.7
				POM Subtotal	**7.7**
OMC	NA	None	NA	NA	NA
				OMC Subtotal	**0**

Source: Final Water Needs Assessment (Malcolm Pirnie, 2006); includes MPWMD water use multipliers.
Notes: FY 2011 GIB re-scheduled from FY 2010.

Table 3-5. No Action Alternative – Water Availability Summary

Type	POM (AFY)	OMC (AFY)
Water demand, existing conditions (2010)	183.6	1,220.4
New demand:		
Short-range construction (2011 – 2015)	7.7	0
Long-range construction (2016 – 2030)	0	0
Total water demand, No Action Alternative	**191.3**	**1,220.4**
Water available	220	1,577
Excess or shortfall (1)	**28.7**	**356.6**

(1) Excess or shortfall = Water available - Water demand

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3.3 Alternative 1: POM-centric

Alternative 1 of the 2010 RPMP places all future primary and support facilities for the DLIFLC within the POM boundaries to maintain a central campus-like atmosphere. The new buildings would include barracks, classrooms, and recreation and training centers and have an estimated total water demand of 67.3 AFY, as shown in Table 3-6. Future construction at the OMC would be made up of long-range projects that consist of community and other support centers and have a total water need of about 27.2 AFY. Water demands were projected using the proposed building size and a water multiplier based on building type. Because these are only programmatic level estimates, additional detailed analyses and environmental documents would be needed for the long-range projects once final designs are determined.

Table 3-6. Alternative 1 (POM-centric) – Planned Facilities and Water Demands

Site	Construction Year	Facility	Size	Water Use Multiplier	Water Need (AFY)
POM	2011	Barracks Phase I - barracks	160 rooms	0.04 AFY/room	6.4
POM	2011	Barracks Phase I - administrative facility	18,300 SF	0.00007 AFY/SF	1.3
POM	2011	Barracks Phase I - dining facility	474 seats	0.02 AFY/seat	9.5
POM	2015	Barracks Phase IV	200 rooms	0.04 AFY/room	8.0
POM	Long-range	Joint services training center	12,600 SF	0.00007 AFY/SF	0.9
POM	Long-range	Joint services headquarters building	11,900 SF (1)	0.00007 AFY/SF	0.8
POM	Long-range	Indoor swimming pool	10,000 SF	0.0002 AFY/SF surface area	2.0
POM	Long-range	Barracks Phase II	180 rooms	0.04 AFY/room	7.2
POM	Long-range	Barracks Phase III	160 rooms	0.04 AFY/room	6.4
POM	Long-range	General instruction building	25,000 SF	0.00007 AFY/SF	1.8
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
				POM Subtotal	**67.3**
OMC	Long-range	Emergency services center	33,141 SF	0.0002 AFY/SF	6.6
OMC	Long-range	Veterans America clinic	100,000 SF	0.0002 AFY/SF	20
OMC	Long-range	Teen center	11,325 SF	0.00003 AFY/SF	0.3
OMC	Long-range	Stilwell Community Center - café	1,000 SF	0.0002 AFY/SF	0.2
OMC	Long-range	Stilwell Community Center - fitness center	1,000 SF	0.00007 AFY/SF	0.1
				OMC Subtotal	**27.2**

Source: Final Water Needs Assessment (Malcolm Pirnie, 2006); includes MPWMD water use multipliers.
Notes: Long-range = 2016 to 2030
(1) Facility size determined from map of alternatives in POM RPMP (POM, 2010).

Current water credits at the POM, the 28.7 AFY available under the No Action Alternative conditions, would be sufficient to meet only the annual baseline demand plus the estimated needs of the short-term projects. Existing outdated barracks at the POM are scheduled to be razed to provide needed space for the new facilities and to free up about 31.9 AFY of water credits for future use (Table 3-7). However, even with building demolition, the limited water available at the POM would be insufficient to meet the build-out demands of the planned long-range facilities. The overall shortfall at the POM is estimated at 6.7 AFY, as shown in Table 3-8. Existing water credits appear sufficient to meet the projected needs of the planned OMC facilities. New development would increase demands, but an estimated 329.4 AFY of water credits would still be available beyond the proposed Alternative 1 projects (Table 3-8).

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Table 3-7. Alternative 1 (POM-centric) – Facility Demolition and Demand Reduction					
Site	**Demolition Year**	**Facility**	**Size**	**Water Use Multiplier**	**Demand Reduction (AFY)**
POM	2011	Barracks Building 629 - barracks	172 rooms	0.04 AFY/room	(6.9)
POM	2011	Barracks Building 629 - administrative facility	35,020 SF	0.00007 AFY/SF	(2.5)
POM	Long-range	Barracks Building 622	201 rooms	0.04 AFY/room	(8.0)
POM	Long-range	Barracks Building 627 - barracks	264 rooms	0.04 AFY/room	(10.6)
POM	Long-range	Barracks Building 627 - dining facility	199 seats	0.02 AFY/seat	(4.0)
				POM Subtotal	**(31.9)**
OMC	NA	None	NA	NA	NA
				OMC Subtotal	**0**

Sources: Demolition year from POM RPMP (POM, 2010).
Buildings 627 and 629 facility sizes and water credits from MPWMD letter to U.S. Army (MPWMD, 2010b).

Table 3-8. Alternative 1 (POM-centric) – Water Availability Summary		
Type	**POM (AFY)**	**OMC (AFY)**
Baseline demand, No Action Alternative	191.3	1,220.4
New demand:		
Short-range construction (2011 – 2015)	25.2	0
Long-range construction (2016 – 2030)	42.2	27.2
Demand reduction, facility demolition	(31.9)	0
Total water demand, Alternative 1	**226.7**	**1,247.6**
Water available	220	1,577
Excess or shortfall (1)	**(6.7)**	**329.4**

(1) Excess or shortfall = Water available - Water demand

3.4 Alternative 2: POM and OMC

Under Alternative 2, future development would be divided between the POM and OMC, allowing the U.S. Army to take advantage of available water credits at the OMC to meet anticipated water demands. New buildings would be placed logically within the existing land use areas to maintain a campus-like atmosphere at the POM. This alternative would also take advantage of the large parcels available at the OMC and allow the OMC to be initiated as a defense language learning center. Short-range projects planned for the POM would be unchanged, but some long-range projects would be relocated. Barracks Phase II and Phase III as well as the three long-range GIBs that were originally planned for the POM would be transferred to the OMC. The remaining buildings, such as the recreation and training centers, headquarters building, and support facilities, would be unchanged from Alternative 1. A list of the buildings and their estimated water needs under Alternative 2 is presented in Table 3-9. As required for Alternative 1, detailed water analyses and environmental documents would also be needed for the projects under Alternative 2 once the final designs are determined.

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Table 3-9. Alternative 2 (POM and OMC) – Planned Facilities and Water Demands					
Site	**Construction Year**	**Facility**	**Size**	**Water Use Multiplier**	**Water Need (AFY)**
POM	2011	Barracks Phase I - barracks	160 rooms	0.04 AFY/room	6.4
POM	2011	Barracks Phase I - administrative facility	18,300 SF	0.00007 AFY/SF	1.3
POM	2011	Barracks Phase I - dining facility	474 seats	0.02 AFY/seat	9.5
POM	2015	Barracks Phase IV	200 rooms	0.04 AFY/room	8.0
POM	Long-range	Joint services training center	12,600 SF	0.00007 AFY/SF	0.9
POM	Long-range	Joint services headquarters building	11,900 SF (1)	0.00007 AFY/SF	0.8
POM	Long-range	Indoor swimming pool	10,000 SF	0.0002 AFY/SF surface area	2.0
POM	Long-range	General instruction building	25,000 SF	0.00007 AFY/SF	1.8
				POM Subtotal	**30.6**
OMC	Long-range	Emergency services center	33,141 SF	0.0002 AFY/SF	6.6
OMC	Long-range	Veterans America clinic	100,000 SF	0.0002 AFY/SF	20
OMC	Long-range	Teen center	11,325 SF	0.00003 AFY/SF	0.3
OMC	Long-range	Stilwell Community Center - café	1,000 SF	0.0002 AFY/SF	0.2
OMC	Long-range	Stilwell Community Center - fitness center	1,000 SF	0.00007 AFY/SF	0.1
POM	Long-range	Barracks Phase II	180 rooms	0.04 AFY/room	7.2
POM	Long-range	Barracks Phase III	160 rooms	0.04 AFY/room	6.4
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
POM	Long-range	General instruction building	110,000 SF	0.00007 AFY/SF	7.7
				OMC Subtotal	**63.9**

Source: Final Water Needs Assessment (Malcolm Pirnie, 2006); includes MPWMD water use multipliers.
Notes: Long-range = 2016 to 2030
(1) Facility size determined from map of alternatives in POM RPMP (POM, 2010).

Fewer existing buildings would be demolished at the POM under this alternative as compared to Alternative 1 because there are fewer space and water requirements for completing the Alternative 2 projects. Approximately 17.4 AFY of water credits would become available after the barracks buildings are demolished, as shown in Table 3-10.

Table 3-10. Alternative 2 (POM and OMC) – Facility Demolition and Demand Reduction					
Site	**Demolition Year**	**Facility**	**Size**	**Water Use Multiplier**	**Demand Reduction (AFY)**
POM	2011	Barracks Building 629 - barracks	172 rooms	0.04 AFY/room	(6.9)
POM	2011	Barracks Building 629 - administrative facility	35,020 AF	0.00007 AFY/SF	(2.5)
POM	Long-range	Barracks Building 622	201 rooms	0.04 AFY/room	(8.0)
				POM Subtotal	**(17.4)**
OMC	NA	None	NA	NA	NA
				OMC Subtotal	**0**

Sources: Building 629 facility sizes and water credits from MPWMD letter to U.S. Army (MPWMD, 2010b).

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Dividing the new construction between the POM and OMC appears to balance the projected demands with the water available in both the short- and long-range, as shown in Table 3-11. An estimated 15.4 AFY of water would still be available at the POM for development beyond 2030 once water credits are freed after building demolition. Under this alternative, approximately 292.7 AFY of water would remain available beyond 2030 at the OMC. However, these are only programmatic level estimates since the number of facilities and the facility sizes for most of the long-range projects have not been finalized by the U.S. Army. Actual water demands may differ from these projections; an overall shortfall is possible. Therefore, water opportunities should still be pursued by the U.S. Army while the long-range projects are being developed.

Table 3-11. Alternative 2 (POM and OMC) – Water Availability Summary

Type	POM (AFY)	OMC (AFY)
Baseline demand, No Action Alternative	191.3	1,220.4
New demand:		
Short-range construction (2011 – 2015)	25.2	0
Long-range construction (2016 – 2030)	5.5	63.9
Demand reduction, facility demolition	(17.4)	0
Total water demand, Alternative 2	**204.6**	**1,284.3**
Water available	220	1,577
Excess or shortfall (1)	**15.4**	**292.7**

(1) Excess or shortfall = Water available - Water demand

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4. WATER OPPORTUNITIES

Water supplies in the Monterey area are limited. In order to implement the developments in Alternative 1 or Alternative 2 of the RPMP, the U.S. Army needs to actively pursue ways to increase supplies. Regional and site specific water opportunities available to the POM and OMC are briefly discussed in this section.

4.1 Potential New Sources

Potential water sources available to the POM and OMC include recycled water, groundwater, and desalinated water. A description of some proposed projects are presented below.

4.1.1 Regional Water Supply Projects

Multiple regional water supply projects are proposed for the Monterey area, many of which involve desalinating seawater. While most of these projects are only in the development stages, buying allocation in one or more of the regional projects may be the best way to ensure a reliable long-term supply for the POM and OMC. For example, the water purveyors for the POM and OMC (Cal Am and MCWD, respectively) are directly involved in two desalination projects, as described below. It is possible, though, that future water supply from many regional projects may already be partially or entirely spoken for.

Cal Am – Coastal Water Project

Cal Am's proposed Coastal Water Project (CWP) was developed to offset a large portion of Cal Am's Carmel Valley Basin and Seaside Area Subbasin diversions. The seawater to potable water desalination plant would generate 11,730 AFY of water (Cal Am, 2005). The plant would treat cooling water from the Moss Landing Power Plant and convey the treated water in a 19 mile pipeline to the existing Cal Am distribution system. The pipeline would have a turnout to aquifer storage and recovery (ASR) facilities located about 4 miles inland near the City of Seaside. The new ASR facilities would store water during the winter for release in the summer to meet peak demands.

Cal Am has submitted its California Environmental Quality Act environmental documentation and is applying for county permits to build a pilot plant (DWR, 2008). Cal Am's proposed project is competing with another proposed desalination plant for some of the same power plant infrastructure. Pajaro-Sunny Mesa Community Services District with Poseidon Resources proposed a 22,400 to 28,000 AFY desalination plant to be located at the former National Refractories site, which is adjacent to the power plant (DWR, 2008). The Pajaro facility is also seeking county permits to build a pilot plant (DWR, 2008).

The CWP was originally designed to replace 11,730 AFY of Cal Am's existing groundwater diversions (Cal Am, 2005), which would mean that "new" water would not be available for customers such as the POM. However, recent documentation showed that an 11 – 12 million gallon per day (12,320 – 13,440 AFY) desalination plant is now proposed (DWR, 2008), which indicates that the plant capacity has not yet been finalized. If this is true, additional water may be available to the POM. The U.S. Army is encouraged to look into this project and gauge whether a CWP water supply would be a viable water opportunity for the POM. The CWP is anticipated to be online around 2015, but exact timing is uncertain.

MCWD – Regional Urban Water Augmentation Project

The MCWD proposed a Regional Urban Water Augmentation Project (RUWAP) to produce water for its customers in the City of Marina and the former Fort Ord, which includes the OMC. Three alternatives were evaluated in the project's environmental impact report, with the "hybrid alternative" endorsed by the MCWD and FORA boards of directors in June 2005 (BBA, 2005). Under the hybrid alternative, RUWAP would produce 1,500 AFY of recycled water and 1,500 AFY of desalinated water (BBA, 2005). Approximately 2,700 AFY would be allocated to MCWD with the remaining 300 AFY provided to meet water demands on the

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Monterey Peninsula (BBA, 2005). The RUWAP facilities are anticipated to come online by about 2015, with FORA allocating the supplies as the water materializes (BBA, 2005).

Wastewater generated in the Monterey area, including at the POM and OMC, is collected and treated to secondary standards at the Monterey Regional Water Pollution Control Agency (MRWPCA) regional treatment plant. A portion of the effluent is conveyed to the adjacent Salinas Valley Reclamation Plant (SVRP), with the remaining effluent flow discharged via an ocean outfall. Although the SVRP capacity is 33,000 AFY, less than one-half is utilized due to lack of storage; only 13,000 AFY of recycled water was generated in 2003 (BBA, 2005). The RUWAP would allow approximately 1,500 AFY of additional recycled water to be generated and used to meet MCWD's recycled water demands without having to construct new seasonal storage facilities (BBA, 2005).

MCWD owns a small, currently idle seawater desalination plant. Under the RUWAP, MCWD proposes to replace this plant with a larger one that can produce 1,500 AFY of potable water (BBA, 2005). The treatment plant would consist of a seawater intake well and a reverse osmosis system.

Although most of this project water is already reserved for MCWD customers, it is unclear how much, if any, would available to the OMC above the U.S. Army's existing water rights. If the U.S. Army wants to consider buying additional water from the MCWD in the future, possibly in conjunction with a water transfer from the OMC to the POM, the U.S. Army is encouraged to evaluate the project details, including the terms that would be used by FORA to allocate the water.

4.1.2 Groundwater Wells

The potential for drilling new wells at the POM in the fractured bedrock aquifers was investigated by the U.S. Army Corps of Engineers in 2007. It was concluded that although it was technically feasible to extract water from a 400 to 700 foot deep well, it would not be a reliable long-term water source (USACE, 2007). New wells in the region have high drawdown, low yield, and are vulnerable to seawater intrusion and urban pollution (USACE, 2007).

The OMC overlies the adjudicated Seaside Area Subbasin, in which the entire safe yield of the basin has been distributed to the litigating parties. New extractions of groundwater from the basin are prohibited. However, the U.S. Army could consider the purchase of an existing water right in the basin and apply for a transfer in place of extraction. Well yields in the basin are highly variable, but yields of at least a few hundred gallons per minute are usually achievable (DWR, 2003).

The U.S. Army could also explore the potential of drilling or acquiring a well in either of the two adjacent unadjudicated Salinas Valley Basin subbasins. The 180/400 Foot Aquifer Subbasin (DWR Basin #3-4.10) located northwest of the OMC does have prolific aquifers, but also has salinity intrusion and nitrate water quality problems (DWR, 2003). The Corral de Tierra Area Subbasin (DWR Basin #3-4.01) includes the eastern portion of the former Fort Ord. Well yields and water quality are generally good, but salinity is locally elevated. Such an option would necessitate a transmission pipeline, but could be evaluated.

