

Draft

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

**for Transfer of Point Mugu Navy Housing to a
Public/Private Venture at Point Mugu, Naval Base
Ventura County, California**



October 2015



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Acronyms and Abbreviations

ACM	asbestos-containing materials	$\mu\text{g}/\text{m}^3$	micrograms per cubic meter
ACORN	Aviation, Construction, and Ordnance Unit	mg/m^3	milligrams per cubic meter
amsl	above mean sea level	NAAQS	National Ambient Air Quality Standards
AICUZ	Air Installation Compatible Use Zone	NAS	Naval Air Station
APE	Area of Potential Effects	NAVFAC SW	Naval Facilities Engineering Command, Southwest (Division)
APZ	Accident Potential Zone	Navy	U.S. Department of the Navy
AQMP	Air Quality Management Plans	NBVC	Naval Base Ventura County
BAH	Basic Allowance for Housing	NEPA	National Environmental Policy Act
BASH	Bird/Wildlife-Aircraft Strike Hazard	NHPA	National Historic Preservation Act
bgs	below ground surface	NOA	Notice of Availability
BMP	Best Management Practice	NO_x	oxides of nitrogen
CAA	Clean Air Act	NO_2	nitrogen dioxide
CAAQS	California Ambient Air Quality Standards	N_2O	nitrous oxide
CAIS	chemical agent identification sets	NPDES	National Pollutant Discharge Elimination System
CalEEMod	California Emissions Estimator Model	NRHP	National Register of Historic Places
CARB	California Air Resources Board	O_3	ozone
CERCLA	Comprehensive Environmental Response Compensation, and Liability Act	ODDs	Oxnard drainage ditches
CEQ	Council on Environmental Quality	OEA	Overseas Environmental Assessment
CFR	Code of Federal Regulations	OSD	Office of the Secretary of Defense
CH_4	methane	PA/SI	Preliminary Assessment and Site Inspection
CNEL	Community Noise Equivalent Level	Pb	lead
CO	carbon monoxide	PCBs	polychlorinated biphenyls
CO_2	carbon dioxide	pCi/l	pico Curies per liter
CO_2e	carbon dioxide equivalent	$\text{PM}_{2.5}$	particulate matter ≤ 2.5 microns in diameter
CWA	Clean Water Act	PM_{10}	particulate matter ≤ 10 microns in diameter
dB	decibels	ppb	parts per billion
dba	A-weighted sound pressure level	ppm	parts per million
DoD	Department of Defense	PPV	Public/Private Venture
EA	Environmental Assessment	RCRA	Resource Conservation and Recovery Act
ECP	Environmental Condition of Property	ROC	reactive organic compounds
EIS	Environmental Impact Statement	RONA	Record of Non-Applicability
EO	Executive Order	RWQCB	Regional Water Quality Control Board
EOD	explosive ordinance disposal	SEA	Supplemental Environmental Assessment
FAA	Federal Aviation Administration	SEL	sound exposure level
FONSI	Finding of No Significant Impact	SHPO	State Historic Preservation Officer
ft	foot (feet)	SIP	State Implementation Plan
FY	fiscal year	SO_2	sulfur dioxide
GHG	greenhouse gas	SOQ	Senior Officer Quarters
GMTA	Gas Mask Training Area	SO_x	oxides of sulfur
GPR	ground penetrating radar	SWPPP	Storm Water Pollution Prevention Plan
GWP	global warming potential	SWRCB	State Water Resources Control Board
ha	hectares	TAC	toxic air contaminant
HMC&M	Hazardous Material Control and Management	TMDL	total maximum daily load
HUD	Housing and Urban Development	TSCA	Toxic Substances Control Act
H_2S	hydrogen sulfide	UAS	unmanned aircraft systems
INRMP	Integrated Natural Resources Management Plan	U.S.	United States
IR	Installation Restoration	USACE	U.S. Army Corps of Engineers
km	kilometer(s)	USC	U.S. Code
LBP	lead-based paint	USCB	U.S. Census Bureau
L_{DN}	day-night average sound level	USEPA	U.S. Environmental Protection Agency
L_{EQ}	equivalent sound level	USFWS	U.S. Fish and Wildlife Service
m	meter(s)	USV	unmanned surface vehicle
MBTA	Migratory Bird Treaty Act	UXO	Unexploded Ordnance
MFH	Military Family Housing	VCAPCD	Ventura County Air Pollution Control District
MILCON	military construction	VOCs	volatile organic compounds
MHPI	Military Housing Privatization Initiative		
MOU	Memorandum of Understanding		
MRP	Munitions Response Program		

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Draft Supplemental Environmental Assessment for Transfer of Point Mugu Navy Housing to a Public/Private Venture at Point Mugu, Naval Base Ventura County, California

Abstract

Lead Agency for the EA: Department of the Navy

Title of Proposed Action: Transfer of Point Mugu Navy Housing to a Public/Private Venture at Point Mugu, Naval Base Ventura County, California

Affected Region: Ventura County, California

Designation: Supplemental Environmental Assessment

The Department of the Navy has prepared this Supplemental Environmental Assessment in accordance with the National Environmental Policy Act of 1969, 42 United States Code §§ 4321-4370h, as implemented by the Council on Environmental Quality regulations, and 40 Code of Federal Regulations Parts 1500-1508. The Proposed Action includes implementing a Public/Private Venture housing privatization program at Naval Base Ventura County Point Mugu, located in Ventura County, California, which includes renovation of 77 units and construction of five new Senior Officer Quarters (SOQ) homes within the premises leased to the Public/Private Venture entity and demolition of up to 150 existing homes, including 102 by the Navy and the remainder by the Public/Private Venture entity. This Supplemental Environmental Assessment describes the potential environmental consequences resulting from the Proposed Action and the No-Action Alternative to the following resource areas: Topography, Geology and Soils; Water Resources; Biological Resources; Cultural Resources; Air Quality/Climate Change; Noise; Hazardous Materials/Public Health and Safety/Protection of Children; Utilities; and, Socioeconomics/Environmental Justice.

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Executive Summary

The Department of the Navy (Navy) has prepared this Supplemental Environmental Assessment (SEA) in accordance with the National Environmental Policy Act (NEPA) of 1969 and other applicable laws and regulations. It presents an analysis of the potential environmental impacts of a Proposed Action pertaining to implementing a Public/Private Venture (PPV) housing privatization program (Proposed Action) at Naval Base Ventura County (NBVC) Point Mugu, located in Ventura County, California. Under the Proposed Action, the Navy would privatize an additional 124 homes at NBVC Point Mugu. The Navy would grant a ground lease of the proposed premises and transfer the ownership of the improvements to the PPV entity. The PPV would demolish, renovate, construct, own, operate and maintain the selected Military Family Housing (MFH). A total of up to 150 homes that are not needed to meet the installation's housing requirements may be demolished as part of this Proposed Action. A total of 102 homes not included within the total of 124 homes to be privatized as part of the Proposed Action would be demolished by the Navy, and the remainder of the up to 150 homes would be demolished by the PPV entity. Minor renovations would be performed by the PPV entity to 77 of the privatized homes remaining. Amenities such as recreational fields, tot lots and dog runs may be built in the areas where the existing homes are demolished. Under the Proposed Action, the PPV entity would also build five new Senior Officer Quarters (SOQ) homes. The homes would each be approximately 2,500 gross square feet and be located within the San Miguel neighborhood.

The purpose of the Proposed Action is to:

- Implement the PPV Housing Program at NBVC Point Mugu, as authorized by the Military Housing Privatization Initiative (MHPI) 10 USC Sections 2871 – 2885;
- Provide adequate, affordable MFH units for NBVC Point Mugu military personnel and their families, in accordance with Office of the Secretary of Defense (OSD) and Department of Defense (DoD) standards;
- Provide cost savings to the government and improved housing quality at NBVC Point Mugu. Cost savings are estimated at \$4 million per year to the government;
- Provide superior housing services to military families such as improved customer service, higher quality housing, and faster responses to the renovation and maintenance needs of the homes; and
- Positively enhance combat readiness and mission capabilities.

The Proposed Action is needed to continue privatization of Government operated homes to fulfill the MFH requirements for NBVC through the PPV Housing Program. The current PPV inventory at NBVC is 1,221 units and the projected housing need in 2017 across NBVC is 1,303 units, as identified in the *2012 Housing Requirements Market Analysis Update* (Navy 2013a). The deficit is 82 units, so the addition of the units addressed in the Proposed Action would eliminate the gap between demand and supply. Of the 1,221 MFH units at NBVC that were privatized in 2007, 408 units were at Point Mugu, surrounding the 226 MFH units that were not privatized in the earlier 2007 privatization action (those 226 units include the 124 homes to be privatized as part of this Proposed Action units plus the 102 units that will be demolished by the Navy, all of which are the subject of this Proposed Action).

The availability of suitable, affordable housing for military personnel and their families would be a positive contribution to the quality of life of those eligible for the housing. The improved quality of life and subsequent improvement in morale, job satisfaction, and retention rates would ultimately have a

direct, positive impact on combat readiness and mission capabilities. Therefore, the provision of MFH would support the mission of NBVC.

The screening factors used to develop the reasonable range of alternatives include the following: (1) be located on federal property; (2) provide superior housing services to all housing units at NBVC Point Mugu; (3) continue to provide on-base MFH; (4) address the housing unit deficit identified in the *2012 Housing Requirements Market Analysis Update* (Navy 2013a); (5) maintain proximity to existing utilities and infrastructure; (6) not cause unnecessary temporary delays or disruptions in current installation mission or function; and (7) avoid significant impacts to sensitive natural resources. Based on these screening factors, only the Proposed Action and the No-Action Alternative were carried forward for analysis in this EA.

The Proposed Action encompasses an area of 48.3 acres (19.5 hectares [ha]) at NBVC Point Mugu. Under the Proposed Action, the Navy would privatize an additional 124 homes on a leased area of approximately 30 acres (12.1 ha) at NBVC Point Mugu, and the PPV entity would build five new SOQ homes within this area. The homes would each be approximately 2,500 gross square feet and be located within the San Miguel neighborhood. For approximately 30 acres to be leased, the Navy would grant a ground lease of the proposed premises and transfer the ownership of the improvements to the PPV entity. These 124 units to be transferred include units within the Anacapa, Santa Cruz, and San Miguel neighborhoods. Anacapa units consist of townhomes, while the San Miguel and Santa Cruz units consist of duplexes and single-family housing units. The PPV would renovate, demolish, own, operate and maintain the selected MFH. The land would be leased to the PPV entity for a period not to exceed 50 years, and ownership of the MFH inventory and associated facilities and infrastructure would be transferred to the PPV entity for the term of the lease. The proposed lease would include an ownership transfer of all associated utility laterals (i.e., electrical, gas, water, and sewer lines extending from each housing unit to the designated main line for each utility) from Navy ownership to the PPV entity for the length of the lease period.

The property proposed for outleasing does not include approximately 18.3 acres of the Proposed Action area that is on land within the former Gas Mask Training Area (GMTA) as well as the 50-foot buffer surrounding the former GMTA, which covers approximately 30 acres (12 ha) and includes portions of the Anacapa, Santa Cruz, and San Miguel MFH. A total of 102 MFH units in the portion of the GMTA and an associated 50-foot (15.2-meter) buffer located within the existing housing area would be demolished by the Navy.

The following resource areas were evaluated for potential environmental consequences: topography, geology and soils; water resources; biological resources; air quality/climate change; cultural resources; noise; hazardous materials/public health and safety/protection of children; utilities; and socioeconomics/environmental justice. The environmental consequences associated with the Proposed Action and the No-Action Alternative are summarized in Table ES-1. As shown in Table ES-1, no significant impacts to any resource area would occur with implementation of the Proposed Action.

Table ES-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
Topography, Geology and Soils	<p><u>No Significant Impact</u></p> <p>Only minor impacts to topography, geology and soils would occur because the activities associated with the Proposed Action would occur in previously disturbed and developed areas. Demolition and construction activities would implement Best Management Practices (BMPs) to minimize soil erosion. Implementation of the Proposed Action would not result in changes to the topography of the site. The Proposed Action would not affect the seismicity of the area, although the ground acceleration associated with anticipated earthquakes on nearby faults would potentially affect the existing and proposed new structures located within the Proposed Action area. Structural design measures already integrated into existing structures and that would be integrated into the five new SOQ homes would reduce potential impacts associated with seismicity to below significant levels. Therefore, the Proposed Action would not result in significant impacts associated with topography, geology and soils.</p>	<p><u>No Significant Impact</u></p> <p>There would be no change to existing conditions; therefore, no impacts would occur.</p>
Water Resources	<p><u>No Significant Impact</u></p> <p>Implementation of the Proposed Action would not substantially alter local drainage patterns, existing runoff volumes or velocities, or involve any direct use of groundwater. The Proposed Action could result in the demolition of up to 150 MFH units, which would remove impervious areas from the project site (thereby potentially increasing infiltration capacity). Based on the minor changes to impervious areas associated with the Proposed Action, no associated net reduction of infiltration and recharge capacity is anticipated (and overall infiltration could potentially be increased, as noted), and no facilities that would potentially affect groundwater quality would be constructed or used (e.g., underground fuel storage tanks or septic systems). While the Proposed Action is located within a mapped 100-year floodplain, no associated significant impacts would result from implementation of the Proposed Action, because no modified conditions that would potentially expose people or structures to flood-related hazards would occur. Also, no modified conditions that would potentially affect the lateral or vertical extent of existing floodplains or floodwaters would result from the Proposed Action.</p> <p>Compliance with the applicable existing regulatory controls and associated guidelines pursuant to applicable requirements of the Clean Water Act (CWA), National Pollutant Discharge Elimination System (NPDES) and related NBVC planning documents would also ensure that no significant impacts associated with water resources would occur.</p>	<p><u>No Significant Impact</u></p> <p>There would be no change to existing conditions; therefore, no impacts would occur.</p>
Biological Resources	<p><u>No Significant Impact</u></p> <p>Potential impacts to wildlife from increased noise, dust, and activity could occur in association with the Proposed Action, but would be temporary and localized. Wildlife species would likely avoid the work area temporarily and return following completion of the work, or would utilize other nearby comparable habitat. The Proposed Action would avoid or minimize interactions between snakes and residents, and there would be no significant effects on native rattlesnakes. If bats are suspected to be</p>	<p><u>No Significant Impact</u></p> <p>There would be no change to existing conditions; therefore, no impacts would occur.</p>

Table ES-1. Summary of Potential Impacts and Avoidance Measures

Resource	Proposed Action	No-Action Alternative
Biological Resources (continued)	roosting within the Proposed Action boundaries, surveys would be conducted by a biologist knowledgeable and experienced with bats, and if bats are present, proper bat exclusion would be done. Therefore, the Proposed Action would not significantly affect bat species. The Proposed Action would comply with the Migratory Bird Treaty Act (MBTA), Executive Order (EO) 13186 (Responsibilities of Federal Agencies To Protect Migratory Birds), the U.S. Fish and Wildlife Service/Department of Defense Memorandum of Understanding (MOU) to “Promote the Conservation of Migratory Birds,” and the NBVC Point Mugu and Special Areas Integrated Natural Resources Management Plan (INRMP), so there would be no significant effects on MBTA-protected species. With implementation of management strategies outlined in the INRMP, no significant effects from invasive plant species would occur from the Proposed Action. There would be no significant direct or indirect effects to wetlands from the Proposed Action as there are no wetlands within the Proposed Action boundaries.	
Cultural Resources	<u>No Significant Impact</u> Implementation of the Proposed Action would not result in impacts to archaeological resources or historic properties. The Proposed Action would be covered under the existing Naval Base Ventura County Housing Privatization Programmatic Agreement (PA) prepared in 2007.	<u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.
Air Quality/Climate Change	<u>No Significant Impact</u> Air emissions generated by the Proposed Action would be well below the South Central Coast Air Basin conformity <i>de minimis</i> levels and therefore would not result in significant air quality impacts. The mobile and intermittent operation of proposed diesel-powered construction equipment during project construction and demolition activities would result in the release of a minimal amount of air contaminants in a localized area. Therefore, construction and demolition activities would not result in significant impacts to air quality. Following the lease transfer, the Proposed Action would result in similar air quality emissions as the current condition; however, operational emissions would be further reduced with the potential demolition of up to 150 MFH units as there would be fewer motorized vehicles being driven in the project area. In regards to climate change, the Proposed Action would produce negligible cumulative impacts to global climate change as the Navy is implementing broad-based programs to reduce energy consumption and is shifting to renewable and alternative fuels, thereby reducing overall emissions of greenhouse gases (GHGs). Therefore, GHG emissions generated from implementation of the Proposed Action, in combination with GHG emissions from potential cumulative projects, would not result in significant cumulative impacts to global climate change.	<u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.

Table ES-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
Noise	<p><u>No Significant Impact</u></p> <p>Demolition activities and construction of new SOQ homes and new amenities would be limited to between the hours of 7:00 AM and 5:00 PM weekdays and Saturdays. No holiday or nighttime operation of construction equipment would be permitted. Also, due to the short-term duration of the construction and demolition activities, there would be no significant impact from noise to off- and on-installation populations.</p> <p>The MFH associated with the Proposed Action is located within an area identified as Noise Exposure Zone 2 in the 1992 Air Installation Compatible Use Zone (AICUZ) Study, which are areas exposed to noise ranging from 65 to 75 dBA Community Noise Equivalent Level (CNEL). Noise insulating measures incorporated into the existing and new MFH units in accordance with the Sound Insulation Project Report at NBVC Point Mugu (Wyle Laboratories 2007) would reduce interior noise levels. No significant impact would occur.</p>	<p><u>No Significant Impact</u></p> <p>There would be no change to existing conditions; therefore, no impacts would occur.</p>
Hazardous Materials/Public Health and Safety/Protection of Children	<p><u>No Significant Impact</u></p> <p>There is an existing potential incompatibility between two MFH units in the San Miguel neighborhood and Accident Potential Zone (APZ) 1, as identified in the 1992 AICUZ Study. Both of the residences are currently unoccupied and are anticipated to be demolished under the Proposed Action. Site locations for the five SOQ homes would be outside of the APZ 1. No significant impact would occur.</p> <p>The Proposed Action would not result in any significant effects associated with hazardous materials, hazardous waste, polychlorinated biphenyls (PCBs), asbestos, lead hazards, radon, or contaminated sites. While the project site includes a former GMTA range, all risks to public health and the environment have been considered, addressed and remediated in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and memorialized in the CERCLA Record of Decision dated May 22, 2014. CERCLA remediation also includes use of a combination of institutional controls and educational awareness, with annual evaluations and five-year recurring reviews. The Navy will continue to implement the preferred remedial alternative of educational awareness and digging restrictions presented in the CERCLA Record of Decision before, during and after demolition of the 102 homes within the GMTA and a 50-foot buffer area. The GMTA and 50-foot buffer area would not be leased to the PPV entity. No impacts to public health and safety or to children would occur.</p>	<p><u>No Significant Impact</u></p> <p>There would be no change to existing conditions; therefore, no impacts would occur.</p>

Table ES-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
Utilities	<p><u>No Significant Impact</u> Utilities within the lease boundary may be conveyed as part of the Proposed Action. Utilities conveyed would be maintained by the PPV entity within the leased premises during the lease period and the Proposed Action, including demolition of MFH units and construction of new SOQ homes, would not impact existing utility services.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
Socioeconomics and Environmental Justice	<p><u>No Significant Impact</u> The MFH is not located within a low-income or minority community relative to the population at large. The Proposed Action would not result in environmental degradation of a low-income or minority community. The Proposed Action would not result in any significant changes to population, housing or jobs. Therefore, no significant socioeconomic/environmental justice impact would occur.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>

1.0 Purpose of and Need for the Project

1.1 Introduction/Background

The Department of the Navy (Navy) has prepared this Supplemental Environmental Assessment (SEA) in accordance with the National Environmental Policy Act (NEPA) of 1969 and other applicable laws and regulations. It presents an analysis of the potential environmental impacts of a Proposed Action pertaining to implementing a Public/Private Venture (PPV) housing privatization program (Proposed Action) at Naval Base Ventura County (NBVC) Point Mugu, located in Ventura County, California. Under the Proposed Action, the Navy would privatize an additional 124 homes at NBVC Point Mugu. The Navy would grant a ground lease of certain proposed premises and transfer the ownership of the improvements to the PPV entity. The PPV would demolish, renovate, construct, own, operate and maintain the selected Military Family Housing (MFH). A total of up to 150 homes that are not needed to meet the installation's housing requirements would be demolished as part of this Proposed Action. A total of 102 homes not included within the total of 124 homes to be privatized as part of the Proposed Action would be demolished by the Navy, and the remainder of the up to 150 homes would be demolished by the PPV entity. Minor renovations would be performed by the PPV entity to 77 of the 124 privatized homes remaining. Amenities such as recreational fields, tot lots and dog runs may be built in the areas where the existing homes are demolished. Under the Proposed Action, the PPV entity would also build five new Senior Officer Quarters (SOQ) homes. The homes would each be approximately 2,500 gross square feet and be located within the San Miguel neighborhood.

The Proposed Action (with the exception of the Navy demolition of the homes on the former GMTA site and within the 50-foot buffer zone) would be implemented through the Navy PPV Housing Program. The PPV program, authorized pursuant to Subchapter IV of Chapter 169 of title 10, U.S. Code (USC) (10 USC 2871, et seq., the Military Housing Privatization Initiative [MHPI]), includes a series of authorities that allow the Department of Defense (DoD) and, in turn, the Navy to work with the private sector to lease, build, renovate, and maintain military housing in key areas of need.

The statute grants the DoD authority to employ a variety of private sector approaches to manage military housing, using private capital to leverage government dollars and make efficient use of limited resources. Using the PPV approach for the Proposed Action, the Navy may lease land to a private sector developer, which will construct, renovate, own, operate, and maintain housing units. The developer will in turn rent the units to military personnel and their families at rental rates at or below the members' Basic Allowance for Housing (BAH). This arrangement allows the military personnel and their families to pay rent within their housing allowance. The PPV entity pays the utilities, including water, sewer, gas, electrical and trash.

Using the PPV program to construct, renovate, own, operate and maintain housing for military personnel and their families provides many benefits to the Navy unavailable through more traditional approaches. In traditional Navy MFH, the Navy pays 100 percent of the costs associated with operating and maintaining the housing. Under the PPV initiative, the private sector developer/partner contributes the majority of the upfront development costs and funds all ongoing operations and maintenance of the housing after it is constructed. Thus, the PPV approach offers advantages over other acquisition vehicles by providing for the maintenance of housing while applying the operating efficiencies of the private sector.

In 2007, the Commanding Officer of NBVC proposed to privatize all MFH at NBVC including the MFH on NBVC Point Mugu. The Navy began the preparation of an EA entitled, "Privatization of Family Housing at Naval Base Ventura County." During preparation of the EA, information collected for the affected environment section indicated that in 2000 a Navy-wide survey of ordnance ranges identified the

presence of the former Gas Mask Training Area (GMTA or range) within the Anacapa, Santa Cruz, and San Miguel housing areas at NBVC Point Mugu. Specifically, 80 housing units at NBVC Point Mugu were located within an area that had been used as a GMTA from 1942 to 1945. Although the area is determined to be safe for normal living conditions by the U.S. Army Corps of Engineers (USACE) Ordnance and Explosives Center and the Navy Ordnance Safety and Security Activity, the former GMTA had not been formally closed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 2007, nor had the study and analysis required by CERCLA been completed. The former GMTA has been managed under the Navy Munitions Response Program (MRP). A Record of Decision for the former GMTA has been issued pursuant to CERCLA determining that the site poses no risk to human health or the environment provided actions are taken and continue in accordance with the terms of the Record of Decision.

The Navy has conducted an extensive search to confirm that the former GMTA has indeed been closed as a range. This has included a review of the 2012 Sustainable Ranges Report to Congress, Appendix C, Maps and Inventory of Ranges, Range Complexes, and Special Use Areas, which does not contain any reference whatsoever to the former GMTA as a current range, range complex or special use area. Further, the following document provides information about closure of the former GMTA: The January 2000, Navy Closed, Transferred, Transferring, Active, and Inactive Range Survey. This Survey was completed for Naval Air Station Point Mugu in 2000, and it was transmitted from the Commanding Officer, Naval Air Station Point Mugu, to the Commander, Navy Region Southwest, on April 11, 2000. The 2000 Range Survey lists the former GMTA as “closed,” as of September, 1945. The Range Survey provides various information regarding the former GMTA, and it definitively does list the former GMTA as “closed” in several places in the document. (Id., Cover Page, Point Mugu Chemical Warfare Training Area, pp. 1 and 2) (Navy 2000).

Transfer or lease of ranges by the DoD without proper remediation is precluded prior to transfer, pursuant to CERCLA, in accordance with the DoD and U.S. Environmental Protection Agency (USEPA) Memorandum, “Interim Management Principles for Implementing Response Actions at Closed, Transferring, and Transferred Ranges” (2000). Therefore, the 80 housing units within the boundary of the former GMTA were excluded from the PPV action addressed in the 2007 EA. An additional 144 units within a 500-foot (152-meter) area around the former GMTA were excluded from the PPV action addressed in the 2007 EA, due to locational uncertainty of the GMTA boundary at the time. Without the risk analysis and determinations contained in a CERCLA decision document, it was not possible to reach a conclusion that the area would pose no risks to human health and the environment. The Navy completed CERCLA remediation on the former GMTA, and a CERCLA Record of Decision was approved by the regulatory agencies, signed by the installation commander, and signed by the regulatory agencies on May 22, 2014 (NAVFAC SW 2014a).

The 80 units within the former GMTA site and 22 units within a 50-foot (15.2-meter) buffer of the former GMTA site will not be transferred to the PPV entity as a part of this Proposed Action. Further, no part of the site of the former GMTA, and the land within a 50-foot buffer of the former GMTA, will be leased to the PPV entity as a part of this Proposed Action. A total of 102 MFH units in the portion of the GMTA and an associated 50-foot buffer located within the existing housing area would be demolished by the Navy as part of this Proposed Action.

Eleven units within the San Miguel housing area were located near or within an Accident Potential Zone (APZ) 1, as defined in the *1992 Air Installation Compatible Use Zone (AICUZ) Study for NBVC Point Mugu* (NBVC 1992). These 11 units, located in the southeastern corner of the San Miguel housing area, were excluded from privatization and inclusion in the 2007 EA. Since that time, nine of these units have been demolished. Two units were retained, as only a very small portion of the rear yards were located within APZ 1 and the structures were completely outside of APZ 1. Both of these residences are

unoccupied and are anticipated to be included in the MFH units to be demolished under this Proposed Action.

1.2 Project Location Description

NBVC was established in 2000 by consolidating Naval Air Station Point Mugu (which became known as NBVC Point Mugu) and the Construction Battalion Center Port Hueneme (which became known as NBVC Port Hueneme). NBVC Point Mugu and NBVC Port Hueneme are located approximately 5 miles (8 kilometers [km]) apart, along the Pacific coast of California, in Ventura County (Figure 1-1).

NBVC Point Mugu consists of 4,490 acres (1,820 hectares [ha]), of which approximately 2,000 acres (810 ha) are developed. The MFH at NBVC Point Mugu is located along the northeastern boundary of the installation, adjacent to Highway 1 (Figure 1-2). The current MFH inventory at NBVC Point Mugu consists of 634 units within five separate neighborhoods: Santa Rosa, Santa Barbara, Anacapa, Santa Cruz, and San Miguel. In 2007, 424 MFH units at NBVC Point Mugu were privatized, and the 16 units comprising the Santa Barbara neighborhood have since been demolished. The remaining 226 MFH units located within the Anacapa, Santa Cruz, and San Miguel neighborhoods remain unprivatized due to constraints associated with the former GMTA and APZs previously discussed and shown on Figure 1-3.

1.3 Purpose and Need for the Project

The purpose of the Proposed Action is to:

- Implement the PPV Housing Program at NBVC Point Mugu, as authorized by the MHPI 10 USC Sections 2871 – 2885;
- Provide adequate, affordable MFH units for NBVC Point Mugu military personnel and their families, in accordance with Office of the Secretary of Defense and DoD standards;
- Provide cost savings to the government and improved housing quality at NBVC Point Mugu. Cost savings are estimated at \$4 million per year to the government;
- Provide superior housing services to military families, such as improved customer service, higher quality housing, and faster responses to the renovation and maintenance needs of the homes; and
- Positively enhance combat readiness and mission capabilities.

The Proposed Action is needed to continue privatization of Government operated homes to fulfill the MFH requirements for NBVC through the PPV Housing Program. The current PPV inventory at NBVC is 1,221 units and the projected housing need in 2017 across NBVC is 1,303 units, as identified in the *2012 Housing Requirements Market Analysis Update* (Navy 2013a). The deficit is 82 units, so the addition of the units addressed in the Proposed Action would eliminate the gap between demand and supply. Of the 1,221 MFH units at NBVC that were privatized in 2007, 408 units were at Point Mugu, surrounding the 226 MFH units that were not privatized in the earlier 2007 privatization action (those 226 units include the 124 units to be privatized plus the 102 units that would be demolished by the Navy, all of which are the subject of this Proposed Action).