4.1.3 Recycled Water

Non-potable water uses such as landscape irrigation and toilet flushing can be met with recycled water, thereby reducing the potable water demand at the POM and OMC. Recycled water availability is independent of drought conditions and represents one of the few "new" water sources in the area (Malcolm Pirnie, 2006). In anticipation of future recycled water use, the U.S. Army has mandated that all new facilities at the POM Installation be designed and constructed with purple piping (ECW, 2007). Purple pipe is designated for transporting recycled water. Although installing purple pipe increases building costs because dual plumbing systems are installed, the facilities would be ready to take advantage of the new water source once it becomes available.

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Recycled water is already available from the SVRP, which treats effluent produced from the MRWPCA regional wastewater treatment plant, as discussed in Section 4.1.1. The RUWAP proposed by MCWD also anticipates production of 1,500 AFY of recycled water in the next decade. The U.S. Army should consider discussions with MRWPCA and MCWD to determine the amount of recycled water potentially available to customers in the future and to secure recycled water for the POM and OMC.

4.2 Water Rights

The U.S. Army could potentially increase water supplies by asserting claims of federal reserved water rights for the POM and OMC and pueblo water rights for the POM, as discussed in the 2006 water needs assessment (Malcolm Pirnie, 2006). However, claiming these water rights would likely involve political as well as technical battles since gaining additional rights would be at the expense of the water rights of another entity in the region. Additional background information is available in the water needs assessment report.

4.3 Renegotiate Water Contracts

The U.S. Army may want to consider legal evaluation of the water rights agreements signed during the BRAC process. There may be recourse for renegotiation of these contracts. Copies of these contracts were not available for review for this report.

4.4 Water Conservation

In September 2004, the U.S. Army established the Presidio of Monterey and Ord Military Community Water Management Plan, which identified best management practices (BMPs) that the U.S. Army has, or could, initiate to conserve water. Water saving devices, such as waterless urinals and low-flow toilets, rainwater collection systems, and landscaping with drought tolerant native vegetation were required for new buildings. Mandatory water conservation restrictions were also established in 2004 for landscape watering, car washing, and washing of buildings and paved parking areas (ECW, 2007).

The POM and OMC are "demand hardened;" effective and low cost BMPs have been implemented and the residents are well educated on the efficient use of water. There is now little waste to eliminate during severe water shortages and the remaining conservation techniques are expensive so are used in emergencies only (Malcolm Pirnie, 2006). Additional conservation measures would have a high cost to benefit ratio and would not be sufficient to reduce demand to a level that would significantly impact future needs.

4.5 Water Transfer

Because water rights above the projected need at the OMC are available, the U.S. Army can explore the possibility of transferring a portion to the POM to meet future demands. The water transfer would involve reassigning a portion of the U.S. Army's allocation from MCWD (purveyor to the OMC) to Cal Am (purveyor to the POM). Potential issues to be addressed include:

- Feasibility of transferring water from one groundwater basin to another within the same county.
- Complications from the legal constraints of the groundwater basins.
- Cost of new transmission pipelines to connect the two water distribution systems.
- Stakeholder buy-in between the two water purveyors, the U.S. Army, and the water management agencies.
- Ability to ease possible public objections.

The feasibility of such a transfer would need to be carefully studied and evaluated by the U.S. Army because of the politically charged atmosphere around water in the Monterey area. However, if successful, a water transfer could provide enough water for the POM to implement either Alternative 1 or Alternative 2.

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5. CONCLUSIONS

The POM and OMC appear to have enough water to meet existing and future building commitments as described under the No Action Alternative and under Alternative 2. However, there would be insufficient water available at the POM to support the facilities planned under Alternative 1 of the RPMP. Water supplies and demands appear more balanced under Alternative 2 because some future development would be redirected to the OMC. However, until designs for the long-range facilities are developed and detailed water supply analyses are completed using the final designs, it is uncertain whether there would definitively be water available to meet the long-range water demands. Because water needs were assessed only at the programmatic level, additional environmental documentation would need to be prepared for the projects described in the RPMP alternatives.

In the meantime, it is recommended that the U.S. Army continue its conservation efforts and actively pursue new water sources. A successful water transfer from the OMC to the POM could provide a direct solution to the water supply issue and allow for either Alternative 1 or Alternative 2 to proceed. In the long-term, recycled water and desalination appear to have the most potential as sustainable water sources for the POM and OMC. The U.S. Army should explore agreements with the MRWPCA to secure a recycled water supply, especially since demand for recycled water would likely increase in the Monterey area in the future. The U.S. Army could also consider securing additional water allocations from one or more of the regional water projects that are currently in development. One challenge, however, is that future water supplies from the projects may already be partially or entirely spoken for. The CWP and the RUWAP are two promising projects since they are developed by the current water purveyors to the POM and OMC. However, it is unclear how much, if any, additional water would be available to existing customers. If the U.S. Army chooses to consider buying water from a regional water project, a study is recommended to explore the feasibility of various regional projects, including the likelihood of each project coming to fruition and the amount of water potentially available to the U.S. Army. There are probably high demands and competition for any "new" water supplied by these projects, so the U.S. Army may need to be aggressive in its pursuit of a new stable water supply.

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APPENDIX B: REVISED TRAFFIC IMPACT STUDY

Technical Memorandum

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BROWN AND CALDWELL

CDM

A Joint Venture

Prepared for: US Army Corps of Engineers and Presidio of Monterey

Project Title: Presidio of Monterey Real Property Master Plan, Environmental Impact Statement

Project No: 65998-66550

Technical Memorandum No. 2

Subject: Revised Traffic Impact Study

Date: August 31, 2010

To: Shellie Sullo, USACE Project Manager

From: John Wondolleck, CDM Project Manager

Copy to: Robert Guidi, Presidio of Monterey, Directorate of Public Works

Bryan Plude, BC Project Manager

Prepared by: Jeffrey Key, Project Engineer

Reviewed by: John Wondolleck, Project Manager

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1. INTRODUCTION

This document presents the results of a traffic and transportation study developed to describe existing traffic conditions within and around the Presidio of Monterey (POM) and Ord Military Community (OMC) and potential impacts from implementation of the RPMP alternatives.

The study area consists of all portions of the POM and the OMC. Additionally, because future activities at these locations have a potential traffic impact to areas outside of the POM and OMC, the transportation analysis has looked at areas immediately adjacent to the POM and OMC. To that end, the study area boundary is somewhat larger than that for the entire POM and OMC. The study area boundary for the transportation component is as shown on Figure 1.

This study has been prepared utilizing available data from existing background reports and memorandums. No new data collection was completed to assist in preparation of this study. In some cases, data presented in this study is over seven years old.

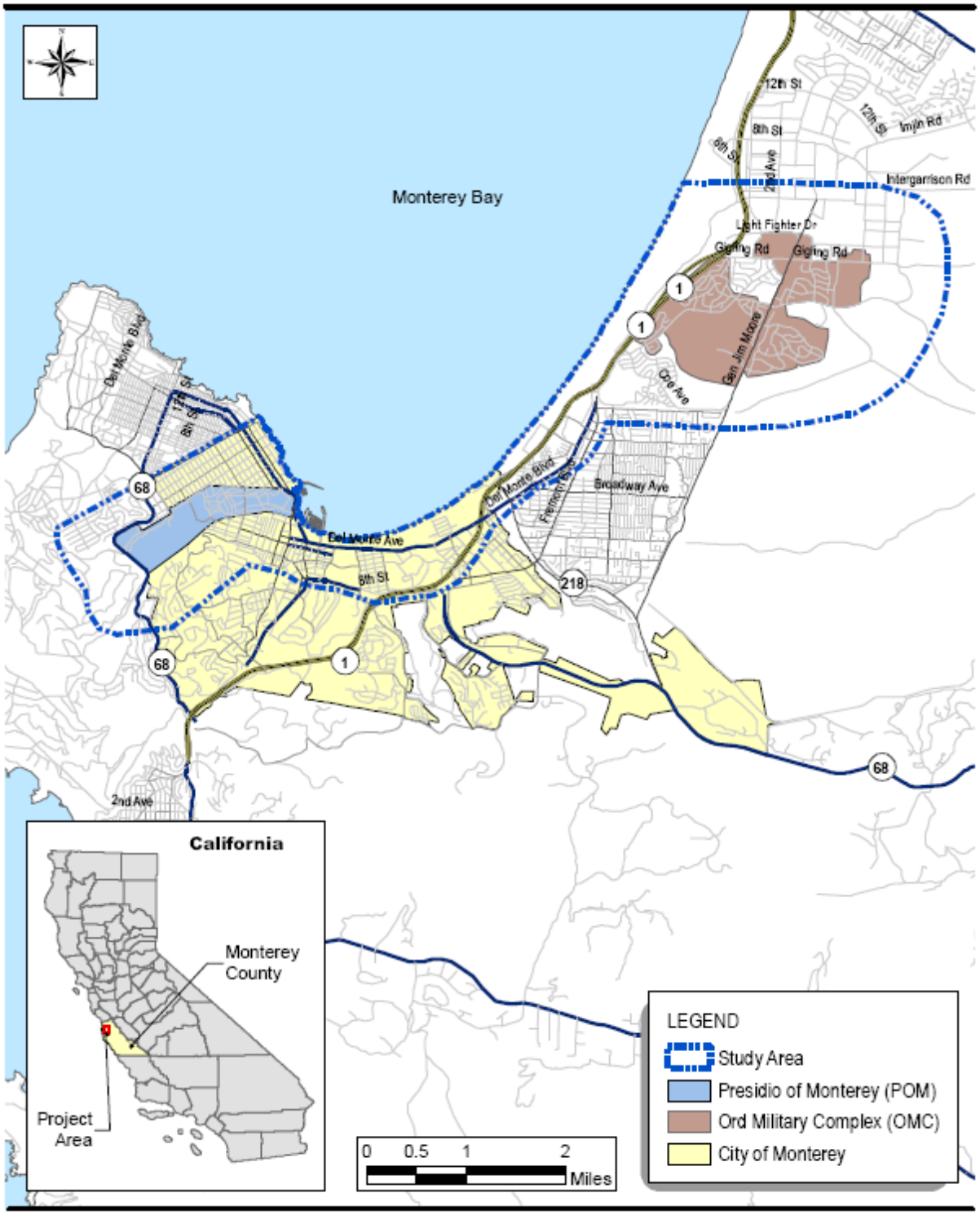

Figure 1. Study Area Boundary for POM and OMC

2. EXISTING TRAFFIC CONDITIONS

This section presents the existing conditions found on the transportation system within the study area and immediately adjacent to the study area. All data utilized for this section has been obtained through a multitude of previous studies as noted herein. For the existing conditions analysis relative to transportation, the following items of interest have been investigated:

- Roadway functional classification,
- Roadway lane use configurations (geometrics),
- Roadway Annual Average Daily Traffic (AADT) volumes,
- Intersection levels of service (LOS), and
- Access gate volumes and operations.

The items noted above are considered to be the minimum types of transportation data and analyses that are necessary for this analysis effort. Additional data collection and analysis may be warranted once the alternatives analysis process commences.

2.1 Existing Roadway Network Functional Classification System

A transportation system is made up of a hierarchy of roadways, with each roadway being classified according to certain parameters. Some of these parameters are geometric configuration, traffic volumes, spacing in the area's transportation grid, speeds, etc. For an overall traffic circulation assessment, it is standard practice to examine roadways that are functionally classified as a collector, minor arterial, or principal arterial. The reasoning for examining the collector, minor arterial and principal arterial roadways is that when the major roadway system (i.e. collectors or above) is functioning to an acceptable level, than the local roadways are not used beyond their intended function. The roadways being studied under this technical analysis, both within the formal study area boundary for the POM and OMC, as well as immediately adjacent to these areas, are as shown on Figure 2 (POM) and Figure 3 (OMC).

2.1.1 Regional Roadway Network

The major regional roadways that are most significant, and that are external to both the POM and the OMC, are summarized below.

State Highway 1: State Highway 1 is a major north-south roadway that roughly follows the Pacific Coast from Northern California to Los Angeles and points south. State Highway 1 is a limited access (freeway) facility from Castroville to just north of Carmel. In the project vicinity, there are freeway interchanges at Reservation Road, Del Monte Boulevard, 1st Ave (12th Street Gate), Light Fighter Drive (Main Gate), and Fremont Boulevard in Seaside.

State Highway 68: State Highway 68 primarily provides access from Salinas to Monterey and areas south of Seaside. South of the study area, State Highway 68 extends west of State Highway 1 into Pacific Grove, and is known as Holman Highway.

State Highway 156: State Highway 156 links State Highway 1 (north of Marina) with U.S. 101 to the northeast.

State Highway 183: State Highway 183 connects Salinas to State Highway 1 to the west.

State Highway 218: State Highway 218 starts at State Highway 1 in Sand City and provides access through Del Rey Oaks to the southeast where it joins State Highway 68. State Highway 218 is an alternative route to the westernmost segment of Route 68. It also serves areas on the south side of the City of Seaside.

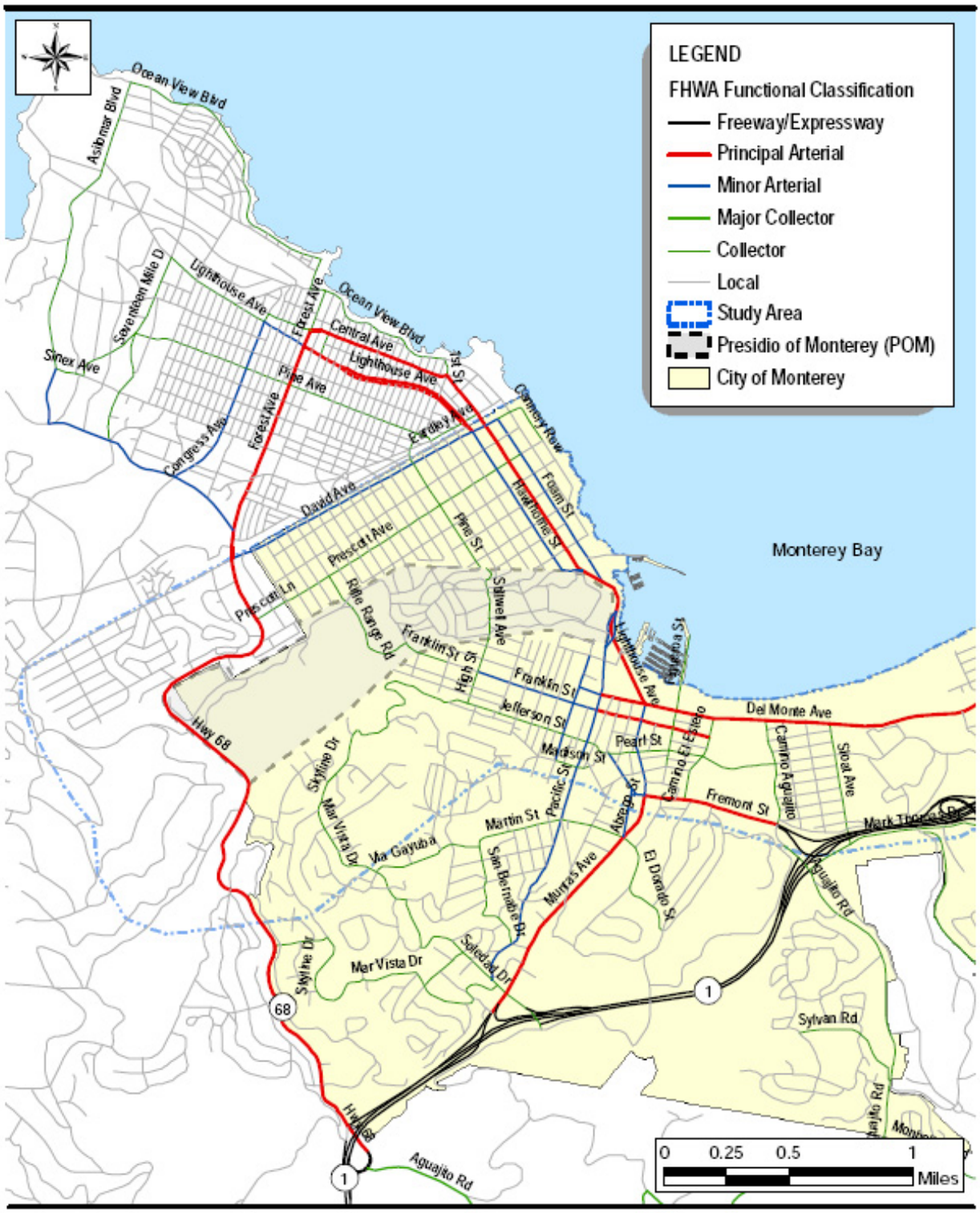

Figure 2. Roadway Functional Classification/Study Network—POM

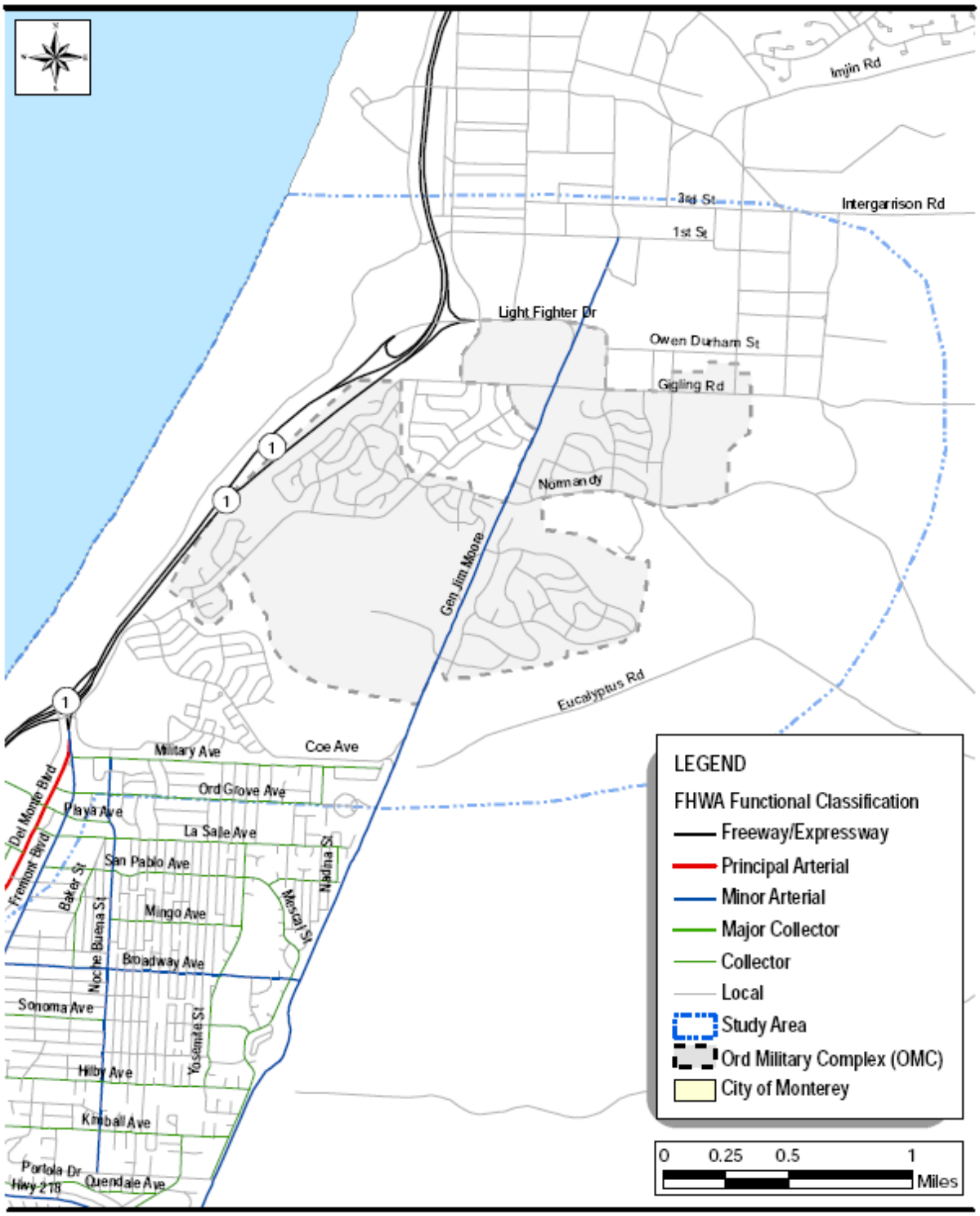

Figure 3. Roadway Functional Classification/Study Network—OMC

U.S. 101: The U.S. 101 freeway is a major north-south route in California. It is aligned to the east of State Highway 1, through Prunedale and Salinas in the vicinity of the OMC.

Del Monte Avenue/Boulevard: Del Monte Avenue/Boulevard is a non-continuous roadway, roughly parallel to State Highway 1, extending from Washington Avenue in Monterey to the interchange with State Highway 1 on the north side of Marina.

Fremont Street/Boulevard: Fremont Street/Boulevard is a key four-lane arterial providing an important link through Seaside. It runs north-south, roughly parallel to State Highway 1, and has interchanges with State Highway 1 at either end.

Broadway Avenue: Broadway Avenue is a four-lane arterial that provides an east-west connection between Del Monte Boulevard, Fremont Boulevard, and North South Road General Jim Moore Boulevard.

Reservation Road: This facility is aligned approximately east-west, from State Highway 1 past the northern boundary of the OMC to State Highway 68 south of Salinas. It is currently classified as a rural highway east of Imjin Road, and a signalized arterial from Imjin Road west to State Highway 1.

Blanco Road: Blanco Road is an east-west route north of the OMC that provides a connection between Highway 101 and Reservation Road. This facility currently provides an important link between the OMC and Salinas.

Davis Road: Davis Road is an arterial between Salinas and Reservation Road, aligned approximately parallel to State Highway 68.

2.1.2 POM Internal Roadway Network

The internal roads of the POM site generally run northeast-southwest or southeast-northwest following and crossing the natural contours of the land. The historic nature of the roadways and urban development of the POM site do not accommodate high levels of vehicle speed or significant volumes of traffic. The POM site has four operational access control points at Franklin Street, High Street, Private Bolio Road, and Taylor Street. Prior to implementing security measures in 2001 that closed the post to public access; two intersections were not operating at an acceptable level of service for the movement of vehicle traffic. Since implementation of the security measures, all intersections are operating at an acceptable level of service.

The major POM internal roadways are summarized below.

Lighthouse Avenue: Lighthouse Avenue is a four-lane undivided arterial roadway that follows the Monterey Bay coastline. Lighthouse Avenue connects the City of Pacific Grove and old Monterey with downtown Monterey. Lighthouse Avenue is signalized at major cross streets. It provides access to the POM via a gate at Private Bolio Road.

Pacific Street: Pacific Street is a north-south arterial roadway that connects the POM with SR 1. Pacific Street is a two-lane roadway with traffic signals at major intersections.

Pine Street: Pine Street is an east-west residential collector with two travel lanes. It provides access to the POM via a gate at Private Bolio Road.

High Street: High Street is a north-south residential collector street with one lane in each direction. It provides access to the POM via a gate at Stilwell Road and Corporal Evans Road.

Franklin Street: Franklin Street is an east-west residential collector street with one-lane in each direction. It provides access to the POM via a gate at Rifle Range Road and Lawton Road.

Prescott Avenue: Prescott Avenue is an east-west collector street that parallels the POM on the north. Prescott Avenue is a two-lane street near the POM.

2.1.3 OMC Internal Roadway Network

The OMC property is currently an open installation and no special permits or licenses are required. The primary access road to the OMC is Light Fighter Road, which can be accessed from State Highway 1. Another major roadway providing access to OMC is Gigling Road, which provides access to all areas of the OMC except the maintenance area, which is accessed via Joe Lloyd Was. Primary roadways on the OMC include General Jim Moore Boulevard, Gigling Road, and Light Fighter Drive.

The roadway network within the OMC consists of a mix of arterial and local roads. The older area of the OMC (area of World War II vintage barracks and structures) was laid out in a traditional street pattern (integrated). Subsequent residential development on the former base incorporated the curvilinear and cul-de-sac street patterns common to residential developments following World War II. The existing roadway system in the OMC generally consists of four types of roads:

- 2-lane rural local;
- Residential local;
- Urban arterial (both 4 and 6-lane); and
- Rural arterial.

The 2-lane rural roads primarily serve the artillery ranges and remote areas of the OMC. Examples are Parker Flats Road and Barloy Canyon Road. These roads are paved but not engineered to any specific standard. The residential streets serve permanent housing areas as well as several mobile home park facilities such as Marshall Park Family Housing and Patton Park Family Housing.

Four lane urban arterials consist of streets such as Gigling Road, Light Fighter Drive (main entrance road) and the portion of North South Road and General Jim Moore Boulevard between Light Fighter Drive and Ardennes Circle. These streets have curbs and in some cases sidewalks and a median. Rural arterials such as Inter-Garrison Road, Reservation Road, and the remaining portion of North South Road & General Jim Moore Boulevard have no curbs, sidewalks, or medians.

The key existing roadways within the OMC include 2nd Avenue, Light Fighter Drive, Gigling Road, Imjin Road, Inter-Garrison Road, Coe Avenue, North South Road and General Jim Moore Boulevard. These facilities are described below.

2nd Avenue: This roadway runs north-south and is east of State Highway 1.

12th Street: 12th is an east-west collector road running between Imjin Road and State Highway 1. Access to State Highway 1 is provided at the 12th Street interchange.

8th Street/8th Street cut-off: This arterial runs from the railroad tracks just east of State Highway 1 eastward toward Imjin Road. Near this location the roadway turns to a southeast direction and intersects Inter-Garrison Road.

Light Fighter Drive: Light Fighter Drive is a short east-west arterial that provides access to State Highway 1. It also connects to 2nd Avenue and North South Road General Jim Moore Boulevard.

Gigling Road: This roadway is an east-west facility in the central part of former Fort Ord, aligned south of Light Fighter Drive. It connects with several north-south streets, including North South Road General Jim Moore Boulevard.

Imjin Road: Imjin Road is an arterial roadway running south from Reservation Road through the OMC where it ends at 8th Street. The northern portion of Imjin is four lanes, narrowing to two lanes in the southern portion.

Inter-Garrison Road: Inter-Garrison Road is an east-west two-lane arterial that provides a connection from Reservation Road to the central area of former Fort Ord, where Inter-Garrison Road becomes 3rd Street.

Coe Avenue: Coe Avenue, a two-lane arterial, currently provides access to OMC areas south of the golf courses from General Jim Moore Boulevard. It starts at General Jim Moore Boulevard and ends immediately east of State Highway 1 at its intersection with Monterey Road.

General Jim Moore Boulevard: This facility is the major north-south roadway through the southern part of former Fort Ord. It begins north of State Highway 218 and follows the western edge of former Fort Ord at the Seaside city limits. Farther north, General Jim Moore Boulevard intersects the Coe Avenue intersection, and continues to an intersection with Light Fighter Drive. General Jim Moore Boulevard ends at 3rd Street, where it becomes 4th Avenue.

2.1.4 Existing Roadway Lane Use Configurations

Traffic volumes collected by the regional MPO and various cities were used to determine current traffic conditions at the ACPs and affected intersections, and to provide data on historic traffic volumes.

In 2009, traffic volumes were collected for 24-hour periods in order to determine annual average daily traffic (AADT) volumes on major road segments within the POM. This information is shown on Figure 4. Existing traffic volume data from 2005 was used to determine AADT volumes on major road segments within the OMC and is shown on Figure 5.

After identifying the current AADT traffic volumes, the existing road network was examined to determine the current size (i.e. lane use configuration) of the major routes. This information is presented on the "Corridor Size" graphics on Figure 6 (for the POM and immediately adjacent area) and Figure 7 (for the OMC and immediately adjacent area).