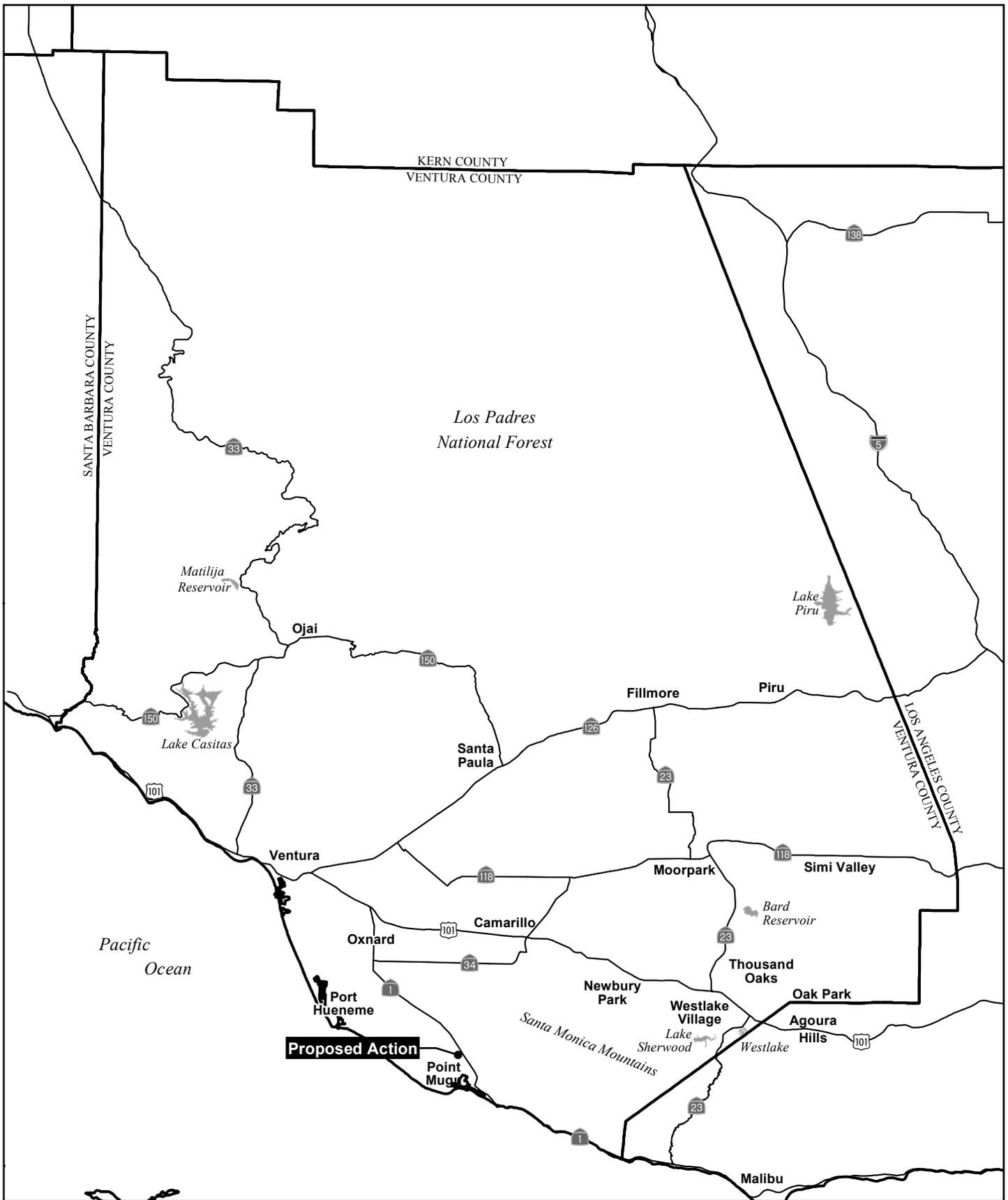


Figure 1-1
 Regional Location Map
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



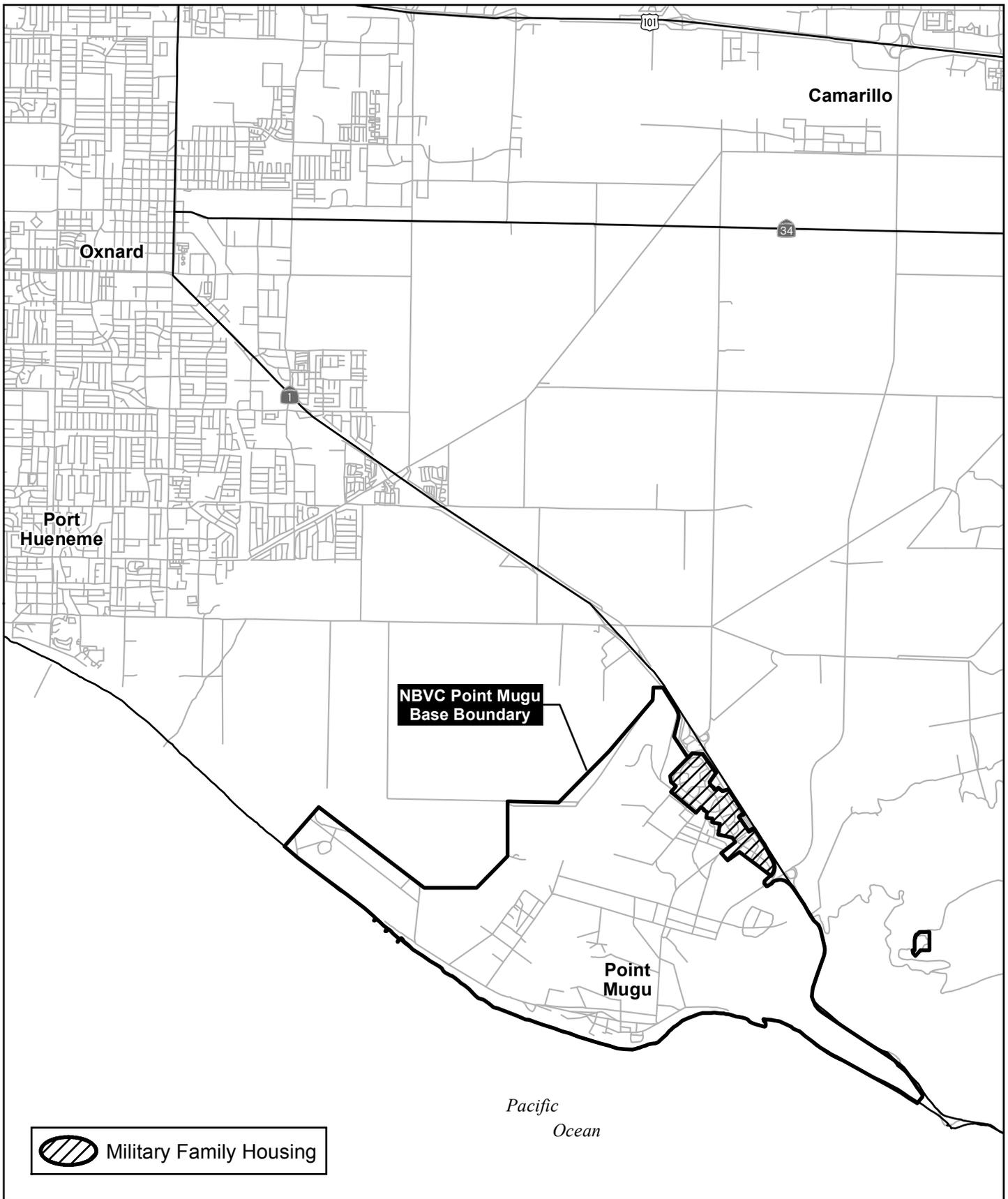
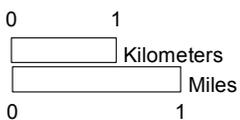


Figure 1-2
 Project Vicinity Map
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



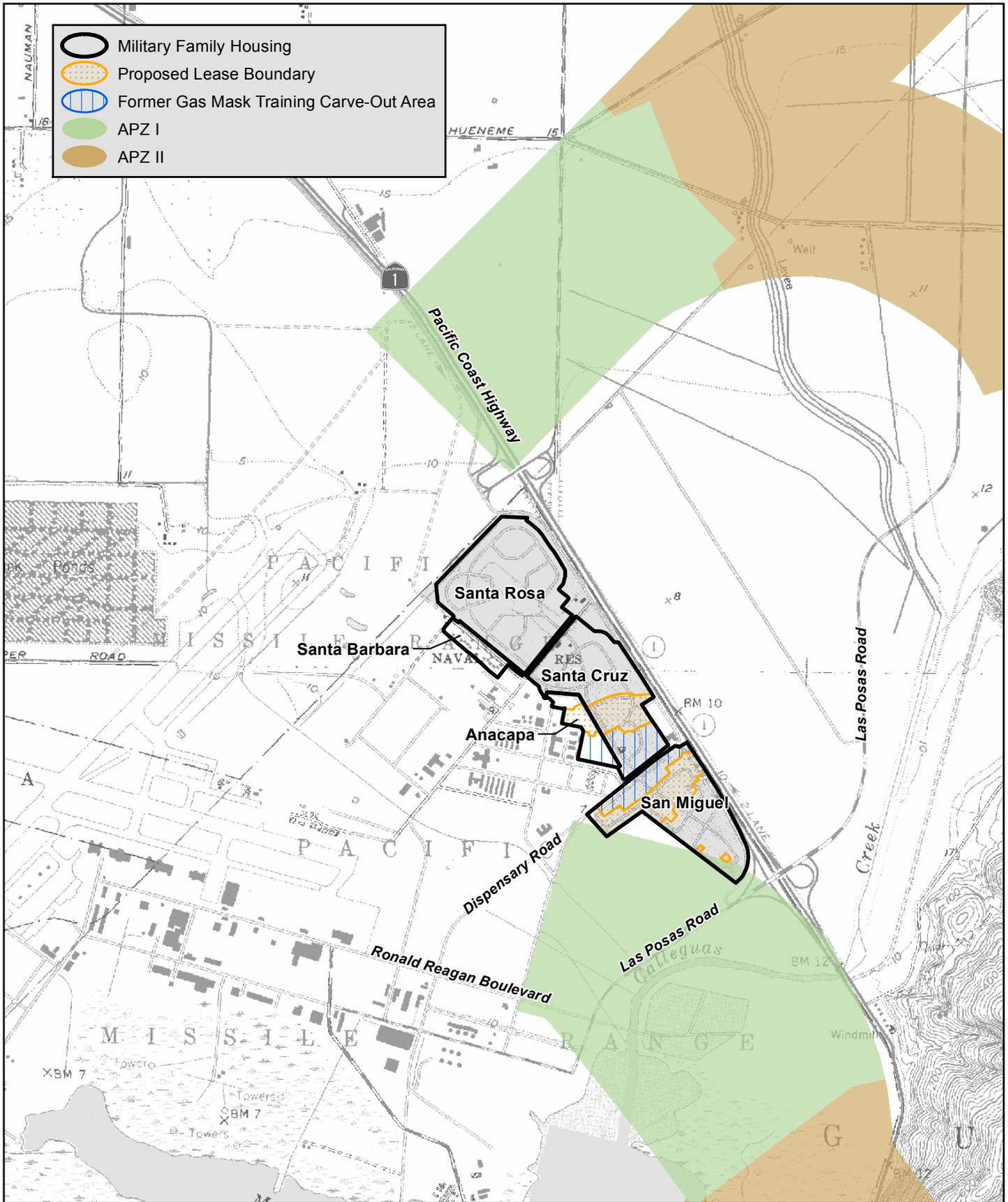


Figure 1-3
 Former Gas Mask Training Area and Accident Potential Zones
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



The availability of suitable, affordable housing for military personnel and their families would be a positive contribution to the quality of life of those eligible for the housing. The improved quality of life and subsequent improvement in morale, job satisfaction, and retention rates would ultimately have a direct, positive impact on combat readiness and mission capabilities. Therefore, the provision of MFH would support the mission of NBVC.

1.4 Decision to be Made

The decision to be made as a result of the analysis in this SEA is to determine if an Environmental Impact Statement (EIS) needs to be prepared. An EIS will need to be prepared if it is determined that the Proposed Action or other alternative ultimately selected for implementation would have significant impacts to the human or natural environment. Should an EIS be deemed unnecessary based on the effects analysis of the alternative selected for implementation, the selection would be documented in a Finding of No Significant Impact (FONSI).

1.5 Scope of Analysis

Council on Environmental Quality regulations, NEPA, and Navy procedures for implementing NEPA specify that an EA should address only those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact. Resource areas analyzed in detail in this SEA include the following:

- Topography, Geology and Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Air Quality/Climate Change
- Noise
- Hazardous Materials/Public Health and Safety/Protection of Children
- Utilities
- Socioeconomics/Environmental Justice

Several resource areas were considered but were not carried forward for detailed analysis in this SEA because potential impacts from the Proposed Action would be non-existent or would be considered negligible. Resources not analyzed further include land use/agricultural resources, recreational resources, traffic/circulation, visual quality/aesthetics, and coastal zone resources.

Land Use and Agricultural Resources: Implementation of the Proposed Action would not adversely affect agricultural resources. The Proposed Action involves the out lease of land and the transfer of related assets and would involve limited new building construction of only five housing units. The Proposed Action would result in the removal of up to 150 MFH units. Land associated with the demolished homes may be used to construct amenities for the Proposed Action, such as recreational fields, tot lots and dog runs. The Proposed Action would not result in impacts to agricultural resources, as it would not change the existing land use within the project boundaries and would not convert any agricultural uses to non-agricultural uses.

Recreational Resources: The Proposed Action would result in an overall decrease in the number of MFH units at NBVC, as well as an increase in recreational amenities such as recreational fields, tot lots and dog runs. As there would be a decrease in housing units and an increase in recreational facilities as a result of the Proposed Action, no additional demand for recreational facilities would occur. While there are several playgrounds within the project area, the Proposed Action would not result in any physical changes to the existing playgrounds.

Traffic/Circulation: The Proposed Action would result in an overall decrease in the number of MFH units at NBVC, and therefore would result in a decrease in daily traffic associated with the MFH. While there may be increased truck traffic associated with demolition, renovation and new construction activities, this would be short-term, and impacts would be negligible.

Visual Quality/Aesthetics: There would be no substantial change in visual quality because the residential area would remain a residential area. With demolition, the residential development would become less dense, and some of the existing housing units would be replaced with amenities such as recreational fields, tot lots and dog runs. Limited new building construction of only five housing units would not change the residential nature of the area.

Coastal Zone Resources: Potential effects of the Proposed Action to coastal zone resources have been analyzed. Implementation of the Proposed Action would not block public access to the ocean nor obstruct near-by resident's views of the ocean. Therefore, there would be no reasonably foreseeable direct or indirect effects on coastal uses and resources from implementation of the Proposed Action. As such, a Coastal Consistency Negative Determination was prepared for a previous version of the project and is included in Appendix A. Re-engagement of the Coastal Commission was initiated in October 2015 to refine the Proposed Action regarding demolition of up to 150 MFH and construction of five new SOQs. The Coastal Commission issued their concurrence of the revised Proposed Action on October 15, 2015.

1.6 Intergovernmental Coordination

The State Historic Preservation Officer (SHPO) was consulted as part of the Naval Base Ventura County Housing Privatization Programmatic Agreement prepared in 2007 (Navy 2007a). NBVC coordination with the SHPO occurred in June 2014 for the previous project and re-engagement of SHPO based on the Proposed Action that is the subject of this SEA is on-going.

In accordance with the Federal Coastal Zone Management Act of 1972 (as amended), NBVC prepared and submitted a Coastal Consistency Negative Determination to the California Coastal Commission on June 19, 2014 for a previous version of this project. The Coastal Commission concurred with this Negative Determination on July 16, 2014. Re-engagement of the Coastal Commission was initiated in October 2015 to refine the Proposed Action regarding demolition of up to 150 MFH and construction of five new SOQs. The Coastal Commission issued their concurrence of the revised Proposed Action on October 15, 2015.

Prior to project implementation of the Proposed Action, a Storm Water Pollution Prevention Plan (SWPPP) would be required pursuant to the general permit for construction-related discharges, as regulated by the State Water Resources Control Board.

1.7 Public/Agency Participation

A public notice providing information about the previous version of the project and its environmental issues, which also solicited comments about the previous Proposed Action and its environmental issues, was published in the *Ventura County Star* newspaper from July 5 through July 6, 2014. Also, scoping letters containing the same information as the public notice were mailed to interested parties in the community, local government agencies, and current residents in MFH units at NBVC Point Mugu within the project footprint. Additional information about the previous Proposed Action was also provided to the public on the Navy Region Southwest website. The scoping period for the previous Proposed Action was two weeks and ended on July 21, 2014. No comments were received during the scoping period

Public notice of the revised version of the Proposed Action, which incorporates demolition of up to 150 MFH and construction of five new SOQs and is documented in this SEA, was published in the Ventura County Star from October 31 to November 1, 2015. The two week public review period began on October 31, 2015 and ends on November 14, 2015.

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2.0 Description of Proposed Action and Alternatives

Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) establish a number of policies for federal agencies, including “using the NEPA process to identify and assess the reasonable alternatives to the Proposed Action that will avoid or minimize adverse effects of these actions on the quality of the human environment” (40 Code of Federal Regulations [CFR] 1500.2(e)). This Supplemental Environmental Assessment (SEA) only carries forward for detailed analysis those alternatives that could meet the purpose of and need for the project, as defined in Chapter 1.0 and the below-listed reasonable alternative screening factors.

2.1 Reasonable Alternative Screening Factors

The screening factors used to develop the reasonable range of alternatives are, as follows:

1. Be located on federal property;
2. Provide superior housing services to all housing units at Naval Base Ventura County (NBVC) Point Mugu;
3. Continue to provide on-base Military Family Housing (MFH);
4. Address the deficit in housing units as detailed by the 2012 Housing Requirements Market Analysis Update (Navy 2013a);
5. Maintain proximity to existing utilities and infrastructure;
6. Not cause unnecessary temporary delays or disruptions in current installation mission or function; and
7. Avoid significant impacts to sensitive natural resources.

2.2 Description of the Proposed Action and Alternatives

2.2.1 Proposed Action

The Proposed Action encompasses an area of 48.3 acres (19.5 hectares [ha]) at NBVC Point Mugu. Under the Proposed Action, the U.S. Department of the Navy (Navy) would privatize an additional 124 homes on a leased area of approximately 30 acres (12.1 ha) at NBVC Point Mugu. The Navy would grant a ground lease of the proposed premises and transfer the ownership of the improvements to the Public/Private Venture (PPV) entity. These 124 units to be transferred include units within the Anacapa, Santa Cruz, and San Miguel neighborhoods (Figure 2-1). Anacapa units consist of townhomes, while the San Miguel and Santa Cruz units consist of duplexes and single-family housing units. The PPV would demolish, renovate, construct, own, operate and maintain the selected MFH. Also as part of the Proposed Action, the PPV entity would build five new Senior Officer Quarters (SOQ) homes on land leased to the PPV entity. The homes would each be approximately 2,500 gross square feet and located within the San Miguel neighborhood.

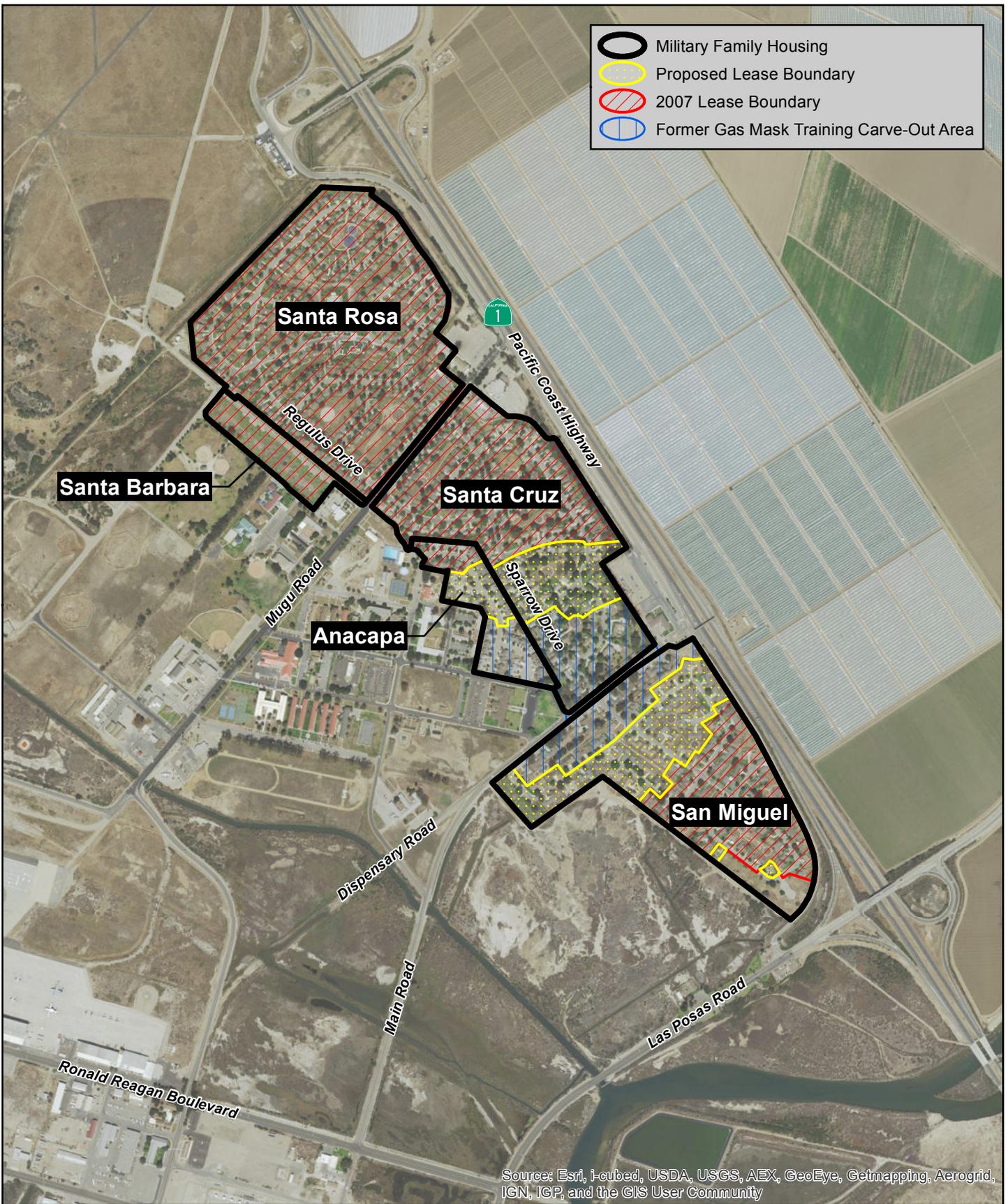
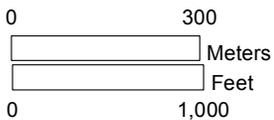


Figure 2-1
 Public/Private Venture Lease Boundary, Proposed Action Supplemental Environmental Assessment for Transfer of Point Mugu Navy Housing to a Public/Private Venture at Naval Base Ventura County, Point Mugu, California



The land would be leased to the PPV entity for a period not to exceed 50 years, and ownership of the MFH inventory and associated facilities and infrastructure would be transferred to the PPV entity for the term of the lease. The proposed lease would include an ownership transfer of all associated utility laterals (i.e., electrical, gas, water, and sewer lines extending from each housing unit to the designated main line/point of connection for each utility) from Navy ownership to the PPV entity for the length of the lease period.

In addition to the housing transfer, demolition of up to 150 MFH units that are not needed to meet the installation's housing requirements may occur, as well as minor renovations to the remaining homes. Amenities such as recreational fields, tot lots and dog runs may be built in the areas where the existing homes are demolished. A total of 102 homes not included within the total of 124 homes to be privatized would be demolished by the Navy, and the remainder of the up to 150 homes would be demolished by the PPV entity.

The Navy would also transfer all ownership of related facilities located within the proposed lease boundaries. These facilities include (but are not limited to) garages, carports, fencing, parks and playgrounds, restrooms at parks and playgrounds, open space, athletic fields, parking areas, sidewalks, driveways, and roads.

Also as part of the Proposed Action, the PPV entity would build five new SOQ homes on land leased to the PPV entity. The homes would each be approximately 2,500 gross square feet and be located within the San Miguel neighborhood.

The property proposed for outleasing does not include approximately 18.3 acres of the Proposed Action area that is on land within the former Gas Mask Training Area (GMTA), which covers approximately 30 acres (12 ha) and includes portions of the Anacapa, Santa Cruz, and San Miguel MFH. Originally, a portion of the former GMTA site was planned to be part of the area privatized and leased to the PPV entity in the Proposed Action. However, the planned project has changed. That portion of the former GMTA site, which encompasses 80 homes, along with land in a 50-foot (15.2-meter) buffer around the area, which encompasses 22 homes, would not be leased to the PPV entity. MFH units on that land would not be transferred to the PPV entity. Instead, a total of 102 MFH units within this area would be demolished by the Navy.

The former GMTA operated from March 1942 to December 1945, during the height of World War II. Special units of the Navy Seabees were trained at the former GMTA in the use of gas masks and smoke-generating devices. Training at the former GMTA also included the use of small amounts of chemical agents, to familiarize the recruits with the physical properties of chemical warfare gas. This chemical agent training was accomplished through the use of chemical agent identification sets (CAIS). While the chemical agents used for the training have long since dissipated, there is a slight chance that some CAIS kits may have been buried on the former GMTA. Housing has been located within the former GMTA for 50 years, and residents currently receive notice of its former use that restricts digging.

The Navy has conducted an extensive search to confirm that the former GMTA has indeed been closed as a range. This has included a review of the 2012 Sustainable Ranges Report to Congress, Appendix C, Maps and Inventory of Ranges, Range Complexes, and Special Use Areas, which does not contain any reference whatsoever to the former GMTA as a current range, range complex or special use area. Further, the following document provides information about closure of the former GMTA: The January 2000, Navy Closed, Transferred, Transferring, Active, and Inactive Range Survey. This Survey was completed for Naval Air Station Point Mugu in 2000, and it was transmitted from the Commanding Officer, Naval Air Station Point Mugu, to the Commander, Navy Region Southwest, on April 11, 2000. The 2000 Range Survey lists the former GMTA as "closed," as of September, 1945. The Range Survey provides various

information regarding the former GMTA, and it definitively does list the former GMTA as “closed” in several places in the document. (Id., Cover Page, Point Mugu Chemical Warfare Training Area, pp. 1 and 2) (Navy 2000). The former GMTA is no longer an operational range, and has been managed under the Navy Munitions Response Program (MRP). The Navy completed CERCLA remediation on the former GMTA, and a CERCLA Record of Decision, concluding that the site as remediated poses no risk to human health or the environment, has been approved by the regulatory agencies, signed by the installation commander, and signed by the regulatory agencies on May 22, 2014, and is included in Appendix B (NAVFAC SW 2014a). The CERCLA Record of Decision includes the requirement for land use controls, including digging restrictions and ongoing education for residents and workers.

The Proposed Action includes on-going maintenance of the property which has been leased and/or transferred to the PPV entity, during the 50-year lease term. The PPV entity would be responsible for maintenance of the buildings and associated facilities within the lease boundaries. Maintenance activities would be those typical of residential uses and similar to those already undertaken in the previously leased portions of MFH on NBVC. Typical maintenance would include activities such as painting, landscaping, and building repairs.

In addition, small portions of two MFH rear yards in the southwestern edge of the San Miguel neighborhood are located within Accident Potential Zone (APZ) 1 under the current 1992 Air Installation Compatible Use Zone (AICUZ). The AICUZ study is currently being updated. As discussed in Section 1.1, 11 units in this neighborhood were excluded from privatization and inclusion in the 2007 EA. Since that time, nine of these units have been demolished. Two units were retained, as only a very small portion of the rear yards were located within APZ 1 and the structures were completely outside of APZ 1. These two MFH units are included in the 124 units to be privatized that are the subject of this EA, along with five new SOQ homes. It is anticipated that the two homes would be demolished by the PPV entity.

2.2.1.1 Environmental Protection Measures

The Proposed Action incorporates environmental protection measures to ensure the avoidance or minimization of environmental impacts

Water Resources

Measure 1. Before demolition and construction activities, a Storm Water Pollution Prevention Plan (SWPPP) would be prepared, which would include the type, placement, and maintenance of erosion control features to be used during and following demolition and construction activities.

As part of the SWPPP, Best Management Practices (BMPs) would be implemented to prevent inadvertent runoff of contaminants, such as construction debris, petroleum products, and hazardous materials. If BMPs currently in place are found to be ineffective in controlling storm water pollution, they shall be amended as soon as possible to correct the problem.

Hazardous Materials Management Plan. A Hazardous Materials Plan would be prepared prior to operation of demolition and construction equipment. Specific BMPs may be required depending on the specific project. Construction project managers would work with NBVC environmental representatives to ensure the Proposed Action meets both environmental compliance and project timelines.

Air Quality/Climate Change

Measure 2. Dust control measures would be implemented to comply with the requirements of Ventura County Air Pollution Control District Rule (VCAPCD) 55, Fugitive Dust, during all proposed ground disturbance and building demolition and construction activities.

Measure 3. Construction equipment control measures would be implemented during all proposed ground disturbance and building demolition and construction activities, **where feasible**.

1. Maintain equipment according to manufacturer specifications.
2. Restrict idling of equipment and trucks to a maximum of five minutes at any location.
3. Use diesel oxidation catalysts and/or catalyzed diesel particulate traps.
4. Use electricity from power poles rather than temporary diesel- or gasoline-powered generators.
5. Provide temporary traffic control, such as a flag person, during all phases of construction and/or demolition activities to maintain smooth traffic flow.
6. Keep construction/demolition equipment and equipment staging areas away from sensitive receptor areas.
7. Re-route construction trucks away from congested streets or sensitive receptor areas.
8. Use construction equipment with engines that meet U.S. Environmental Protection Agency (USEPA) Tier 3 and four nonroad standards.
9. Use alternatively fueled construction equipment, such as compressed natural gas, liquefied natural gas, or electric.

Noise

Measure 4. Construction/demolition equipment operation would be limited to between the hours of 7:00 AM and 5:00 PM weekdays and Saturdays, excluding holidays. No holiday or nighttime operation of construction equipment would be permitted.

Public Health and Safety

Measure 5. Prior to the start of demolition, renovation and construction activities, a Health and Safety Plan would be prepared by the PPV entity for the homes to be demolished, renovated or constructed within the leased area, and all necessary permits and approvals would be obtained. Any required asbestos and lead abatement would be the responsibility of the PPV entity and would be conducted before demolition activities begin. The Health and Safety Plan would describe the strategy for handling and disposing of all demolition debris. Part of this strategy would be to divert as much of the demolition waste from landfills as possible, using demolition deconstruction techniques to reduce, reuse, or recycle the various types of waste. For all lead-based paints (LBP) hazards in MFH which would be transferred to the PPV entity per the Proposed Action, and that would not be demolished, all LBP hazards would be abated by the PPV entity after transfer, using the acceptable interim controls described in the 2015 Environmental Condition of Property (ECP) Report (NAVFAC SW 2015). For any homes that are occupied at the time of the transfer, the PPV entity would abate all lead hazards identified in the 2015 ECP (NAVFAC SW 2015) within thirty (30) days of transfer. For any other lead hazards which are

subsequently discovered, for homes occupied at the time of transfer, abatement must occur no later than the first change of occupancy (abatement must occur before new tenants move in, after the tenants move out who were in place during the transfer), or during any renovation which takes place on the home, whichever event occurs first. For homes that are vacant at the time of transfer, and which will become occupied, the abatement must take place before occupancy. All abatement must be in accordance with all applicable federal, state and local statutes and regulations, including but not limited to 42 USC § 4822(b), 24 CFR Part 35, and 40 CFR § 745.227. Further, for all MFH constructed before 1978, the PPV entity shall perform the following: (1) develop a lead management plan (which may also be referred to as an “Operations and Management Plan”); (2) maintain the MFH and associated property in accordance with that lead management plan; and (3) take appropriate corrective action if the PPV entity has been advised that for any MFH which has been transferred to the PPV entity, a child under the age of six who lives in the unit has been reported to have elevated blood lead level, and the unit has been identified as the potential source. With regard to MFH housing constructed before 1960, the PPV’s lead management plan for housing shall identify the steps that the PPV entity would take to address any LBP hazards in the housing and associated property, which pose an immediate threat to the health of MFH residents.

The removal methods, health and safety procedures, and disposal methods would conform to the regulations of federal, state, and local regulatory agencies. All required notifications would be made to the VCAPCD and California Division of Occupational Safety and Health. A contractor certified by the Contractors State License Board and registered with the California Division of Occupational Safety and Health would perform the abatement work.

Similarly, all applicable statutes and regulations, including measures contained in the CERCLA Record of Decision, would be followed by the Navy during demolition of a total of 102 MFH units located in the former GMTA site and an associated 50-foot buffer located within the existing housing area, which is part of the Proposed Action.

Measure 6. Implement access control for the former GMTA before, during and after a total of 102 MFH units located in the former GMTA site and an associated 50-foot buffer located within the existing housing area are demolished by the Navy. Access controls limit future receptor usage of the site by implementing various physical restrictions. Required access controls include digging restrictions that rely on dig permits and the use of posted warning signs to indicate that the area has a history of past CAIS-related activity and that certain activities such as digging are restricted. Dig permits are accompanied by fact sheets that apprise maintenance and construction workers of special precautions and requirements necessary for digging at the former GMTA site. The warning signs are posted at high-visibility or high-use sites, at the perimeter of the site, and at key access points. Installation of the signs requires their periodic maintenance, repair, or replacement.

2.2.2 No-Action Alternative

Under the No-Action Alternative, the Navy would not transfer the 124 MFH units and associated infrastructure to private control as part of a PPV at NBVC, and five SOQ homes would not be built. The congressional direction to implement the Military Housing Privatization Initiative (MHPI) would not be met. There would be no leasing of land or transfer of ownership of housing units to a privatized entity. The Navy would continue to maintain the MFH and would be responsible for the ongoing upkeep of the housing and associated infrastructure, and would not demolish 102 MFH units within the former GMTA site and an associated 50-foot buffer located within the existing housing area. Any future actions to upgrade or renovate the facilities would have to be achieved through conventional military construction (MILCON) or other types of government funding. For these reasons, the No-Action Alternative would not meet the purpose and need for the proposed action; however, as required by NEPA, the No-Action Alternative is carried forward for analysis in this EA.