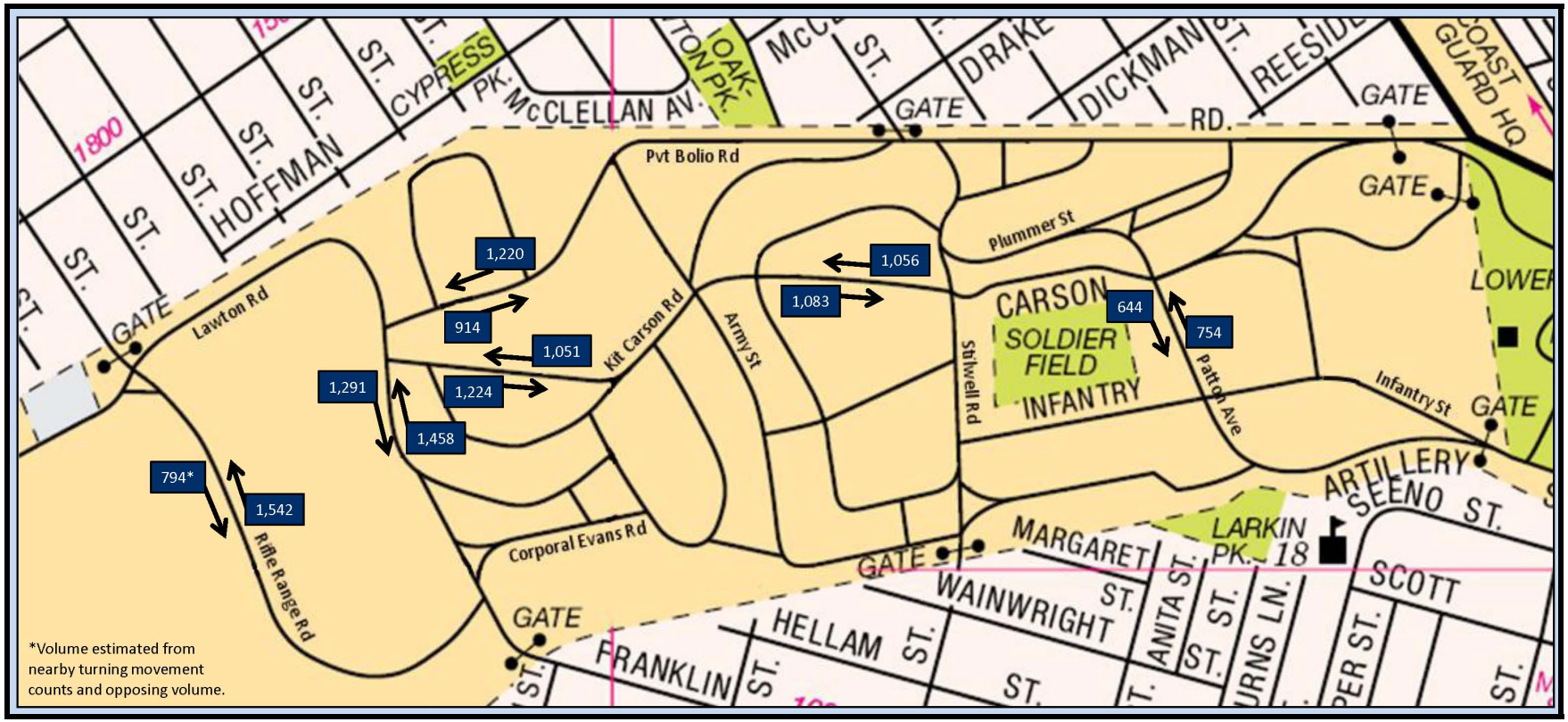

Figure 4. Weekday Daily Traffic Volumes—POM

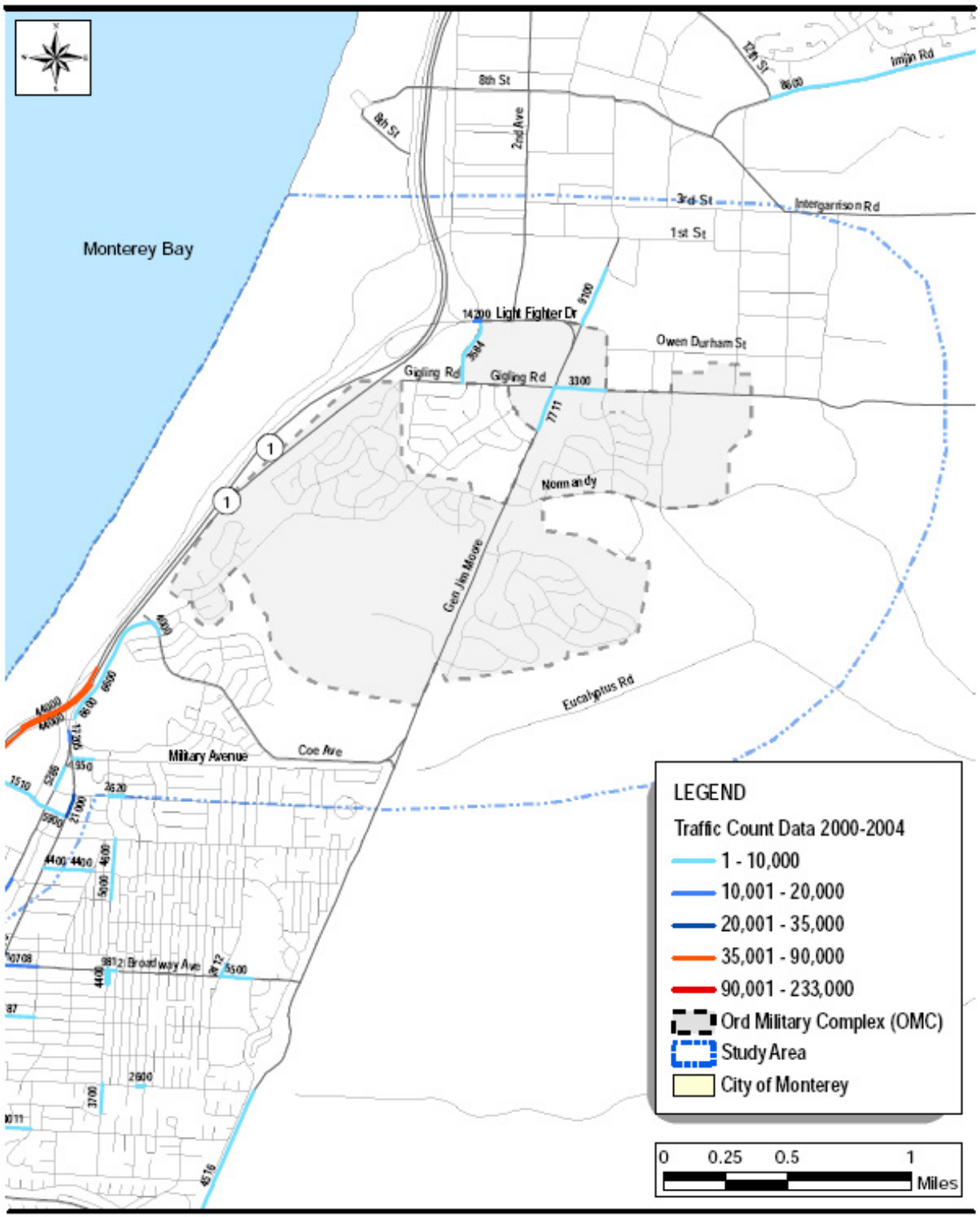

Figure 5. Weekday Daily Traffic Volumes—OMC

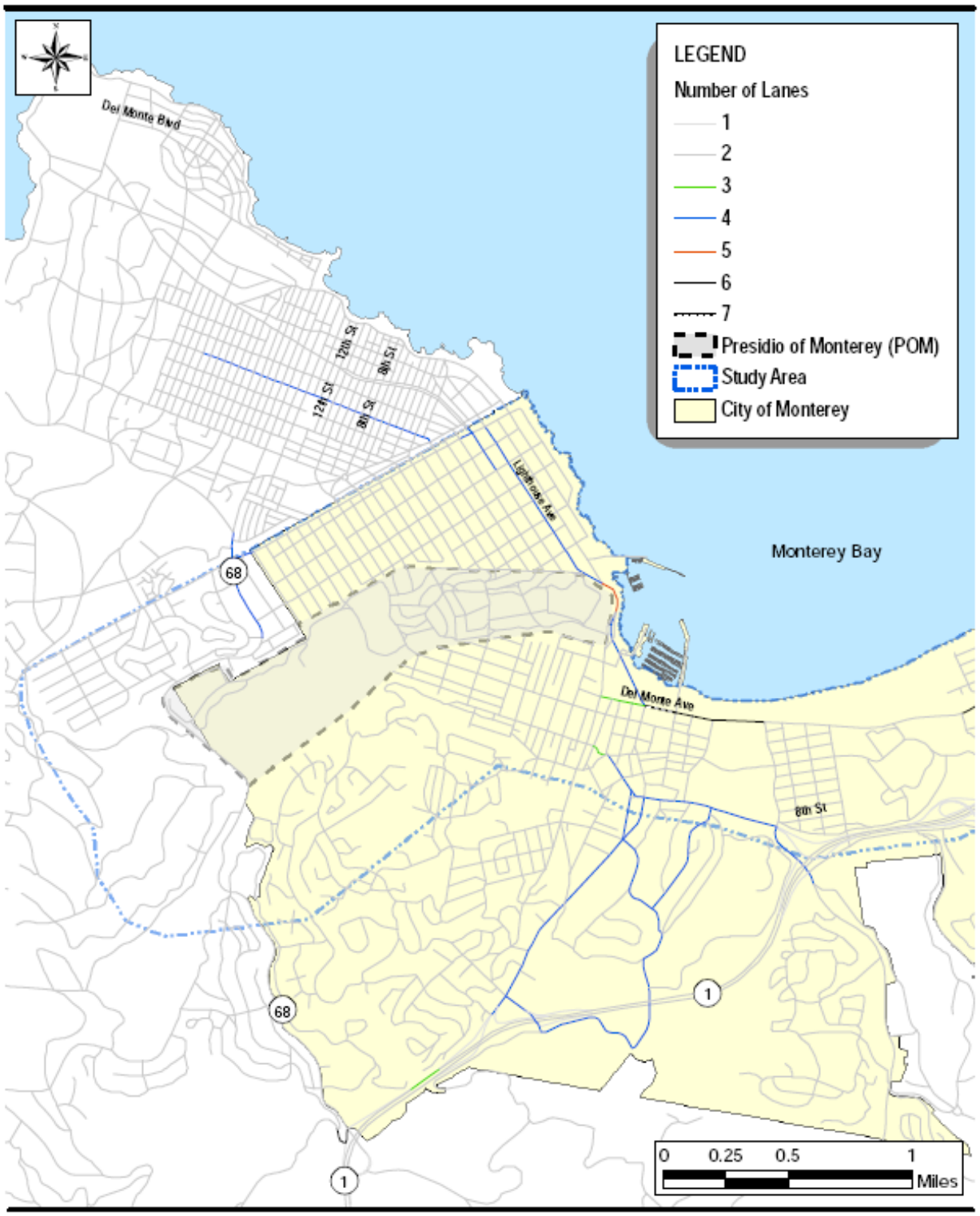

Figure 6. Corridor Size—POM

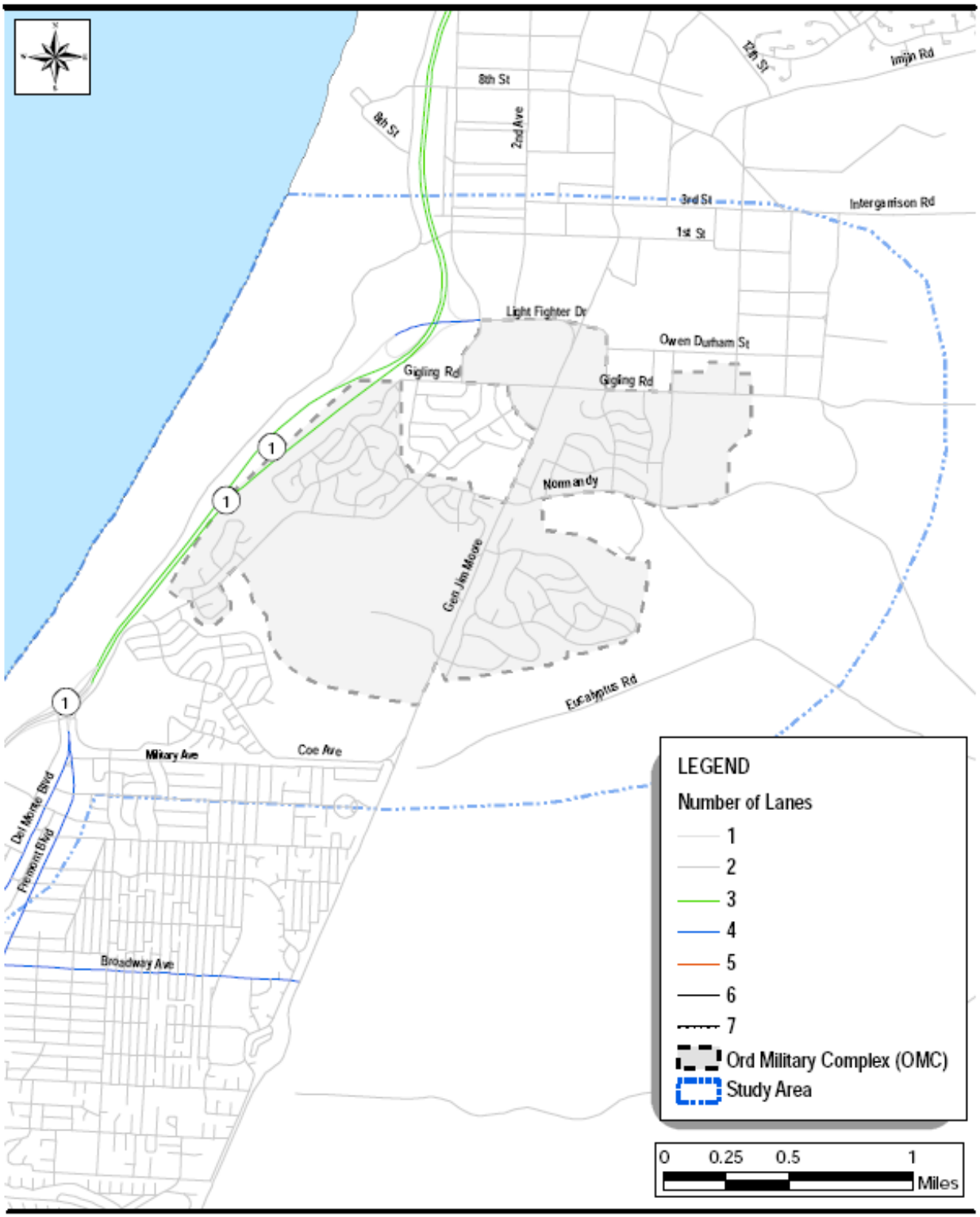

Figure 7. Corridor Size—OMC

2.1.5 Existing Intersection Descriptions

Major intersections within the POM include:

Taylor Street and Rifle Range Road and Mason Road and Lawton Road

The traffic flow at the intersection of Mason Road, Lawton Road, Taylor Street and Rifle Range Road consists of four approaches. The lane configuration of the Mason Road approach from the west consists of a single through/left turn lane. The Lawton Road approach from the east consists of a combined through/right/left turn lane. Both the approach on Taylor Street from the north and the approach from the south on Rifle Range Road have a combined through/right/left turn lane.

Rifle Range Road and SSG Fronins Street

The SSG Fronins Street at Rifle Range Road intersection consists of three approaches. The approach from the north along Rifle Range Road consists of a combined through/right turn lane. The approach from the south along Rifle Range Road consists of a combined through/left turn lane. The lane configuration of the SSG Fronins Street approach from the west is a combined left/right turn lane.

Patton Avenue and Plummer Street

The Patton Avenue at Plummer Street intersection consists of three approaches. The approach from the south along Patton Avenue consists of a combined through/left turn lane. The approach from the west along Plummer Street consists of a combined right turn /left turn lane. The lane configuration of the Patton Avenue approach from the north is a combined left/right turn lane.

Kit Carson Road at Stillwell Road and Plummer Street

The Kit Carson Road at Stillwell Road and Plummer Street intersection consists of four approaches. The lane configuration of the Stillwell Road for both approaches is a combined through/left/right turn lane. The approach of Plummer Street from the east consists of an exclusive right turn lane and an exclusive through/left turn lane. The approach along Kit Carson Road from the west consists of a combined through/left/right turn lane.

Army Street and Private Bolio Road

The Army Street at Private Bolio Road intersection consists of three approaches. The approach from the south along Army Street consists of a combined left/right turn lane. The approach from the east along Private Bolio Road consists of a combined through/right turn lane. The lane configuration of the Private Bolio Road approach from the east is a combined through/left turn lane.

Army Street and Kit Carson Road

The Army Street at Kit Carson Road intersection consists of four approaches. The lane configuration of Army Street for both the north and south approaches is a combined through/left/right turn lane. The lane configuration of Kit Carson Road for both the east and west approaches is a combined through/left/right turn lane.

Kit Carson Road at Lewis Road

The Kit Carson Road at Lewis Road intersection consists of three approaches. The approach from the north along Lewis Road consists of a combined through/right turn lane. The approach from the south along Lewis Road consists of a combined through/left turn lane. The lane configuration of the Kit Carson Road approach from the west is a combined through/left/right turn lane.

Lawton Road at Kit Carson Road

The Lawton Road at Kit Carson Road intersection consists of four approaches. The Lawton Road approaches both consist of a combined through/left/right turn lane. The approach from the east on Kit Carson Road is a single through/left/right turn lane. The approach to this intersection for the west is from a parking lot and consists of a single through/left/right turn lane.

Lawton and Franklin Street at Rifle Range Road

The traffic flow at the intersection of Franklin Road and Rifle Range Road consists of three approaches. The Franklin Road approach from the north consists of a combined through/right turn lane. The Franklin Road approach from the south consists of an exclusive through lane and exclusive left turn lane. The approach from Rifle Range Road from the west consists of an exclusive left turn lane and an exclusive right turn lane.

Lawton Road at Private Bolio Road

The traffic flow at the intersection of Lawton Road and Private Bolio Road consists of three approaches. All three approaches consist of a combined through/left/right turn lane.

Major intersections near the Presidio of Monterey include:

Taylor Street at Prescott Lane

The Taylor Street and Prescott Street intersection consists of four approaches. The Taylor Street approaches both consist of a combined through/left/right turn lane. The Prescott Street approach from the east consists of a combined through/right turn lane and an exclusive left turn lane. The Prescott Street approach from the west consists of a combined through/left turn lane and an exclusive right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Franklin Street at High Street

The Franklin Street and High Street intersection consists of four approaches. The Franklin Street approaches both consist of a combined through/left/right turn lane. The lane configuration of High Street approaches both consist of a combined through/left/right turn lane. The intersection has stop signs for both High Street approaches but there are no stop signs for either Franklin Street approach. Pedestrian crosswalks are provided at all four approaches.

Van Buren Street at Franklin Street

The Van Buren Street and Franklin Street intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Pacific Street at Franklin Street

The Pacific Street and Franklin Street intersection consists of three approaches. The Pacific Street approaches both consist of an exclusive left turn lane and a combined through/right turn lane. The Franklin Street approach from the west consists of a combined through/right turn lane and an exclusive left turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Lighthouse Avenue and Private Bolio Road

The intersection of Lighthouse Street and Private Bolio Road consists of three approaches. The approach from the north along Lighthouse Avenue consists of an exclusive through lane and a combined through/right

turn lane. The Lighthouse Avenue approach from the south consists of two exclusive through lanes and an exclusive left turn lane. The lane configuration of the Private Bolio Road approach from the west consists of a right turn lane.

Major intersections within the OMC include:

First Avenue at Gigling Road

The traffic flow at First Avenue and Gigling Road consists of three approaches. The First Avenue approach from the north consists of a combined through/left/right turn lane. The lane configuration of the Gigling Road approach from the west consists of a combined through/left/right turn lane. The Gigling Road approach from the east consists of an exclusive through lane as well as an exclusive right turn lane. The intersection has stop signs for all three approaches. There are no pedestrian crosswalks on any of the approaches.

Sixth Division Circle at Gigling Road

The traffic flow at Sixth Division Circle and Gigling Road consists of three approaches. The Sixth Division Circle from the south consists of a single combined through/left/right turn lane. The lane configuration of the Gigling Road approaches both consist of a combined through/left/right turn lane. The intersection has stop signs for the Sixth Division Circle approach. The pedestrian crosswalk is provided for only the Sixth Division Circle approach.

General Jim Moore Boulevard at Gigling Road

The traffic flow at General Jim Moore Boulevard and Gigling Road consists of four approaches. The General Jim Moore Boulevard approach from the south consists of an exclusive left turn lane as well as an exclusive through lane and a combined through/right turn lane. The approach from the north on General Jim Moore Boulevard consists of an exclusive lane for each left turning and right turning traffic as well as two exclusive lanes for through traffic. The Gigling Road approach from the east has an exclusive lane each for right turning, left turning, and through traffic. The Gigling Road approach from the west has an exclusive lane for left turning and a combined lane for through/right turning traffic. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on all four approaches.

Monterey Road at Normandy Road

The Monterey Road and Normandy Road intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection is has stop signs on all four approaches. Pedestrian crosswalks are provided on all four approaches.

General Jim Moore Boulevard at Normandy Road

The traffic flow at General Jim Moore Boulevard and Normandy Road consists of four approaches. The General Jim Moore Boulevard approach from the south consists of an exclusive left turn lane as well as a through lane and a combined through/right turn lane. The approach from the north on General Jim Moore Boulevard consists of an exclusive lane for each left turning and right turning traffic as well as two exclusive lanes for through traffic. The Normandy Road approaches both have a combined lane for through/left/right turning traffic. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided on both Normandy Road approaches as well as the northern approach of General Jim Moore Boulevard.

California Avenue at Monterey Road

The Monterey Road and California Road intersection consists of four approaches. All four approaches consist of a combined through/left/right turn lane. The intersection has stop signs on all four approaches. Pedestrian crosswalks are provided on all four approaches.

Major intersections near the OMC include:

Second Avenue at First Street

The Second Avenue and First Street intersection consists of four approaches. The Second Avenue approaches both have a three lane configuration; one exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The First Street approach from the west consists of a single combined through/left/right turn lane. The First street approach from the east consists of an exclusive right turn lane and a combined through/left turn lane. The intersection has stop signs on all four approaches. Pedestrian crosswalks are provided on all four approaches.

First Avenue at Light Fighter Drive and Highway 1 Off-Ramp

The First Avenue and Light Fighter Drive/Highway 1 ramp intersection consists of four approaches. The First Avenue approach from the south consists of two lanes; an exclusive left turn lane and an exclusive right turn lane. The lane configuration of the First Avenue approach from the north consists of three exclusive lanes, one each for left turning, through, and right turning traffic. The Highway 1 off-ramp approach from the west consists of an exclusive through lane and a combined through/right turn lane. The Light Fighter Drive approach from the east consists of an exclusive left turn lane and two exclusive through lanes. The intersection has stop signs for the First Avenue approaches only. There are no pedestrian crosswalks on any approach.