3.0 Affected Environment and Environmental Consequences

This chapter describes existing environmental conditions and environmental consequences for resources potentially affected by implementation of the Proposed Action (as described in Chapter 2.0). In compliance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and U.S. Department of the Navy (Navy) procedures for implementing NEPA, the description of the affected environment focuses only on those resources potentially subject to impacts. In addition, the level of analysis is comparable with the anticipated level of impact anticipated for that resource. Applying these guidelines to this Supplemental Environmental Assessment (SEA), the following resources are evaluated in this section: topography, geology and soils; water resources; biological resources; air quality/climate change; cultural resources; noise; hazardous materials/public health and safety/protection of children; utilities; and socioeconomics/environmental justice. The environmental consequences associated with the Proposed Action and the No-Action Alternative are summarized in Table 3.0-1.

Table 3.0-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
<p>Topography, Geology and Soils</p>	<p><u>No Significant Impact</u> Only minor impacts to topography, geology and soils would occur because the activities associated with the Proposed Action would occur in previously disturbed and developed areas. Demolition and construction activities would implement Best Management Practices (BMPs) to minimize soil erosion. Implementation of the Proposed Action would not result in changes to the topography of the site. The Proposed Action would not affect the seismicity of the area, although the ground acceleration associated with anticipated earthquakes on nearby faults would potentially affect the existing and proposed new structures located within the Proposed Action area. Structural design measures already integrated into existing structures and that would be integrated into the five new Senior Officer Quarters (SOQ) homes would reduce potential impacts associated with seismicity to below significant levels. Therefore, the Proposed Action would not result in significant impacts associated with topography, geology and soils.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
<p>Water Resources</p>	<p><u>No Significant Impact</u> Implementation of the Proposed Action would not substantially alter local drainage patterns, existing runoff volumes or velocities, or involve any direct use of groundwater. The Proposed Action could result in the demolition of up to 150 MFH units, which would remove impervious areas from the project site (thereby potentially increasing infiltration capacity). Based on the minor changes to impervious areas associated with the Proposed Action, no associated net reduction of infiltration and recharge capacity is anticipated (and overall infiltration could potentially be increased, as noted), and no facilities that would potentially affect groundwater quality would be constructed or used (e.g., underground fuel storage tanks or septic systems). While the Proposed Action is located within a mapped 100-year floodplain, no associated significant impacts would result from implementation of the Proposed Action, because no modified conditions that would potentially expose people or structures to flood-related hazards would occur. Also, no modified conditions that would potentially affect the lateral or vertical extent of existing floodplains or floodwaters would result from the Proposed Action.</p> <p>Compliance with the applicable existing regulatory controls and associated guidelines pursuant to applicable requirements of the Clean Water Act (CWA), National Pollutant Discharge Elimination System (NPDES) and related Naval Base Ventura County (NBVC) planning documents would also ensure that no significant impacts associated with water resources would occur.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
<p>Biological Resources</p>	<p><u>No Significant Impact</u> Potential impacts to wildlife from increased noise, dust, and activity could occur in association with the Proposed Action, but would be temporary and localized. Wildlife species would likely avoid the work area temporarily and return following completion of the work, or would utilize other nearby comparable habitat. The Proposed Action would avoid or minimize interactions between snakes and residents, and there would be no significant effects on native rattlesnakes. If bats are suspected to be roosting within the Proposed Action boundaries, surveys would be conducted by a biologist</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>

Table 3.0-1. Summary of Potential Impacts and Avoidance Measures

Resource	Proposed Action	No-Action Alternative
Biological Resources (continued)	<p>knowledgeable and experienced with bats, and if bats are present, proper bat exclusion would be done. Therefore, the Proposed Action would not significantly affect bat species. The Proposed Action would comply with the Migratory Bird Treaty Act (MBTA), Executive Order (EO) 13186 (Responsibilities of Federal Agencies To Protect Migratory Birds), the U.S. Fish and Wildlife Service/Department of Defense Memorandum of Understanding (MOU) to “Promote the Conservation of Migratory Birds,” and the NBVC Point Mugu and Special Areas Integrated Natural Resources Management Plan (INRMP), so there would be no significant effects on MBTA-protected species. With implementation of management strategies outlined in the INRMP, no significant effects from invasive plant species would occur from the Proposed Action. There would be no significant direct or indirect effects to wetlands from the Proposed Action, as there are no wetlands within the Proposed Action boundaries.</p>	
Cultural Resources	<p><u>No Significant Impact</u> Implementation of the Proposed Action would not result in impacts to archaeological resources or historic properties. The Proposed Action would be covered under the existing Naval Base Ventura County Housing Privatization Programmatic Agreement (PA) prepared in 2007.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
Air Quality/Climate Change	<p><u>No Significant Impact</u> Air emissions generated by the Proposed Action would be well below the South Central Coast Air Basin conformity <i>de minimis</i> levels and therefore would not result in significant air quality impacts. The mobile and intermittent operation of proposed diesel-powered construction equipment during project construction and demolition activities would result in the release of a minimal amount of air contaminants in a localized area. Therefore, construction and demolition activities would not result in significant impacts to air quality. Following the lease transfer, the Proposed Action would result in similar air quality emissions as the current condition; however, operational emissions would be further reduced with the potential demolition of up to 150 MFH units, as there would be fewer motorized vehicles being driven in the project area. In regards to climate change, the Proposed Action would produce negligible cumulative impacts to global climate change, as the Navy is implementing broad-based programs to reduce energy consumption and is shifting to renewable and alternative fuels, thereby reducing overall emissions of greenhouse gases (GHGs). Therefore, GHG emissions generated from implementation of the Proposed Action, in combination with GHG emissions from potential cumulative projects, would not result in significant cumulative impacts to global climate change.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>

Table 3.0-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
Noise	<p><u>No Significant Impact</u> Demolition activities and construction of new SOQ homes and new amenities would be limited to between the hours of 7:00 AM and 5:00 PM weekdays and Saturdays. No holiday or nighttime operation of construction equipment would be permitted. Also, due to the short-term duration of the construction and demolition activities, there would be no significant impact from noise to off- and on-installation populations.</p> <p>The MFH associated with the Proposed Action is located within an area identified as Noise Exposure Zone 2 in the 1992 Air Installation Compatible Use Zone (AICUZ) Study, which are areas exposed to noise ranging from 65 to 75 dBA Community Noise Equivalent Level (CNEL). Noise insulating measures incorporated into the existing and new MFH units in accordance with the Sound Insulation Project Report at NBVC Point Mugu (Wyle Laboratories 2007) would reduce interior noise levels. No significant impact would occur.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
Hazardous Materials/Public Health and Safety/Protection of Children	<p><u>No Significant Impact</u> There is an existing potential incompatibility between two MFH units in the San Miguel neighborhood and Accident Potential Zone (APZ) 1, as identified in the 1992 AICUZ Study. However, the incompatibility would be resolved with the demolition of the two units. No significant impact would occur.</p> <p>The Proposed Action would not result in any significant effects associated with hazardous materials, hazardous waste, polychlorinated biphenyls (PCBs), asbestos, lead hazards, radon, or contaminated sites. While the project site includes a former gas mask training area (GMTA) range, all risks to public health and the environment have been considered, addressed and remediated in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and memorialized in the CERCLA Record of Decision dated May 22, 2014. CERCLA remediation also includes use of a combination of institutional controls and educational awareness, with annual evaluations and five-year recurring reviews. The Navy will continue to implement the preferred remedial alternative of educational awareness and digging restrictions presented in the CERCLA Record of Decision before, during and after demolition of a total of 102 MFH units in the portion of the GMTA and an associated 50-foot buffer located within the existing housing area, which is part of the Proposed Action. No part of the GMTA and 50-foot buffer area would be leased to the PPV entity. No impacts to public health and safety or to children would occur.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>

Table 3.0-1. Summary of Potential Impacts and Avoidance Measures

<i>Resource</i>	<i>Proposed Action</i>	<i>No-Action Alternative</i>
Utilities	<p><u>No Significant Impact</u> Utilities within the lease boundary may be conveyed as part of the Proposed Action. Utilities conveyed would be maintained by the PPV entity within the leased premises during the lease period, and the Proposed Action, including demolition of MFH and construction of new SOQ homes, would not impact existing utility services.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>
Socioeconomics and Environmental Justice	<p><u>No Significant Impact</u> The MFH is not located within a low-income or minority community relative to the population at large. The Proposed Action would not result in environmental degradation of a low-income or minority community. The Proposed Action would not result in any significant changes to population, housing or jobs. Therefore, no significant socioeconomic/environmental justice impact would occur.</p>	<p><u>No Significant Impact</u> There would be no change to existing conditions; therefore, no impacts would occur.</p>

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3.1 Topography, Geology and Soils

3.1.1 Affected Environment

3.1.1.1 Topography

Topography incorporates the physiographic or surface features of an area, and is usually described with respect to elevation, slope, aspect, and landforms. Long-term geological, erosional, and depositional processes typically influence topographic relief of an area. The principal geologic factors influencing stability of structures are soil stability and seismic properties.

Naval Base Ventura County (NBVC) Point Mugu is situated in the Ventura Basin in the southern portion of the Oxnard Plain. The Oxnard Plain is a broad alluvial fan formed by the Santa Clara River, located near the western terminus of the Transverse Ranges of Southern California. NBVC Point Mugu is bordered by the Santa Monica Mountains to the east, generally flat land to the north and northwest, and the Pacific Ocean to the south and southwest. The ground surface at NBVC Point Mugu is relatively flat; elevations range from sea level to about 11 feet (ft; 3 meters [m]) above mean sea level (amsl), with elevation rising on the east side of the installation towards the Santa Monica Mountains. The elevation is also slightly higher near the residential area on the northern side of the installation, and slopes gradually south to the tidal flats surrounding Mugu Lagoon. Other topographic features include Mugu Lagoon and associated marsh areas, the lower portion of Calleguas Creek, and a section of ocean beaches and dunes. Based on published geologic information, mineral resources of economic value are unlikely to be present under NBVC Point Mugu (Navy 2007b).

3.1.1.2 General Geology

Stratigraphy

NBVC Point Mugu is underlain by unconsolidated alluvial deposits, with the uppermost sedimentary layers composed of quaternary alluvium (Naval Facilities Engineering Command Southwest [NAVFAC SW] 2013). Additional unconsolidated water-bearing soils and sediments known as the San Pedro and the Santa Barbara Formations underlie the alluvium. The unconsolidated sediments underlying NBVC Point Mugu range from about 900 ft (275 m) to 2,300 ft (700 m) thick and consist of alluvial clays, silts, sands, and gravels (NAVFAC SW 2013).

Soils

Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil characteristics can limit the proposed use of an area. Limiting characteristics include excessive erodibility or wetness, poor drainage, excessive occurrence of rock at shallow depths, and the presence of shrink-swell clays. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability for the ground to support structures and facilities.

The Military Family Housing (MFH) area is composed primarily of fill and Camarillo loam soils. In addition, Pacheco Silty Clay Loam makes up a small area in the southern portion of the housing area (Navy 2007b). An erosion study conducted in 1978 found a majority of soils on the installation to have a low to moderate erosion potential except the coastal beach area, which has a very severe erosion hazard. In addition, the majority of soils at Point Mugu have low to moderate shrink-swell rating and a moderate soil pressure rating, making them suitable for development (Navy 2007b).

3.1.1.3 Faulting and Seismicity

The California Geological Survey, formerly the California Division of Mines and Geology, classifies faults as either active or potentially active, according to the Alquist-Priolo Special Studies Zone Act of 1972. A fault that has exhibited surface displacement within the Holocene Epoch (the last 11,000 years) is defined as active by the California Geological Survey. A fault that has exhibited surface displacement during the Pleistocene Epoch (which began about 1.6 million years ago and ended about 11,000 years ago) is defined as potentially active. The California Geological Survey has established Alquist-Priolo Special Study Zones around faults identified by the State Geologist as being active. The Alquist-Priolo Special Studies Zone Act limits development along the surface trace of active faults to reduce the potential for structural damage and/or injury due to fault rupture. The California Geological Survey also suggests that active faults, located within a 60-mile (97 kilometer [km]) radius of a project site, be evaluated with respect to regional seismicity (California Division of Mines and Geology 1999, 1994).

Several faults are located within the vicinity of the NBVC Point Mugu, including segments of the potentially active Sycamore Canyon and Boney Mountain faults, and the older Bailey and Malibu Coast Faults (Figure 3.1-1).

3.1.1.4 Geologic Hazards

Liquefaction is a potential hazard associated with seismic activity. In areas where the depth from the surface to the bedrock is deep, the soils above it are loosely compacted, and the water table is near the surface, shock waves may cause the soils to become suspended in the water. The resulting liquefied surface may not be capable of supporting a building foundation or other structures and facilities. NBVC Point Mugu falls within an area identified by the California Geological Survey as a zone of high seismic hazard for liquefaction potential and strong earthquake shaking (Navy 2007b), and has been identified as an area with a remote possibility for earthquake related tsunami hazard (Navy 2007b).

3.1.2 Environmental Consequences and Avoidance Measures

3.1.2.1 Proposed Action

Potential Impacts

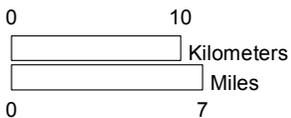
Soils and Erosion

The areas leased to the PPV entity for housing privatization, as well as demolition within the former GMTA would occur in previously disturbed and developed areas. Minor earthwork may be associated with the Proposed Action, related to the demolition of up to 150 MFH units and the construction of five new SOQ homes and new amenities such as tot lots and dog runs. Although these activities may require soil movement, the Proposed Action does not include large scale grading. The demolition of up to 150 MFH units and construction of the new SOQ homes and new amenities would not result in the potential for large-scale erosion. Because project construction/demolition would disturb more than 1 acre (0.4 hectare [ha]), it would be required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity (General Permit), Water Quality Order 2009-009-DWQ. The construction contractor would prepare a Storm Water Pollution Prevention Plan (SWPPP) before project implementation (Environmental Protection Measure 1; Section 2.2.1.2, Environmental Protection Measures). The SWPPP would include an Erosion Control Plan that identifies the appropriate measures (e.g., silt fences, siltation basins, gravel bags) necessary to stabilize the soil in denuded or graded areas during demolition of MFH units and construction of new SOQ homes and new amenities.



Figure 3.1-1
 Fault Map

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 at Naval Base Ventura County, Point Mugu, California



As required by the Regional Water Quality Control Board, standard erosion control measures as identified in the Erosion Control Plan and SWPPP (e.g., sandbags, silt fencing, earthen berms, and temporary sedimentation basins) would reduce potential impacts resulting from erosion during construction and demolition activities. Therefore, implementation of the Proposed Action would not have a significant impact to soils.

Topography

Implementation of the Proposed Action would not result in changes to the topography of the site. As discussed above, the proposed demolition of up to 150 MFH units and the construction of new SOQ homes and new amenities such as tot lots, recreational facilities and dog runs would result in minor earthwork (i.e., small amounts of grading/soil disturbance); however, the earthwork would not be substantial and would not result in alterations to the topography of the MFH area. Therefore, implementation of the Proposed Action would not result in significant impacts to the area's topography.

Seismicity

The Proposed Action would not affect the seismicity of the area; however, the ground acceleration associated with anticipated earthquakes on nearby faults would potentially affect the structures located within the Proposed Action area. Proximity to active faults could result in structural damage to buildings and underground utilities in the event of an earthquake. However, structural design measures already integrated into existing structures, including utilization of Uniform Building Code specifications for building construction in a Seismic Hazard Zone, would reduce potential impacts associated with seismicity to below significant levels. Integration of structural design measures into the five new SOQ homes would reduce the potential impacts associated with exposure of people or habitable structures to seismic risk to below significant levels. Demolition of up to 150 MFH units in the Proposed Action area would reduce the number of structures subject to structural damage in the event of an earthquake, further reducing potential impacts associated with seismicity.

3.1.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed housing privatization, construction of the five new SOQ homes, and demolition of up to 150 MFH units would not occur. Baseline topography, geology, and soils conditions, as described in Section 3.1.1, would remain unchanged. Therefore, no impacts to these resources would occur as a result of implementation of the No-Action Alternative.

3.2 Water Resources

3.2.1 Affected Environment

3.2.1.1 Surface Water

Surface water includes all lakes, ponds, rivers, streams (perennial, intermittent, and ephemeral), and impoundments within a defined area or watershed. Groundwater occurs as subsurface aquifers and is contained in soil pore spaces (i.e., pores, or air space, created by the contacts made between irregular shaped soil particles) and/or bedrock fractures.

The principal surface waters at NBVC Point Mugu include the Pacific Ocean, Mugu Lagoon, Calleguas Creek, Revolon Slough, and several Oxnard drainage ditches (ODDs, see Figure 3.2-1). Mugu Lagoon is a generally shallow (less than 10 ft [3 m] deep at high tide), linear, and east-west trending feature that receives both freshwater and tidal flows. Freshwater flows are derived from Calleguas Creek/Revolon Slough (both perennial streams) and several ODDs. Circulation patterns and flushing levels within the lagoon are controlled by tidal influence and the amount of freshwater influx. Additional surface waters at NBVC Point Mugu and in surrounding areas include several smaller perennial streams; off-site extensions of Calleguas Creek, Revolon Slough and local ODDs; and a series of duck ponds to the west.

Surface runoff at NBVC Point Mugu is transported to Calleguas Creek, Mugu Lagoon, or the Pacific Ocean via a system of drainage ditches and natural channels. Existing drainage patterns at NBVC Point Mugu are variable, with a number of natural and developed drainage features as described above. Drainage in much of the southernmost (coastal) portion of the base flows directly into Mugu Lagoon or the ocean, while runoff in other areas enters one or more of the noted natural drainage features and/or ODDs. All flows from NBVC Point Mugu ultimately discharge into Mugu Lagoon or the ocean. Surface flows within the NBVC Point Mugu site are characterized by generally low velocities, due to the predominantly low elevation and subdued nature of local topography.

The two main categories of pollutants to waters of the state are point and non-point sources. A point source is any discernible, confined, and discrete conveyance (pipe, ditch, channel, and/or tunnel) from which pollutants may be discharged. Non-point-source pollution (also called polluted runoff) is the release of pollutants from everything other than point sources. These include sources such as storm water, agricultural runoff, dust, and air pollution that settle into water bodies.

Urban storm water runoff discharged into streams, bays, and oceans from municipal storm drain systems has been identified under local, regional, and national research programs as one of the principal causes of water quality problems in urbanized areas. Pollutants that accumulate on paved (impervious) surfaces are easily transported by runoff, and flow downstream via the storm water conveyance system (or storm drain system) to downstream creeks, estuaries, and the ocean. As discussed above, surface runoff at NBVC Point Mugu is transported to Calleguas Creek, Mugu Lagoon, or the Pacific Ocean via a system of drainage ditches and natural channels; therefore, urban runoff is not mechanically treated before being discharged off site.

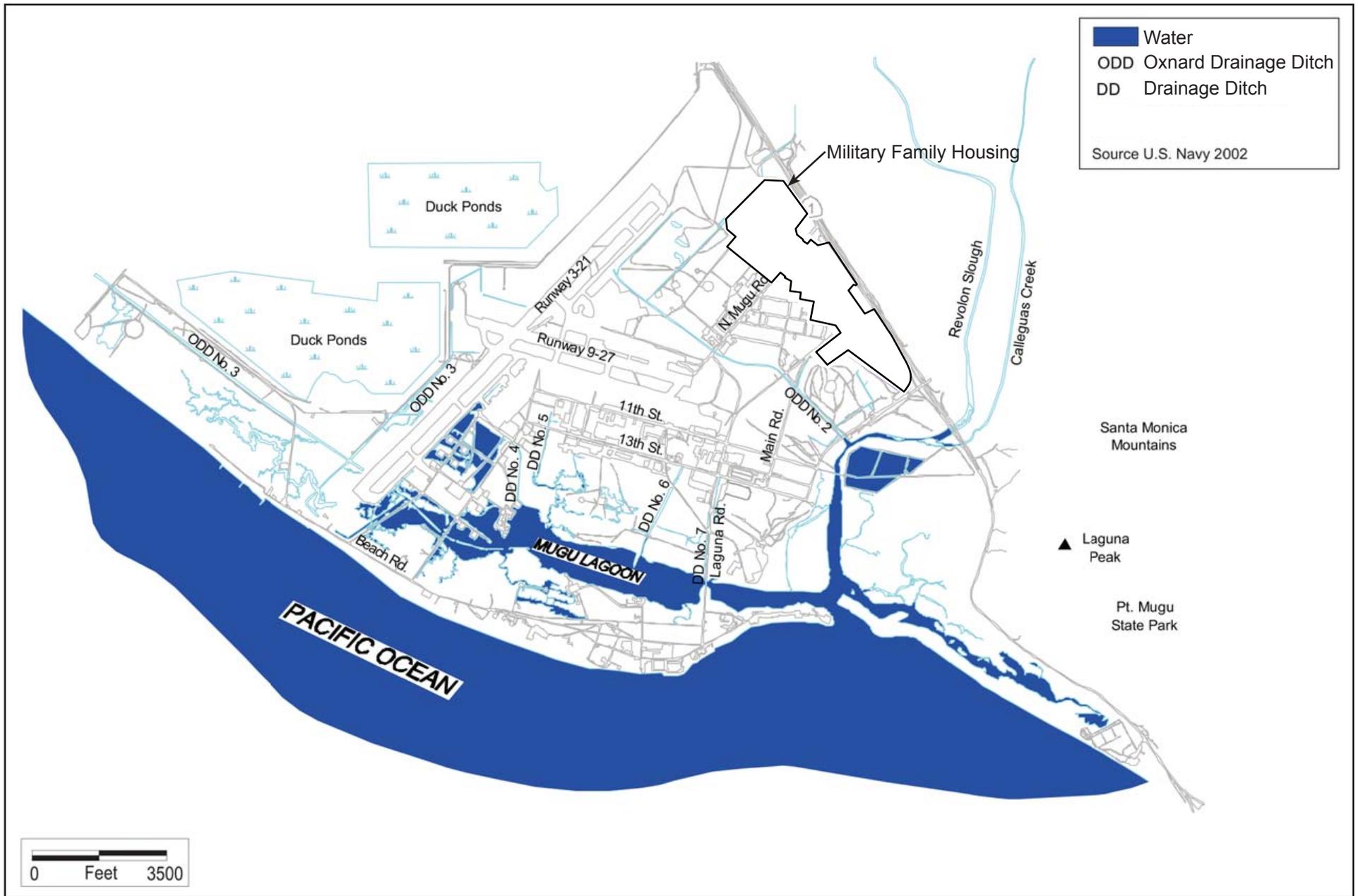


Figure 3.2-1
 Surface Water Features at NBVC Point Mugu
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 at Naval Base Ventura County, Point Mugu, California



3.2.1.2 Flood Hazard

Floodplains are generally located in low-lying areas near rivers or other water bodies, and are subject to inundation (flooding) during defined storm events. A 100-year floodplain, for example, is the inundation area associated with a 100-year storm (i.e., a storm event having a one percent chance of occurring in any given year). Due to the potential danger and property damage associated with major flooding, regulatory controls have been developed to generally limit development in 100-year floodplains to uses such as recreational sites and open space/habitat preservation (e.g., Executive Order [EO] 11988).

Based on mapping included in the NBVC Activity Overview Plan (Navy 2006a), most portions of NBVC Point Mugu (including the MFH areas) are within 100-year floodplain boundaries associated with Calleguas Creek and other surface waters (refer to Figure 3.2-2). Flooding within NBVC Point Mugu is characterized as a “significant problem” in the referenced Activity Overview Plan, with two “major floods” identified at the base since 1994 (Navy 2006a). Specifically, several homes in the western corner of the San Miguel housing area (which includes portions of the Proposed Action) were flooded in 1998 and 2006, along with a number of streets in these and other (off-site) portions of the MFH area (Navy 2007b). A system of tide gates, storm drains, retaining walls and berms has been constructed around the northern and eastern perimeters of the base to divert floodwaters, with existing housing at NBVC Point Mugu partially protected by these facilities. Several of the existing flood control structures are identified as providing inadequate protection, however, as evidenced by the noted floods in 1998 and 2006 (Navy 2006a).

3.2.1.3 Groundwater

Groundwater occurs as subsurface aquifers and is contained in soil pore spaces (i.e., pores, or air space, created by the contacts made between irregular shaped soil particles) and/or bedrock fractures. Groundwater may be withdrawn for uses including agricultural, domestic and industrial applications, and is recharged primarily through the infiltration of rainfall.

Six groundwater aquifers are present within the upper approximately 2,000 ft (610 m) of unconsolidated sediments present in the Ventura Basin. Specifically, these include (in order of increasing depth) the Semi-Perched, Oxnard, Mugu, Hueneme, Grimes Canyon, and Fox Canyon aquifers (NAVFAC SW 2013). The Semi-Perched and Oxnard are the most important aquifers, as they comprise the upper aquifer system and would be the most susceptible to potential impacts associated with surface development (Navy 2007b). The Semi-Perched and Oxnard aquifers are separated by an extensive clay layer, which generally precludes mixing. The Oxnard Aquifer is the principal source of local water supplies derived from groundwater; the Semi-Perched Aquifer is not utilized for such purposes due to water quality considerations (as described below). Recharge to all of the described aquifers occurs primarily in the unconfined portion of the Oxnard Plain to the northeast, with groundwater elevations generally above sea level except for the southernmost portions of NBVC Point Mugu. These generally high groundwater elevations (particularly in the recharge areas to the northeast) exert pressure on the confined aquifers, with resulting groundwater movements primarily toward the ocean.

Water supply at NBVC Point Mugu is discussed in Section 3.8, Utilities.



Figure 3.2-2
 Natural Constraints
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



3.2.1.4 Water Quality

While quantitative water quality data are not known to be available for NBVC Point Mugu and surrounding areas, general qualitative assessments of local surface and groundwater quality conditions are provided in the NBVC Activity Overview Plan (Navy 2006a) and the Final Integrated Natural Resources Management Plan (INRMP, NAVFAC SW 2013). The INRMP identifies a number of issues related to water quality, including sea water intrusion and the discharge of urban and agricultural-related contaminants such as sediment, chemical pesticides/fertilizers, and metals. Past Navy practices are also cited as potential sources of water quality contamination. Based on the described conditions, the referenced plans generally identify existing water quality in the Semi-Perched Groundwater Aquifer as poor, while the underlying Oxnard Aquifer is characterized as containing high quality groundwater (except in areas where seawater intrusion has occurred).

While no characterization of surface water quality is provided in the referenced sources, portions of the Calleguas Creek watershed (including segments of Calleguas Creek, Mugu Lagoon and Revolon Slough) are included on the most recent (2010) CWA 303(d) *List of Water Quality Limited Segments Requiring TMDLs* (California SWRCB 2014). Total maximum daily loads (TMDLs) establish the maximum amount of an impairing substance or stressor that a water body can assimilate and still meet water quality standards. Existing TMDLs identified for various portions of the Calleguas Creek watershed within and upstream of NBVC include toxicity, nutrients, salts, trash, and metals. Based on the described conditions, local surface water quality is generally considered to be moderate to poor.

A number of water resource management guidelines and related efforts are identified in the referenced Activity Overview Plan and INRMP, including a SWPPP and numerous BMPs. These guidelines are described below in Section 3.2.2, Environmental Consequences and Mitigation Measures, as appropriate.

3.2.2 Environmental Consequences and Avoidance Measures

3.2.2.1 Proposed Action

Potential Impacts

Surface Water

The Proposed Action would not entail large-scale earth movement such as extensive grading or excavation for demolition of up to 150 MFH units, construction of five new SOQ homes, and the construction of new amenities. Long-term activities under the Proposed Action would entail continued occupancy of housing units, along with related operations such as building, landscaping, and roadway maintenance. No expanded long-term activities would occur under the Proposed Action, in fact, there would be fewer housing units in the area; therefore, no associated long-term impacts to surface water hydrology would occur. Accordingly, potential impacts to surface water quality from the Proposed Action would be the same as those under existing conditions. The demolition of MFH, construction of new SOQ homes, construction of new amenities, and long-term activities are (and would continue to be) subject to existing regulatory controls, and would implement associated guidelines pursuant to applicable requirements of the CWA, NPDES and related NBVC planning documents, including the preparation of a SWPPP (Environmental Protection Measure 1, Section 2.2.1.2, Environmental Protection Measures). Based on the described operations to be conducted under the Proposed Action and the related conformance requirements, no significant impacts associated with surface water hydrology or water quality would result.

Groundwater

The Proposed Action would not involve any direct use of groundwater (e.g., through increased withdrawals), and would not entail any modifications of existing facilities or operations that could potentially affect groundwater resources. While there is potential for an incremental increase in impervious areas due to the construction of five new SOQ homes and new amenities such as a tot lot, recreational facilities, and dog runs (e.g., minor areas of pavement or structures), any increase in impervious areas would be very small. Additionally, the Proposed Action could result in the demolition of up to 150 MFH units, which would remove impervious areas from the project site (thereby potentially increasing infiltration capacity). Based on the minor changes to impervious areas associated with the Proposed Action, no associated net reduction of infiltration and recharge capacity is anticipated (and overall infiltration could potentially be increased as noted), and no facilities that would potentially affect groundwater quality would be constructed or used (e.g., underground fuel storage tanks or septic systems). Based on these conditions and the conformance requirements described above for surface water quality, the Proposed Action would not result in significant impacts related to groundwater hydrology or quality.

Flooding

While the Proposed Action site is located within a mapped 100-year floodplain, as previously described (refer to Figure 3.2-2), and while that site has flooded twice in the last twenty years, no associated adverse impacts would result from implementation of the Proposed Action. This conclusion is based on the following considerations: (1) no modified conditions that would potentially expose people or structures to flood-related hazards would result from the Proposed Action; and (2) no new or modified conditions (e.g., encroachments) that would be substantial enough to potentially affect the lateral or vertical extent of existing floodplains or floodwaters would result from the Proposed Action. Special design requirements for the five new SOQs would include the import of fill to raise the elevations around the new homes and/or construction of site improvements to control storm water and reduce the potential for flooding. Therefore, implementation of the Proposed Action would not result in significant impacts related to flooding.

3.2.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed housing privatization program, demolition of up to 150 MFH units, renovation of 77 units, construction by the PPV entity of five SOQ units, and related operation and maintenance efforts would not occur. Accordingly, the baseline surface water, groundwater, wetland and floodplain conditions described in Section 3.2.1 would remain unchanged and no related impacts would occur to water resources.

3.3 Biological Resources

3.3.1 Affected Environment

3.3.1.1 Wildlife

While numerous species of invertebrates, amphibians, and reptiles are present at NBVC, only one reptile was specifically reported in a housing area documented in the INRMP (a garter snake that may have been an escaped pet; NAVFAC SW 2013). However, rattlesnakes are often reported in the NBVC housing areas (Kelley, Rebecca, pers. comm.). NBVC is considered a major stopover for migratory birds (NAVFAC SW 2013). While most species are likely to occur in less developed portions of NBVC, nearly all avian species with potential to be present within the Proposed Action boundaries are protected by the federal Migratory Bird Treaty Act (MBTA). According to the INRMP for NBVC Point Mugu and Special Areas (NAVFAC SW 2013), migratory birds use the man-made areas of NBVC Point Mugu for forage and nesting, and developed areas provide roosting and nesting habitat in structures and landscaping. Cliff swallows (*Petrochelidon pyrrhonota*) nest on buildings in the industrial and housing areas. Tree swallows (*Tachycineta bicolor*) nest in the housing areas. Snowy egrets (*Egretta thula*) nest with black-crowned night herons (*Nycticorax nycticorax*) and yellow-crowned night herons (*Nyctanassa violacea*) in ficus (*Ficus* sp.) trees within the housing areas (NAVFAC SW 2013). Other species that have been observed (and in some cases have nested; Ruane, Martin K., pers. comm.) in the neighborhoods proposed for privatization include turkey vulture (*Cathartes aura*), mourning dove (*Zenaida macroura*), mallard (*Anas platyrhynchos*), yellow-rumped warbler (*Setophaga coronata*), and black phoebe (*Sayornis nigricans*). The State listed endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is present in salt marsh habitat outside the Proposed Action boundaries adjacent to the San Miguel neighborhood (NAVFAC SW 2013).