Second Avenue at Light Fighter Drive

The traffic flow at the intersection of Second Avenue and Light Fighter Drive consists of four approaches. The Second Avenue approach from the south consists of a combined lane for through/left/right turning traffic. The Second Avenue approach from the north consists of three exclusive lanes, one each for through/left/right turning traffic. The Light Fighter Drive approaches both consist of an exclusive left turn lane and two exclusive through lanes. The intersection is signalized and has pedestrian signal heads and push buttons for both the Second Avenue approaches as well as the eastern Light Fighter Drive approach. Pedestrian crosswalks are provided on both Second Avenue approaches as well as the eastern approach of Light Fighter Drive.

General Jim Moore Boulevard at Light Fighter Drive

The General Jim Moore Boulevard and Light Fighter Drive intersection consists of four approaches. The General Jim Moore Boulevard approach from the south consists of two exclusive left turn lanes and a combined through/right turn lane. The lane configuration of the northern approach of General Jim Moore Boulevard consists of an exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The Light Fighter Drive approaches both consist of an exclusive left turn lane and a combined through/right turn lane. This is a signalized intersection with a pedestrian signal head and push button for the western approach of Light Fighter Drive.

Monterey Road at Coe Avenue

The traffic flow at the intersection of Monterey Road and Coe Avenue consists of three approaches. The Monterey Road approach from the west consists of an exclusive lane each for through traffic as well as a lane for right turning traffic. The Monterey Road approach from the east consists of an exclusive lane each for through traffic as well and left turn lane. The Coe Avenue approach from the south consists of an exclusive left turn lane as well as an exclusive right turn lane. All three approaches are controlled by stop signs and all three approaches have pedestrian crosswalks.

General Jim Moore Boulevard at McClure Way-Arloncourt Road

The General Jim Moore Boulevard and McClure Way/Arloncourt Road intersection consists of four approaches. The General Jim Moore Boulevard approaches both consist of an exclusive left turn lane, exclusive right turn lane, and two dedicated through lanes. The Arloncourt Road approach from the east consists of a combined left/right turn lane. The McClure Way approach from the west consists of a combined through/left/right turn lane. The intersection has stop signs on all four approaches.

General Jim Moore Boulevard at Coe Avenue

The General Jim Moore Boulevard and Coe Avenue intersection consists of three approaches. The Coe Avenue approach from the west consists of an exclusive lane each for left turning and right turning traffic. The lane configuration of the southern approach from General Jim Moore Boulevard consists of an exclusive left turn lane as well as an exclusive through lane. The lane configuration of the northern approach from General Jim Moore Boulevard consists of an exclusive right turn lane as well as an exclusive through lane.

Fremont Boulevard at Monterey Road

The traffic flow at the intersection of Fremont Boulevard and Monterey Road consists three approaches. The Fremont Boulevard approach from the south consists of an exclusive left turn lane, an exclusive through lane, and a combined through/right turn lane. The Monterey Road approach from the east consists of a combined through/right turn lane. The Monterey Road approach from the west consists of an exclusive right turn lane, an exclusive left turn lane, and a combined through/left turn lane. The intersection is signalized on all three approaches and there are no pedestrian crosswalks.

Fremont Boulevard at Del Monte Boulevard-Military Avenue

The traffic flow at the intersection of Fremont Boulevard and Del Monte Boulevard/Military Avenue consists of four approaches. The Del Monte approach from the southwest consists of an exclusive left turn lane as well as a dedicated right turn lane. The Military Avenue approach from the east consists of a single right turn lane. The Fremont Boulevard approaches both consist of an exclusive through lane and a combined through/right turn lane. The Del Monte and Military Avenue approaches have stop signs. There are no pedestrian crosswalks on any of the approaches.

General Jim Moore Boulevard at Broadway Avenue

The General Jim Moore Boulevard and Broadway Avenue intersection consists of three approaches. The lane configuration for General Jim Moore Boulevard for both approaches consists of a combined through/left/right turn lane. The Broadway Avenue approach from the west consists of a combined left/right turn lane. The intersection has stop signs on all three approaches. Pedestrian crosswalks are not provided on any approach.

General Jim Moore Boulevard at State Highway 218

The General Jim Moore Boulevard and State Highway 218 intersection consists of three approaches. The General Jim Moore Boulevard approach from the north consists of an exclusive left turn lane as well as a dedicated right turn lane. The State Highway 218 approach from the east consists of a dedicated through lane and a dedicated left turn lane. The State Highway 218 approach from the west consists of a dedicated through lane as well as an exclusive right turn lane. The intersection is signalized and has pedestrian signal heads and push buttons. Pedestrian crosswalks are provided for all four approaches.

2.2 Existing Intersection Levels of Service

Urban road systems are ultimately controlled by the function of the major intersections. Intersection failure directly reduces the number of vehicles that can be accommodated during the peak hours that have the highest demand and the total daily capacity of a corridor. As a result of this strong impact on corridor function, it is important to determine how well the major intersections are functioning by determining their LOS.

LOS is a qualitative measure developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles. It provides a scale that is intended to match the perception by motorists of the operation of the intersection. Level of Service provides a means for identifying intersections that are experiencing operational difficulties, as well as providing a scale to compare intersections with each other. The level of service scale represents the full range of operating conditions. The scale is based on the ability of an intersection or street segment to accommodate the amount of traffic using it. The scale ranges from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion (Table 1). LOS computational analysis is guided by the procedures outlined in the Transportation Research Board's Highway Capacity Manual – Special Report 209 using the Highway Capacity Software, version 4.1f.

Table 1. Description of Traffic Level of Service (LOS)

Level of Service	Description	Delay
A	Free flow conditions	Little or no delay
B	Reasonably free flow conditions	Short traffic delays
C	Stable operations	Average traffic delays
D	High density, bordering unstable flow	Long traffic delays
E	Very unstable operations	Very long delays
F	Forced or breakdown flow	Stop and go conditions

Source: *The Transportation Research Board's Highway Capacity Manual*

2.2.1 Signalized Intersections

For signalized intersections, recent research has determined that average stopped delay per vehicle is the best available measure of level of service. Table 2 identifies the relationship between level of service and average stopped delay per vehicle. The procedures used to evaluate signalized intersections use detailed information on geometry, lane use, signal timing, peak hour volumes, arrival types and other parameters. This information is then used to calculate delays and determine the capacity of each intersection. Generally, an intersection is determined to be functioning adequately if operating at LOS C or better.

Table 2. Level of Service Criteria (Signalized Intersections)

Level of Service	Stopped Delay per Vehicle (sec)
A	< 10
B	10 to 20
C	20 to 35
D	35 to 50
E	50 to 80
F	> 80

Source: *The Transportation Research Board's Highway Capacity Manual*

2.2.2 Unsignalized Intersections

Level of service for unsignalized intersections is based on the delay experienced by each movement within the intersection, rather than on the overall stopped delay per vehicle at the intersection. This difference from the method used for signalized intersections is necessary since the operating characteristics of a stop-controlled intersection are substantially different. Driver expectations and perceptions are also entirely different. For two-way stop controlled intersections, the through traffic on the major (uncontrolled) street experiences no delay at the intersection. Conversely, vehicles turning left from the minor street experience more delay than other movements and at times can experience significant delay. Vehicles on the minor street, which are turning right or going across the major street, experience less delay than those turning left from the same approach. Due to this situation, the level of service assigned to a two-way stop controlled intersection is based on the average delay for vehicles on the minor street approach.

Levels of service for all-way stop controlled intersections are also based on delay experienced by the vehicles at the intersection. Since there is no major street, the highest delay could be experienced by any of the approaching streets. Therefore, the level of service is based on the approach with the highest delay as shown in Table 3. This table shows the LOS criteria for both the all-way and two-way stop controlled intersections.

Table 3. Level of Service Criteria (Stop Controlled Intersections)

Level of Service	Stopped Delay per Vehicle (sec)
A	< 10
B	10 to 15
C	15 to 25
D	25 to 35
E	35 to 50
F	> 50

Source: *The Transportation Research Board's Highway Capacity Manual*

In order to calculate the LOS, a number of intersections were selected for this traffic technical analysis based on the availability of traffic count data via previous traffic studies. To that end, within the POM boundary, 10 specific intersections were identified. These intersections are as shown in Table 4. For the major street network adjacent to the POM, 12 intersections were identified and are shown in Table 5. In the vicinity of the OMC study area, Table 6 portrays the 6 specific intersections within the OMC and Table 7 portrays the 11 intersections immediately adjacent to the OMC.

Based upon the available information from other studies, the operational characteristics of each intersection were obtained. Note that for each intersection, data was collected and analyzed for the peak hour periods. Peak periods for the POM were 6 am to 8 am (AM peak hour) and 3:30 pm to 5:30 pm (PM peak hour) while the peak periods for the OMC were 7 am to 9 am (AM peak hour) and 4 pm to 6 pm (PM peak hour), to ensure that the intersection's peak volumes were represented.

Table 4. Existing Intersection Level of Service – Locations within POM (2010)		
Intersection	**AM Peak Hour LOS**	**PM Peak Hour LOS**
Taylor Street / Lawton Road / Mason Road / Rifle Range Road	B	B
Rifle Range Road / SSG Fronins Road	B	B
Patton Avenue / Plummer Street	B	B
Stilwel Road / Kit Carson Road	A	A
Army Street / Pvt Bolio Road	B	B
Army Street / Kit Carson Road	A	A
Kit Carson Road / Lewis Road	B	B
Lawton Road / Kit Carson Road	E	B
Lawton / Rifle Range Road / Franklin Street	F	D
Lawton Road / Pvt Bolio Road	C	B

Source: *2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA*

Table 5. Existing Intersection Level of Service – Locations outside POM (2010)		
Intersection	**Am Peak Hour LOS**	**PM Peak Hour LOS**
Lighthouse Avenue/Washington Street/Del Monte Avenue	B	B
Foam Street/Reeside Avenue	A	B
Lighthouse Avenue/Reeside Avenue	B	B
Private Bolio Road/Lighthouse Avenue	B	C
Prescott Avenue/Taylor Street	A	B
Prescott Avenue/Lighthouse Avenue	NA	B
Franklin Street/High Street	C	C
Franklin Street/Pacific Street	C	C
Franklin Street/Van Buren Street	B	A
Munras Avenue/Soledad Drive	B	C
Fremont Street/Aguajito Road	C	D
Fremont Street/Abrego Street	B	C

Sources:

(1) 2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA

(2) City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey County, California.

(3) City of Monterey. February 2005. Army Administration Lease of Monte Vista School Traffic Impact Study, Monterey County, California.

(4) Presidio of Monterey. August 17, 2001. Draft Final Environmental Assessment for the Military Construction Project, Monterey County, California.

(5) City of Monterey. April, 2004. General Plan Update Traffic Study, City of Monterey, California.

Table 6. Existing Intersection Level of Service – Locations within OMC (2005)		
Intersection	**AM Peak Hour LOS**	**PM Peak Hour LOS**
First Avenue / Gigling Road	A	A
Sixth Division Circle / Gigling Road	A	A
General Jim Moore Boulevard / Gigling Road	B	B
Monterey Road / Normandy Road	A	A
General Jim Moore Boulevard / Normandy Road	B	B
California Avenue / Monterey Road	C	D

Source: *Presidio of Monterey. December, 2005. Draft Environmental Assessment of Implementation of the Army Residential Communities Initiative Land Exchange, Monterey, California.*

Table 7. Existing Intersection Level of Service – Locations outside OMC (2005)		
Intersection	**AM Peak Hour LOS**	**PM Peak Hour LOS**
Second Avenue / First Street	A	A
First Avenue / Light Fighter Drive	C	D
Second Avenue / Light Fighter Drive	A	A
General Jim Moore Boulevard / Light Fighter Drive	C	C
Monterey Road / Coe Avenue	A	A
General Jim Moore Boulevard / McClure Way-Arloncourt Road	F	C
General Jim Moore Boulevard / Coe Avenue	A	A
Fremont Boulevard / Monterey Road	D	D
Fremont Boulevard / Del Monte Boulevard-Military Avenue	A	E
General Jim Moore Boulevard / Broadway Avenue	D	C
General Jim Moore Boulevard / State Route 218	C	A

Sources:

(1) *Presidio of Monterey. December, 2005. Draft Environmental Assessment of Implementation of the Army Residential Communities Initiative Land Exchange, Monterey, California.*

(2) *Presidio of Monterey. August 17, 2001. Draft Final Environmental Assessment for the Military Construction Project, Monterey County, California.*

2.3 Existing Access Gate Volumes and Operations

2.3.1 POM Access Gates

At the POM there are six access control points (ACPs), or gates. These ACPs are as noted in Table 8. It must be noted that two of the six gates are not open due to mandated anti-terrorism / force protection (AT/FP) measures. These have been included herein for completeness, but data is not available for the two locations. The data shown in Table 8 is based on traffic counts taken during the first and second weeks of August, 2007, as well as data available from the POM for "Pre-September 11th".

Table 8. Traffic Volume Access Control Points – POM (2007 & 2001)					
Access Control Point (ACP)	August, 2007 Data				Pre-September 11th Data
	AM Peak Hour (In)	PM Peak Hour (Out)	Weekday ADT (In)	Weekday ADT (Out)	AM Peak Hour (In)
Franklin Street	446	425	2719	2360	484
Private Bolio Road	176	151	1341	1273	305
Taylor Street	262	278	1676	2833	475
High Street	175	122	754	676	195
Pine Street (closed ACP)	0	0	0	0	364
Artillery Street (closed ACP)	0	0	0	0	130

Source: *City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey County, California. Presidio of Monterey. December 2007. Draft Environmental Assessment Proposed General Instruction Building Construction FY08, 09, 10 on the Presidio of Monterey, Monterey, California.*

Specific data corresponding for each gate, used to arrive at the values shown in Table 8 above, are shown below. These tables show the daily volumes over a period of one week as observed during the first week of August, 2007.

Franklin Street ACP

The Franklin Street ACP provides the most direct and primary access to the core of the POM. Most of the DLI students living off campus enter the POM at this location. This ACP also provides the most direct and influential access point to the POM for emergency response vehicles. The street grade on Franklin is steep and as such does not lend itself to allow for heavy vehicle/commercial truck traffic. However some heavy vehicle traffic does occur. The ACP includes two inbound lanes and one outbound lane, and is staffed by three guards checking IDs. Traffic volume information at the Franklin Street ACP is provided in Table 9.

Table 9. Traffic Volume Access Control Point – Franklin Street ACP (2007)				
Date	Day	In	Out	Total
8/04/2007	Saturday	1420	1217	2637
8/05/2007	Sunday	1117	1100	2217
8/06/2007	Monday	2696	2304	5000
8/07/2007	Tuesday	2673	2353	5026
8/08/2007	Wednesday	2678	2241	4919
8/09/2007	Thursday	2646	2448	5094
8/10/2007	Friday	2904	2456	5360
8/11/2007	Saturday	1390	1257	2647
8/12/2007	Sunday	1039	1066	2105
Weekday ADT		2719	2360	--
Weekend ADT		1242	1160	--
AM Peak Hour (6:45 AM – 7:45 PM): 446 Vehicles				
PM Peak Hour (4:15 PM – 5:15 PM): 425 Vehicles				

Source: *City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey*

Private Bolio ACP

The Private Bolio ACP is located at the unsignalized intersection at Lighthouse Avenue. Traffic from New Monterey and Pacific Grove enters the POM travelling southbound on Lighthouse Avenue by making a right turn onto Private Bolio. The southbound traffic entering the POM does not impede traffic because queues can back up to Lighthouse Avenue without impeding through traffic. Northbound traffic from the Lighthouse Tunnel (from Seaside, marina and Downtown) enters the POM making an uncontrolled left turn from lighthouse Avenue onto Private Bolio. Vehicles trying to make this left turn must find an appropriate gap in the southbound traffic on Lighthouse Avenue. The left turn queue at the intersection of Lighthouse Avenue and Private Bolio can be problematic. The ACP includes one inbound lane (with separated tandem positions) and one outbound lane, and is staffed by two guards checking IDs, two guards inspecting vehicles, and one guard at the Visitor Control Center. Traffic volume information at the Private Bolio ACP is provided in Table 10.

Table 10. Traffic Volume Access Control Point – Private Bolio ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	695	625	1320
8/05/2007	Sunday	557	450	1007
8/06/2007	Monday	1352	1263	2615
8/07/2007	Tuesday	1370	1227	2597
8/08/2007	Wednesday	1447	1374	2821
8/09/2007	Thursday	1308	1221	2529
8/10/2007	Friday	1230	1282	2512
8/11/2007	Saturday	868	829	1697
8/12/2007	Sunday	528	444	972
Weekday ADT		1341	1273	--
Weekend ADT		662	587	--
AM Peak Hour (7:00 AM – 8:00 PM): 176 Vehicles				
PM Peak Hour (4:30 PM – 5:30 PM): 151 Vehicles				

***Source**: City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey.*

Taylor Street ACP

The Taylor Street ACP provides the only direct access from the POM to New Monterey, Pebble Beach and Pacific Grove. Because of the aforementioned steep grade on Franklin Street, the majority of heavy vehicles/commercial traffic routes through the Taylor Street ACP. There is potential for traffic to queue back and interfere with the traffic signal at Taylor and Prescott. During the PM Peak Hour there does appear to be heavy traffic from Rifle Range Road and Private Bolio (where the DLI classes are) to Mason (where the dorms are located), and this traffic conflicts with vehicles entering the POM from Taylor Street. The ACP includes one inbound lane and one outbound lane, and is staffed by one guard checking POV IDs, one guard checking pedestrian IDs, and one guard performing random inspections. Traffic volume information at the Taylor Street ACP is provided in Table 11.

Table 11. Traffic Volume Access Control Point – Taylor Street ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	628	553	1181
8/05/2007	Sunday	573	542	1115
8/06/2007	Monday	1797	1394	3191
8/07/2007	Tuesday	1774	1357	3131
8/08/2007	Wednesday	1796	1311	3107
8/09/2007	Thursday	1308	1685	1685
8/10/2007	Friday	1704	1449	3153
8/11/2007	Saturday	658	598	1256
8/12/2007	Sunday	535	498	1033
Weekday ADT		1676	2833	--
Weekend ADT		599	548	--
AM Peak Hour (11:30 AM – 12:30 PM): 262 Vehicles				
PM Peak Hour (4:30 PM – 5:30 PM): 278 Vehicles				

Source: *City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey.*

High Street ACP

The High Street ACP provides good access for all types of vehicles. The direct route from High Street to the core of the POM is through the residential area to the west of the High Street ACP. This ACP is an important secondary access point for emergency response vehicles to the POM. The ACP includes one inbound lane and one outbound lane, and is staffed by one guard checking POV IDs and one guard checking pedestrian IDs. Traffic volume information at the High Street ACP is provided in Table 12.

Table 12. Traffic Volume Access Control Point – High Street ACP (2007)

Date	Day	In	Out	Total
8/04/2007	Saturday	82	76	158
8/05/2007	Sunday	87	61	148
8/06/2007	Monday	712	685	1397
8/07/2007	Tuesday	838	621	1459
8/08/2007	Wednesday	663	741	1404
8/09/2007	Thursday	765	524	1289
8/10/2007	Friday	792	807	1599
8/11/2007	Saturday	65	75	140
8/12/2007	Sunday	86	81	167
Weekday ADT		754	676	--
Weekend ADT		80	73	--
AM Peak Hour (7:30 AM – 8:30 PM): 175 Vehicles				
PM Peak Hour (4:30 PM – 5:30 PM): 122 Vehicles				

Source: *City of Monterey. October 30, 2007. 2007 Artillery Gate Turning Movement Counts, Monterey.*

Data was collected at the four open ACPs during the development of the 2010 Comprehensive Transportation Engineering Study. Traffic demands were observed and recorded at each ACP and compared to the October 2007 and September 2001 counts shown above from the City of Monterey. In general, there was an increase in demands observed at the ACPs as compared to 2001 and 2007. Nearly 40 percent of the traffic demand occurs at the Franklin Street ACP. The total 2009 traffic demands are shown in Table 13.

Table 13. Traffic Demands at Four Open ACPs (2009)

ACP	Private Bolio	Franklin Street	High Street	Taylor Street	Combined
Number of Vehicles Processed in Peak Hour	342	611	230	391	1574
Number of Maximum Queued Vehicles in Peak Hour	9	24	2	10	45
Total Existing Peak Hour Demand	351	635	232	401	1619
Total Daily Demand	1392	2353	644	1418	5807

Source: *2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA*

Of particular interest from the data shown in Table 13 is the proportion of traffic using the gates to access the POM in relation to each other. The data can be further summarized as shown below.

- Franklin Street ACP realizes 41% of the total vehicle daily demand and 39% of the AM peak hour demand.
- Private Bolio ACP realizes 24% of the total vehicle daily demand and 22% of the AM peak hour demand.
- Taylor Street ACP realizes 24% of the total vehicle daily demand and 25% of the AM peak hour demand.
- High Street ACP realizes 11% of the total vehicle daily demand and 14% of the AM peak hour demand.

2.4 Existing Parking Conditions

Existing installation-wide parking supply at the Presidio of Monterey is noted in Table 14 as per data taken and provided by POM staff (current as of April 12, 2007):

Table 14. Existing Available Parking Spaces (2007)

Parking	Available Spaces
Staff	1,320
Reserved	372
Open	1,634
Visitor	67
Handicap	90
Motorcycle	91
Military/GSA	46
Loading zone	5
Total Available Parking	**3,625**

2.5 Existing Transit Service

Monterey-Salinas Transit (MST), an external bus service, provides bus service not only within POM but also between OMC and POM via lines 71-79. Figure 8 illustrates these nine commuter bus routes. Additionally, the external bus service offers services to/from OMC, Naval Postgraduate School, and the POM. An internal shuttle system links key areas on POM. The internal shuttle service operates during the morning, midday, and evening time periods.

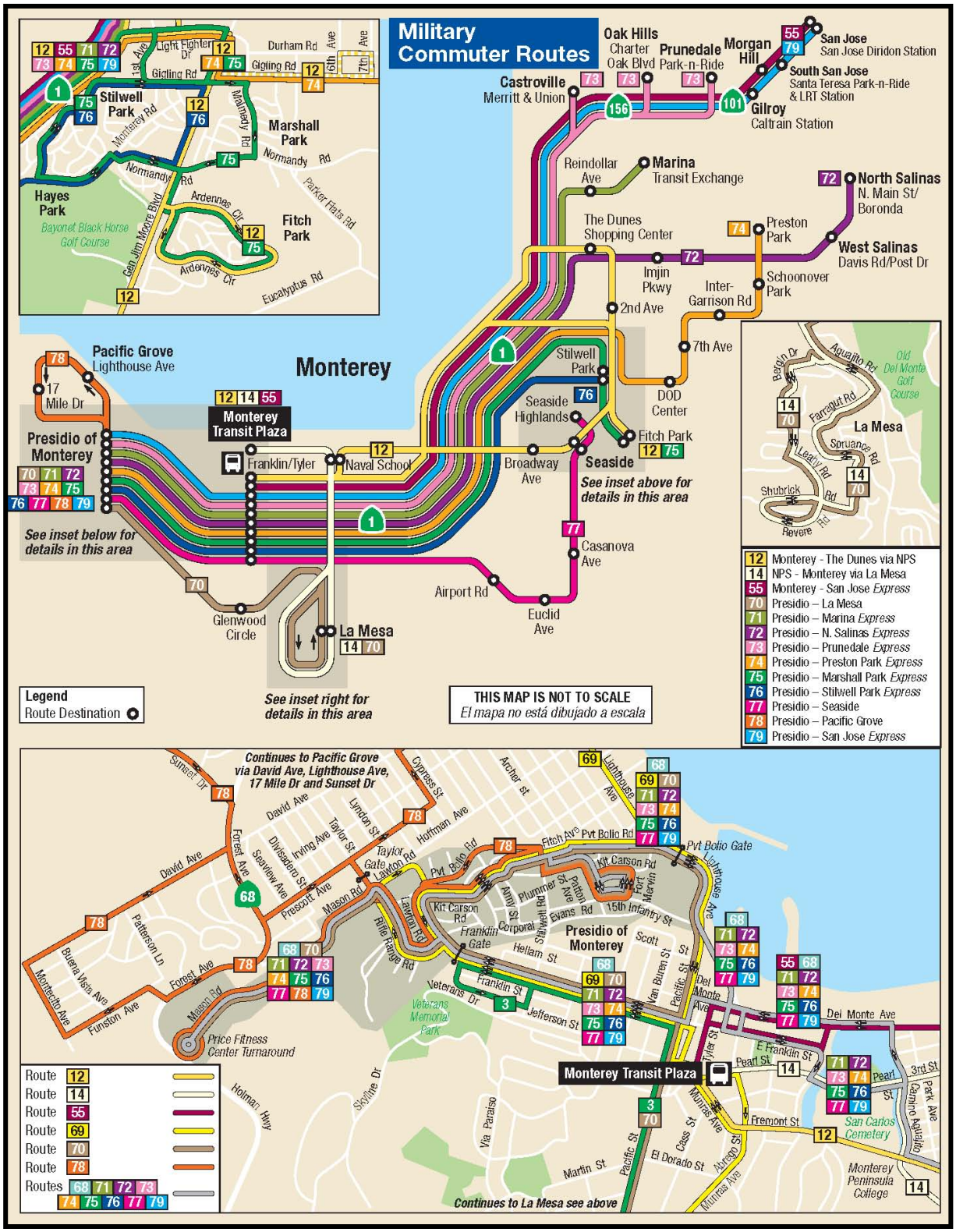

Figure 8. MST Routes Serving POM and OMC

Source: *MST (http://mst.org/maps/1-20-10/Presidio%20Map+1214.pdf)*

2.6 Existing Pedestrian Traffic

Pedestrian activity to, from, and within the POM is relatively heavy compared to the region as a whole. The highest concentration of pedestrian activity occurs across Rifle Range Road, where students travel between the barracks and the Academic Area cross before morning classes beginning at approximately 7:45 am, during the noon lunch period, and after classes ending at approximately 3:30 pm. There is also considerable pedestrian activity between the POM and the restaurants and retail business on Forest Avenue and to other support areas.

Several pedestrian entrances to the POM are located at the ends of streets that dead-end at the POM boundary, such as Clay Street and Lyndon Street. These entrances are often used by POM people who live nearby and by some commuters who choose to park offsite. People seeking to access the transit stops along State Highway 68 often use a pedestrian access on Divisadero Street. A fence was erected around the perimeter of the northwest corner of the POM to discourage crossing State Highway 68 at that location. Access to transit stops on this highway is obtained by way of Divisadero Street and Prescott Avenue. Pedestrian facilities on the POM are non-continuous. Sidewalks are often located solely on one side of a roadway, such as on parts of Mason Road. Crosswalks are provided at some intersections and at mid-block crossing. Formal and informal pedestrian paths provide access to student activity locations. ADA compatibility varies throughout POM, however, curb ramps have been updated in some areas.

Pertinent to bicycle facilities, there are three basic types of bicycle facilities in the Monterey Peninsula. Each type is described below:

- **Bike Path (Class I):** A completely separate right-of-way designed for the exclusive use of cyclists and pedestrians, with minimal crossings for motorists.
- **Bike Lane (Class II):** A lane on a regular roadway, separated from the motorized vehicle right-of-way by paint striping, designated for the exclusive or semi-exclusive use of bicycles. Bike lanes allow one-way bike travel. Through travel by motor vehicles or pedestrians is prohibited, but crossing by pedestrians and motorists is permitted.
- **Bike Route (Class III):** Provides shared use of the roadway, designated by signs or permanent markings and shared with motorists.

The majority of the existing roadways in the POM and the OMC areas do not have dedicated bicycle lanes, nor do they allow enough room for vehicles and bicycles to comfortably share the roadway.

3. POTENTIAL TRAFFIC IMPACTS OF PROJECT ALTERNATIVES

This section presents the potential impacts of the project alternatives on the transportation system. The project alternatives are described herein, followed by the analysis methodology for each alternative. This includes the detailed analysis of trip generation, trip distribution, trip assignment and potential impacts.

3.1 Analysis Methodology

In general, traffic can be affected by construction activities and long-term implementation of the RPMP. Construction effects would be temporary, and could include increased truck traffic, increased construction worker traffic, decreased parking availability due to staging, and possible road detours. Implementation, or operation, impacts could include increased vehicles on POM and OMC from more military and civilian personnel accommodated by new RPMP facilities and changes in traffic distribution from new operations of ACPs.

Increases in traffic volumes are directly related to population growth expected at the POM and OMC sites. In general, as population increases, traffic in the region would also increase with more vehicles and vehicle trips. Table 15 shows expected population growth for military personnel, including students and faculty, at the POM and OMC sites. Family members of students and faculty and civilians that live at OMC are not included. Past estimates indicated that about 6,000 civilians live on site.

Table 15. Projected Population

Fiscal Year	Total Population [1]
2008	8,170
2009	8,958
2010	9,570
2011	10,485
2012	10,086
2015 – 2020	10,088

Source: *2009 Army Stationing and Installation Plan (ASIP) values, Bob Guidi (POM DPW, March 2009).*

[1] Military population living at the installation.

This analysis strives to document trip generation and travel pattern changes that may result from the project level actions. The project-level analysis is based on existing data available for past transportation studies and planning efforts. It is not known how the population estimates relate to the project-level actions. Long range plans (i.e. programmatic level projects) currently lack sufficient detail to accurately quantify and analyze impacts; therefore, these plans will require future supplemental environmental documentation.

The Army is currently in the process of preparing a comprehensive, area-wide traffic and parking analysis for the POM and the OMC. The study in progress will be based on recent and relevant traffic and parking data collected in the field by others, and is much more detailed than existing data, such that traffic and travel patterns will be captured for areas within the POM and OMC, and the surrounding communities. This data would help support future environmental documentation related to RPMP implementation.

3.2 No Action Alternative Traffic Impacts

As stated earlier, the No Action Alternative is defined as the condition that would result if the project were not approved and/or constructed. Because the project is actually approval of a Master Plan rather than a physical construction project, the No Action Alternative would be defined as not approving the RPMP. If the 2008 RPMP is not approved, management of the POM would continue based on the 1980 RPMP that is currently in effect.

The No Action Alternative does include the addition of one of three General Instructional Buildings (GIB's) that were documented in a Final Environmental Assessment (EA) completed in 2007. The EA documents the effects of three proposed GIB's. Two of the GIB's have been completed or are being completed, thus are part of the existing conditions for 2010. The remaining GIB with a parking lot (FY11) is the only GIB included under the No Action Alternative as follows:

- General Instructional Building (FY11): Four-story building; 105,627 square feet

3.2.1 Traffic Impacts

A trip generation analysis was completed for the General Instructional Building (GIB) EA. Due to the proximity of the new GIB to the Taylor Street and Franklin Street gates, it is assumed that all additional traffic will be distributed to these two gates at a proportional percentage to the existing AM Peak Hour ACP Demand. Therefore 39 percent of the additional traffic (69 AM and 76 PM) will use the Taylor Street Gate while the remaining 61 percent (109 AM and 119 PM) will use the Franklin Street Gate. This assumes that none of the new traffic generated will be routed through the Private Bolio Gate or the High Street Gate.

3.3 Alternative 1 - POM Centric Traffic Impacts

3.3.1 Projects Planned for Development by 2015 (Project Level Analysis)

The following are facility upgrades identified for completion by 2015 and potential impacts. Traffic impacts of these facilities are intended to be analyzed at the project-level for the EIS.

Barracks Complex Phase I

The Barracks Complex Phase I facility upgrade action includes the demolition of an existing 1950's era barracks building with a new 164,960 square foot facility. The new barracks complex will increase the dining facility capacity, provide updates to language student accommodations and develop new command and control facilities. Construction of the Barracks Complex Phase I project is planned for the 2011 fiscal year. . Parking capacity would decrease to 192 spaces, only 60 percent of the required 320 parking spaces.

Renovation of Building 326

The restoration of the Weckerling Center (POM Building 326) will improve the facilities usefulness as cultural center used to reinforce cultural differences associated with different languages. Restoration of the 18,403 square foot building originally constructed in 1925 is planned for the 2012 fiscal year. The Weckerling Center (POM Building 326) restoration will include cosmetic refurbishment, interior redesign, and structural improvements. The work will not alter the size or usage of the building.

Barracks Complex Phase IV

The Barracks Complex Phase IV facility upgrade action includes the demolition of an existing 1960's era barracks building with a new 169,500 square foot facility. The new barracks complex will increase the dining

facility capacity, provide updates to language student accommodations and develop new command and control facilities. Construction of the Barracks Complex Phase IV project is planned for the 2015 fiscal year.

3.3.1.1 Traffic Impacts

Based on existing descriptions, the projects planned for development by 2015 are not expected to result in significant long-term traffic increases relative to the No Action Alternative. The described projects are renovations and/or demolitions and reconstruction of existing buildings. It is not expected that these projects would substantially change the number of students and faculty that access the buildings over existing conditions. Therefore, the amount of vehicle trips expected from use of the new facilities in similar to existing conditions and there would be minimal traffic impacts.

Construction of the facilities could result in increased trips in the study area. Construction vehicles would transport construction materials using local roadways both within and outside the POM and using available ACPs. Construction routes or number of trucks needed per building have not been identified; therefore, a quantitative analysis is not possible at this point.