Other than bat species, no mammal species have specifically been listed in the INRMP as being present in the housing areas. However, it is possible that some of the more common mammal species on NBVC may be found there; for example, house mouse (*Mus musculus*) and house rat (*Rattus rattus*). Bat surveys have commonly recorded the Mexican free-tailed bat (*Tadarida brasiliensis mexicana*), a year-round resident, which inhabits buildings and residential homes at NBVC Point Mugu (NAVFAC SW 2013). More than 700 bats once occupied a vacant condominium on Patriot Place in the Anacapa neighborhood (Ruane, Martin K., pers. comm.).

3.3.1.2 Federally Listed Threatened or Endangered Species

No federally listed species have been reported within the Proposed Action boundaries (Figure 3-11 of the INRMP), and none is expected to occur because the area is completely developed, as shown on Figures 2-2 (Regional Land Use) and 3-10 (Terrestrial Communities) of the INRMP (NAVFAC SW 2013).

In 2012, annual monitoring was conducted for the six federally listed species found year-round or seasonally at NBVC Point Mugu (NBVC 2013). The six species include salt marsh bird's-beak (*Chloropyron maritimum* subsp. *maritimum*, formerly *Cordylanthus maritimus* subsp. *maritimus*), light-footed Ridgway's rail (*Rallus obsoletus levipes*), western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), least Bell's vireo (*Vireo bellii pusillus*), and tidewater goby (*Eucyclogobius newberryi*). The habitats of these species include marshes, mudflats, tidal creeks, beaches, dunes, riparian scrubs, intertidal mudflats, and intertidal sandflats (NAVFAC SW 2013). None of these habitats occurs within the Proposed Action boundaries.

Two federally listed species have potential to occur on NBVC Point Mugu. These species are Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*) and El Segundo blue butterfly (*Euphilotes battiodes allyni*). Ventura marsh milk-vetch habitats include wetlands and coastal marshes. It has low potential to occur on NBVC Point Mugu and no potential to occur within the Proposed Action boundaries, due to absence of habitat. El Segundo blue butterfly habitat includes coastal sand dunes. It has moderate potential to occur on NBVC Point Mugu and no potential to occur within the Proposed Action boundaries, due to absence of habitat (NAVFAC SW 2013; Appendix G of NAVFAC SW 2013).

3.3.1.3 Wetlands

Wetlands are defined by the U.S. Army Corps of Engineers (USACE) as areas that are inundated or saturated by surface water or groundwater at a frequency or duration sufficient to support, and that under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Approximately 2,139 acres (866 ha) of wetlands are present within NBVC Point Mugu, or roughly 48 percent of the total base area (NAVFAC SW 2013). The majority of these wetlands are associated with Mugu Lagoon and Calleguas Creek, and consist primarily of salt marsh. A number of freshwater marshes are also associated with local areas, including several ODDs, dune-related swales, and shallow groundwater. The described wetlands represent important wildlife habitat and support several federally listed bird species.

There are no wetlands as defined under federal CWA regulations (33 Code of Federal Regulations [CFR] 328.3) within the Proposed Action boundaries. The salt marsh outside the Proposed Action boundaries and adjacent to the San Miguel neighborhood is a wetland.

3.3.2 Environmental Consequences and Avoidance Measures

3.3.2.1 Proposed Action

Potential Impacts

Throughout the lease period, the Proposed Action would include minor renovations that would be performed by the PPV entity to homes that are transferred and not demolished, and to the five new SOQ homes, as well as maintenance operations typical of residential uses and similar to those already undertaken in the previously leased portions of MFH on NBVC (e.g., painting, landscaping [including tree trimming] and building repairs).

Potential impacts to wildlife from increased noise, dust, and activity could occur in association with minor building renovations, maintenance operations, and construction of five new SOQ homes and tot lots and dog runs, but would be temporary and localized. Wildlife species would likely avoid the work area temporarily and return following completion of the work, or would utilize other nearby comparable habitat.

Native rattlesnakes in the NBVC Point Mugu housing area are a specific safety concern to residents and their pets. A snake fence that is currently in place between the San Miguel neighborhood and the adjacent salt marsh (where these rattlesnakes have been observed; NAVFAC SW 2013) would be maintained as part of the Proposed Action. The NBVC Environmental Division also relocates snakes that occur in housing areas (NAVFAC SW 2013). As these measures would remain in place, the Proposed Action would avoid or minimize interactions between snakes and residents, and there would be no significant effects on these snakes (or residents and their pets).

Minor building renovations, maintenance operations, and construction of five new SOQ homes and tot lots, recreational facilities and dog runs could cause impacts to MBTA-protected species. Specific concerns outlined in the INRMP (NAVFAC SW 2013) related to migratory birds include:

- Conflicts between birds and facility tenants and housing, particularly through maintenance or demolition activities that could result in potential take under the MBTA.
- Potential impacts to nesting migratory birds due to demolition of housing, and tree and brush trimming and removal during the nesting season.
- Difficulty in educating building tenants on protocols for responding to the discovery of nesting or trapped birds, particularly raptors, in their facilities.

Management of migratory birds at NBVC includes the definition that all bird species at NBVC Point Mugu, with the exception of rock pigeon (*Columba livia*), European starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*), are protected by federal law under the MBTA (16 USC Section 703 *et seq.*) and EO 13186 (Responsibilities of Federal Agencies To Protect Migratory Birds, 10 January 2001). Furthermore, in July 2006, the Department of Defense (DoD) and U.S. Fish and Wildlife Service (USFWS) entered into a Memorandum of Understanding (MOU) to “Promote the Conservation of Migratory Birds.” The MOU describes specific actions that should be taken by DoD to advance migratory bird conservation; avoid or minimize the take of migratory birds; and ensure DoD operations other than military readiness activities are consistent with the MBTA. The INRMP Benefits for Migratory Birds (Appendix E of the INRMP) further details NBVC Point Mugu’s efforts and strategies for bird conservation to maintain compliance with the MBTA (NAVFAC SW 2013).

In accordance with the regulations of the MBTA, the USFWS recommends that impacts to birds protected under the MBTA be avoided by surveying for nesting birds in areas proposed for disturbance, and if protected birds or active nests are present, re-scheduling activities for outside the nesting season, until the young are fledged. Alternatively, the USFWS recommends that activities that have the potential to impact protected birds or their nesting habitat be conducted outside the migratory bird nesting season, to avoid impacts. A majority of migratory birds nest from mid-February and continue until the end of August; however, some species may start earlier or extend their nesting activities through September.

The Proposed Action would comply with the MBTA, EO 13186, the DoD/USFWS MOU, and INRMP, so there would be no significant effects on MBTA-protected species.

According to the INRMP (NAVFAC SW 2013), specific concerns regarding mammals at NBVC include:

- Conflicts with residents when wildlife is in housing or industrial areas.
- Conflicts with bats occupying buildings and houses.

Mammals in buildings and residential areas are managed under the NBVC Integrated Pest Management Program (Navy 2011), coordinated by the NBVC Environmental Division. The program includes measures to “ensure compliance with the INRMP and other mandates.” Therefore, any pest management activities associated with maintenance operations would not significantly affect sensitive wildlife species.

The DoD and Bat Conservation International signed an MOU in 2006 to conserve bats. If bats are suspected to be roosting within the Proposed Action boundaries, surveys will be conducted by a biologist knowledgeable and experienced with bats, and if bats are present, proper bat exclusion will be done. Therefore, the Proposed Action would not significantly affect bat species.

Under the Proposed Action, up to 150 homes that are not needed to meet the installation's housing requirements may be demolished. Building demolition and removal activities have the potential to temporarily increase disturbance, noise, and dust and permanently remove roosting and/or nesting habitat for some MBTA-protected species and bats. Wildlife that may be using the structures proposed for demolition would lose potential breeding and perching habitat and would be displaced by demolition. The effects of demolition would be the same as those described for construction and operation activities above (i.e., no significant effects).

While no native or natural vegetation is present within the Proposed Action boundaries, native salt marsh occurs outside the Proposed Action boundaries adjacent to the San Miguel neighborhood. According to the INRMP (NAVFAC SW 2013), invasive plant species threaten the integrity of NBVC Point Mugu natural communities, and new facilities, for example, would include the five new SOQ homes and could include landscaping that may not have gone through the Site Approval/Project Review Board process. Additionally, demolition of housing and the associated removal of the existing landscaping could result in the spread of non-native plant species to natural habitat outside the Proposed Action boundaries, if the removed plant material is not handled properly.

President Clinton's 26 April 1994 EO on Beneficial Landscaping directs federal agencies to, among other things, "use regionally native plants for landscaping" and "design, use, or promote construction practices that minimize adverse effects on the natural habitat." Furthermore, EO 13112 issued by President Clinton on 3 February 1999 requires federal agencies "to prevent the introduction of invasive species..." The INRMP lists this objective for invasive species: "Minimize introduction of invasive non-native terrestrial species to NBVC Point Mugu through prevention." The INRMP also includes management strategies to meet this objective and the requirements of the EOs, including, but not limited to, "certify as weed free, to the extent possible, gravel and fill materials" and "require that native plant species provided in Appendix G of this INRMP are used for landscaping..." With implementation of these management strategies, no significant effects from invasive plant species would occur from the Proposed Action.

There would be no direct effects to wetlands from the Proposed Action, as there are no wetlands within the Proposed Action boundaries. Additionally, there would be no significant indirect effect to wetlands (salt marsh) outside the Proposed Action boundaries adjacent to the San Miguel neighborhood, because the Proposed Action would comply with applicable existing regulatory controls and associated guidelines pursuant to applicable requirements of the CWA, NPDES, and related NBVC planning documents. This would ensure that no significant effects to wetlands would occur.

3.3.2.2 No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not occur. There would be no demolition or renovation of existing structures or construction of new SOQ homes or new amenities. Current maintenance activities in the housing areas would continue to occur, subject to existing regulatory controls and associated guidelines pursuant federal law and related NBVC planning documents. Therefore, there would be no significant effects to biological resources under the No-Action Alternative.

3.4 Air Quality/Climate Change

3.4.1 Affected Environment

Air quality at a given location is defined by the concentrations of various pollutants in the atmosphere. Pollutants are defined as two general types: (1) criteria pollutants; and, (2) toxic compounds. Criteria pollutants have national and/or state ambient air quality standards. The United States Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS), while the California Air Resources Board (CARB) established the state standards, known as the California Ambient Air Quality Standards (CAAQS). The USEPA designates all areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. A nonattainment designation generally means that a primary NAAQS has been exceeded more than once per year in a given area; however, an area will be in nonattainment with respect to an annual standard if that standard is exceeded on even one occasion during a year. The CARB also designates areas of the state as either in attainment or nonattainment of the CAAQS. An area is in nonattainment for a pollutant if its CAAQS has been exceeded more than once in three years. The national and state ambient air quality standards are shown in Table 3.4-1. Toxic air contaminants (TACs) are compounds that generally have no established ambient standards, but have been determined to cause short-term (acute) and/or long-term (chronic non-carcinogenic or carcinogenic) adverse health effects. Units of concentration for these pollutants are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

The main pollutants of concern considered in this air quality analysis include volatile organic compounds (VOCs), ozone (O_3), carbon monoxide (CO), oxides of nitrogen (NO_x), particulate matter less than or equal to 10 microns in diameter (PM_{10}), and particulate matter less than or equal to 2.5 microns in diameter ($\text{PM}_{2.5}$). Although VOCs or NO_x (other than nitrogen dioxide) have no established ambient standards, they are important as precursors to ozone formation.

Air emissions produced by the Proposed Action may affect air quality in proximity to NBVC Point Mugu and the surrounding region. The project site is within the South Central Coast Air Basin, which consists of the San Luis Obispo County, Santa Barbara County, and Ventura County Air Pollution Control Districts.

Regarding the NAAQS, the air quality in Ventura County (excluding the Channel Islands of Anacapa and San Nicolas Island) have been characterized by the USEPA as a serious nonattainment area for 8-hour ozone (NO_x and VOCs). Ventura County is classified by the USEPA as unclassified/attainment for all other criteria pollutants (USEPA 2011). Regarding the CAAQS, Ventura County is classified as a state nonattainment area for 8-hour ozone, PM_{10} , and $\text{PM}_{2.5}$, and as unclassified/attainment for all other criteria pollutants (CARB 2011).

3.4.2 Greenhouse Gases

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere by absorbing infrared radiation. Without this natural greenhouse effect, the average surface temperature of the Earth would be about 60°F (15.5°C) colder (U.S. Global Change Research Program 2009). Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce environmental, economic, and social consequences across the globe.

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

Pollutant	Averaging Time	National Standards ^a		California Standards
		Primary ^{b,c}	Secondary ^{b,d}	
Ozone (O ₃)	1-hour	—	—	0.09 ppm (180 µg/m ³)
	8-hour	0.075 ppm (147 µg/m ³)	Same as primary	0.070 ppm (137 µg/m ³)
CO	8-hour	9 ppm (10 mg/m ³)	—	9 ppm (10 mg/m ³)
	1-hour	35 ppm (40 mg/m ³)	—	20 ppm (23 mg/m ³)
NO ₂	Annual	0.053 ppm (100 µg/m ³)	Same as primary	0.030 ppm (57 µg/m ³)
	1-hour	0.10 ppm (188 µg/m ³)	—	0.18 ppm (339 µg/m ³)
SO ₂	3-hour	—	0.5 ppm (1,300 µg/m ³)	—
	1-hour	0.075 ppm (105 µg/m ³)	—	0.25 ppm (655 µg/m ³)
PM ₁₀	Annual	—	—	20 µg/m ³
	24-hour	150 µg/m ³	Same as primary	50 µg/m ³
PM _{2.5}	Annual	12 µg/m ³	Same as primary	12 µg/m ³
	24-hour	35 µg/m ³	Same as primary	—
Lead	Rolling 3-month average	0.15 µg/m ³	Same as primary	—
	Quarterly Average	1.5 µg/m ³	Same as primary	—
	30-day average	—	—	1.5 µg/m ³

Source: CARB 2013a

Notes:

- Standards other than the 8-hour ozone, 24-hour PM₁₀, 24-hour PM_{2.5}, and those based on annual averages are not to be exceeded more than once a year.
- Concentrations are expressed first in the units in which they were promulgated. Equivalent units given in parenthesis.
- Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
- Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

O₃ = ozone; CO = carbon monoxide; NO₂ = nitrogen dioxide; SO₂ = sulfur dioxide; PM₁₀ = particulate matter less than 10 microns in diameter; PM_{2.5} = particulate matter less than 2.5 microns in diameter; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter.

Greenhouse gas emissions occur from natural processes and human activities. Water vapor is the most important and abundant GHG in the atmosphere. However, human activities produce only a very small amount of the total atmospheric water vapor. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). The main source of GHGs from human activities is the combustion of fossil fuels, such as crude oil and coal. Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. These six GHGs (CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) are regulated by the State of California.

Each GHG is assigned a global warming potential (GWP). The GWP is the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO₂, which has a value of one. For example, CH₄ has a GWP of 21, which means that it has a global warming effect 21 times greater than CO₂ on an equal-mass basis (Intergovernmental Panel on Climate Change 2007). To simplify GHG analyses, total GHG emissions from a source are often expressed as a CO₂ equivalent (CO₂e). The CO₂e is calculated by multiplying the emissions of each GHG by its GWP and adding the results together to

produce a single, combined emission rate representing all GHGs. While CH₄ and N₂O have much higher GWPs than CO₂, CO₂ is emitted in so much higher quantities that it is the overwhelming contributor to CO₂e from both natural processes and human activities.

Recent observed changes due to global warming include rising temperatures, shrinking glaciers and sea ice, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges. International, national, and state organizations independently confirm these findings (Intergovernmental Panel on Climate Change 2014; U.S. Global Change Research Program 2009; California Energy Commission 2009).

The most recent *California Climate Change Scenarios Assessment* predicts that temperatures in California will increase between 3 to 10.5 degrees Fahrenheit (1.7 to 5.8 degrees Celsius) by 2100, based upon low and high global GHG emission scenarios (California Energy Commission 2009). Predictions of long-term negative environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a substantial reduction in winter snow pack. In California, predictions of these effects include exacerbation of air quality problems, a reduction in municipal water supply from the Sierra snowpack, a rise in sea level that would displace coastal businesses and residences, an increase in wild fires, damage to marine and terrestrial ecosystems, and an increase in the incidence of infectious diseases, asthma, and other human health problems (California Energy Commission 2009).

Federal agencies on a national scale address emissions of GHGs by reporting and meeting reductions mandated in federal laws, EOs, and agency policies. The most recent of these are EOs 13423 and 13514 and the USEPA *Final Mandatory Reporting of Greenhouse Gases Rule*. Several states have promulgated laws as a means of reducing statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 (Assembly Bill 32) directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020. Groups of states also have formed regionally based collectives (such as the Western Climate Initiative) to jointly address GHG pollutants.

In an effort to reduce energy consumption, reduce dependence on petroleum, and increase the use of renewable energy resources in accordance with the goals set by EO 13423 and the Energy Policy Act of 2005, the Navy has implemented a number of renewable energy projects (NAVFAC 2006). The types of projects currently in operation in the NAVFAC SW region include thermal and photovoltaic solar systems, geothermal power plants, and wind generators. The military also purchases one-half of the biodiesel fuel sold in California. The Navy continues to promote and install new renewable energy projects in the NAVFAC SW region. The Navy intends to ensure that all residential units would comply with the Energy Policy Act of 2005 and EOs 13423 and 13514.

On 18 February 2010, the CEQ proposed for the first time draft guidance on how federal agencies should evaluate the effects of climate change and GHG emissions for NEPA documentation (CEQ 2010). The CEQ does not propose a reference point as an indicator of a level of GHG emissions that may significantly affect the quality of the human environment. In the analysis of the direct effects of a Proposed Action, the CEQ proposes that it would be appropriate to (1) quantify cumulative emissions over the life of the project; (2) discuss measures to reduce GHG emissions, including consideration of reasonable alternatives; and, (3) qualitatively discuss the link between such GHG emissions and climate change. The CEQ issued final guidance in June 2012.

The potential effects of proposed GHG emissions are by nature global and cumulative impacts, because individual sources of GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, the potential impact of proposed GHG emissions to climate change is discussed in the context of cumulative impacts in Chapter 4.0.

3.4.3 Applicable Regulations and Standards

The Federal Clean Air Act of 1970 (CAA) and its subsequent amendments establish air quality regulations and the NAAQS and delegate the enforcement of these standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. The CARB has in turn delegated the responsibility of regulating stationary emission sources to regional air agencies. In the South Central Coast Air Basin, each of the three Air Pollution Control Districts (San Luis Obispo County, Santa Barbara County, and Ventura County) has this responsibility. The CAA establishes air quality planning processes and requires areas in nonattainment of a NAAQS to develop a State Implementation Plan that details how the state will attain the standard within mandated time frames. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area. The following summarizes the air quality rules and regulations that apply to the Proposed Action.

Federal Regulations

Section 176(c) of the CAA, as articulated in the USEPA General Conformity Rule, states that a federal agency cannot issue a permit or support an activity unless the agency determines that it will conform to the most recent USEPA-approved State Implementation Plan. This means that projects using federal funds or requiring federal approval in nonattainment or maintenance areas must not (1) cause or contribute to any new violation of a NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay timely attainment of any standard, interim emission reduction, or other milestone. The General Conformity Rule applies to federal actions affecting areas that are in nonattainment of a NAAQS and to designated maintenance areas (attainment areas that have been reclassified from a previous nonattainment status and which are required to prepare an Air Quality Maintenance Plan).

Conformity determinations are required when the annual direct and indirect emissions from a federal action exceed an applicable *de minimis* threshold. The conformity *de minimis* thresholds vary by pollutant and the severity of nonattainment conditions in the region affected by the Proposed Action. Based upon these designations, the applicable annual conformity *de minimis* thresholds for the project area within Ventura County Air Basin are 50 tons of VOCs and NO_x. Ventura County Air Pollution Control District (VCAPCD) Rule 220 implements the USEPA General Conformity Rule.

State Regulations

The CARB is responsible for the coordination and administration of both federal and state air pollution control programs within California, and implementation of the California Clean Air Act. The California Clean Air Act requires the CARB to establish the CAAQS (Table 3.4-1). In general, the CAAQS are at least as stringent as the NAAQS. The California Clean Air Act requires local air districts in the state to achieve and maintain the CAAQS by the earliest practical date. The California Clean Air Act specifies that local air districts should focus particular attention on reducing emissions from transportation and area-wide emission sources, and it gives districts the authority to regulate indirect sources of emissions.

Local Regulations

NBVC is located in Ventura County. Presently, the NBVC project region attains all NAAQS except the ozone standard. Ventura County is classified as a serious ozone nonattainment area (USEPA 2013). The CARB also designates areas of the state that are in attainment or nonattainment of the CAAQS. An area is in nonattainment for a pollutant if its CAAQS has been exceeded more than once in three years. Presently, Ventura County is in attainment of the CAAQS for all air pollutants except ozone.

The VCAPCD is responsible for regulating stationary sources of air emissions within Ventura County, and has prepared numerous air quality planning documents to meet state and federal clean air mandates. The most important of these are the air quality management plans (AQMPs). These documents outline the VCAPCD's long-range strategy for providing clean, healthful air to the citizens and businesses of Ventura County and, once approved by the USEPA, become components of the California SIP. The AQMPs are not one-time documents, but periodically get updated and revised in accordance with changes in governing law and air pollution control science and technology. Moreover, each successive AQMP builds on its predecessor. The last major Ventura County AQMP was the 2007 AQMP (VCAPCD 2007). It was prepared to satisfy requirements of the CAA for the 1997 federal 8-hour ozone standard.

Central to Ventura County's AQMPs are stationary source control measures. Stationary source control measures are techniques and equipment for reducing ozone precursor emissions, reactive organic compounds (ROC) and NO_x, from stationary sources in the county. Examples of stationary source control measures include gasoline station vapor recovery systems, landfill gas recovery systems, and catalytic emission control systems on engines and various other combustion devices. Control measures for stationary sources proposed in the air quality plans and adopted by the VCAPCD are incorporated into the Rules and Regulations of the VCAPCD (VCAPCD 2014a).

3.4.4 Environmental Consequences and Avoidance Measures

Potential air quality/climate change impacts were reviewed for significance compared to federal, state, and local air pollution standards and regulations. For the purposes of this analysis, if proposed emissions were projected to exceed a conformity *de minimis* threshold applicable to South Central Coast Air Basin, further analysis was conducted to determine whether potential impacts were significant. In such cases, if emissions conform to the approved State Implementation Plan, then potential impacts would be less than significant.

3.4.4.1 Proposed Action

Potential Impacts

Construction and Demolition

Potential air quality impacts from demolition and construction activities would occur from (1) combustive emissions due to the use of fossil fuel-powered equipment; and (2) fugitive dust emissions (PM₁₀ and PM_{2.5}) generated from construction activities due to the demolition of up to 150 residential units, the renovation of up to 77 residential units, and the construction of the five new SOQ homes and tot lots and other park infrastructure. Construction activity data were used to estimate project combustive and fugitive dust emissions. This analysis evaluates the proposed activities in two phases: (1) demolition of up to 150 residential units, and (2) renovation of up to 77 residential units in the project area, along with construction of the five new SOQ homes and tot lots and other park infrastructure. This analysis assumes a worst-case scenario where overlapping of phases one and two would occur in the same calendar year over an 18-month construction duration period.

To determine proposed demolition and renovation air quality impacts, this analysis employed the use of the *California Emissions Estimator Model* (CalEEMod) to estimate proposed construction emissions (South Coast Air Quality Management District 2013). Dust control measures would be implemented to comply with the requirements of VCAPCD Rule 55, Fugitive Dust during all proposed ground disturbance and building demolition activities (Environmental Protection Measure 2, Section 2.2.1.2, Environmental Protection Measures). Implementation of this measure would reduce fugitive dust from ground disturbances and housing demolition by 61 and 36 percent, respectively (South Coast Air Quality

Management District 2013). Construction equipment control measures would be implemented during all ground disturbances and building demolition activities (Environmental Protection Measure 3; Section 2.2.1.2, Environmental Protection Measures) to minimize combustive emissions from proposed construction equipment, and all equipment would be operated in compliance with applicable federal and state requirements.

Table 3.4-2 summarizes the annual and total emissions associated with construction of the Proposed Action. These data show that annual emissions generated by the Proposed Action would be well below the South Central Coast Air Basin conformity *de minimis* levels. As a result, the Proposed Action would not produce adverse air quality impacts.

Proposed construction equipment would emit minor amounts of toxic air contaminants. Due to the mobile and intermittent operation of proposed diesel-powered construction equipment, Proposed Action construction and demolition activities would generate minimal ambient impacts of toxic air contaminants in a localized area. As a result, the Proposed Action would produce less than significant impacts to public health. Therefore, implementation of the construction and demolition components of the Proposed Action would not have a significant impact to air quality.

Table 3.4-2. Annual and Total Construction Emissions (Proposed Action)

Activity/Phase	Air Pollutant Emissions (Tons)						
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
<i>Phase 1 – Demolish up to 150 Existing Homes</i>							
Demolition – Total 2016 Annual	0.07	1.80	1.39	0.00	0.07	0.03	218.89
<i>Phase 2 – Renovate up to 77 Existing Homes and Construct five new SOQ homes and Tot Lots/Dog Park</i>							
Renovation – Total 2017 Annual	3.54	3.94	3.93	0.01	0.26	0.12	589.18
Total Emissions*	3.61	5.74	5.32	0.01	0.34	0.16	808.07
Conformity De Minimis Level	50	50	100	100	100	100	---
Exceed Conformity De Minimis Level?	No	No	No	No	No	No	---

* Total emissions would occur in separate calendar years. Data are subject to rounding.

Operations

The Proposed Action would not change the intensity or frequency of operational emissions associated with the 77 MFH units. Following renovation, the homes would consume lower energy and therefore would emit fewer air pollutants, compared to existing residential units with outdated energy features. Sources of energy generation due to housing operations would include on-site natural gas-fired space and water heaters and off-site electrical power generation. Other operational emissions would occur from area sources (such as landscaping and architectural coating activities), solid waste streams, water usage, and commuting activities associated with the residential units. To determine proposed operational air quality impacts, this analysis used CalEEMod to estimate proposed operational emissions (South Coast Air Quality Management District 2013).

Table 3.4-3 presents the annual operational emission estimates for the MFH included in the Proposed Action. These data show that operation of the Proposed Action would produce emissions well below the applicable conformity *de minimis* thresholds. Additionally, the MFH units would result in lower emissions as compared to the existing condition, based on the demolition of up to 150 MFH units, and the

renovation of existing units. Therefore, the long-term operation of the Proposed Action would not have a significant impact to air quality.

Table 3.4-3. Annual Operational Emissions (Proposed Action)

Scenario/Activity	Air Pollutant Emissions (Tons)						
	VOC	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}	CO _{2e}
Area	1.67	0.01	0.61	0.00	0.00	0.00	1.02
Energy	0.01	0.09	0.04	0.00	0.01	0.01	271.88
Mobile	0.43	1.09	4.38	0.01	0.83	0.23	835.52
Waste	--	--	--	--	--	--	23.51
Water	--	--	--	--	--	--	51.05
Total Annual Emissions*	2.10	1.20	5.03	0.01	0.85	0.24	1,182.96
Conformity De Minimis Level	50	50	100	100	100	100	---
Exceed Conformity De Minimis Level?	No	No	No	No	No	No	---

* Data are subject to rounding.

Adding the highest level of construction-related emissions from any single year (Table 3.4-2) to projected annual operational emissions (Table 3.4-3) for any pollutant would not exceed that pollutant's *de minimis* level. Accordingly, implementation of the Proposed Action would not result in a significant impact to air quality. Appendix C of this EA includes a Clean Air Act Record of Non-Applicability documentation for the Proposed Action.

3.4.4.2 No-Action Alternative

Because there would be no demolition or renovation of existing units or construction of five new SOQ units under the No-Action Alternative, no changes in emissions would occur. Implementation of the No-Action Alternative would not result in a change relative to existing air quality conditions. Consequently, baseline conditions would remain unchanged. Therefore, the No-Action Alternative would not result in impacts to air quality.

3.5 Cultural Resources

3.5.1 Affected Environment

Historic properties are archaeological and built environment resources that reflect our heritage and are considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. Historic properties include prehistoric and historic sites, buildings, structures, districts, and objects listed, or eligible for listing, in the National Register of Historic Places (NRHP). Additionally, cultural resources are addressed under the National Historic Preservation Act, as amended (NHPA; 16 USC 470-470x-6), the Archaeological Resources Protection Act of 1979 (16 USC 470aa-470mm), and subject to protection under the Native American Graves Protection and Repatriation Act (25 USC 3001-3013) and the American Indian Religious Freedom Act (42 USC 1996 and 1996a). Compliance with Section 106 of the NHPA requires that federal agencies take into account the effects of their undertakings on historic properties and provides the opportunity to the Advisory Council on Historic Preservation to comment on those impacts. Requirements are outlined in the Advisory Council on Historic Preservation's regulations, "Protection of Historic Properties" (36 CFR Part 800).

Previous Cultural Resources Summary reports were prepared in 2007 and 2010 in support of the 2007 project for Privatization of Family Housing at NBVC (Navy 2007b). The 2007 Cultural Resources Summary Report prepared for the Privatization of Family Housing at NBVC included a total of 1,287 MFH units distributed among the NBVC Port Hueneme and NBVC Point Mugu locations, as well as at an additional military housing neighborhood, NBVC Camarillo MFH (Catalina Heights). The 2007 Cultural Resources Summary Report did not include the former Gas Mask Training Area (GMTA), which is approximately 30 acres (12 ha) in extent and includes portions of the Anacapa, Santa Cruz, and San Miguel MFH. The current study includes the MFH units that would be demolished by the Navy within the former GMTA site and associated 50-foot buffer under the Proposed Action. The majority of these MFH units in the current study area were constructed as part of the Capehart family housing complex. Capehart housing, like the Wherry Housing program that preceded it, was a private-public partnership program designed to speed construction of MFH units on bases throughout the United States during the mid-twentieth century.

3.5.1.1 Definition of the Area of Potential Effects

The Area of Potential Effects (APE) of an undertaking is defined at 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The Proposed Action APE for cultural resources includes the entire lease area for the proposed land lease and property transfer, plus the area of the former GMTA site and a 50-foot buffer encompassing the 102 MFH units that would be demolished by the Navy, which would not be transferred/leased to the PPV entity (see Figure 3.5-1).

3.5.1.2 Cultural Setting

The following provides a brief summary of the cultural setting described in the Cultural Resources Summary Report (ASM Affiliates 2014), to provide a general context for the historic properties documented within the APE.

The Cultural Resources Summary Report prepared in May 2007 in support of the 2007 project for Privatization of Family Housing at NBVC (Navy 2007b) included the NBVC Point Mugu Family Housing areas, with the exception of the former GMTA. The 2007 Cultural Resources Summary Report indicates that no intensive archaeological surveys were completed within the APE for the 2007 action at NBVC Point Mugu, although several reconnaissance surveys were conducted. A total of

32 archaeological surveys have been conducted within 1 mile (1.6 km) of the 2007 action's APE at NBVC Point Mugu, during which a total of six sites was recorded.