Based on the LOS of existing roadways outside the POM shown in Table 5, additional construction traffic could result in significant impacts, depending on the roadway used. However, all construction impacts would be temporary. Construction traffic would also increase wait times at ACPs as construction vehicles are transporting material to and from the POM. Depending on the ACP used, the impact could be significant. Roads within the POM have generally high LOS ratings, and increased construction traffic may not result in a significant impact. Construction staging could occur in nearby parking lots that would reduce parking availability during the period of construction. Because of already limited parking at POM, this could result in a significant impact. The EIS analysis will identify potential mitigation measures to reduce construction traffic impacts.

- Additional information needed for a quantitative project-level analysis includes:
- Population supported by new facilities
- Expected travel routes of any new students or faculty
- Number of construction trucks, estimates can be per building
- Proposed roads and intersections used during construction
- Access points into POM for construction vehicles
- Number of parking spaces affected during construction

3.3.2 Long Range Projects (Programmatic Level Analysis)

Alternative 1 includes 23 long-range, programmatic level projects that are intended to consolidate operations associated with the DLI to the POM facility. The new buildings will include barracks, classrooms, and recreation and training centers at the POM facility. Alternative 1 also includes some facility improvements at OMC. Future construction at the OMC consists of community and other support centers and development of the Marshall Park and Joe Lloyd Way neighborhoods into self-contained housing and learning sites.

3.3.2.1 Traffic Impacts

Potential traffic impacts of long-range projects include increased vehicle trips into, within, and out of the POM and OMC sites and increased delays at ACPs. The proposed facilities would support increased number of students and faculty that would travel in the study area. Depending on the roadways used, increased traffic outside of the POM could result in significant impacts because several LOS levels in the region are already poor. Traffic delays at ACPs could increase in the long-term as new students and faculty drive into and out of the POM. An exception to this is based on the likelihood of a new ACP being implemented off of SH 68. If this were to be realized, ACP traffic demand would reduce 50 percent at both the Franklin Street and Taylor

Street ACPs. Trips that occur during peak times could result in significant impacts. Roads inside the POM would likely be able to support additional trips. Alternative 1 includes new parking structures, which could alleviate existing parking limitations. Faculty and students living on the site would not increase daily trips relative to those that choose to live off-site because they would be more likely to walk or take short bus rides to classrooms.

Construction impacts of the long-range projects would be similar to those described above for the near-term projects. Construction impacts would be temporary and could be mitigated.

Because there is insufficient detail to assess the impacts of these projects on the area transportation system, trip generation, and distribution, an impact analysis cannot be undertaken. It is recommended that a comprehensive traffic study be undertaken to identify potential impacts associated with these programmatic level projects.

From a general planning level analysis, however, the Army Restationing Plan suggests that the POM is expected to experience a uniformly distributed 14 percent increase to roadways within POM by 2015. This increase was validated by the trip generation analysis (Gannett Fleming 2010). Using this data, future year levels of service can be calculated. Future year levels of service for intersections within the POM are shown in Table 16. The level of service was obtained from the 2010 POM Comprehensive Transportation Study (Gannett Fleming) and reflects a 14 percent increase to all roadways and intersection volumes. Intersections that show a decrease in levels of service without any mitigation are shown with an asterisk in the table.

Table 16. Future Intersection Level of Service – Locations within POM

Intersection	AM Peak Hour LOS	PM Peak Hour LOS
Taylor Street / Lawton Road / Mason Road / Rifle Range Road	C*	B
Rifle Range Road / SSG Fronins Road	B	C*
Patton Avenue / Plummer Street	B	B
Stilwel Road / Kit Carson Road	B*	A
Army Street / Pvt Bolio Road	B	B
Army Street / Kit Carson Road	A	B*
Kit Carson Road / Lewis Road	B	B
Lawton Road / Kit Carson Road	F*	C*
Lawton / Rifle Range Road / Franklin Street	F	D
Lawton Road / Pvt Bolio Road	E*	C*

Source: *2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA*

For intersections outside of the POM, future year LOS is shown in Table 17. As with the internal POM intersections, the LOS was obtained from the 2010 POM Comprehensive Transportation Study (Gannett Fleming) and reflects a 14 percent increase to all roadways and intersection volumes. Intersections that show a decrease in levels of service without any mitigation are shown with an asterisk in the table.

Table 17. Future Intersection Level of Service – Locations outside POM		
Intersection	**Am Peak Hour LOS**	**PM Peak Hour LOS**
Lighthouse Avenue/Washington Street/Del Monte Avenue	B	B
Foam Street/Reeside Avenue	A	B
Lighthouse Avenue/Reeside Avenue	B	B
Private Bolio Road/Lighthouse Avenue	B	C
Prescott Avenue/Taylor Street	A	B
Prescott Avenue/Lighthouse Avenue	NA	B
Franklin Street/High Street	C	D*
Franklin Street/Pacific Street	C	C
Franklin Street/Van Buren Street	A	B*
Munras Avenue/Soledad Drive	B	C
Fremont Street/Aguajito Road	C	E*
Fremont Street/Abrego Street	B	C

Source: *2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA*

Of particular note is the potential long-term impact to traffic distribution and SH 68 with the addition of a new primary ACP at SH 68. This new ACP would be located at the intersection of SH 68 and SFB Morse Drive, at the POM West Campus boundary. For implementation of this new ACP, SH 68 would have to be widened and a turn-lane added.

Data contained in the 2010 Comprehensive Transportation Study (Gannett Fleming) assessed potential traffic demand shifts in POM ACP's given the potential development of a new ACP at SH 68. Correlating to "Scenario 3" in said report, the assessment suggests a 50% shift from the Franklin Street ACP and a 50 percent shift from the Taylor Street ACP to the new SH 68 ACP. Analyzing this potential shift on existing volumes suggests the new SH 68 ACP may see traffic demands as shown in Table 18:

Table 18. Traffic Demands at Four Open ACPs (Scenario 3) – Existing Traffic Distribution					
ACP	**Private Bolio**	**Franklin Street**	**Taylor Street**	**New SH 68**	**Combined**
Number of Vehicles Processed in Peak Hour	342	306	196	730	1574
Number of Maximum Queued Vehicles in Peak Hour	9	12	5	19	45
Total Existing Peak Hour Demand	351	318	201	749	1619
Suggested ACP Lanes	2	2	1	3	6

Source: *2009 Data from Gannett Fleming 2010 Comprehensive Transportation Engineering Study, Presidio of Monterey, CA*

Table 18 gives a planning level assessment of the volume of traffic demand that may be encountered should a new primary ACP be implemented at SH 68. Traffic demands and corresponding queues reduce at both the Franklin Street ACP and the Taylor Street ACP with the creation of the SH 68 ACP. However the traffic demands noted above are inherently conservative since Scenario 3 from the 2010 Comprehensive Transportation Study also includes the closure of the High Street ACP, while Alternative 1 (POM Centric) contained herein does not. Thus, the traffic demand and potential queues presented in Table 17 may be somewhat less than that shown if the High Street ACP remains open.

The potential number of queued vehicles at a new SH 68 ACP could be on the order of 19 vehicles (under existing traffic conditions) to potentially 22 vehicles (future with 14 percent ambient traffic growth). The queuing of these vehicles may be a significant concern if not mitigated for vehicles stacking back onto SH 68.

3.4 Alternative 2 - POM and OMC Development

3.4.1 Projects Planned for Development by 2015 (Project Level Analysis)

At the level of detail provided, the facility upgrades planned for development by 2015 under Alternative 2 are identical to those identified under Alternative 1. Therefore the impacts would be the same.

To complete a quantitative analysis of potential impacts, the following data is necessary:

- Population supported by new facilities
- Expected travel routes of any new students or faculty
- Number of construction trucks, estimates can be per building
- Proposed roads and intersections used during construction
- Access points into POM for construction vehicles
- Number of parking spaces affected during construction

3.4.2 Long Range Projects (Programmatic Level Analysis)

Alternative 2 includes 29 long-range, programmatic level projects dividing future development between POM and OMC. New buildings would be placed logically within the existing land use areas to maintain a campus-like atmosphere at the POM, while also utilizing the large parcels at the OMC and initiating the OMC as a defense language learning center. The projects generally include new barracks, and additional GIBs at the OMC facility. Alternative 2 also proposes facility improvements at POM site, including new parking structures, classrooms, and several other facilities.

3.4.2.1 Traffic Impacts

Potential traffic impacts of long-range projects include increased vehicle trips into, within, and out of the POM and OMC sites and increased delays at ACPs. The proposed facilities would support increased number of students and faculty that would travel in the study area. Depending on the roadways used, increased traffic outside of the POM could result in significant impacts because several LOS levels in the area are already poor. LOS levels outside the OMC sites are better relative to POM and may be able to support additional traffic from new students and faculty without further degrading traffic conditions. Traffic delays at ACPs could increase in the long-term as new students and faculty drive into and out of the POM and OMC. An exception to this is based on the likelihood of a new ACP being implemented off of SH 68. If this were to be realized, ACP traffic demand would reduce 50 percent at both the Franklin Street and Taylor Street ACPs. Trips that occur during peak times could result in significant impacts. Roads inside the POM and OMC would likely be able to support additional trips. Alternative 2 includes new parking structures, which could alleviate existing parking limitations. Faculty and students living on the site would not increase daily trips relative to those that choose to live off-site because they would be more likely to walk or take short bus rides to classrooms.

Construction impacts of the long-range projects would be similar to those described for the near-term projects under Alternative 1. Construction impacts would be temporary and could be mitigated.

Because there is insufficient detail to assess the impacts of these projects on the area transportation system, trip generation, and distribution, an impact analysis cannot be undertaken. It is recommended that a comprehensive traffic study be undertaken to identify potential impacts associated with these programmatic level projects.

4. CONCLUSIONS

The RPMP Alternatives 1 or 2 could affect traffic within the POM sites and surrounding cities. Traffic impacts would result from both construction of facilities and long-term operation of the facilities. For the EIS analysis, it is necessary to analyze both types of impacts. As currently proposed, projects anticipated to be complete by 2015 will be analyzed at the project-level of detail and projects planned for after 2015 will be analyzed at a programmatic level of detail.

Under the RPMP Alternatives, the Army plans to increase students and faculty at the DLIFLC, which would result in more vehicle trips within the POM and OMC sites and in the surrounding cities. The Army Restationing Plan suggests that the POM is expected to experience a uniformly distributed 14 percent increase to roadways within POM by 2015. This increase was validated by the trip generation analysis (Gannett Fleming 2010). With more vehicles on the road, circulation would likely worsen and delays would increase. If the majority of students and faculty choose to live on-site, traffic impacts would be less. Limited data is available on population growth expected as part of the RPMP alternatives; therefore, the long-term impacts to traffic were analyzed qualitatively and at a programmatic level. Supplemental documentation will be necessary as the projects are further defined.

Construction impacts could include increased construction vehicle trips, delays at the ACPs, and decreased parking availability. With no data available on construction trips, routes, and staging areas, it was not possible to quantify impacts to LOS, delay times, or parking reductions. The EIS will identify appropriate mitigation measures to reduce construction related impacts to traffic.

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APPENDIX C: AIR QUALITY EMISSIONS

No Action Alternative - Construction Emissions

Table C-1. Unmitigated Daily Construction Emissions for No Action Alternative							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
FY11 General Instruction Building							
2010	33	5	25	0	83	18	3,092
2011	31	384	19	0	2	1	3,091
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Table C-2. Mitigated Daily Construction Emissions for No Action Alternative							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Peak Daily Emissions (pounds per day)						
FY11 General Instruction Building							
2010	33	5	25	0	33	8	3,092
2011	31	384	19	0	2	1	3,091
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Table C-3. Unmitigated Annual Construction Emissions for No Action Alternative							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
FY11 General Instruction Building							
2010	1	0	1	0	1	0	89
2011	3	4	2	0	0	0	278
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Table C-4. Mitigated Annual Construction Emissions for No Action Alternative							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Annual Emissions (tons per year)						
FY11 General Instruction Building							
2010	1	0	1	0	1	0	89
2011	3	4	2	0	0	0	278
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

No Action Alternative - Operational Emissions

Table C-5. Unmitigated Daily Operational Emissions for No Action Alternative							
Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
FY11 General Instruction Building							
2011	4	2	3	-	0	0	4,121
MBUAPCD Thresholds of Signifiance for Operations							
	550	137	137	150	82	NA	NA

Table C-6. Unmitigated Annual Operational Emissions for No Action Alternative							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
FY11 General Instruction Building							
2011	1	0	1	-	-	-	752
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Short-Range Projects - Construction Emissions

Table C-7. Unmitigated Daily Construction Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
Barracks Phase I Demolition							
2010	19	4	43	0	33	8	5,079
Barracks Phase I Construction							
2010	36	5	25	0	31	7	3,534
2011	46	96	38	0	3	3	5,038
Building 326							
2012	36	5	25	0	31	7	3,534
Barracks Phase IV Demolition							
2014	15	3	32	0	36	9	5,620
Barracks Phase IV Construction							
2014	48	7	35	0	27	7	6,506
2015	47	150	32	0	2	2	6,630
GRAND TOTAL							
2010	55	9	68	0	64	16	8,613
2011	46	96	38	0	3	3	5,038
2012	36	5	25	0	31	7	3,534
2014	63	10	67	0	63	15	12,125
2015	47	150	32	0	2	2	6,630
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Table C-8. Mitigated Daily Construction Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Peak Daily Emissions (pounds per day)						
Barracks Phase I Demolition							
2010	19	4	43	0	33	8	5,079
Barracks Phase I Construction							
2010	36	5	25	0	13	4	3,534
2011	46	96	38	0	3	3	5,038
Building 326							
2012	36	5	25	0	31	7	3,534
Barracks Phase IV Demolition							
2014	15	3	32	0	36	9	5,620
Barracks Phase IV Construction							
2014	48	7	35	0	12	4	6,506
2015	47	150	32	0	2	2	6,630
GRAND TOTAL							
2010	55	9	68	0	46	12	8,613
2011	46	96	38	0	3	3	5,038
2012	36	5	25	0	31	7	3,534
2014	63	10	67	0	48	12	12,125
2015	47	150	32	0	2	2	6,630
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Short-Range Projects - Construction Emissions (continued)

Table C-9. Unmitigated Annual Construction Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
Barracks Phase I Demolition							
2010	0	0	1	0	1	0	114
Barracks Phase I Construction							
2010	2	0	2	0	1	0	232
2011	3	3	2	0	0	0	347
Building 326							
2012	0	0	0	0	0	0	0
Barracks Phase IV Demolition							
2014	0	0	1	0	1	0	112
Barracks Phase IV Construction							
2014	2	0	2	0	1	0	338
2015	6	4	2	0	0	0	385
GRAND TOTAL							
2010	2	0	3	0	2	0	347
2011	3	3	2	0	0	0	347
2012	0	0	0	0	0	0	0
2014	3	0	3	0	1	0	450
2015	6	4	2	0	0	0	385
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Table C-10. Mitigated Annual Construction Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Annual Emissions (tons per year)						
Barracks Phase I Demolition							
2010	0	0	1	0	1	0	114
Barracks Phase I Construction							
2010	2	0	2	0	0	0	232
2011	3	3	2	0	0	0	347
Building 326							
2012	0	0	0	0	0	0	0
Barracks Phase IV Demolition							
2014	0	0	1	0	1	0	112
Barracks Phase IV Construction							
2014	2	0	2	0	0	0	338
2015	3	4	2	0	0	0	385
GRAND TOTAL							
2010	2	0	3	0	1	0	347
2011	3	3	2	0	0	0	347
2012	0	0	0	0	0	0	0
2014	3	0	3	0	1	0	450
2015	3	4	2	0	0	0	385
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Short-Range Projects - Operational Emissions

Table C-11. Unmitigated Daily Operational Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
Barracks Phase I Demolition							
2011	(112)	(21)	(16)	(0)	(11)	(2)	(8,335)
Barracks Phase I Construction							
2011	154	30	22	0	15	3	11,589
Building 326							
2012	-	-	-	-	-	-	-
Barracks Phase IV Demolition							
2015	(112)	(21)	(16)	(0)	(11)	(2)	(8,335)
Barracks Phase IV Construction							
2015	127	32	20	0	18	4	13,819
GRAND TOTAL							
2011	41	9	6	0	4	1	3,254
2012	41	9	6	0	4	1	3,254
2013	41	9	6	0	4	1	3,254
2014	41	9	6	0	4	1	3,254
2015	57	20	9	0	11	2	8,738
Operational emissions for 2016 - 2030 will be equivalent to those in 2015.							
MBUAPCD Thresholds of Signifiance for Operations							
	550	137	137	150	82	NA	NA

Table C-12. Unmitigated Annual Operational Emissions from Short-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
Barracks Phase I Demolition							
2011	19	4	3	0	2	0	1516
Barracks Phase I Construction							
2011	26	6	4	0	3	1	2108
Building 326							
2012	-	-	-	-	-	-	-
Barracks Phase IV Demolition							
2015	19	4	3	0	2	0	1516
Barracks Phase IV Construction							
2015	22	6	3	0	3	1	2514
GRAND TOTAL							
2011	45	9	6	0	5	1	3,624
2012	45	9	6	0	5	1	3,624
2013	45	9	6	0	5	1	3,624
2014	45	9	6	0	5	1	3,624
2015	85	19	12	0	10	2	7,654
Operational emissions for 2016 - 2030 will be equivalent to those in 2015.							
General Conformity De Minimis Thresholds							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Construction Emissions

Table C-13. Unmitigated Daily Construction Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
Joint Service Headquarters Building							
2016	0	29	0	0	0	0	16
VA Clinic and Parking							
2016	11	35	16	0	8	2	2,294
Administrative Support Center							
2016	0	29	0	0	0	0	16
Joint Service Training Center							
2016	16	37	22	0	9	3	3,332
Emergency Services Center							
2016	11	35	16	0	8	2	2,294
Stillwell Community Center							
2016	0	13	0	0	0	0	7
Barracks Phase II Demolition							
2016	12	2	25	0	35	8	5,500
Barracks Phase II Construction							
2016	26	3	16	0	48	11	3,769
2017	26	113	14	0	1	1	3,877
Barracks Phase III Demolition							
2017	18	4	41	0	70	16	10,309
Barracks Phase III Construction							
2018	22	3	13	0	43	9	3,530
2019	22	101	12	0	1	1	3,626
Classroom Renovation I							
2018	0	13	0	0	0	0	7
Teen Center							
2020	10	13	11	0	3	1	2,294
Classroom Renovation II							
2025	0	25	0	0	0	0	14
General Instruction Buildings (4)							
2020	20	306	11	0	82	17	3,207
Swimming Pool							
2025	9	11	11	0	3	1	2,294
Multi-level Parking							
2016	11	57	16	0	16	4	2,294
2025	17	169	12	0	45	10	4,336
GRAND TOTAL							
2016	87	242	111	0	125	30	19,525
2017	45	117	55	0	71	16	14,186
2018	22	15	13	0	43	9	3,537
2019	22	101	12	0	1	1	3,626
2020	29	320	22	0	85	18	5,501
2025	26	205	23	0	48	11	6,644
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Construction Emissions (continued)

Table C-14. Mitigated Daily Construction Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Peak Daily Emissions (pounds per day)						
Joint Service Headquarters Building							
2016	0	29	0	0	0	0	16
VA Clinic and Parking							
2016	11	35	16	0	4	1	2,294
Administrative Support Center							
2016	0	29	0	0	0	0	16
Joint Service Training Center							
2016	16	37	22	0	4	2	3,332
Emergency Services Center							
2016	11	35	16	0	4	1	2,294
Stillwell Community Center							
2016	0	13	0	0	0	0	7
Barracks Phase II Demolition							
2016	12	2	25	0	35	8	5,500
Barracks Phase II Construction							
2016	26	3	16	0	19	5	3,769
2017	26	113	14	0	1	1	3,877
Barracks Phase III Demolition							
2017	18	4	41	0	70	16	10,309
Barracks Phase III Construction							
2018	22	3	13	0	17	4	3,530
2019	22	101	12	0	1	1	3,626
Classroom Renovation I							
2018	0	13	0	0	0	0	7
Teen Center							
2020	10	13	11	0	2	1	2,294
Classroom Renovation II							
2025	0	25	0	0	0	0	14
General Instruction Buildings (4)							
2020	20	306	11	0	32	7	3,207
Swimming Pool							
2025	9	11	11	0	2	1	2,294
Multi-level Parking							
2016	11	57	16	0	7	2	2,294
2025	17	169	12	0	18	4	4,336
GRAND TOTAL							
2016	87	242	111	0	73	19	19,525
2017	45	117	55	0	71	16	14,186
2018	22	15	13	0	17	4	3,537
2019	22	101	12	0	1	1	3,626
2020	29	320	22	0	34	8	5,501
2025	26	205	23	0	20	5	6,644
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Construction Emissions (continued)

Table C-15. Unmitigated Annual Construction Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
Joint Service Headquarters Building							
2016	0	1	0	0	0	0	1
VA Clinic and Parking							
2016	1	0	1	0	0	0	127
Administrative Support Center							
2016	0	1	0	0	0	0	1
Joint Service Training Center							
2016	1	0	1	0	0	0	129
Emergency Services Center Construction							
2016	1	0	1	0	0	0	127
Stillwell Community Center							
2016	0	0	0	0	0	0	0
Barracks Phase II Demolition							
2016	0	0	1	0	1	0	110
Barracks Phase II Construction							
2016	2	0	2	0	2	0	365
2017	2	3	1	0	0	0	341
Barracks Phase III Demolition							
2017	0	0	1	0	2	0	232
Barracks Phase III Construction							
2018	3	0	2	0	1	0	432
2019	1	2	1	0	0	0	211
Classroom Renovation I							
2018	0	0	0	0	0	0	0
Teen Center							
2020	1	0	0	0	0	0	114
Classroom Renovation II							
2025	0	1	0	0	0	0	0
General Instruction Buildings (4)							
2020	2	4	1	0	1	0	300
Swimming Pool							
2025	0	0	0	0	0	0	97
Multi-level Parking							
2016	1	1	1	0	0	0	179
2025	1	2	1	0	1	0	391
GRAND TOTAL							
2016	6	5	5	0	3	1	1,039
2017	3	3	2	0	2	0	573
2018	3	1	2	0	1	0	432
2019	1	2	1	0	0	0	211
2020	2	4	2	0	1	0	414
2025	2	3	2	0	1	0	488
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Construction Emissions (continued)

Table C-16. Mitigated Annual Construction Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Annual Emissions (tons per year)						
Joint Service Headquarters Building							
2016	0	1	0	0	0	0	1
VA Clinic and Parking							
2016	1	0	1	0	0	0	127
Administrative Support Center							
2016	0	1	0	0	0	0	1
Joint Service Training Center							
2016	1	0	1	0	0	0	129
Emergency Services Center							
2016	1	0	1	0	0	0	127
Stillwell Community Center							
2016	0	0	0	0	0	0	0
Barracks Phase II Demolition							
2016	0	0	1	0	1	0	110
Barracks Phase II Construction							
2016	2	0	2	0	1	0	365
2017	2	3	1	0	0	0	341
Barracks Phase III Demolition							
2017	0	0	1	0	2	0	232
Barracks Phase III Construction							
2016	3	0	2	0	0	0	432
2017	1	2	1	0	0	0	211
Classroom Renovation I							
2018	0	0	0	0	0	0	0
Teen Center							
2020	1	0	0	0	0	0	114
Classroom Renovation II							
2025	0	1	0	0	0	0	0
General Instruction Buildings (4)							
2020	2	4	1	0	1	0	300
Swimming Pool							
2025	0	0	0	0	0	0	97
Multi-level Parking							
2016	1	1	1	0	0	0	179
2025	1	2	1	0	0	0	391
GRAND TOTAL							
2016	8	5	7	0	2	1	1,471
2017	4	5	3	0	2	0	784
2018	0	0	0	0	0	0	0
2019	-	-	-	-	-	-	-
2020	2	4	2	0	1	0	414
2025	2	3	2	0	0	0	488
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Operational Emissions

Table C-17. Unmitigated Daily Operational Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
Joint Service Headquarters Building							
2016	-	-	-	-	-	-	-
VA Clinic and Parking							
2016	2	0	0	-	0	0	268
Administrative Support Center							
2016	-	-	-	-	-	-	-
Joint Service Training Center							
2016	2	0	0	-	0	0	409
Emergency Services Center							
2016	2	0	0	-	0	0	268
Stillwell Community Center							
2016	-	-	-	-	-	-	-
Barracks Phase II Demolition							
2017	(56)	(15)	(9)	(0)	(9)	(2)	(6,829)
Barracks Phase II Construction							
2017	112	29	17	0	18	4	13,638
Barracks Phase III Demolition							
2019	(85)	(25)	(13)	(0)	(16)	(3)	(12,118)
Barracks Phase III Construction							
2019	85	25	13	0	16	3	12,118
Classroom Renovation I							
2018	-	-	-	-	-	-	-
Teen Center							
2020	2	0	0	-	0	0	134
Classroom Renovation II							
2025	-	-	-	-	-	-	-
General Instruction Buildings (4)							
2020	4	2	3	-	0	0	4,121
Swimming Pool							
2025	-	0	-	-	-	-	-
Multi-level Parking							
2016	2	1	0	-	0	0	3
2025	2	1	0	-	0	0	3
GRAND TOTAL							
2016	5	1	1	-	0	0	945
2017	61	15	9	0	9	2	7,754
2018	61	15	9	0	9	2	7,754
2019	61	15	9	0	9	2	7,754
2020	67	18	13	0	9	2	12,009
2021	67	18	13	0	9	2	12,009
2022	67	18	13	0	9	2	12,009
2023	67	18	13	0	9	2	12,009
2024	67	18	13	0	9	2	12,009
2025	67	18	13	0	9	2	12,009
2026	67	18	13	0	9	2	12,009
2027	67	18	13	0	9	2	12,009
2028	67	18	13	0	9	2	12,009
2029	67	18	13	0	9	2	12,009
2030	67	18	13	0	9	2	12,009
MBUAPCD Thresholds of Signifiance for Construction							
	550	137	137	150	82	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Long-Range Projects - Operational Emissions (continued)

Table C-18. Unmitigated Annual Operational Emissions from Long-Range Projects							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
Joint Service Headquarters Building							
2016	-	-	-	-	-	-	-
VA Clinic and Parking							
2016	0	0	0	-	-	-	49
Administrative Support Center							
2016	-	-	-	-	-	-	-
Joint Service Training Center							
2016	0	0	0	-	-	-	74
Emergency Services Center							
2016	0	0	0	-	-	-	49
Stillwell Community Center							
2016	-	-	-	-	-	-	-
Barracks Phase II Demolition							
2017	(10)	(3)	(1)	(0)	(2)	(0)	(1,242)
Barracks Phase II Construction							
2017	19	5	3	0	3	1	2,480
Barracks Phase III Demolition							
2019	(15)	(5)	(2)	(0)	(3)	(1)	(2,204)
Barracks Phase III Construction							
2019	15	5	2	0	3	1	2,204
Classroom Renovation I							
2018	-	-	-	-	-	-	-
Teen Center							
2020	0	0	0	-	-	-	24
Classroom Renovation II							
2025	-	-	-	-	-	-	-
General Instruction Buildings (4)							
2020	1	0	1	-	-	-	752
Swimming Pool							
2025	-	0	-	-	-	-	-
Multi-level Parking							
2016	0	0	-	-	-	-	0
2025	0	0	-	-	-	-	0
GRAND TOTAL							
2016	1	0	0	-	-	-	172
2017	10	3	2	0	2	0	1,410
2018	10	3	2	0	2	0	1,410
2019	10	3	2	0	2	0	1,410
2020	11	3	2	0	2	0	2,186
2021	11	3	2	0	2	0	2,186
2022	11	3	2	0	2	0	2,186
2023	11	3	2	0	2	0	2,186
2024	11	3	2	0	2	0	2,186
2025	11	3	2	0	2	0	2,186
2026	11	3	2	0	2	0	2,186
2027	11	3	2	0	2	0	2,186
2028	11	3	2	0	2	0	2,186
2029	11	3	2	0	2	0	2,186
2030	11	3	2	0	2	0	2,186
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Baseline to Project Increment - Construction Emissions

Table C-19. Unmitigated Daily Construction Emissions 2010-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Total Unmitigated Peak Daily Emissions (pounds per day)						
2010	88	14	93	0	147	34	11,705
2011	77	480	57	0	4	4	8,129
2012	36	5	25	0	31	7	3,534
2013	-	-	-	-	-	-	-
2014	63	10	67	0	63	15	12,125
2015	47	150	32	0	2	2	6,630
2016	-	-	-	-	-	-	-
2017	87	242	111	0	125	30	19,525
2018	45	117	55	0	71	16	14,186
2019	22	15	13	0	43	9	3,537
2020	22	101	12	0	1	1	3,626
2021	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-
2025	29	320	22	0	85	18	5,501
2026	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Includes construction emissions from No Action Alternative, Short-Range Projects, and Long-Range Projects.

Table C-20. Mitigated Daily Construction Emissions 2010-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Peak Daily Emissions (pounds per day)						
2010	88	14	93	0	79	20	11,705
2011	77	480	57	0	4	4	8,129
2012	36	5	25	0	31	7	3,534
2013	-	-	-	-	-	-	-
2014	63	10	67	0	48	12	12,125
2015	47	150	32	0	2	2	6,630
2016	11	57	16	0	7	2	2,294
2017	17	169	12	0	18	4	4,336
2018	-	-	-	-	-	-	-
2019	87	242	111	0	73	19	19,525
2020	45	117	55	0	71	16	14,186
2021	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-
2025	22	15	13	0	17	4	3,537
2026	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-
MBUAPCD Thresholds of Signifiance for Construction							
	NA	NA	NA	NA	82	NA	NA

Includes construction emissions from No Action Alternative, Short-Range Projects, and Long-Range Projects.

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

No Action to Project Increment - Construction Emissions

Table C-21. Unmitigated Annual Construction Emissions 2010-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
2010	2	0	3	0	2	0	347
2011	3	3	2	0	0	0	347
2012	0	0	0	0	0	0	0
2013	-	-	-	-	-	-	-
2014	3	0	3	0	1	0	450
2015	6	4	2	0	0	0	385
2016	-	-	-	-	-	-	-
2017	6	5	5	0	3	1	1,039
2018	3	3	2	0	2	0	573
2019	3	1	2	0	1	0	432
2020	1	2	1	0	0	0	211
2021	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-
2025	2	4	2	0	1	0	414
2026	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Includes construction emissions from Short-Range Projects and Long-Range Projects.

Table C-22. Mitigated Annual Construction Emissions 2010-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Mitigated Annual Emissions (tons per year)						
2010	2	0	3	0	1	0	347
2011	3	3	2	0	0	0	347
2012	0	0	0	0	0	0	0
2013	-	-	-	-	-	-	-
2014	3	0	3	0	1	0	450
2015	3	4	2	0	0	0	385
2016	1	1	1	0	0	0	179
2017	1	2	1	0	0	0	391
2018	-	-	-	-	-	-	-
2019	8	5	7	0	2	1	1,471
2020	4	5	3	0	2	0	784
2021	-	-	-	-	-	-	-
2022	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-
2025	0	0	0	0	0	0	0
2026	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	-
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Includes construction emissions from Short-Range Projects and Long-Range Projects.

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.

Baseline to Project Increment - Operational Emissions

Table C-23. Unmitigated Daily Operational Emissions 2011-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Peak Daily Emissions (pounds per day)						
2011	46	11	10	0	4	1	7,375
2012	41	9	6	0	4	1	3,254
2013	41	9	6	0	4	1	3,254
2014	41	9	6	0	4	1	3,254
2015	57	20	9	0	11	2	8,738
2016	-	-	-	-	-	-	-
2017	5	1	1	-	0	0	945
2018	61	15	9	0	9	2	7,754
2019	61	15	9	0	9	2	7,754
2020	61	15	9	0	9	2	7,754
2021	67	18	13	0	9	2	12,009
2022	67	18	13	0	9	2	12,009
2023	67	18	13	0	9	2	12,009
2024	67	18	13	0	9	2	12,009
2025	67	18	13	0	9	2	12,009
2026	67	18	13	0	9	2	12,009
2027	67	18	13	0	9	2	12,009
2028	67	18	13	0	9	2	12,009
2029	67	18	13	0	9	2	12,009
2030	67	18	13	0	9	2	12,009
MBUAPCD Thresholds of Signifiance for Construction							
	550	137	137	150	82	NA	NA

Includes operational emissions from No Action Alternative, Short-Range Projects, and Long-Range Projects.

No Action to Project Increment - Operational Emissions

Table C-24. Unmitigated Annual Operational Emissions 2011-2030							
Project Year	CO	VOC	NOx	SOx	PM_{10}	$PM_{2.5}$	CO_2
	Unmitigated Annual Emissions (tons per year)						
2011	45	9	6	0	5	1	3,624
2012	45	9	6	0	5	1	3,624
2013	45	9	6	0	5	1	3,624
2014	45	9	6	0	5	1	3,624
2015	85	19	12	0	10	2	7,654
2016	-	-	-	-	-	-	-
2017	1	0	0	-	-	-	172
2018	10	3	2	0	2	0	1,410
2019	10	3	2	0	2	0	1,410
2020	10	3	2	0	2	0	1,410
2021	11	3	2	0	2	0	2,186
2022	11	3	2	0	2	0	2,186
2023	11	3	2	0	2	0	2,186
2024	11	3	2	0	2	0	2,186
2025	11	3	2	0	2	0	2,186
2026	11	3	2	0	2	0	2,186
2027	11	3	2	0	2	0	2,186
2028	11	3	2	0	2	0	2,186
2029	11	3	2	0	2	0	2,186
2030	11	3	2	0	2	0	2,186
General Conformity De Minimis Threshold							
	NA	NA	NA	NA	NA	NA	NA

Includes operational emissions from Short-Range Projects and Long-Range Projects.

Note: Highlighted cell indicates a value that exceeds the significance threshold.
Red text indicates a reduction in emissions.