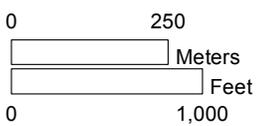
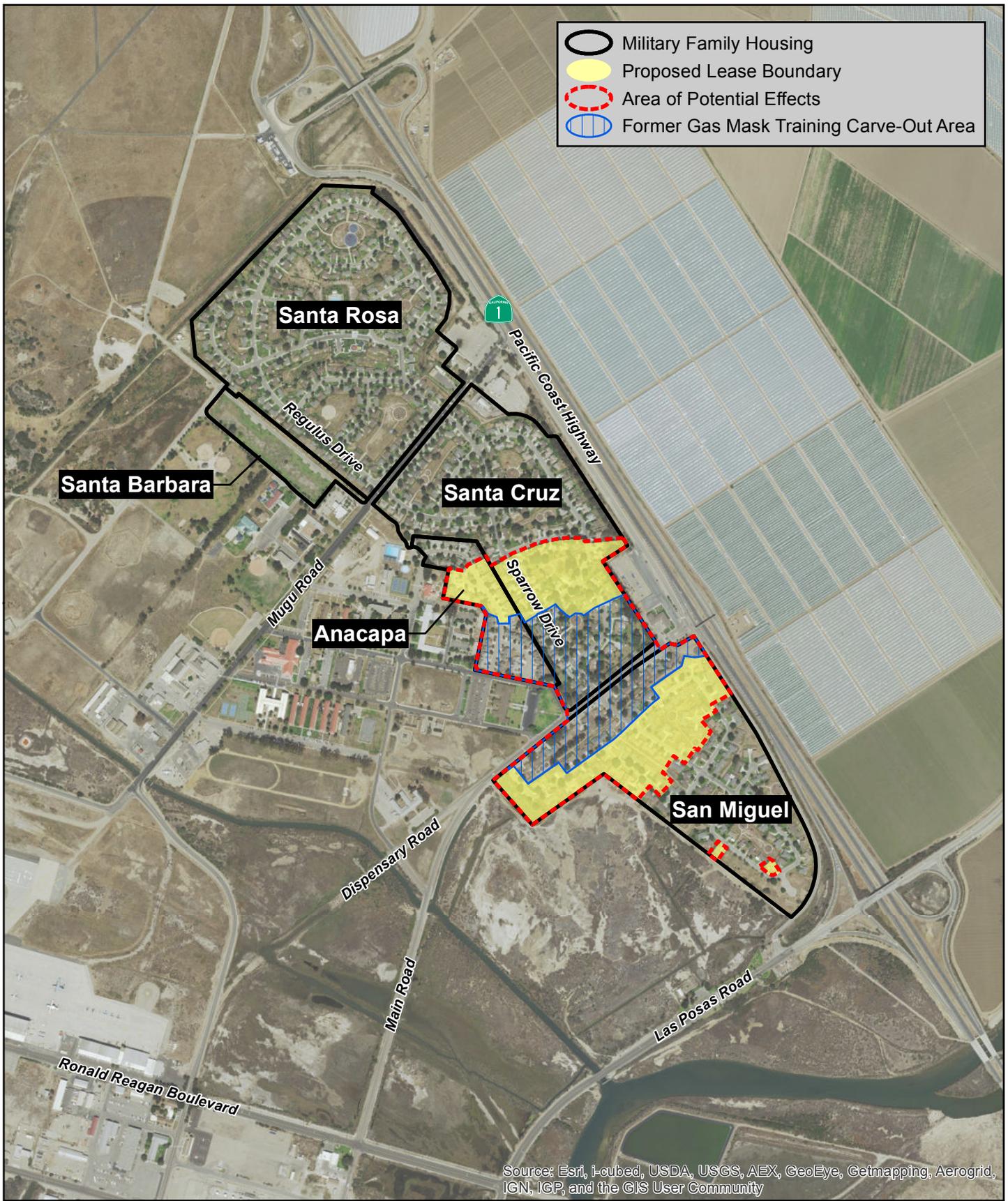


Figure 3.5-1
 Area of Potential Effects
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



The 2007 Cultural Resources Summary Report reported that during construction of the base, the original salt marsh at Mugu Lagoon was dredged and filled to create the eastern portion of the present-day installation. Dredged soil was also deposited in the northern part of the facility. Therefore, prehistoric archaeological sites that might have existed at the NBVC Point Mugu site may now be obscured by fill. Reconnaissance surveys in non-filled areas of the base were conducted, but these surveys were not project-specific, and were used to evaluate the potential of non-filled areas to produce evidence of cultural remains. The remainder of the NBVC Point Mugu site consists of developed areas that most likely have obliterated evidence of prehistoric use of this area. It is unlikely that any additional prehistoric sites will be located at the NBVC Point Mugu site, unless they are located beneath the redeposited fill.

Based on previous research completed at NBVC Point Mugu, a number of prehistoric sites about the eastern boundary of the base, and it is possible that these sites extend across the Pacific Coast Highway into NBVC Point Mugu. These potentially sensitive areas for archaeological resources do not extend into the family housing area APE.

No survey or subsurface testing was completed in 2007 within the APE for the NBVC Point Mugu Family Housing Area, due to the low sensitivity for archaeological resources.

3.5.1.3 Cultural Resources within the APE

The MFH within the APE consists of 424 units within five separate neighborhoods at NBVC Point Mugu: Santa Rosa, Santa Barbara, Anacapa, Santa Cruz, and San Miguel. The majority of MFH units within the Proposed Action boundaries were constructed between 1958 and 1962 as part of the Capehart family housing complex. As previously noted, Capehart housing, like the Wherry Housing program that preceded it, was a private-public partnership program designed to speed construction of MFH units on bases throughout the U.S. In both programs, the military branch procured the site and prepared, or caused to be prepared, the plans and specifications for the buildings. As a general rule these plans and specifications were prepared by a private architect-engineer contractor, rather than Navy personnel. In both cases, the Federal Housing Authority acted as a broker for the deal, approving housing standards and approving development deals, as well as the developers and design professionals. These legal and financial arrangements have two major implications for the appearance of those homes. First, the station specified the general types of homes that would be built, based upon its perceived housing needs, by the number as well as the rank of the potential residents. In addition, the Navy was responsible for acquiring the site and preparing the plans. Because of the arrangement, the site plan, as well as the plans for individual buildings, were prepared according to the design traditions of the Navy. The plans, however, were not prepared by the Navy itself; all of the plans for Wherry and Capehart housing were the work of private architect-engineer contractors, with a different group of contractors responsible for each generation of housing plans.

The first big group of such housing at Point Mugu was built in 1958. The contractor selected for the project was the Murray Sanders Construction Company from Santa Ana, California. The architect for the project was Hugh Gibbs, AIA, an architect from Long Beach, California. Gibbs had previously designed a large Wherry Housing project at Marine Corps Air Station El Toro, completed in the mid-1950s. The development plan was something of a hybrid, blending many of the characteristics of post-war housing tracts with longstanding military traditions. The site plan was characteristic of a civilian post-war housing tract, with curvilinear streets and suburban-scale set-backs. The architecture, too, was that of a late-1950s civilian tract, with a limited number of distinct Ranch Style housing models interspersed along the streetscape. The 1958 Capehart housing differed from civilian housing chiefly through the absence of enclosed yards and the presence of a substantial number of duplex models. It also differed, of course, in that these units were meant to be rented and maintained by the Navy. On balance, however, the Capehart

housing at Point Mugu is not substantially different from the civilian housing tracts in Southern California from the same period.

3.5.2 Environmental Consequences and Avoidance Measures

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. The analysis is based upon regulations and guidance addressing the protection of historic properties.

3.5.2.1 Proposed Action

Potential Impacts

Archaeological Sites within the APE

No archaeological resources have been identified within the project APE, and NBVC Point Mugu has previously been determined to have a low sensitivity for archaeological resources. Therefore, implementation of the Proposed Action would not result in adverse impacts to archaeological resources.

Wherry and Capehart Era Family Housing

Capehart family housing units have been identified within the APE. This particular property type has been previously identified and subjected to specific regulation as described below. Of the 226 properties within the Proposed Action, a small portion is within the Anacapa neighborhood, which is a neighborhood that was constructed within the last 20 years. The SHPO has concurred with the Navy that the Anacapa neighborhood does not have any significant historic association and is not eligible for Section 106 review. The remaining two neighborhoods within the Proposed Action are the San Miguel and Santa Cruz neighborhoods, which contain Capehart Era family housing units and are eligible for Section 106 review.

The Department of the Army conducted a study of the historic context of its Wherry and Capehart properties and documented these in a report entitled *For Want of a Home: A Historic Context for Wherry and Capehart Military Family Housing* (U.S. Army Environmental Center 1996). Following a symposium on Wherry and Capehart era housing management as it relates to historic preservation, the Army adopted a programmatic approach in compliance with Section 106 with respect to management of Wherry and Capehart era housing, preparing a Program Comment which was approved by the Advisory Council on Historic Preservation in 2002. As with the Army, the Air Force and the Navy consider their inventory of Wherry and Capehart properties, including any associated structures and landscape features, to be eligible for the NRHP for the purposes of Section 106 compliance.

Based on the Program Comment previously approved for the Army for this property type, the Navy agreed to a programmatic approach to the treatment of its Wherry and Capehart properties that included a six-step approach to ensuring that the Air Force and the Navy take into account the effects of management of their Wherry and Capehart era housing. These six steps include: (1) revising the original Army historic context study to include information pertinent to Air Force and Navy bases; (2) reviewing the results of the expanded and revised context study to determine whether any of those properties identified are of particular importance; (3) modifying for their own use, the Army's design guidelines: *Neighborhood Design Guidelines for Army Wherry and Capehart Housing*; (4) considering the need to conduct additional historical documentation for properties that have been determined to be of particular importance, and considering the preservation of these properties through continued use as military housing; (5) advising developers involved in housing privatization initiatives that Wherry and Capehart properties may be eligible for historic preservation tax credits, and; (6) attempting to locate and conduct oral interviews with military families who lived in Wherry and Capehart housing, and other people

involved with design and construction of these buildings. On November 18, 2004, the Advisory Council on Historic Preservation approved a Program Comment that facilitated compliance with the NHPA with regard to the management of Wherry and Capehart era family housing at Air Force and Navy bases.

A Naval Base Ventura County Housing Privatization Programmatic Agreement between the Navy, the California State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and San Diego Family Housing Limited Liability Corporation regarding PPV for Family Housing on NBVC was signed on July 31, 2007. The purpose of this Programmatic Agreement is to establish an efficient program alternative for taking into account the effects of San Diego Family Housing activities on historic properties and to ensure Section 106 compliance. This Programmatic Agreement recognized that the Commanding Officer of NBVC had applied the Advisory Council on Historic Preservation Program Comment for Wherry and Capehart era family housing at Air Force and Navy bases to appropriate portions of its housing, had applied all considerations identified in the Program Comment, and confirmed that Section 106 responsibilities had been completed for those properties. In applying the Program Comment to the plan to demolish and reconstruct housing at the Catalina Heights Housing area, a property of particular importance as defined in the Program Comment, the Commanding Officer of NBVC had given full consideration to the need for additional historical documentation and application of neighborhood design guidelines to new construction.

The 2007 Programmatic Agreement confirmed that the 2004 Advisory Council on Historic Preservation Program Comment for Wherry and Capehart Era Housing at Air Force and Navy bases applies to the Capehart MFH proposed for demolition or outleasing as part of the Proposed Action. The signatories and other consulting parties to the 2007 Programmatic Agreement will be notified on the addition of housing units and underlying property to the PPV lease, that these include no new historic properties, and will be managed under the requirements of the Programmatic Agreement. The Programmatic Agreement confirms that Section 106 responsibilities have been completed for the Capehart MFH units in the Proposed Action. NBVC coordination with the SHPO is on-going for the Proposed Action that is the subject of this SEA.

The remainder of the MFH units included in the Proposed Action were determined ineligible for listing in the NRHP by consensus determination (Abeyta 1999; JRP 1998). No further Section 106 compliance is required for these properties.

For this reason, the Proposed Action would not result in significant impacts to historic resources.

3.5.2.2 No-Action Alternative

Under the No-Action Alternative, no change to the existing MFH would occur, and no associated impacts related to cultural resources would occur.

3.6 Noise

Noise Characteristics

Noise can be defined as unwanted sound. For purposes of this SEA, sound is defined as pressure variations in air that the human ear can detect. The nature of sound can be characterized by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds of the same energy level but with a lower pitch. Loudness is the amplitude of sound waves combined with the reception characteristics of the ear.

Sound Level and Frequency

Several noise measurement scales are used to describe noise. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. Zero on the decibel scale is based on the lowest sound pressure that a healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. There is also a relationship between the subjective noisiness or loudness of a sound and its level. Each 10-dB increase in sound level is perceived by the human ear as approximately a doubling of loudness over a wide range of amplitudes. Since decibels are logarithmic units, sound pressure levels are not added arithmetically. When two sounds of equal sound pressure level are added, the result is a sound pressure level that is 3 dB higher. For example, if the sound level was 70 dB when 100 cars pass by in a certain time period, then it would be 73 dB if 200 cars pass the observer during the same period. Doubling the amount of energy results in a 3-dB increase to the sound level.

Frequency relates to the number of pressure oscillations per second, or Hertz. The range of sound frequencies that can be heard by healthy human ears is from about 20 Hertz at the low end of the frequency spectrum to 20,000 Hertz at the high end.

There are several methods for characterizing sound. The most common is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted level is closely correlated with annoyance caused by noise sources such as traffic and construction activity. Table 3.6-1 shows typical A-weighted noise levels that occur in various indoor and outdoor environments.

Noise Descriptors

Because sound levels can vary over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations is utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{EQ} . A common averaging period is hourly, but equivalent sound level (L_{EQ}) can describe any series of noise events of arbitrary duration. The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within approximately plus or minus 1 dBA. Other measures also are used to characterize community noise levels. The Day/Night average sound level (L_{DN}) weights noise from 10:00 PM to 7:00 AM by 10 dB. The Community Noise Equivalent Level (CNEL) calculates the overall average noise based on presumed increased sensitivities in the night and evening with noise from 7:00 PM to 10:00 PM being weighted by 5 dB and noise between 10:00 PM and 7:00 AM being weighted by 10 dB. Both L_{DN} and CNEL measures result in a

weighted average sound level approximately 5 dB higher over a 24 hour period than actual measured noise levels.

Table 3.6-1. Typical Noise Levels in the Environment

<i>Common Outdoor Noise Source</i>	<i>Noise Level (dBA)</i>	<i>Common Indoor Noise Source</i>
Jet fly-over at 1,000 feet (305 m)	110	Rock concert
Pile driver at 100 feet (30 m)	100	Night club with live music
Large truck passby at 50 feet (15 m)	90	Noisy restaurant
Gas lawn mower at 50 feet (15 m)	80	Vacuum cleaner at 10 feet (3 m)
Commercial/Urban area daytime	70	Normal speech at 3 feet (1 m)
Suburban daytime	60	Active office environment
Urban area nighttime	50	Quiet office environment
Suburban nighttime	40	Library
Quiet rural areas	30	Quiet bedroom at night
Wilderness area	20	Quiet recording studio
Threshold of human hearing	0	Threshold of human hearing

Source: Adapted from Caltrans 1998.

Human Response to Noise

It is widely accepted that sound pressure level changes of 3 dBA are just noticeable to most people. A change of 5 dBA is readily perceptible. An increase in sound pressure level of 10 dBA is perceived as being twice as loud, while a decrease of 10 dBA is perceived as being half as loud.

Noise and Health

A number of studies have linked increases in noise with health effects, including hearing impairment, sleep disturbance, cardiovascular effects, psychophysiological effects, and potential impacts to fetal development (Van Kempen et al. 2002). Potential health affects appear to be caused by both short and long term exposure to very loud noises and long term exposure to lower levels of sound (chronic exposure). Acute exposure to sounds greater than 120 dB can cause mechanical damage to hair cells of the cochlea (the auditory portion of the inner ear) and hearing impairment (Babisch 2005).

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise is reduced with distance depends on several factors:

Geometric Spreading: Sound from a single source (i.e., a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of 6 dBA for each doubling of distance.

When the source is linear, like a highway, it does not behave as a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a “line” source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level from a line source is 3 dBA per doubling of distance.

Ground Absorption: Often, the noise path between the source and the observer is very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation because of geometric spreading. For the purpose of this analysis, no ground absorption is considered, making the analysis more conservative.

Atmospheric Effects: Atmospheric conditions can have a major effect on noise levels. Wind has been shown to be the single most important meteorological factor within approximately 500 ft (150 m), whereas vertical air temperature gradients are more important over longer distances. Other factors, such as air temperature, humidity, and turbulence, also have an effect. However, these effects are neither stable nor readily quantifiable and, for this analysis, no attenuation from atmospheric effects is considered.

Shielding: A large object or barrier, whether natural or man-made, in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by this shielding depends on the size and material of the object and the frequency content of the noise source. Attenuation of from 5 dB to 10 dB is achievable in many circumstances. Natural terrain and man-made buildings and walls can often serve as effective noise barriers.

Regulatory Setting

NAVFAC Planning in the Noise Environment (Publication P-970)

Naval Facilities Engineering Command (NAVFAC) Publication P-970, *Planning in the Noise Environment*, (1978) provides a discussion of allowable noise levels; guidance for selecting a site for new facilities within the noise environments on military installations; and a discussion of noise reduction techniques that may be applied to render marginally acceptable locations suitable for use.

Federal Interagency Committee on Urban Noise

Land use compatibility with differing noise levels is regulated at the local level, although the federal government has established suggested land use compatibility criteria for different noise zones (Federal Interagency Committee on Urban Noise 1980). Based on Land Use Guidelines contained in the Federal Interagency Committee on Urban Noise (1980; Table 2), residential areas and schools are considered compatible where the L_{DN} is less than, or equal to, 65 dBA; outdoor recreational activities are compatible with noise levels less than, or equal to, 70 dBA; and parks are compatible with noise levels less than, or equal to, 75 dBA.

USEPA Noise Standards

The USEPA identifies a 24-hour exposure level of 70 dB as the level of environmental noise at which no measurable hearing loss would be expected to occur over a lifetime (USEPA 1974). Likewise, levels of 55 dB or less outdoors and 45 dB or less indoors are identified as not creating activity interference and

annoyance. Average noise levels for various areas are identified according to the use of the area. Levels of 45 dB are acceptable for indoor residential areas, hospitals, and schools, whereas 55 dB is acceptable for certain outdoor areas where human activities occur. The level of 70 dB is the threshold for all areas in terms of avoiding hearing loss.

Federal Highway Administration Noise Standards

The Federal Highway Administration has adopted noise standards, regulations, and policies related to highway traffic noise. The federal regulations addressing highway noise are defined in 23 CFR Part 772. These standards are not directly applicable to the Proposed Action because it is not a Type 1 federally funded highway improvement project. However, the Federal Highway Administration includes in its guidance a useful methodology to evaluate construction noise impacts. This methodology, included in the Federal Highway Administration's Roadway Construction Noise Model User's Guide, has been incorporated into this analysis to evaluate potential construction (including demolition) noise impacts (Federal Highway Administration 2006).

Air Installation Compatible Use Zones Program

The 1992 Air Installation Compatible Use Zone (AICUZ) Study for NBVC Point Mugu (1992 AICUZ Study; NBVC 1992) serves as an update to the original AICUZ Study, developed in 1977. The purpose of the Navy AICUZ Program is to protect the public's health, safety, and welfare and to prevent encroachment, so that the military can fulfill its mission and national security needs. The 1992 AICUZ Study addresses aircraft noise, aircraft safety, and land use compatibility in the vicinity of NBVC Point Mugu, and addresses land use planning for safety through demarcation of clear zones and Accident Potential Zones (APZs). For land use planning purposes, the noise exposure from aircraft operations at NBVC Point Mugu is divided into the following three noise zones:

- *Noise Exposure Zone 1* (less than 65 dBA CNEL) is the area of minimal impact, where sound attenuation or noise level reduction is not suggested in most cases.
- *Noise Exposure Zone 2* (65 to 75 dBA CNEL) is an area of moderate impact, where some land use controls are needed. California state law does not allow most types of residential development in this zone. Most other land uses are acceptable, although sound attenuation is often required.
- *Noise Exposure Zone 3* (more than 75 dBA CNEL) is the most severely impacted area and the area that requires the greatest degree of land use compatibility. Residential uses are unacceptable in this zone and most other land uses are incompatible or require sound attenuation measures to reduce the noise level by at least 30 dBA.

3.6.1 Affected Environment

3.6.1.1 Existing Noise Sources

The dominant source of noise at NBVC Point Mugu is aircraft noise. Noise levels from flight operations exceeding ambient background noise typically occur only beneath main approach and departure corridors and in areas immediately adjacent to parking ramps and aircraft staging areas. As aircraft take off and gain altitude, their contribution to the noise environment at ground level drops to levels indistinguishable from the ambient background. The height at which the noise becomes indistinguishable varies depending on the aircraft and meteorological conditions. Other noise sources include transportation-related sources, primarily motor vehicles. Most of the MFH area at NBVC Point Mugu (and all units located within Proposed Action boundaries) are located in the 65-75 CNEL noise zone (Navy 2006a), a level that

exceeds the standard planning threshold for compatibility with residential land use. Seven units in the Santa Rosa neighborhood at NBVC Point Mugu are located in the 75+ CNEL noise zone; however, these units are not located within the Proposed Action boundaries.

3.6.1.2 Noise Sensitive Receptors

Noise sensitive receptors in proximity to the project area at NBVC Point Mugu include residences within and adjacent to the Proposed Action boundaries. In 2007, an engineering analysis for residential noise level reduction of housing units was completed in a Sound Insulation Project Report at NBVC Point Mugu (Wyle Laboratories 2007). The purpose of the analysis was to determine whether sound insulation measures were needed and available, and to estimate the associated costs to improve the noise level reduction at the existing housing units to provide proper interior noise levels of CNEL 45 or less. The report contains the results of architectural surveys, proposed acoustic modifications to meet the program goals, and conclusions reached in considering sound insulation treatments to the Point Mugu housing units. Window and exterior door replacement recommendations were provided for units located in the different noise contours, additional wall modifications are recommended for those units in close proximity to runways, and various other recommendations are presented, all of which were incorporated into the buildings to reduce the noise impact of aircraft and other exterior noise events to the noise environment in the housing area (Wyle Laboratories 2007).

3.6.2 Environmental Consequences and Avoidance Measures

The primary factor considered in determining the significance of noise effects is the extent or degree to which implementation of the Proposed Action would affect baseline noise environments. The primary issue of concern with regard to noise is the potential for impacts to humans and terrestrial wildlife. Noise impacts would occur if implementation of the Proposed Action would directly or indirectly:

- increase ambient CNEL levels at noise-sensitive land uses beyond the “normally acceptable” land use compatibility criteria (typically 60 or 65 dB CNEL for residential, education, and health care land uses); and
- establish noise-sensitive land uses (residential, educational, and health care uses) in areas exposed to ambient noise levels that are higher than the applicable land use compatibility criteria (typically 60 or 65 dB CNEL).

Less stringent guidelines are applied to temporary noise sources that are restricted to daytime hours (such as most construction and demolition activities), unless they affect noise-sensitive land uses and result in CNEL levels more than 10 dB above the respective land use compatibility criteria.

3.6.2.1 Proposed Action

Potential Impacts

Construction and Demolition Activities

Demolition and renovation activities and construction of new SOQ homes and new amenities would be limited to between the hours of 7:00 AM and 5:00 PM weekdays and Saturdays. No holiday or nighttime operation of construction equipment would be permitted (Environmental Protection Measure 4; Section 2.2.1.2, Environmental Protection Measures).

Table 3.6-2 lists noise levels associated with common types of construction equipment that are typically used during construction, demolition, and renovation activities. While the Proposed Action includes very

limited construction associated with renovations and five new SOQ homes and new amenities, it is assumed that demolition noise associated with the Proposed Action would generate similar noise levels to those identified in Table 3.6-2. Construction equipment usually exceeds the ambient sounds levels by 20 to 25 dBA in an urban environment, and up to 30 to 35 dBA in a quiet suburban area (Navy 2013a).

Table 3.6-2. Estimated Construction Equipment Noise Levels

<i>Equipment</i>	<i>Estimated Noise Level (dB) at 50 Feet (15 m)</i>
Air compressor	81
Backhoe	80
Compactor	82
Concrete Saw	90
Crane, mobile	83
Dozer	85
Generator	81
Grader	85
Jack Hammer	88
Loader	85
Pump	76
Rock Drill	98
Scraper	89
Truck (heavy)	88
Welding Torch	74

Source: Federal Highway Administration 2006.

Under the Proposed Action, the demolition of up to 150 MFH units, renovations of 77 units and construction of five new SOQ homes and amenities may occur in close proximity to existing and occupied MFH. Demolition, renovation and construction would be short-term activities. Amenities included as part of the Proposed Action may include items such as recreational fields, tot lots and dog runs. Construction of these or similar-type amenities and the new SOQ homes, which may occur as part of the Proposed Action, would not involve large-scale construction. Given the level of construction that would be required for the limited number of new homes and amenities, it is anticipated that construction noise levels would not be substantial, would be short in duration, and would not result in permanent impacts. Likewise, demolition activities would be short-term in nature and would not result in permanent impacts. Noise insulating measures incorporated into the existing MFH units in accordance with the Sound Insulation Project Report at NBVC Point Mugu (Wyle Laboratories 2007) would reduce interior noise levels during construction and demolition activities. Additionally, no significant impact to off-installation populations would result from the potential demolition of up to 150 MFH units, renovation of 77 homes and construction of new SOQ homes and amenities. Therefore, implementation of the construction, renovations and demolition components of the Proposed Action would not have a significant noise impact to sensitive human receptors.

Based on the short-term duration of these activities, the limited potential effects to those residences in immediately adjacent areas to where activities are occurring, and because activities would occur in compliance with Environmental Protection Measures, no significant impacts from noise would occur.

Operations

The MFH associated with the Proposed Action is located within an area identified as Noise Exposure Zone 2 in the 1992 AICUZ Study, as is the rest of the MFH at NBVC Point Mugu. This is an area

exposed to noise ranging from 65 to 75 dBA CNEL. As discussed above, California state law does not allow most types of residential development in this zone, and the existing MFH is considered a pre-existing, non-conforming land use. Demolition of up to 150 MFH units would eliminate some of the non-conforming land use; however, the remaining units and the five new SOQ homes would be a non-conforming land use. Noise insulating measures incorporated into the existing MFH units in accordance with the Sound Insulation Project Report at NBVC Point Mugu (Wyle Laboratories 2007) would continue to reduce interior noise levels. Similar measures would be incorporated into the five new SOQ homes. The Proposed Action would not involve activities that would introduce noises above the ambient noise level during the long-term operation of the MFH. Because no changes in noise levels would occur, no impacts would result from implementation of Proposed Action.

3.6.2.2 No-Action Alternative

Under the No-Action Alternative, conveyance of the MFH to a PPV entity would not occur. The demolition of up to 150 MFH units and renovations of 77 units would not occur, nor would construction of five new SOQ homes or new amenities. No impact associated with noise would occur as a result of implementation of the No-Action Alternative.

3.7 Hazardous Materials/Public Health and Safety/Protection of Children

3.7.1 Affected Environment

3.7.1.1 Protection of Children (EO 13045)

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks (Protection of Children), was issued in 1997. This order requires each federal agency to “make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children and shall...ensure that its policies, programs, activities and standards address disproportionate risks to children...”

The areas within NBVC adjacent to the project site consist of MFH. The project site is located along a boundary to NBVC, but neighboring uses outside of NBVC are limited to agricultural uses. Ventura County encompasses 21 school districts, three community colleges, and two 4-year universities (Ventura County Office of Education 2014). The K-12 public school enrollment in Ventura County currently exceeds 140,000 (Ventura County Office of Education 2014). NBVC Point Mugu is located within the Hueneme Elementary School District. Although children live in the NBVC Point Mugu MFH, there are no known concentrations of children (i.e., schools) located within close proximity to the NBVC Point Mugu MFH. The closest school (Laguna Vista Elementary School) is located over 2 miles (3.2 km) north of the project site.

Children are currently present, and would continue to be present at the project site, as residents of MFH. The Navy has taken precautions for their safety using a number of means, such as fencing, limitations on access to certain areas, and adult supervision. Unescorted children are not allowed anywhere at NBVC at any time.

3.7.1.2 Accident Potential Zones

Areas proximate to airfields have various potential for aircraft mishaps, depending on their specific location and type of aircraft operations. The DoD has defined these areas as Accident Potential Zones (APZs) and has determined their sizes and shapes according to generalized experience with air installations across the country. Three different APZ zones exist at NBVC Point Mugu, as follows:

- The Clear Zone, which possesses a high risk for potential accidents. This zone lies immediately beyond the end of the runways and outward along the extended runway centerline for a distance of 3,000 feet (914 m). Its fan-shaped pattern ranges from 1,500 feet (457 m) to 2,284 feet (696 m) at its widest point. Only open space, vacant, and agricultural uses are permitted; no buildings intended for human occupancy are permitted in the clear zone.
- APZ-1, which possesses a significant potential for accidents. This zone is present under flight paths that have 5,000 or more annual operations. The zone is typically 3,000 feet (914 m) wide by 5,000 feet (1,524 m) long and curves to conform to the shape of the flight path. All residential development is unacceptable, and the density of development and concentration of people limit commercial and industrial uses.
- APZ-2, which possesses a measurable potential for accidents. This zone is typically present under a flight path whenever APZ-1 is required. Most agriculture, open space, recreation, industrial, business, and commercial uses are acceptable, providing they meet the requirements for density of development and concentrations of people.

As shown in Figure 3.7-1, portions of the property for two MFH units within the San Miguel neighborhood area proposed for privatization are located within APZ-1. These two units have yards located within APZ-1, but the MFH structures are outside APZ-1. Both of the units are currently unoccupied.

3.7.1.3 Public Services

Public services provided at NBVC Point Mugu include police protection (Force Protection), fire and emergency medical services, and hazardous materials response (NAVFAC 2009). Additional police protection and fire and emergency medical services at the station are provided, through mutual aid agreements, by the City of Oxnard and Ventura County.

Police Protection (Force Protection)

Security and law enforcement services are provided by Force Protection, which is collocated with the Naval Criminal Investigative Service.

Fire Prevention and Emergency Medical Services

Fire prevention and emergency medical services are provided by the Federal Fire Department Ventura County. The NBVC Fire Department also has an agreement with the City of Oxnard and Ventura County for assistance with fire services. Two fire stations are located on NBVC Point Mugu that provide structural and aircraft fire protection.

3.7.1.4 Hazardous and Toxic Materials and Waste

Installation Restoration and Munitions Response Programs

The Navy's Installation Restoration (IR) Program, conducted pursuant to CERCLA, was established in 1986 to identify, assess, characterize, and clean up or control contamination from past hazardous waste-disposal operations and hazardous materials spills at Navy installations. The IR program is centrally managed throughout the Department of the Navy by NAVFAC. The IR program is carried out in accordance with all applicable federal, state, and local laws. The IR program at NBVC Point Mugu is administered by NAVFAC SW with regulatory participation and concurrence with Navy actions by the California Department of Toxic Substances Control.

A Restoration Advisory Board, mandated by CERCLA and designed to provide a forum for public involvement, receives updates on site cleanup progress, reviews and provides comments on remediation plans and documents, and meets periodically to discuss remedial issues related to NBVC. The board members are made up of representatives from the community, Navy, federal, state, and local regulatory agencies. The Navy circulates the CERCLA Proposed Plan outlining remedial alternatives to the public and holds a public meeting, in accord with the National Contingency Plan, 40 CFR Part 300; the CERCLA Record of Decision incorporates and responds to public comments. A public meeting was held with regard to the former GMTA on August 7, 2013. Members of the public attended the meeting.

Specific locations within NBVC that have been affected by past contamination from hazardous materials and hazardous wastes have been investigated and managed under the NBVC IR program, as well as other programs (e.g., RCRA). There are 14 IR sites at NBVC Point Mugu, none of which are located within the Proposed Action area. Two sites, IR Sites 11 and 35 are located within one-quarter-mile (0.4 km) of the MFH included in the Proposed Action (NAVFAC SW 2015).

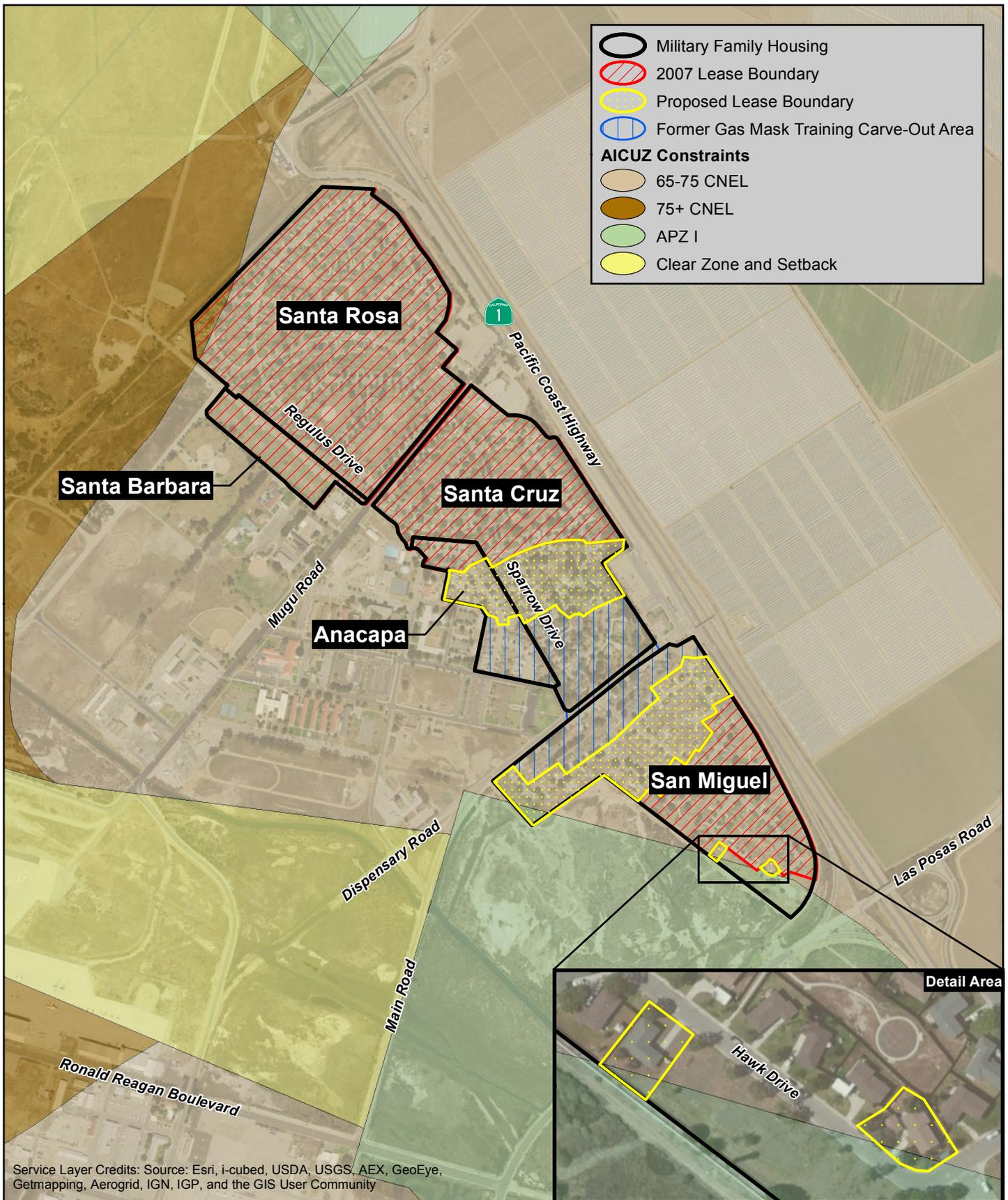
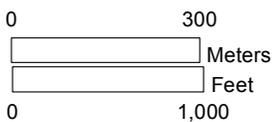


Figure 3.7-1
 Air Installation Compatible Use Zone
 Supplemental Environmental Assessment for Transfer
 of Point Mugu Navy Housing to a Public/Private Venture
 at Naval Base Ventura County, Point Mugu, California



IR Site 11: Historically, various wastes containing oils, fuels, solvents, acid, metals, pesticides, and/or sewage were spilled or directly discharged to the IR Site 11 lagoon, its tributaries, and some drainage ditches. However, the down gradient ditch adjacent to the San Miguel neighborhood makes it unlikely that potential contaminants within the ditches could impact the Proposed Action area. Review of historical photos identified the land directly to the southeast of the San Miguel housing area was undeveloped and an unlikely upstream potential point source of contamination to the down gradient drainage ditch adjacent to the San Miguel housing area (NAVFAC SW 2015).

IR Site 35: The former Morale, Welfare, and Recreation Auto Hobby Shop (former Building PM2-8) is located approximately 800 ft (240 m) west of the Proposed Action area. Building PM2-8 was demolished in September 2007. Several operations at the former MWR Auto Hobby Shop had the potential to release contaminants including a solvent dip tank, wash rack, and oil/water separator. In addition, other wastes of potential concern generated at the site included used batteries, used oil, and waste adsorbents (NAVFAC SW 2015).

Soil and groundwater samples were collected at several locations around the potential release areas, including the solvent dip tank, wash rack, and oil/water separator. According to an engineering study conducted in 2001, sample analytical results were below the regulatory limits set by California Code of Regulations Title 22, Article 3 (NAVFAC SW 2015).

An underground storage tank found during demolition operations was reported and appeared to have an approximate capacity of 500 gallons and contained old diesel fuel. The diesel underground storage tank and surrounding area was remediated. The distance of IR Site 35 from the Proposed Action area and its assumed relative cross gradient position make it unlikely that a potential release would impact the Proposed Action area (NAVFAC SW 2015).

The groundwater at IR Site 35 is impacted by volatile organic compounds (NAVFAC SW 2015). Possible sources include the solvent dip tank, wash rack, and oil/water separator. The human health risk assessment is currently underway to determine if remedial action is required for the site groundwater. The distance of IR Site 35 from the Proposed Action area and its assumed relative cross gradient position make it unlikely that a potential release would impact the Proposed Action area (NAVFAC SW 2015).

The former GMTA is a Department of the Navy Munitions Response Program (MRP) site, also referred to as unexploded ordnance (UXO) Site 4. As shown in Figure 1-3, the former GMTA includes portions of the Santa Cruz, Anacapa, and San Miguel housing areas. No part of the former GMTA site or 50-foot buffer will be included in the lease area of the Proposed Action. The former GMTA is an approximately 30-acre area that was developed into residential housing and Navy administration buildings during the 1950s to 1970s. There is no undeveloped land within the boundaries of the former GMTA. Approximately 30 to 40 percent of the area is paved or covered by pavement or structures (NAVFAC SW 2014a). The Navy has conducted an extensive search to confirm that the former GMTA has indeed been closed as a range. This has included a review of the 2012 Sustainable Ranges Report to Congress, Appendix C, Maps and Inventory of Ranges, Range Complexes, and Special Use Areas, which does not contain any reference whatsoever to the former GMTA as a current range, range complex or special use area. Further, the following document provides information about closure of the former GMTA: The January, 2000, Navy Closed, Transferred, Transferring, Active, and Inactive Range Survey. This Survey was completed for Naval Air Station Point Mugu in 2000, and it was transmitted from the Commanding Officer, Naval Air Station Point Mugu, to the Commander, Navy Region Southwest, on April 11, 2000. The 2000 Range Survey lists the former GMTA as "closed," as of September, 1945. The Range Survey provides various information regarding the former GMTA, and it definitively does list the former GMTA as "closed" in several places in the document. (Id., Cover Page, Point Mugu Chemical Warfare Training Area, pp. 1 and 2) (Navy 2000).

The former GMTA was operated from 1943 to 1945 during the height of WWII. Special units of the Navy Seabees called the Aviation, Construction, and Ordnance (ACORN) Unit used the former GMTA for training new recruits in the use of gas masks and smoke-generating devices. Recruits were also given chemical-agent identification training. Small amounts of chemical agents were used to familiarize Navy recruits with the physical properties of the chemicals without being harmed. The chemical agents used during these training activities were provided in war gas identification kits (NAVFAC SW 2014a).

The war gas identification kits, also known as chemical agent identification sets (CAIS), were cast iron canisters that each contained 48 40-millileter glass vials: 12 vials each of phosgene (100 percent), chloropicrin (50 percent in chloroform), mustard gas (5 percent in chloroform), and lewisite (5 percent in chloroform). The chemical agent training was discontinued in December 1945 (NBVC 2003). Disposal procedures during the 1940s for excess CAIS included subsurface burial. In most cases, the material was treated (burned or chemically neutralized) prior to burial. There is no written record or physical evidence that CAIS were ever buried at the former GMTA (NAVFAC SW 2014a).

Between 1948 and 1951, security and command buildings were constructed in the former GMTA area, followed by housing unit construction in the late 1950s to early 1960s. Roads and utilities were also installed in this general time frame. The present day site contains housing units and security and command buildings (NAVFAC SW 2014a).

The former GMTA was not identified as a hazardous waste site during the Initial Assessment Study conducted for NBVC Point Mugu in 1985 (Navy 1985). The purpose of the Initial Assessment Study was to identify and assess sites posing potential threat to human health or to the environment due to contamination from past handling of hazardous materials. However, more recent construction activity and investigation brought attention to the site. Navy personnel from the NBVC Point Mugu Environmental Department have consulted with the USACE Ordnance and Explosives Center of Expertise and Naval Ordnance Safety and Security Activity regarding the former GMTA, and determined that the current housing area is safe for normal living conditions (NBVC 2003).

In May 1995, the Navy conducted a search and review of historical documents, including an analysis of historical aerial photographs using 1947 basin-wide topographic maps and World War II-era condition maps. The former GMTA was identified in the historical summary as a location where gas warfare drills potentially took place; however, no specific information was given (NAVFAC, 2014a). In December 1995, the Navy performed a soil gas survey to assess chlorinated hydrocarbon contamination related to chemical warfare training at the former GMTA. Fifty-seven soil gas samples were collected at a depth of approximately 3 ft (1 m) below ground surface and analyzed for 256 VOCs. There were no detections of VOCs in any of the soil gas samples.

Additional studies have been conducted at the site. On January 8, 2004, an emergency response action was initiated after a Navy contractor uncovered a suspicious metal underground object during utility trench work at Building 1 in the former GMTA footprint. The contractor reported a possible CAIS container to base emergency services. The Point Mugu explosive ordnance disposal (EOD) unit, in coordination with station police, federal firefighters, and the Directorate of Public Works, Environmental, performed a chemical response in chemical protective clothing and gas masks. The buried metallic object was identified as a 6-inch (15-cm) in diameter pipe broken into four pieces. The pipe was identified as scrap metal and disposed of as such. The site was declared safe by installation authorities (NAVFAC SW 2014a).

The Navy conducted a geophysical survey in 2004, and issued a geophysical survey summary report in July 2008 discussing the site history, community relations, and geophysical survey. The geophysical survey used a magnetometer and electromagnetic surveying throughout the former GMTA and a 50-foot

(15-m) buffer, with ground penetrating radar at four playgrounds. This subsurface investigation identified 754 anomalies within the former GMTA. The summary report recommended further investigation of the site using nonintrusive methods to rule out probable cultural artifacts and subsurface utilities (NAVFAC SW 2014a).

The Navy conducted a Preliminary Assessment and Site Inspection in 2008, based in part on the results from the geophysical survey. The report recommended further investigation and suggested consideration of protective measures such as additional site control, personal protective equipment, engineering controls, decontamination facilities, training, and medical surveillance (NAVFAC SW 2014a). During the extended Site Inspection conducted in 2010, the Navy dug up 20 underground objects, using geophysical signatures and the 2004 geophysical survey on sites most likely to contain CAIS. All of the recovered items were cultural debris (e.g., cables, tractor parts, clothesline poles, etc.). No CAIS-related debris or evidence of historic chemical warfare training was found. Because current geophysical detection technology has limited capability to detect buried glass CAIS vials or liquids, the Navy conducted a Remedial Investigation/Feasibility Study in 2012. No intact CAIS or evidence of CAIS burial has been found in investigations of the site, and no evidence of CAIS was found while digging utility corridors over nearly nine percent of the site during development of the housing area (NAVFAC SW 2014a). After completing the Remedial Investigation, the Navy conducted a feasibility study examining six alternatives for remedial response. The recommended alternative was to implement a number of institutional controls to be carried forward for stakeholder and public consideration in a Proposed Plan. In 2013, a Proposed Plan document was prepared for the site, outlining the Navy's preferred approach to remediation, to insure long term protection of public health and the environment. This Proposed Plan calls for implementation of a series of institutional controls, including access controls, educational awareness, and recurring inspections and reviews of the controls applied to the former GMTA. The Proposed Plan was mailed to stakeholders and the interested public. The Navy provided a legal notice in the county newspaper, and held a public meeting at which the interested public could review the Proposed Plan, including the suggested and preferred alternatives. Members of the public attended the meeting.

A Final CERCLA Record of Decision concluding that the former GMTA site as remediated poses no risk to human health or the environment was approved by the regulatory agencies on May 22, 2014 and is contained in Appendix B of this SEA. The Record of Decision identifies the selected remedy for the former GMTA, including implementation of a series of institutional controls described below, which were found by the Navy and regulators to protect human health and the environment from actual or threatened releases of CERCLA hazardous substances (NAVFAC SW 2014a).

The remedy addresses the post-closure actions necessary to prevent human and ecological receptor exposure to CAIS and CAIS-related contamination, and to minimize the former GMTA as a potential source of contamination for other environmental media (NAVFAC SW 2014a). The selected remedy is a combination of institutional controls, including access control and educational awareness, with annual evaluations and five-year reviews. These controls include educational efforts, including educational packets and move-in materials that cover how to identify CAIS, potential hazards of CAIS, and steps to take and authorities to contact should a resident or invitee find a CAIS. They also include digging restrictions that rely on dig permits and the use of posted warning signs to indicate that the area has a history of past CAIS-related activity and that certain activities, such as digging, are restricted. Dig permits are accompanied by fact sheets that apprise maintenance and construction workers of special precautions and requirements necessary for digging at the former GMTA site. The warning signs are posted at high-visibility or high-use sites, at the perimeter of the former GMTA, and at key access points. Installation of the signs requires their periodic maintenance, repair, or replacement. Warning signs recently have been placed at the perimeter of the former GMTA warning residents and persons entering the footprint of the former GMTA of the potential danger underground. These signs would be maintained. Additionally, digging restrictions are in place to address concerns for possible CAIS under existing

foundation slabs. These restrictions include only digging to a depth of one foot (0.3 m) when a slab is removed. If new construction that requires deeper digging is planned at the former GMTA, the site would then be geophysically surveyed to identify underground anomalies. The proper course of action, including possible anomaly avoidance, would be determined at that time.

The land use restriction could include digging restrictions that limit the depth of excavation during construction and maintenance. If maintenance or repair of existing buried utilities is required at greater depths than that of the restriction, the NBVC Department of Public Works would be contacted to review the work and approve the deeper dig. Because the maintenance or repair is in an existing utility corridor, the Department of Public Works would approve work subject to remaining in the existing corridor.

If a deeper excavation is necessary for new construction on virgin land, special controls called anomaly avoidance would be required. During anomaly avoidance, a geophysical survey of the dig site is conducted prior to breaking ground, and if underground objects are detected, the work would be relocated to another (cleared) location.

The restrictions noted above are CERCLA land use controls which will be included in the base land use plan and base master plans. Prior to the initiation of any work on the installation in the former GMTA site, coordination with base planning would occur, and the implementation of the land use controls would be undertaken, and restrictions noted in the BMP. The remedy selected in the CERCLA Record of Decision is necessary to prevent human and ecological receptor exposure from buried, intact CAIS or from CAIS chemical contamination. The remedy will prevent exposure by restricting access to buried CAIS or CAIS contamination; educating the public and contractors regarding CAIS hazards, recognition, and response actions to preclude contact by the public with CAIS materials; and periodic reviews of the remedy implementation to ensure that the remedy is working and intact. As such, the selected remedy is protective of human health and the environment.

Asbestos-containing Materials

The Occupational Safety and Health Administration has developed safety and health regulations for construction in 40 CFR Part 1926; 40 CFR 1926.1101 that specifically addresses asbestos. Demolition and renovation activities where asbestos is present are regulated under the Clean Air Act (CAA). Section 112 of the CAA delegates responsibility to the USEPA for enforcing regulations relating to asbestos; the USEPA is authorized to delegate this authority to state and local agencies. However, the USEPA retains the authority to oversee agency performance and to enforce Asbestos National Emissions Standards for Hazardous Air Pollutants regulations. In Ventura County, authority to regulate the Asbestos National Emissions Standards for Hazardous Air Pollutants regulations has been delegated to the Ventura County Air Pollution Control District (VCAPCD). Demolition and renovation activities involving the presence of asbestos are covered by VCAPCD District Rule 62.7, which specifies notification requirements as well as procedures for asbestos emission control.

In 1989, the Toxic Substances Control Act banned the manufacture and use of asbestos-containing materials (ACM) in most new building construction. Buildings constructed prior to 1989 likely contain ACM. Given the date of construction of the housing units in the San Miguel and Santa Cruz housing areas (1958 and 1963, respectively), ACM is likely present in the original building materials. Additionally, ACM could be present in the Anacapa housing units even though they were built in 1995 due to exemptions with the Asbestos Ban and Phase-out Rule and North America Free Trade Act of 1993 allowing some asbestos-containing products made in Mexico and Canada to be available in the U.S.

Historically, ACM were used throughout various NBVC building structures in both exterior and interior applications. Asbestos is abated, where necessary, when exposed in occupied structures or prior to

demolition. The contractor handling the abatement submits an Asbestos Abatement Plan, which addresses procedures for each abatement on a case-by-case basis. State certified personnel in the NBVC Environmental Program Office review and approve each plan. In addition, certified Environmental Program Office personnel monitor each abatement activity to ensure that the abatement contractor is following the site-specific Abatement Plan. Asbestos-containing waste is handled and disposed in accordance with applicable regulations, and ACM waste is disposed only in appropriately permitted landfills.

No ACM survey has been previously performed for the subject property and the Environmental Condition of Property (ECP) Report prepared for the Proposed Action also did not include an ACM survey. Santa Cruz and San Miguel housing units underwent major renovations in 2003 and 2004 and nearly all units were stripped until only bare studs remained. During the course of these renovations, interior ACM was removed from these housing units (NAVFAC SW 2015).

Lead-based Paint

Human exposure to lead has been determined to be an adverse health risk by the USEPA and the Occupational Safety and Health Administration. Lead-based paint (LBP) is defined as paint that contains a total lead content of more than 600 parts per million (ppm). Site preparation, demolition, removal, and cleanup activities must comply with all applicable federal and state statutes pertaining to the handling and disposal of LBP.

A LBP and Risk Assessment Report for NBVC Point Mugu was prepared as part of the 2007 ECP Report for the San Miguel, Santa Cruz and Santa Rosa housing areas. The results of the LBP inspection of the PPV housing areas conducted in 2007 concluded that LBP is present in two of the three surveyed housing developments (exterior roof and porch components; and exterior garage door components). Interior and exterior paint was determined to be intact and in good condition (NAVFAC SW 2007).

Interim control measures and recommendations are contained in Attachment 7 (*Final Lead Inspection & Risk Assessment Report, Naval Base Ventura County, Ventura County, California*) of the 2007 ECP (NAVFAC SW 2007). Beginning in August 2007, performance of these interim control measures at 16 units (15 units at Santa Cruz, 1 unit at Santa Rosa) to correct LBP hazards identified at NBVC Point Mugu was initiated. These measures included the mechanical scraping of loose or flaking (damaged) LBP previously identified on the exterior (porch, walls, eaves, rafters and window casings) of five houses, and the interior (plumbing access door) of one house. After surface preparation, a primer was applied to encapsulate all work areas. Upon completion of interim control measures at each housing unit, building components were assessed visually for thoroughness of removing the damaged LBP and proper encapsulation to prevent potential future exposure. Interim control measures were completed at NBVC Point Mugu on August 24, 2007 (NAVFAC SW 2007).

A lead inspection and risk assessment was conducted in 2009 and identified LBP and LBP hazards in the San Miguel and Santa Cruz housing areas. The Anacapa housing area is not suspected to contain LBP due to the build date of 1995. An updated LBP and Risk Assessment for the Proposed Action area was conducted as part of the 2015 ECP to document the current condition of the LBP identified in the 2009 lead inspection and risk assessment as part of the MFH transfer process. The results of this study concluded that LBP hazards are present in some of the housing units (NAVFAC SW 2015). For all LBP hazards in MFH which would be transferred to the PPV entity per the Proposed Action, and that would not be demolished, all LBP hazards would be abated by the PPV entity after transfer, using acceptable interim controls described in the 2015 ECP (NAVFAC SW 2015). For any homes that are occupied at the time of the transfer, the PPV entity would abate all lead hazards identified in the 2015 ECP (NAVFAC SW 2015) within 30 days of transfer. For any other lead hazards which are subsequently discovered, for

homes occupied at the time of transfer, abatement must occur no later than the first change of occupancy (abatement must occur before new tenants move in, after the tenants move out who were in place during the transfer), or during any renovation or replacement work which takes place on the home, whichever event occurs first. For homes that are vacant at the time of transfer, and which will become occupied, the abatement must take place before occupancy. All abatement must be in accordance with all applicable federal, state and local statutes and regulations, including but not limited to 42 USC § 4822(b), 24 CFR Part 35, and 40 CFR § 745.227.” Further, for all MFH constructed before 1978, the PPV entity shall perform the following: (1) develop a lead management plan (which may also be referred to as an “Operations and Management Plan”); (2) maintain the MFH and associated property in accordance with that lead management plan; and (3) take appropriate corrective action if the PPV entity has been advised that for any MFH which has been transferred to the PPV entity, a child under the age of six who lives in the unit has been reported to have elevated blood lead level, and the unit has been identified as the potential source. With regard to MFH constructed before 1960, the PPV’s lead management plan for housing shall identify the steps that the PPV entity would take to address any LBP hazards in the housing and associated property, which pose an immediate threat to the health of MFH residents.

Hazardous Materials

NBVC and its contractors use a variety of hazardous materials in carrying out the primary missions of providing aviation shore command and Naval Construction Force mobilization, as well as in maintaining the base’s infrastructure, grounds, housing areas, and administrative facilities. These hazardous materials include, but are not limited to, petroleum-based products (e.g., fuels, oils, lubricants, solvents), paints and thinners, cleaning agents, batteries (e.g., lead-acid, nickel-cadmium, lithium, alkaline), pesticides (e.g., herbicides) and compressed gases (e.g., oxygen, acetylene, various aerosols). Since the early 1990s, the base has operated a Hazardous Material Control and Management Program to ensure that all hazardous materials purchased are stored and managed in accordance with applicable federal, state, and local regulations. The Hazardous Material Control and Management Program is implemented through a centralized Hazardous Material Minimization Center facility, with satellite sites located at each installation (i.e., Port Hueneme and Point Mugu). The majority of hazardous materials used at Point Mugu are stored by the Supply Department. Materials are purchased in quantities necessary for shops to complete their mission efficiently, and this system is designed to ensure that all materials issued are suitable for the job at hand and are available to the customer when needed. Unused materials are restocked for use by other shops.

Hazardous materials are used throughout NBVC and are managed under the NBVC Instruction 5090.7, Hazardous Material Management Plan (NBVC 2002). The referenced Instruction states that no hazardous material shall be purchased, used, or stored unless it is listed in the applicable work center's authorized use list. Contractors are required to adhere to the Instruction, including the relevant requirements of the Occupational Safety and Health Administration Hazard Communication Standard, RCRA, CERCLA, and SARA.

NBVC oversees pollution prevention functions and has a comprehensive Pollution Prevention program in place. This program includes but is not limited to the following:

- Developing and implementing short- and long-term plans for pollution prevention programs to ensure compliance with environmental and safety regulations, and monitoring and responding, as required, to hazardous materials procurement, acquisition procedures, and data inquiries;
- Maintaining a database for tracking hazardous materials ordered, stored, issued, and recycled;

- Developing and implementing plans for an accurate hazardous materials inventory and maintaining the corresponding authorized use list;
- Meeting all aspects of the Emergency Planning Community Right-to-Know Act reporting requirements; and
- Providing technical support and administrative oversight to the recycling and hazardous materials recovery program, and conducting hazard communication and specific hazard training as required.

Bulk quantities of various fuels (e.g., heating oil, gasoline, and diesel) and other petroleum-containing products and wastes are managed in aboveground and underground storage tanks, pumps, pipelines, emergency generators, and oil/water separators across the base, and these storage locations and facilities represent potential sources of small spills. There are no aboveground storage tanks, underground storage tanks, pipelines, emergency generators, or oil/water separators located within the NBVC Point Mugu housing areas.

Pesticides used and stored on base are required to be managed in accordance with the NBVC Integrated Pest Management Plan. The Integrated Pest Management Plan applies to all pest management and pesticide-related activities conducted by DoD personnel, both civilian and military, and commercial contractors within all functional areas of NBVC, including facilities outside of NBVC Point Mugu.

Hazardous Waste

A wide variety of hazardous wastes are generated from the diverse activities at NBVC; these hazardous wastes include waste oil, waste fuel, hydraulic fluid, antifreeze, spent absorbent materials, oily wastewater, contaminated soil, empty containers, spill residues, batteries, miscellaneous chemicals, waste paints, solvents, and aerosols. Hazardous wastes generated at NBVC are accumulated in satellite areas located at or near the point of generation or in 90-day areas located throughout the base, from which they are eventually manifested and transported off the base by a contractor to an appropriately permitted storage, treatment, and disposal facility.

There are no authorized hazardous waste accumulation or storage facilities designated within the base housing areas. The types of hazardous wastes typically generated within the housing areas include mercury-containing thermostats and fluorescent light tubes/lamps, paints, and paint-related products. It is the housing tenants' responsibility to properly dispose of any household hazardous waste off base at an approved household hazardous waste handling facility.

Hazardous wastes generated at NBVC are managed in accordance with the Hazardous Waste Management Plan (NBVC 2015), which provides guidance for the use, storage, and compliance activities for hazardous materials and wastes at the base. The Hazardous Waste Management Plan applies to all NBVC departments and special assistants, permanently stationed contractors, and tenant commands.

Polychlorinated Biphenyls

California classifies polychlorinated biphenyls (PCB)-contaminated materials as hazardous waste when concentrations are greater than or equal to 5 ppm in liquids or greater than or equal to 50 ppm in solids.

From 1989 through 1995, a substantial portion of the electrical equipment at NBVC Point Mugu was sampled and inventoried for PCBs. In 1995, the Navy conducted a PCB study, and the resulting inventory identified 479 oil-filled electrical equipment devices at the base. Of these 479 oil-filled electrical devices,

146 of the devices had analytical results from the 1989 to 1995 PCB initiatives, and 30 of the devices had manufacturer-provided certification of the absence of PCBs. The study identified 8 transformers and 2 switches with PCB levels greater than 500 ppm; 170 devices with PCB concentrations ranging from 5 ppm to 499 ppm; 72 devices with PCB concentrations between the 2 ppm detection limit and 5 ppm; and 171 electrical devices with PCB levels below detection limits. The findings of the inventory were used for developing plans for removal of PCB and PCB-contaminated equipment at Point Mugu. All electrical devices with greater than 500 ppm PCBs were removed as of 2000 (Navy 2001).

According to the 2015 ECP Report performed for the subject property, all PCB-containing transformers have been replaced with non-PCB containing transformers within the Proposed Action area (NAVFAC SW 2015).

Radon

Radon is a colorless, tasteless radioactive gas with an EPA-specified action level of 4.0 picoCuries per liter of air (pCi/L). The prevalent radioactive radon isotope has a half-life of 3.8 days. The health risk potential of radon is associated with its rate of accumulation within confined areas, particularly confined areas near or in the ground, such as basements, where vapors can readily transfer from the subsurface to indoor air through foundation cracks or other pathways. Large, adequately ventilated rooms generally present limited risk for radon exposure. According to regional radon information obtained from USEPA, the project site is located within an EPA-designated Zone 1 for radon gas. Average radon concentrations within Zone 1 have the potential to be greater than 4.0 pCi/L, which is the EPA-designated action level for radon mitigation and/or control measures (NAVFAC SW 2015).

The most recent DoD policy with regard to radon is described in the DoD memorandum *Asbestos, Lead-Based Paint and Radon Policies at Base Realignment and Closure Properties* (DoD 1994). This memorandum states that, in accordance with 26 USC Sections 2661 to 2671, the DoD will conduct a study to determine radon levels in a representative sample of its buildings. The DoD has applied the USEPA action level for radon mitigation and/or control measures for residential structures of 4 pCi/L. According to “Navy Radon Assessment and Mitigation Program (NAVRAMP) Screening Results,” evidence was found to suggest current or historical presence of radon gas within the project area. However, the highest detected concentration of radon was 2.2 pCi/L (Unit A-1966 in San Miguel), which is below the USEPA guidelines. Additionally, the construction style of the housing units (slab-on-grade) is not considered to be conducive to the collection of radon within the units (NAVFAC SW 2007).

The only high concentration (10 pCi/L) of radon gas documented at NBVC Point Mugu was in the crawl space of Building 2-43, which has been demolished. This building was located near the former building PM2-8 (Auto Hobby Shop), which is within one-quarter mile (0.4 km) from the project site (NAVFAC SW 2007).

Other Federal Health and Safety Requirements

The Navy has historically maintained safety and health programs to protect its personnel and property. Occupational health is a key element of the overall Navy Occupational Safety and Health program, which includes explosive, nuclear, aviation, industrial, and off-duty safety.

All proposed construction and operation activities must meet the requirements of EO 13423 (Strengthening Federal Environmental, Energy, and Transportation Management), 64 CFR 30851 (1999), and EO 13148 (Greening the Government through Leadership in Environmental Management), 65 CFR 24595 (2000). These requirements are intended to ensure, wherever feasible, that pollution would be prevented or reduced at the source; pollution that cannot be prevented or recycled would be treated in

an environmentally safe manner; and disposal or other releases to the environment would be employed as a last resort. These requirements would be contained in all construction contractor documents associated with the Proposed Action.

3.7.2 Environmental Consequences and Avoidance Measures

Federal, state, and local laws regulate the use, storage, transportation and disposal of hazardous materials and wastes. These laws have been established to protect human health and the environment from potential adverse impacts. The significance of impacts associated with hazardous and toxic materials and wastes is based on the toxicity of the substance, transportation and storage risk, and the method of waste disposal. Impacts are considered significant if the storage, use, handling, transportation, or disposal of these substances substantially increases the risks to human health due to direct exposure, substantially increases the risk of environmental contamination, or violates applicable federal, state, DoD, or local regulations.

3.7.2.1 Proposed Action

Potential Impacts

Protection of Children (EO 13045)

Implementation of the Proposed Action would not result in increased environmental health risks or safety risks to children. During proposed demolition, renovation, construction, and maintenance activities, standard safety and security precautions would be implemented to minimize the risks of accidents and to discourage site access by unauthorized persons, particularly children. Any hazardous wastes that would be generated during demolition, renovation or construction, and all hazardous substances associated with existing housing units would be disposed of off-site in accordance with applicable federal and state regulations. Therefore, no significant impacts to children would result from implementation of the Proposed Action.

Public Services

Under the Proposed Action, the existing housing development would remain and public service needs would remain the same. The Proposed Action may result in a decrease of up to 150 MFH units at NBVC Point Mugu; however, this decrease in the need for services would be slight and, therefore, no significant impact to public services would occur.

Accident Potential Zones

As shown in Figure 3.7-1, portions of two of the MFH lots proposed for privatization are located within the boundaries of APZ-1. As discussed above, residential uses are considered unacceptable in APZ-1. Both of the residences are currently unoccupied and are anticipated to be demolished by the PPV entity. Site locations for construction of the five new SOQ homes would be outside of the APZ 1. As the existing units are vacant and would be demolished as part of the Proposed Action and the five new SOQ homes would be located outside of the APZ 1, no significant impact would occur.

Hazardous and Toxic Materials and Waste

Installation Restoration and Munitions Response Programs

There are two known IR and RCRA contaminated sites located within ¼ mile (0.4 km) of the MFH within the Proposed Action boundaries. Due to the nature of the contamination having low mobility and

the minimum ¼ mile (0.4 km) separation of the sites relative to the boundary for the Proposed Action, there is a low risk of the contamination at these sites impacting the housing areas. Should contaminated media (e.g., debris, soil, surface water, groundwater) be encountered during the course of demolition, construction, or maintenance activities, measures would be established and employed to ensure that the risk of human exposure to contaminated media is minimized as much as possible. Such measures would include direct involvement of, and consultation with, NBVC Environmental and Safety Office representatives, NAVFAC SW and base IR managers; review of existing reports, laboratory data, and relevant management plans prior to initiation of on-site activities; and the employment of a combination of visual observation, screening, monitoring, and sampling techniques to identify and segregate any contaminated media encountered during all stages of site preparation and construction.

According to the results of the 2015 ECP survey for the PPV housing areas, all of the IR or contaminated sites identified in the vicinity of the surveyed housing areas are considered to have a low potential risk to the project area (NAVFAC SW 2015). There are no components of the Proposed Action that would result in any disturbance at contaminated sites.

As discussed above, a Final CERCLA Record of Decision for the former GMTA site was approved by the regulatory agencies on May 22, 2014. With implementation of the remedy identified in Section 3.7.1.7 above, which includes a combination of institutional controls such as access control and educational awareness, with annual evaluations and five-year reviews, the Proposed Action would not result in significant impacts associated with exposure to CAIS and CAIS-related contamination.

All identified contamination sites would be avoided during any ground-disturbing maintenance activities. Furthermore, construction contractors would be required to prepare and implement hazardous materials/hazardous waste management plans that would include special measures to avoid identified contamination sites. As discussed previously, land use controls for the former GMTA contained in the CERCLA Record of Decision would limit the depth of excavation during proposed demolition of MFH by the Navy. If maintenance or repair of existing buried utilities is required at greater depths than that of the restriction, the NBVC Department of Public Works would be contacted to review the work and approve the deeper dig. Because the maintenance or repair is in an existing utility corridor, the Department of Public Works would approve such work subject to the work remaining in the existing corridor (NAVFAC SW 2014a).

If a deeper excavation is necessary for new construction on virgin land, special controls called anomaly avoidance would be required. During anomaly avoidance, a geophysical survey of the dig site is conducted prior to breaking ground, and if underground objects are detected, the work would be relocated to another (cleared) location (NAVFAC SW 2014a).

The restrictions noted above are CERCLA land use controls that will be included in the base land use plan and base master plans. Prior to the initiation of any work on the installation, coordination with base planning and the land use controls would be undertaken and restrictions noted in the BMP. Therefore, there would be no significant impacts associated with previously contaminated sites with implementation of the Proposed Action.

Asbestos-containing Materials

Based on the age (i.e., more than 40 years old) of some of the existing housing units, the potential exists for encounters with ACM during potential renovation or demolition of MFH and during future facility maintenance managed by the PPV entity. Prior to initiating any demolition and/or maintenance activities that would have the potential to disturb ACM, an asbestos survey would be conducted. The subject housing units should be assumed to contain ACM until proven otherwise (which would be determined per

the asbestos survey). ACM would be managed, transported, and disposed of in accordance with all applicable federal, state, and local rules and regulations (including, but not limited to, 40 CFR 61 Part M, and 29 CFR 1926.1101). Additionally, all work would be done in compliance with applicable federal regulations and by certified personnel with experience removing, handling, and disposing of these materials (Environmental Protection Measure 6; Section 2.2.1.2, Environmental Protection Measures). Under such conditions, the handling and disposal of any ACM encountered would not substantially increase the risk to human health due to direct exposure, and would not substantially increase the risk of environmental contamination. Additionally, all work would be done in compliance with applicable federal regulations and by certified personnel with experience removing, handling, and disposing of these materials (Environmental Protection Measure 6; Section 2.2.1.2, Environmental Protection Measures). Therefore, no adverse or significant impacts associated with ACM are expected to result from the Proposed Action.

Lead Hazards

Lead-based paint hazard risk assessments have been conducted as part of the 2007 and 2015 ECPs for the project housing areas within the Proposed Action area. Based on the results of the 2015 LBP hazard risk assessment, LBP hazards are present at some of the PPV housing units within the proposed leased area (NAVFAC SW 2015). For all LBP hazards in MFH which would be transferred to the PPV entity per the Proposed Action, and that would not be demolished, all LBP hazards would be abated by the PPV entity after transfer, using the acceptable interim controls described in the 2015 ECP (NAVFAC SW 2015). For any homes that are occupied at the time of the transfer, the PPV entity would abate all lead hazards identified in the 2015 ECP (NAVFAC SW 2015) within thirty (30) days of transfer. For any other lead hazards which are subsequently discovered, for homes occupied at the time of transfer, abatement must occur no later than the first change of occupancy (abatement must occur before new tenants move in, after the tenants move out who were in place during the transfer), or during any renovation which takes place on the home, whichever event occurs first. For homes that are vacant at the time of transfer, and which will become occupied, the abatement must take place before occupancy. All abatement must be in accordance with all applicable federal, state and local statutes and regulations, including but not limited to 42 USC § 4822(b), 24 CFR Part 35, and 40 CFR § 745.227. Further, for all MFH constructed before 1978, the PPV entity shall perform the following: (1) develop a lead management plan (which may also be referred to as an “Operations and Management Plan”); (2) maintain the MFH and associated property in accordance with that lead management plan; and (3) take appropriate corrective action if the PPV entity has been advised that for any MFH which has been transferred to the PPV entity, a child under the age of six who lives in the unit has been reported to have elevated blood lead level, and the unit has been identified as the potential source. With regard to MFH constructed before 1960, the PPV’s lead management plan for housing shall identify the steps that the PPV entity would take to address any LBP hazards in the housing and associated property, which pose an immediate threat to the health of MFH residents.

The quantity of LBP present within the housing areas would not be expected to change under the long-term operation of the Proposed Action, because the preferred strategy for addressing LBP in existing buildings is to maintain it in good condition or cover it with non-lead-containing paint, and this strategy would be employed during ongoing maintenance of the MFH. However, the proposed demolition of up to 150 MFH units has the potential to disturb LBP and release contaminants into the air and into the soil. During demolition of the units that had been privatized, the PPV entity would be responsible for management, treatment, transport, and disposal of LBP in accordance with applicable federal, state, and local statutes and regulations, and applicable DoD/Department of the Navy policies, instructions and guidance. Additionally, all work would be done in compliance with all applicable federal, state and local statutes and regulations and by certified personnel with experience removing, handling, and disposing of these materials (Environmental Protection Measure 6; Section 2.2.1.2, Environmental Protection

Measures). Similarly, all applicable statutes and regulations, including measures contained in the CERCLA Record of Decision, would be followed by the Navy during demolition of a total of 102 MFH units in the portion of the former GMTA site and an associated 50-foot buffer located within the existing housing area, which is part of the Proposed Action. The handling and disposal of existing LBP and LBP-contaminated materials would not substantially increase the risk to human health due to direct exposure and would not substantially increase the risk of environmental contamination. Therefore, no significant impacts associated with lead hazards would result from implementation of the Proposed Action.

Hazardous Materials

The aboveground storage tanks, underground storage tanks and pipelines at NBVC are managed in accordance with applicable federal and state laws and regulations and would continue to be managed to comply with these laws and regulations under the proposed action. There are no storage tanks located within the housing areas included in the Proposed Action; however, pipelines may exist (e.g., natural gas).

The quantity of petroleum and petroleum-derived products (e.g., diesel fuel, gasoline, heating oil, lubricants) delivered to and used on the base would not change as a result of the Proposed Action. During demolition activities that may occur for up to 150 MFH units, petroleum and petroleum-based products would likely be present at the site for use in construction vehicles and equipment. However, the use of these materials would be temporary and these materials would be handled in accordance with applicable requirements and handled in the same manner that these materials are handled installation-wide. No new fuel storage facilities would be installed under the Proposed Action.

Any hazardous substances present at the MFH would be small in quantity and would be handled through the use of industry accepted methods and compliance with applicable federal, state, local and DoD/Navy regulations with regard to the storage hazardous materials (e.g., self-contained storage cabinets with appropriate flammability ratings). The NBVC Business Agreements Manager would be responsible for ensuring that PPV entity employees comply with the NBVC pollution prevention requirements. Under the Proposed Action, various solvents, sealants, adhesives, and paints would be used during routine maintenance activities within the housing area. With proper hazardous material use and storage, no increase in human health risk or environmental exposure to hazardous materials would result from implementation of the Proposed Action.

The PPV entity and its contractor (if applicable) would be responsible to clean up any spills that occur during routine maintenance activities associated with the Proposed Action within the proposed lease area. Under these conditions, and considering the fact that there would be no change in the quantity or types of hazardous materials used in the MFH area as compared to the existing condition, no significant impacts associated with hazardous materials would result from the Proposed Action.

Hazardous Waste

The hazardous wastes generated at NBVC are managed in accordance with applicable federal and state laws and regulations and would continue to be managed to comply with these laws and regulations under the Proposed Action.

During demolition and construction activities associated with the Proposed Action, hazardous wastes may be present on the project site. It is not expected that the Proposed Action would generate hazardous waste during the long-term operation of the site. If the PPV entity generates hazardous waste from the Proposed Action as a result of demolishing MFH within the lease area or constructing five new SOQ homes or new amenities, or in the future as a result of additional renovation or construction of housing units (not part of

the Proposed Action), or conducting routine maintenance of housing units and associated facilities, the PPV entity would be required to obtain its own USEPA Hazardous Waste Generator Identification Number. The PPV entity would be required to manage, transport and dispose of future hazardous wastes generated in NBVC facilities in accordance with applicable federal, state, local, and DoD regulations. Similarly, all applicable statutes and regulations, including measures contained in the CERCLA Record of Decision, would be followed by the Navy during demolition of a total of 102 MFH units in the former GMTA site and an associated 50-foot buffer located within the existing housing area, which is part of the Proposed Action. Therefore, no significant impacts associated with hazardous wastes would result from the implementation of the Proposed Action.

Polychlorinated Biphenyls

No known PCB-containing material is located within the boundaries of the Proposed Action. According to the 2015ECP, all PCB-containing transformers have been replaced within the housing areas (NAVFAC SW 2015). The Proposed Action would not result in the placement or use of materials PCB-containing materials. Therefore, no significant impacts associated with PCBs would result from the Proposed Action.

Radon

The currently minimal risk of encounter with radon during construction and demolition activities and the long-term operation of the MFH would remain unchanged under the Proposed Action. Therefore, no significant impacts associated with radon would result from implementation of the Proposed Action.

Other Federal Health and Safety Requirements

All requirements proposed by EO 13423 (Strengthening Federal Environmental, Energy, and Transportation Management) and EO 13148 (Greening the Government through Leadership in Environmental Management), such as designing new construction to meet Leadership in Energy and Environmental Design (LEED[®]) requirements, solid waste diversion and recycling; and pollution prevention and management of toxic and hazardous materials, would be specified in construction and operation/maintenance contracts and implemented with standard BMPs associated with the Proposed Action. These requirements would ensure, wherever feasible, that pollution would be prevented or reduced at the source and/or treated in an environmentally safe manner. Therefore, implementation of the construction and demolition components of the Proposed Action would not have a significant impact to public health and safety.

3.7.2.2 No-Action Alternative

Under the No-Action Alternative, there would be no change to the existing condition and no hazardous material or public health and safety impact. Existing remedies to minimize potential hazards associated with the former GMTA would remain in place.

3.8 Utilities

3.8.1 Affected Environment

3.8.1.1 Electricity

Electricity for NBVC is purchased from the Southern California Edison Company and Strategic Energy (NAVFAC SW 2013). Electricity in NBVC Point Mugu is provided through an overhead distribution system. Many buildings with critical missions have stand-by generators to support the mission if the power should fail.

3.8.1.2 Water

Potable water is provided to NBVC Point Mugu by the Port Hueneme Water Agency, which is the wholesale provider for the City of Port Hueneme, the Channel Islands Beach Community Services District, and NBVC Point Mugu and Port Hueneme (NAVFAC SW 2013). The Port Hueneme Water Agency serves a population of approximately 50,000 and has relatively fixed water requirements (NAVFAC SW 2013). The NBVC Point Mugu water distribution system consists of a series of steel, polyvinyl chloride and cement pipes and two 500,000-gallon (1.9-million-liter) water storage tanks.

3.8.1.3 Sewer

NBVC Point Mugu has a complete sanitary sewage collection system with lift stations, force mains, and manholes (NAVFAC SW 2013). Sewage from NBVC Point Mugu is pumped through a 10-inch (25-cm) force main to the Oxnard Wastewater Treatment Plant for secondary treatment and discharge.

3.8.1.4 Solid Waste

Solid waste from NBVC is conveyed by a private contractor to a landfill in Oxnard.

3.8.2 Environmental Consequences and Avoidance Measures

3.8.2.1 Proposed Action

Utilities within the lease boundary maybe conveyed to the PPV entity as part of the Proposed Action. Utilities to be conveyed would be maintained by the PPV entity during the lease period and the Proposed Action would not impact existing utility services. As the Proposed Action would not increase the number of housing units that are currently present at NBVC Point Mugu, and would not result in increases to the number of residents at the MFH, the Proposed Action would not result in increases in demand for utilities. Demolition of up to 150 homes could result in less demand on existing utility systems. The demolition of up to 150 homes would result in the generation of demolition debris that must be disposed of or recycled accordingly. The Proposed Action would be required to comply with applicable recycling diversion goals for reducing construction and demolition waste. Therefore, implementation of the Proposed Action would not result in significant impacts to utilities.

3.8.2.2 No-Action Alternative

Under the No-Action Alternative, no impacts related to utilities would occur.

3.9 Socioeconomics/Environmental Justice

Socioeconomics describe the basic attributes of population and economic activity within a particular area, and typically encompass demographics, employment and income, housing, and environmental justice. Impacts on these fundamental socioeconomic resources can also influence other components, such as public services provision and housing availability. To illustrate local baseline conditions, socioeconomic data provided in this section consist primarily of county and city level data for the areas surrounding NBVC.

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued to focus the attention of federal agencies on human health and environmental conditions in minority and low-income communities. In addition, EO 12898 aims to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. To provide a thorough evaluation of environmental justice issues, the socioeconomics section of this SEA includes data and analysis regarding the distribution of race and poverty status for the areas surrounding NBVC.

3.9.1 Affected Environment

3.9.1.1 Population

The NBVC lies within Ventura County, surrounded by the cities of Port Hueneme, Camarillo, and Oxnard. According to the U.S. Census Bureau (USCB), the total population for Ventura County in 2010 was 823,318, of which Port Hueneme, Camarillo, and Oxnard comprised 2.6 percent, 7.9 percent, and 24.0 percent, respectively. Table 3.9-1 shows that Port Hueneme experienced a small decrease in population from 2000 to 2010, while Camarillo, Oxnard, and Ventura County have all experienced population gains from 2000 to 2010 (USCB 2000, USCB 2010).

Table 3.9-1. Population for Port Hueneme, Camarillo, Oxnard, and Ventura County, 2000-2010

<i>Year</i>	<i>Port Hueneme</i>	<i>Camarillo</i>	<i>Oxnard</i>	<i>Ventura County</i>
2000	21,845	57,077	170,358	753,197
2010	21,723	65,201	197,899	823,318
Percent Change	-0.6	12.2	16.2	9.3

Source: USCB 2000, USCB 2010.

NBVC currently (as of 2013) employs 17,307 personnel, consisting of 11,457 military and civilian personnel, and 5,850 on-site contractors (Navy 2013a). In 2012, there were 2,495 effective military families requiring housing, with a projected need of 3,161 families in 2017 (NAVFAC SW 2014b).

3.9.1.2 Employment and Income

According to 5-year estimates for 2008 to 2012, there were 403,113 people in the work force in Ventura County, with 36,555 unemployed individuals, resulting in an unemployment rate of 9.1 percent (USCB 2012). Camarillo (8.1 percent) had a lower unemployment rate than the County, whereas Oxnard (10.1 percent) and Port Hueneme (12.7 percent) had higher unemployment rates (refer to Table 3.9-2). The education services sector was the dominant employment industry in Ventura County at 19.0 percent, while the professional and management sector accounted for 12.3 percent of employment. According to 5-year estimates for 2008 to 2012, educational services was the largest employment industry in Camarillo,

Oxnard, and Port Hueneme, accounting for 21.2 percent, 16.8 percent, and 18.3 percent of employment, respectively.

Table 3.9-2. Employment Figures: Port Hueneme, Camarillo, Oxnard, and Ventura County, 2008-2012, 5-Year Estimates

<i>Area</i>	<i>Labor Force</i>	<i>Employed</i>	<i>Unemployed</i>	<i>Rate (%)</i>
Port Hueneme	8,770	7,657	1,113	12.7
Camarillo	30,849	28,359	2,490	8.1
Oxnard	94,611	85,073	9,538	10.1
Ventura County	403,113	366,558	36,555	9.1

Source: USCB 2012.

According to 5-year estimates for 2008-2012, mean earnings in Ventura County were \$96,794, with an average per capita income of \$32,826 (Table 3.9-3). Mean earnings and average per capita income were higher in Camarillo, \$104,916 and \$37,926, respectively, than in the County. Mean earnings and average per capita income were lower than the County for Port Hueneme, (\$62,572 and \$23,367, respectively), and Oxnard, (\$72,158 and \$20,579, respectively). The median household income for Ventura County was \$76,483. Median household income was lower in Oxnard (\$60,736) and Port Hueneme (\$51,723), and higher in Camarillo (\$83,892). Consequently, Camarillo had the lowest percentage of individuals below poverty level (4.1 percent), followed by Ventura County (7.7 percent), Oxnard (12.9 percent), and Port Hueneme (13.4 percent) (USCB 2012).

Table 3.9-3. Income Data: Port Hueneme, Camarillo, Oxnard, and Ventura County 2008-2012, 5-Year Estimates

<i>Area</i>	<i>Mean Earnings (\$)</i>	<i>Average per Capita Income (\$)</i>
Port Hueneme	62,572	23,367
Camarillo	104,916	37,926
Oxnard	72,158	20,579
Ventura County	96,794	32,826

Source: USCB 2012.

3.9.1.3 Housing

According to 5-year estimates for 2008-2012, the total number of housing units in Ventura County was 281,245, with 8,087 units (2.9 percent) in Port Hueneme, 24,457 units (8.7 percent) in Camarillo, and 54,434 units (19.4 percent) in Oxnard. During this period, a greater percentage of housing was owner occupied (65.4 percent) than renter occupied (34.6 percent) in Ventura County. Similarly, Camarillo (70.8 percent owner occupied, 29.2 percent renter occupied) and Oxnard (55.3 percent owner occupied, 44.7 percent renter occupied) both had a greater percentage of housing units that were owner occupied as opposed to renter occupied. In contrast, Port Hueneme (45.8 percent owner occupied, 54.2 percent renter occupied) had a greater percentage of renter occupied housing units. Based on the 5-year estimates for 2008 to 2012, 57.3 percent of households paid 30 percent or more of their household income to gross rent in Ventura County. Approximately 56 percent of households in Camarillo, 62.4 percent of households in Oxnard, and 61.7 percent of households in Port Hueneme paid 30 percent or more of their household income to gross rent (USCB 2012). The rental vacancy rate was 3.8 percent countywide, 3.5 percent in Port Hueneme, 2.1 percent in Camarillo, and 3.6 percent in Oxnard.

The four criteria the DoD uses to determine whether off-base community housing is acceptable for military households are cost, location (i.e., within the market area, which is a 60-minute commute time), adequate condition and facilities (i.e., decent, safe, and sanitary housing), and bedroom entitlements. If market area housing is not affordable for military personnel, they are more likely to reside outside the market area, live in housing of unsuitable condition or with inadequate facilities, or in units with fewer bedrooms than their entitlements.

3.9.1.4 Environmental Justice

As shown in Table 3.9-4, the cities in proximity to NBVC vary in their diversity. Ventura County and Camarillo display less diversity than the state of California by having a higher percentage of whites (non-Hispanic) and a lower percentage of many minority groups. All of the cities and Ventura County have a lower percentage of blacks as compared to the State of California average. Port Hueneme and Oxnard display greater diversity than Camarillo, Ventura County, and California, with a higher percentage of American Indian or Alaska Native and Other Races and a lower percentage of whites. Camarillo does, however, have a higher percentage of Asians than Port Hueneme, Oxnard, and Ventura County, but a lower percentage as compared for the State of California. Port Hueneme has a higher percentage of Native Hawaiian or Other Pacific Islanders and a higher percentage of Two or More Races than the other cities, Ventura County, and California.

Table 3.9-4. Population Ethnicity (2010): Port Hueneme, Camarillo, Oxnard, Ventura County, and California (Percent of Population)

<i>Ethnicity</i>	<i>Port Hueneme</i>	<i>Camarillo</i>	<i>Oxnard</i>	<i>Ventura County</i>	<i>California</i>
White	56.9	75.1	48.2	68.7	57.6
Black	5.1	1.9	2.9	1.8	6.2
American Indian and Alaska Native	1.4	0.6	1.5	1.0	1.0
Asian	6.0	10.2	7.4	6.7	13.0
Native Hawaiian or Other Pacific Islander	0.5	0.2	0.3	0.2	0.4
Other Races	24.0	7.3	35.1	17.0	17.0
Two or More Races	6.1	4.8	4.6	4.5	4.9

Source: USCB 2010.

3.9.2 Environmental Consequences and Avoidance Measures

The significance of population and expenditure impacts are assessed in terms of their direct effects on the local economy and related indirect effects on other socioeconomic resources within the NBVC area.

In order to comply with EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, ethnicity and poverty status in the vicinity of the proposed action have been examined to determine if any minority or low-income communities could potentially be disproportionately affected by implementation of the Proposed Action or the No-Action Alternative.

3.9.2.1 Proposed Action

Potential Impacts

Population

Under the Proposed Action, up to 150 MFH units could be demolished. These units would consist of excess housing that is not needed to meet the installation's housing requirements as detailed by the *2012 Housing Requirements Market Analysis Update* (Navy 2013a). This potential decrease in units would not result in a population change in the area; rather it would be in response to a decreased need for housing at the installation. The proposed lease transfer of units necessary to meet the installation's housing requirements would not result in changes to the number of bedrooms in the transferred units, and no population change associated with the transferred units would be expected. Therefore, no impacts to population would occur.

Employment and Income

The proposed lease transfer would allow the PPV entity to provide management services to the MFH. Short-term job growth would occur, but would be minimal. Renovation and demolition work would likely be accomplished using sub-contractors that already work for the PPV entity. The Proposed Action could generate from zero to fifteen short-term jobs related to renovation and demolition activities. For the long-term, the Proposed Action would add a small number of jobs (between two and five) for the PPV entity's property management group. These jobs could provide minimal, short-term benefits for the local economy due to increases in payroll and taxes for short-term and long-term jobs generated, and the indirect purchase of goods and services. Considering the size and diversity of the regional economy, however, these short-term beneficial effects would not be significant. The potential demolition of up to 150 MFH units that would consist of excess housing not needed to meet the installation's housing requirements would not result in effects to the regional economy.

Housing

The Proposed Action would involve the lease transfer of existing occupied housing units. No displacements would occur as a result of its implementation. Up to 150 MFH units may be demolished as part of the Proposed Action. Although this demolition would result in the removal of housing at NBVC, any housing removed as part of the Proposed Action would be excess housing not needed to meet the installation's housing requirements. Residents living in units to be demolished would be relocated to other housing within the NBVC MFH areas. Units being demolished only include units in excess of the installation's housing needs; thus, the Proposed Action, although it may require relocation of residents in units to be demolished, would not result in the need for relocation of residents off installation, or a deficit of housing. Additionally, the Proposed Action includes renovations to the existing housing and the addition of amenities, as well as construction of five new SOQ homes. The new SOQ homes, as well as renovations and new amenities, such as recreational fields, tot lots and dog runs, would improve the quality of life for current and future residents. The improvements to on-installation housing associated with the Proposed Action may result in the relocation of some residents that are currently living off-installation into the privatized housing. Given the number of housing units in Ventura County (281,245 in 2013), and the low vacancy rates countywide and in Port Hueneme, Camarillo, and Oxnard (3.8, 3.5, 2.1, and 3.6 percent, respectively), relocations from off-installation into the privatized housing on installation would not significantly affect the local or regional housing market. Thus, there would be no significant impacts to local or regional housing markets from implementation of the Proposed Action.

Environmental Justice

The proposed lease transfer, construction of new SOQ and neighborhood recreational amenities, and potential demolition of up to 150 MFH units would be contained entirely within the boundaries of the housing areas on NBVC property; no minority or low-income populations are known to exist in the vicinity of the project areas and no such groups would be disproportionately affected. Accordingly, no significant Environmental Justice impacts would occur as a result of implementation of the Proposed Action.

3.9.2.2 No-Action Alternative

Implementation of the No-Action Alternative would maintain the status quo at NBVC housing areas. The MFH units would continue to be managed by the Navy and, therefore, no significant impacts would occur related to socioeconomics and environmental justice.

4.0 Cumulative Impacts

4.1 Introduction

Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) require that the cumulative impacts of a Proposed Action be assessed (40 Code of Federal Regulations [CFR] Parts 1500-1508). A cumulative impact is defined as the following:

“the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” (40 CFR § 1508.7)

Cumulative effects are most likely to arise when a relationship exists between the Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated.

Under the Proposed Action, the Department of the Navy (Navy) would privatize an additional 124 homes at NBVC Point Mugu. The Navy would grant a ground lease of the proposed premises and transfer the ownership of the improvements to the PPV entity. The PPV would own, operate and maintain the selected Military Family Housing (MFH). In addition, up to 150 homes that are not needed to meet the installation’s housing requirements may be demolished by the Navy and the PPV entity. Minor renovations would be performed by the PPV entity to the remaining homes. Amenities such as recreational fields, tot lots and dog runs may be built in the areas where the existing homes are demolished. Also as part of the Proposed Action, the PPV entity would build five new Senior Officer Quarters (SOQ) homes on land leased to the PPV entity. The homes would each be approximately 2,500 gross square feet and be located within the San Miguel neighborhood.

The CEQ’s guidance for considering cumulative effects states that NEPA documents “should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant” (Council on Environmental Quality 1997). The first step in assessing cumulative effects, therefore, involves identifying and defining the scope of other actions and their interrelationship with the Proposed Action or alternatives. The scope of the cumulative effects analysis involves both the geographic extent of the effects and the timeframe in which the effects could be expected to occur. The scope must consider other projects that coincide with the location and timing of the Proposed Action and other actions, and the duration of potential effects on the environment. Section 4.1.1 identifies the projects considered in the cumulative analysis. Section 4.2 provides an analysis of potential cumulative impacts for each of the environmental resources discussed in this Supplemental Environmental Assessment (SEA).

4.1.1 Potentially Cumulative Projects

Resource areas were analyzed using a list of past, present and reasonably foreseeable projects (refer to Table 4.1-1) that have been or will be implemented in the project region.

Table 4.1-1. List of Potentially Cumulative Projects

#	Project Title	Project Description
1	NBVC Point Mugu Sea Range Countermeasures Testing and Training	The Navy (Naval Air Systems Command) prepared an EA for Point Mugu Sea Range Countermeasures (Navy 2014a) for conducting additional types of countermeasures testing on the Sea Range at NBVC Point Mugu and San Nicolas Island. Countermeasures testing addressed in this EA included directed energy (e.g., high-energy lasers and high-power microwave systems), small arms, missiles, flares, and electronic support systems in nearshore areas at NBVC Point Mugu and San Nicolas Island. For the purposes of this EA, small arms included bullets fired from close-in weapon systems and projectiles up to 5 inches (13 centimeters) in diameter. Effective countermeasure systems testing requires realistic conditions that (1) exist on the Sea Range over land, (2) are in littoral (i.e., nearshore) environments, and (3) are in the open ocean (Navy 2014a). A Finding of No Significant Impact (FONSI) was signed in July 2014.
2	Point Mugu Sea Range Expansion of Unmanned Systems Operations	The Navy has recently developed a Draft EA/Overseas Environmental Assessment (OEA) for the proposed expansion of unmanned systems testing and training on the Point Mugu Sea Range, which includes land areas at NBVC Point Mugu, NBVC Port Hueneme, and San Nicolas Island (Navy2014b). As evaluated in the EA/OEA, capabilities of the Sea Range would be expanded to include unmanned aircraft systems (UAS) and unmanned surface vehicle (USV) exercises up to 250 days per year, with duration of each exercise lasting between 1 hour and 7 days. Also as addressed in the EA/OEA, UAS, and USV operations would be initiated from NBVC Point Mugu and San Nicolas Island, with marine vessels launched from NBVC Port Hueneme. An increase of approximately 15 personnel would be required for the launch and recovery of the vehicles, command and control of the vehicles, and maintenance of the systems and associated equipment. No modifications to existing facilities (temporary lodging, meals, recreation, sanitation, etc.) are needed to accommodate the Proposed Action and associated personnel. The Final EA/OEA was completed in October 2014 and the FONSI/FONSH was signed on February 23, 2015.
3	EA for the West Coast Home Basing of the MQ-4C Triton UAS at Naval Base Ventura County Point Mugu	In 2013, the Navy prepared an EA that evaluated the potential effects associated with home basing the MC-4C Triton UAS at NBVC Point Mugu (Navy 2013b). Under the Proposed Action, the Navy would home base four Triton UAS; establish a hub for the Triton UAS, supporting up to four additional Triton UAS that would be undergoing maintenance actions at any one time; conduct an average of five Triton UAS flight operations per day (1,825 annually); construct, demolish, and renovate facilities and infrastructure at NBVC Point Mugu; and station up to 700 personnel, plus their family members, while supporting rotational developments to and from outside the continental United States. The FONSI was signed in April 2013, and Triton flight operations will begin in fiscal year (FY 2015). It is assumed that a maximum of eight Triton UAS will be at NBVC Point Mugu at any given time: four that are assigned for operational missions and four that have been transferred to NBVC Point Mugu from another location to receive maintenance. The additional 700 personnel and their families would be gradually relocated to NBVC Point Mugu and the surrounding areas in phases (from 2014 to 2020).

Table 4.1-1. List of Potentially Cumulative Projects

#	Project Title	Project Description
4	EA/OEA for the Navy MQ-4C Triton (BAMS) UAS Developmental Test Program	<p>In 2012, the Navy prepared an EA/OEA that analyzed the potential effects associated with conducting the Navy's MQ-4C Triton (BAMS) UAS Developmental Test Program at NBVC Point Mugu. On March 13, 2013, a FONSI was signed (Navy 2013b). The Developmental Test Program would be conducted over a three-year period beginning in FY 2013 at a number of contractor and Department of Defense (DoD) facilities and ranges. The Developmental Test Program evaluated the operational capabilities of the Triton UAS in a variety of mission scenarios. The staging of the Developmental Test Program would occur at Naval Air Station (NAS) Patuxent River, Maryland, with secondary locations at the Northrop Grumman Corporation facility in Palmdale, California, and NBVC Point Mugu. In total, approximately 2,270 flight-hours are planned for the entire Developmental Test Program. Initially, 2 flights per week averaging 8 hours per flight would occur. Test flights would progress to 4 flights per week and increase in duration until a 24-hour duration for 7 days can be demonstrated. This program would require approximately 125 personnel. No new infrastructure is expected to be constructed. The Developmental Test Program would include a combination of flight hours between the primary location at NAS Patuxent River in Maryland (1,787 flight hours), and secondary locations at Northrop Grumman Corporation Palmdale in California (363 flight hours), and NBVC Point Mugu (120 flight hours). This program is being implemented through FY 2015.</p>
5	Homeporting the Littoral Combat Ship	<p>An EA was prepared to identify and evaluate the potential environmental consequences associated with providing facilities and functions to homeport the Littoral Combat Ship on the West Coast of the United States. The homeporting will be conducted in phases over a period of 8 years, beginning in FY 2013. Naval Base San Diego was selected as the homeporting location, so activities associated with homeporting vessels, stationing personnel, and constructing facilities at Naval Base San Diego would have no potential for cumulative impacts at NBVC Point Mugu, and actions at Naval Base San Diego are not discussed in further detail in the EA. The MQ-8B Firescout, a UAS, is one of the supporting aerial systems associated with the Littoral Combat Ships, and the FONSI and <i>Final Environmental Assessment for the Homeporting of the Littoral Combat Ship on the West Coast of the United States</i> support the decision to store, maintain, and conduct test flights of the Firescout at NBVC Point Mugu (Navy 2012b). Up to 40 operational Firescouts would be required to support the mission modules associated with the Littoral Combat Ships homeported on the West Coast of the United States. The procurement of these 40 Firescouts would occur in phases over a 4-year period from FY 2013 to FY 2016, with the first deployment of a Firescout onboard a Littoral Combat Ship anticipated in FY 2013. Firescout test flights would be required to verify that maintenance has been performed properly. Test flights would consist of preprogrammed profiles and would total approximately 5 hours per month of flying time for all Firescouts. Up to 10 test flights could be conducted each month at NBVC Point Mugu. Storage and maintenance facilities would also be required to support the Firescouts. While on shore, up to eight Firescouts could be in a maintenance cycle at any one time and would need access to an airfield flight line for test flights. The Firescouts not in a maintenance cycle would be stored in a</p>

Table 4.1-1. List of Potentially Cumulative Projects

#	Project Title	Project Description
5 (cont.)		preserved state (i.e., defueled with the battery disconnected) to preserve airframe life. To support the storage, maintenance, and test flights of Firescouts at NBVC Point Mugu, 27 on-installation support personnel would be stationed, or based, at NBVC Point Mugu (Navy 2012b).
6	Transition to E-2D Advanced Hawkeye	In 2009, the Navy prepared the <i>Final Environmental Assessment for the Transition of the E-2D Advanced Hawkeye, Naval Station Norfolk, VA, Naval Base Ventura County Point Mugu, CA</i> ; a FONSI was signed February 9, 2009 (Navy 2009a, Navy 2009b). The Navy proposed to provide facilities and functions to support the replacement of 44 E-2C aircraft with 57 E-2D Advanced Hawkeye aircraft at established Airborne Early Warning home bases (i.e., Naval Station Norfolk and NBVC Point Mugu). For purposes of this analysis, only the actions proposed at NBVC Point Mugu are assessed. At the time of development of the E-2D Advanced Hawkeye EA, there were 16 E-2C aircraft and 644 E-2C aircraft personnel at NBVC Point Mugu. The transition to the E-2D Advanced Hawkeye began in FY 2011 and is expected to be completed in FY 2022. It is anticipated that the full transition to the Advanced Hawkeye would take approximately 11 years. Completion of the Advanced Hawkeye transition would result in an increase in the number of squadrons and the number of aircraft per squadron already there (approximately 200 personnel).
7	Implementing the Bird/Wildlife-Aircraft Strike Hazard Management Plan	The Navy prepared an EA for the implementation of the Bird/Wildlife-Aircraft Strike Hazard (BASH) Management Plan at NBVC Point Mugu in 2008 (NAVFAC 2008). In addition to ongoing BASH management techniques, the Navy proposed various habitat modification projects, including specific grassland and wetland management, and several specific wildlife exclusion projects. The EA identified that 4.9 acres (1.9 hectares [ha]) of wetlands would be filled, 28.3 acres (11 ha) of brackish and freshwater marsh and 360.4 acres (146 ha) of transition disturbed habitat would be subject to mowing and vegetation removal, and wildlife abundance near the runways would be permanently excluded. Wetland losses would be offset by using the installation's existing wetland mitigation bank or by creating new mitigation projects. Operation of equipment and construction would generate minor air emissions. Implementation of BASH management would be expected to reduce hazards that pose a risk to aviation safety.
8	NBVC Point Mugu Integrated Natural Resources Management Plan	The Integrated Natural Resources Management Plan (INRMP) for NBVC is the Navy's long-term planning document to guide the installation commander in the management of natural resources to support the installation mission, while protecting and enhancing installation resources for multiple use, sustainable yield, and biological integrity (NAVFAC SW 2013). The INRMP addresses terrestrial and aquatic natural resources at NBVC Point Mugu and Special Areas. The INRMP establishes planning and management strategies; identifies natural resources constraints and opportunities; supports the resolution of land use conflicts, provides baseline descriptions of natural resources necessary for development of conservation strategies and environmental assessments; serves as the principal information source for the preparation of future environmental documents for proposed actions at NBVC Point Mugu and Special Areas; and provides guidance for annual natural resources management reviews, internal compliance audits, and annual budget submittals.

Table 4.1-1. List of Potentially Cumulative Projects

#	Project Title	Project Description
9	Shoreline Protection	The Navy is in the process of preparing an EA for the Shoreline Protection at NBVC. The Proposed Action would provide protection from the immediate threats of coastal flooding and beach erosion through the implementation of two projects, the West Revetment Extension and the Central Revetment Repair. The West Revetment Extension includes extending the existing revetment to protect Building 812 and Beach Road from flooding. The extension would continue to the southeast approximately 125 linear feet (38.1 meter; m) and crest at approximately 18 feet (5.5 m) high. The revetment would be constructed of armored stone and the footprint would be approximately 0.18 acre (0.07 ha). The Central Revetment Repair would include increasing the crest elevation up to approximately 27 feet (8.2 m); armoring the seaward slope; and reinforcing the backside of the structure by adding larger dense stone and increasing its width. Armored stone would be used for the repairs and stabilization of the revetment.
10	EA for Point Mugu 18 May 2011 Omega 707 Air Tanker Crash Damage Assessment and Restoration Plan (DARP)	Commander Navy Region Southwest in coordination with USFWS and California .Office of Spill Prevention and Response conducted restoration planning and prepared a DARP EA for the Omega 707 Air Tanker Crash of May, 18, 2011 at Mugu Lagoon at NBVC. Pursuant to 15 C.F.R, Section 990.44, the purpose of the restoration planning effort was to further evaluate injuries to natural resources and service and to use the information to determine the need for, type of, and scale of compensatory restoration actions. The preferred action is the Laguna Road culvert installation project, which would connect the existing wetland at Laguna Road with a tidally-influenced drainage channel by installing pre-cast culverts and 120-feet of pre-cast pipe under the existing asphalt road to re-establish tidal influence across the 2.9 acre site. The Final EA was completed in December 2015 and the FONSI was signed in December 2015.
11	Ventura County General Plan	In 2011, Ventura County updated its General Plan to extend the planning horizon from 2010 to 2020. The updates included updating population, dwelling unit, and employment forecasts; updating transportation and circulation impacts and noise impacts based on updated traffic forecasts; updating appendices based on the updated population, dwelling unit, and employment forecasts; and incorporating specific amendments as directed by the County Board of Supervisors (Ventura County Board of Supervisors 2013). The General Plan identified impacts on air quality, biological resources, agricultural resources, scenic resources, paleontological resources, cultural resources, coastal beaches and sand dunes, fire protection services, hazardous materials and waste and public health, noise and vibration, transportation circulation, airports and airport hazards, water resources and water supply, utilities and energy resources, education facilities, recreational facilities, community character, and housing as a result of direct and induced growth and road projects.

Table 4.1-1. List of Potentially Cumulative Projects

#	Project Title	Project Description
12	Ormond Beach Specific Plan Environmental Impact Report	<p>The <i>Ormond Beach Specific Plan Final Environmental Impact Report (EIR)</i> was developed in 2009 (Oxnard Development Services 2009). This EIR addressed the 916.8-acre (371 ha) Ormond Beach Specific Plan Study Area on the Oxnard Plain in unincorporated Ventura County immediately outside the southeastern city limits of the City of Oxnard. The Study Area is currently almost exclusively used for agricultural activities. The Study Area is adjacent to the perimeter of NBVC Point Mugu and is divided into subareas by Hueneme Road: the 322.9-acre (131-ha) Northern Subarea and the 594.8-acre (241-ha) Southern Subarea. The Northern Subarea is proposed to be annexed as the South Shore Specific Plan project area, while a portion of the Southern Subarea would be annexed as the South Ormond Beach Specific project area. The South Shore Specific Plan calls for a variety of residential uses, a small amount of mixed-use commercial development, an elementary school, a high school, a man-made lake, and supporting park and open spaces. The South Ormond Beach Specific Plan calls for a mixture of light industrial and business park uses, and supporting open space. The South Shore and South Ormond Beach specific annexations would total approximately 700 acres (283 ha) of unincorporated Ventura County. If both plans are approved, approximately 330 acres (134 ha) would either be dedicated (i.e., protected in open space and park uses) or would remain agricultural in use. The Ormond Beach EIR evaluates the environmental effects of these proposed projects.</p>

4.2 Cumulative Impacts Analysis

4.2.1 Topography, Geology and Soils

The geographic scope for potential cumulative impacts to topography, geology, and soils with respect to soil erosion (and the potential for soil loss and sediment delivery into nearby waterways) includes the waterways (i.e., Mugu Lagoon) that receive surface water flows from the project site. Cumulative projects at NBVC Point Mugu and adjacent areas involving grading, excavations, and construction/demolition (e.g., Implementing the BASH Management Plan, Shoreline Protection, and Ormond Beach Specific Plan) would include construction activities that would temporarily exacerbate the potential for erosion-induced sedimentation of the surrounding waterways (e.g., Mugu Lagoon, the Pacific Ocean, or Oxnard drainage ditches [ODDs]). However, not all cumulative project construction activities would occur within the same timeframe, thereby minimizing the potential for cumulative impacts.

Environmental Protection Measure 1 (Section 2.2.1.2, Environmental Protection Measures) was developed to accompany the standard erosion control measures included in Storm Water Pollution Prevention Plan (SWPPP)/Erosion Control Plans (e.g., sandbags, silt fencing, earthen berms, and temporary sedimentation basins) that assure project actions avoid, minimize, and mitigate these potential effects. Therefore, no significant impacts would result from construction or operation of the Proposed Action. Although other past, present, and reasonable foreseeable projects on NBVC Point Mugu and in adjacent areas/communities would have similar effects, these projects would also comply with applicable federal, state, and local regulations and/or requirements, and would have to implement similar types of protection measures. This would minimize the majority of potential impacts from the Proposed Action and other projects in the regional vicinity.

All projects located at NBVC Point Mugu and adjacent areas are subject to seismically induced ground shaking in the event of an earthquake on a local or regional fault. While the Proposed Action includes the construction of five new habitable structures, seismic-related impacts at the project site, in combination with past, present, and reasonably foreseeable projects would not be cumulatively significant with incorporation of modern construction engineering and safety standards. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to topography, geology, and soils.

4.2.2 Water Resources

The geographic scope of the water resources cumulative analysis includes the waterways (i.e., Mugu Lagoon) that receive surface water flows from the project site. Cumulative development upgradient of the Mugu Lagoon (i.e., receiving waters for cumulative projects), including Implementing the BASH Management Plan, Shoreline Protection, and Ormond Beach Specific Plan, could result in temporary and localized effects to water quality that could be individually comparable to those associated with the Proposed Action. Environmental Protection Measure 1 (Section 2.2.1.1, Environmental Protection Measures) was developed to accompany Best Management Practices (BMPs) and the required permits that ensure that project actions avoid, minimize, and mitigate these potential effects. Therefore, implementation of the Proposed Action would not result in significant impacts to water resources, including surface water and groundwater quality, construction-induced erosion, dispersion of construction-related contaminants or existing groundwater contamination, or increased flooding potential on- or off-site. Although other past, present, and reasonably foreseeable projects on NBVC Point Mugu and in adjacent areas/communities would have similar effects, these projects would also comply with applicable federal, state, and local regulations and/or requirements, and would have to implement similar types of protection measures. This would minimize the majority of potential impacts from Proposed Action and other projects on and in the regional vicinity. Therefore, implementation of the Proposed

Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to water resources.

4.2.3 Biological Resources

The geographic region of analysis for potential cumulative impacts to biological resources consists of the MFH area and adjacent areas on NBVC Point Mugu. Past, present, and reasonably foreseeable cumulative projects in the region that require ground-disturbance, vegetation clearing, grading, and excavations (e.g., Implementing the BASH Management Plan, Shoreline Protection, and Ormond Beach Specific Plan) could result in temporary and localized effects to biological resources that may be individually comparable to those associated with the Proposed Action. Potential cumulative impacts associated with the loss of nesting and/or roosting habitat for Migratory Bird Treaty Act (MBTA)-protected species (e.g., raptors and owls) from the Proposed Action would be minimized by compliance with the MBTA, Executive Order (EO) 13186, the DoD/U.S Fish and Wildlife Service (USFWS) Memorandum of Understanding (MOU) to “Promote the Conservation of Migratory Birds,” and the INRMP. As discussed in Section 3.3, Biological Resources, the Proposed Action would not result in significant impacts to biological resources. Although other past, present, and reasonable foreseeable projects on NBVC Point Mugu and in adjacent areas/communities would also have the potential for biological effects, these projects would also have to comply with applicable federal, state, and local regulations and/or requirements, including the MBTA, EO 13186, MOU, and INRMP. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to biological resources.

4.2.4 Cultural Resources

The geographic region of analysis for potential cumulative impacts to cultural resources consists of NBVC Point Mugu and adjacent communities. Regional development and urbanization in California has resulted in extensive impacts to cultural resources, especially the destruction of archaeological sites and historic buildings. These types of cultural resources are limited, which is one of the reasons why strict federal and state regulations have been implemented to provide management and regulatory oversight.

Past, present, and reasonably foreseeable projects at NBVC Point Mugu that involve ground disturbing activities within areas not surveyed and/or modification or demolition of historic structures could result in impacts on cultural resources. Federal projects that could potentially affect historic properties (assuming the presence of such properties) would undergo Section 106 review under the National Historic Preservation Act (NHPA), and any adverse effects on historic properties (under the standards of the NHPA) would be mitigated. The potential significance of any such adverse effects would also be assessed for purposes of NEPA.

As discussed in Section 3.5, Cultural Resources, the Proposed Action may demolish up to 150 MFH units associated with Wherry and Capehart era family housing. A Naval Base Ventura County Housing Privatization Programmatic Agreement is in place between the Navy, the California State Historic Preservation Officer (SHPO), the Advisory Council on Historic Preservation, and San Diego Family Housing Limited Liability Corporation regarding PPV for Family Housing on NBVC. This Programmatic Agreement recognized that the Commanding Officer of NBVC had applied the Advisory Council on Historic Preservation Program Comment for Wherry and Capehart era family housing at Air Force and Navy bases to appropriate portions of its housing, had applied all considerations identified in the Program Comment, and confirmed that Section 106 responsibilities had been completed for those properties. The 2007 Programmatic Agreement confirmed the 2004 Advisory Council on Historic Preservation Program Comment for Wherry and Capehart Era Housing at Air Force and Navy bases applies to the Capehart MFH proposed for demolition by the Navy or outleasing to the PPV entity as part of the Proposed Action.

The remainder of the MFH units included in the Proposed Action were determined ineligible for listing in the National Register of Historic Places (NRHP) by consensus determination. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to cultural resources.

4.2.5 Air Quality/Climate Change

4.2.5.1 Criteria Pollutants

The geographic scope of the criteria air pollutant cumulative analysis is primarily the South Central Coast Air Basin. Emissions from the Proposed Action and the cumulative projects identified above in Section 4.1.1, Potentially Cumulative Projects, would comply with Ventura County Air Pollution Control District rules and regulations, which would minimize the impact of project cumulative air quality impacts.

As described in Section 3.4, Air Quality/Climate Change, construction activities associated with the Proposed Action would produce temporary emissions that would remain substantially below all emission significance thresholds. Implementation of standard fugitive dust and construction equipment emission control measures (Environmental Protection Measures 2 and 3; Section 2.2.1.2, Environmental Protection Measures) during proposed construction activities would minimize air emissions from proposed demolition and construction activities. Implementation of the Proposed Action would not exceed designated *de minimis* levels for criteria pollutants (40 CFR Part 51.853[b]). Therefore, this Federal Action is exempt from conformity determinations. Based on the air quality analysis for the Proposed Action, emissions would be less than 10 percent of projected regional emissions. The Proposed Action would not contribute to the degradation of regional air quality or otherwise contribute to a significant cumulative effect on air quality. Consequently, proposed construction and operational activities would produce less than significant cumulative impacts to criteria pollutant levels. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to air quality.

4.2.5.2 Greenhouse Gases

The potential effects of proposed greenhouse gas (GHG) emissions are by nature global and cumulative impacts, as individual sources of GHG emissions are typically not large enough to have an appreciable effect on climate change. Therefore, an appreciable impact to global climate change would only occur when proposed GHG emissions combine with GHG emissions from other man-made activities on a global scale.

Currently, there are no formally adopted or published NEPA thresholds of significance for GHG emissions. Therefore, in the absence of an adopted or science-based NEPA significance threshold for GHGs, this EA compares GHG emissions from Proposed Action to the U.S. net GHG emissions inventory of 2012 to determine the relative increase in proposed GHG emissions (USEPA 2014b). Appendix C-2 presents estimates of GHG emissions generated by Proposed Action.

Table 4.2-1 summarizes the annual GHG emissions generated from construction of Proposed Action. These data show that the ratio of carbon dioxide equivalent (CO₂e) emissions from the Proposed Action to the CO₂e emissions associated with the net U.S. sources in 2012 is 808/6,526 million metric tons, or about 0.000012 percent of the U.S. CO₂e emissions inventory. Because GHG emissions from the Proposed Action would equate to minimal amounts of the U.S. inventory, they would not substantially contribute to global climate change. No other cumulative project would have the potential to generate more than comparably-negligible GHG emissions. Therefore, GHG emissions from construction of the

Proposed Action, in combination with global GHGs, would not produce significant cumulative impacts to global climate change.

The analysis in Section 3.4, Air Quality/Climate Change, determined that proposed operations would lower CO₂e emissions with the renovation and installations of energy efficient appliances and other features for the MFH. Therefore, operational GHG emission reductions from Proposed Action, in combination with global GHGs, would produce beneficial cumulative impacts to global climate change. Implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to GHGs.

Table 4.2-1. Annual GHG Emissions from the Proposed Action

<i>Scenario/Activity</i>	<i>Metric Tons per Year of CO₂e¹</i>
Proposed Action Demolition/Construction Emissions	808
U.S. 2012 Net Emissions (metric tons) ²	6,526,000,000
Proposed Action Emissions as a percent of U.S. Emissions	0.000012

Notes: 1. CO₂e = (CO₂ * 1) + (CH₄ * 21) + (N₂O * 296). 2. USEPA 2014b.

CO₂ = carbon dioxide, CH₄ = methane; N₂O = nitrogen dioxide; CO₂e = carbon dioxide equivalent

Although the alternatives would produce minimal cumulative impacts to global climate change, the Navy implements broad-based programs to reduce energy consumption and shift to renewable and alternative fuels, thereby reducing overall emissions of GHGs. Some of these programs are listed below.

- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, adopted in October 2009, directs federal agencies to increase renewable energy use to achieve general GHG emission reductions. EO 13514 requires federal agencies to develop a 2008 GHG emissions baseline and to develop a percentage reduction target for agency-wide GHG reductions by FY 2020. As part of this effort, federal agencies will evaluate sources of GHG emissions and develop, implement, and annually update an integrated Strategic Sustainability Performance Plan that will prioritize agency actions based on lifecycle analyses. The DoD is currently developing its Strategic Sustainability Performance Plan that will guide Navy initiatives to reduce GHG emissions.
- On 16 October 2009, the Secretary of the Navy announced five energy targets for the Navy, as summarized below.
 - When awarding contracts, appropriately consider energy efficiency and energy footprints as additional factors in acquisition decisions.
 - By 2012, demonstrate a Green Strike Group composed of nuclear vessels and ships powered by biofuels. By 2016, sail the Strike Group as a Great Green Fleet composed of nuclear ships, surface combatants equipped with hybrid electric alternative power systems running on biofuels, and aircraft running on biofuels.
 - By 2015, cut petroleum use in its 50,000 non-tactical commercial fleet in half, by phasing in hybrid, flex fuel, and electric vehicles.
 - By 2020, produce at least half of the shore-based installations’ energy requirements from alternative sources. Also, convert 50 percent of all shore installations to net zero energy consumers.

- By 2020, half of the Navy's total energy consumption for ships, aircraft, tanks, vehicles and shore installations would come from alternative sources.
- As part of its efforts to encourage the development of alternative fuels, on 22 January 2010 the Navy and the Department of Agriculture signed an MOU to encourage the development of advanced biofuels and other renewable energy systems.

Climate Change Adaptation

In addition to assessing whether the Proposed Action potentially would impact climate change, the following considers how climate change could impact the Proposed Action and what adaptation strategies, if any, would be required to respond to these future conditions. For projects in southern California, the main effect of climate change to consider is increased temperatures and droughts, as documented in *Global Climate Change Impacts in the United States* (U.S. Global Change Research Program 2009). California is currently in a drought situation, and neither drought nor high temperatures are likely to result in any substantive change to the demolition or renovation activities that would occur under the Proposed Action. Any future climate-change and drought-related restrictions to allowable use of potable water in southern California or Ventura County would not be affected by whether the MFH is owned by a PPV or the Navy. Any future sea level rise that would affect the Proposed Action area would also have substantial effects on the overall operations of NBVC Point Mugu, and measures to address/accommodate sea level rise would need to be implemented on a base-wide basis. No other substantial effects from future climate change would impact proposed demolition and construction phases, and operational activities.

4.2.6 Noise

The geographic region of analysis for potential cumulative impacts to noise consists of the MFH area and adjacent areas on NBVC Point Mugu that are close enough to the Proposed Action area to be able to hear the Proposed Action's construction, renovation and demolition activities. If other construction activities in close proximity to the MFH would occur concurrently with construction, renovation and demolition activities associated with the Proposed Action, there is potential for a cumulative increase in noise levels; however, construction noise level increases would be temporary and typical of standard construction activities. Overall, construction activities at and within the vicinity of NBVC Point Mugu would collectively increase noise levels in the area temporarily, but variations in the timing of cumulative projects, and the relatively short duration of project effects, would moderate impacts over space and time.

The Proposed Action would not result in long-term noise increases associated with operation, and thus, would not contribute to a cumulatively significant long-term noise impact. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts associated with noise.

4.2.7 Hazardous Materials/Public Health and Safety/Protection of Children

The geographic scope of the public health and safety cumulative analysis includes NBVC Point Mugu and adjacent communities. The Proposed Action along with other related projects proposed at NBVC Point Mugu and adjacent communities (e.g., Sea Range Countermeasures, Expansion of Unmanned Systems Operations, MQ-4C Triton [BAMS] UAS Developmental Test Program, Homeporting the Littoral Combat Ship, Transition to E-2D Advanced Hawkeye, Implementing the BASH Management Plan, Shoreline Protection, and Ormond Beach Specific Plan) could result in increased risks to public health and safety (e.g., exposure to soil and/or groundwater contamination or hazards). Cumulative

construction and operations activities occurring within the region would be subject to federal, state, and local guidelines regulating public health and safety and hazardous materials.

The Proposed Action would not result in significant impacts to the health and safety of the public or military personnel, primarily because project demolition and construction activities would occur at a military facility with limited public access. Although the project site includes MFH and is also adjacent to MFH, access to areas where demolition activities and construction of new SOQ homes and new amenities are occurring would be restricted, which would minimize environmental health risks or safety risks to children, including potential exposure to contamination in groundwater. There is no appreciable likelihood of persons living either on or in proximity to NBVC Point Mugu being exposed to risk from accidental explosions because all explosives are separated from inhabited buildings. No adverse effects from construction-induced soil and/or groundwater contamination are expected to occur, thereby minimizing these types of risks to public health and safety. Other past, present, or reasonably foreseeable actions on NBVC Point Mugu also would be located in areas not accessible by the general public. All construction and operations on NBVC Point Mugu would comply with applicable DoD and federal safety regulations and/or requirements, including proper handling of ordnance and hazardous materials. Also, as discussed in Section 3.7, Hazardous Materials/Public Health and Safety/Protection of Children, the former GMTA does not pose a risk to public health and safety. Because the former GMTA is contained within the immediate area of the Proposed Action, there would be no cumulatively considerable impacts associated with the former GMTA. This would minimize the majority of impacts from the Proposed Action and other projects on and in the regional vicinity. Therefore, the Proposed Action, in conjunction with development of past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to public health and safety.

4.2.8 Utilities and Services

The geographic region of analysis for potential cumulative impacts to utilities is centered on the utility supply at NBVC Point Mugu. The Proposed Action would not involve a significant net increase in utilities usage. The demolition of up to 150 MFH units would result in a decrease in utility usage at NBVC Point Mugu, including a decrease in the amount of water used and wastewater produced compared to existing conditions, and a decrease in annual energy (electricity and natural gas) consumption. Following a short-term increase in solid waste generation when up to 150 MFH units are demolished and non-recyclable waste material hauled off site, there would be a long-term decrease in solid waste generation, because fewer MFH units would be present at NBVC Point Mugu than under the current condition. The demands on electricity, natural gas, communication, water, sanitary sewer, and solid waste disposal of the other cumulative projects, in combination with the demands from the Proposed Action, would be accommodated by existing supplies and capacities and planned upgrades. Therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to utilities.

4.2.9 Socioeconomic and Environmental Justice

The geographic scope of the socioeconomic and environmental justice cumulative analysis includes NBVC Point Mugu and adjacent communities. The Proposed Action would not result in population increases. Removal of units in excess of the installation's housing requirements would occur as part of the Proposed Action, and only five new SOQ homes would be constructed. The Proposed Action, therefore, would not generate or result in a net population increase in the area. Several past, present, and reasonably foreseeable projects would result in increases to personnel stationed at NBVC and persons living in the area; however, as the Proposed Action would not increase the population, it would not contribute to a cumulative impact.

The Proposed Action would generate short-term beneficial impacts on socioeconomic resources through the procurement of goods and services during construction of five new SOQ homes and new amenities at the MFH and during demolition activities. Other construction, demolition, and/or renovation activities associated with past, present, and reasonably foreseeable projects would likewise generate short-term beneficial impacts on socioeconomic resources. However, construction-related expenditures would not generate long-lasting cumulative benefits; therefore, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts on socioeconomic resources from construction activity. The Proposed Action would result in the generation of two to five long-term jobs.

The Proposed Action may result in the removal of excess housing not needed to meeting the installation's housing requirements as detailed by the *2012 Housing Requirements Market Analysis Update* (Navy 2013a). Past, present, and reasonably foreseeable projects occurring in the area would result in a number of new personnel at NBVC. These projects include West Coast Home Basing of the MQ-4C Triton Unmanned Aircraft System; MQ-4C Triton (BAMS) UAS Developmental Testing Program, Homeporting the Littoral Combat Ship, and Transition to E-2D Advanced Hawkeye. In total, the four projects would result in 1,627 personnel that would require housing (Navy 2013b). Any MFH demolished as part of the Proposed Action would be excess housing not required to meet the installation's housing requirements. The determination of installation housing requirements includes consideration of past, present, and reasonably foreseeable projects occurring at NBVC. Rental vacancy rates in the project area are low, ranging from 2.1 percent in Camarillo to 3.6 percent in Oxnard; however, the units available for rental in Camarillo, Oxnard, and Port Hueneme total 5,264 (UCSB 2012). Housing needs associated with past, present, and reasonable foreseeable projects occurring on NBVC can be met by existing NBVC housing and rental units off-base.

The proposed lease transfer, construction of five new SOQ homes, and potential demolition of up to 150 MFH units would be contained entirely within the boundaries of the housing areas on NBVC property; no minority or low-income populations are known to exist in the vicinity of the project areas and no such groups would be disproportionately affected. Thus, the Proposed Action would not contribute to a cumulative significant environmental justice impact.

Based on the above discussion, implementation of the Proposed Action, in addition to the effects from past, present, and reasonably foreseeable projects, would not result in significant cumulative impacts to socioeconomics and environmental justice.

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5.0 Other NEPA Considerations

5.1 Possible Conflicts between the Proposed Action and the Objectives of Federal Acts, Executive Orders, Policies, and Plans

Implementation of the Proposed Action would comply with all federal laws and regulations. The federal acts and Executive Orders (EO) that specifically apply to this project include: National Environmental Policy Act (NEPA); Clean Water Act (CWA); National Historical Preservation Act (NHPA); and Executive Order (EO) 12898, Minority Populations and Low-Income Populations.

5.2 Energy Requirements and Conservation Potential of Alternatives Including the Proposed Action and All Conservation Measures Being Considered

The Proposed Action includes the potential demolition of up to 150 Military Family Housing (MFH) units if they are not needed to meet the installation's housing requirements. This potential decrease in the number of housing units would result in an overall reduction in energy usage in the housing area.

5.3 Irreversible or Irrecoverable Commitment of Natural or Depletable Resources

NEPA requires an analysis of significant, irreversible effects resulting from implementation of a Proposed Action. Resources that are irreversibly or irretrievably committed to a project are those that are typically used on a long-term or permanent basis; however, those used on a short-term basis that cannot be recovered (e.g., non-renewable resources such as metal, wood, fuel, paper, and other natural or cultural resources) also are irretrievable. Human labor also is considered an irretrievable resource. All such resources are irretrievable in that they are used for one project and thus become unavailable for other purposes. An impact that falls under the category of the irreversible or irretrievable commitment of resources is the destruction of natural resources that could limit the range of potential uses of that resource.

Implementation of the Proposed Action would result in an irreversible commitment of a small amount of materials associated renovation of 77 units and construction of five new Senior Officer Quarters (SOQ) homes and new amenities; fuel for construction equipment and vehicles used during renovation, construction and demolition activities; and human labor. However, these commitments of resources are neither unusual nor unexpected, given the nature of the action. The Proposed Action would not result in the destruction of other environmental resources such that the range of potential uses of the environment would be limited, or affect the biodiversity of the region.

5.4 Relationship Between Short-Term Uses of the Environment and Long-Term Productivity

NEPA requires consideration of the relationship between short-term use of the environment and the impacts that such use could have to the maintenance and enhancement of the long-term productivity of the affected environment. Of particular concern are impacts that would narrow the range of beneficial uses of the environment. This refers to the possibility that choosing one alternative reduces future flexibility in pursuing other options, or that transforming land or other resources to a certain land use often eliminates the possibility of other uses being performed at that site.

Implementation of the Proposed Action would not result in any such environmental impacts because it would not pose long-term risks to health, safety, or the general welfare of the communities surrounding the project site that would significantly narrow the range of future beneficial uses. In addition, biological productivity would not be affected, as implementation of the Proposed Action would not result in significant direct, indirect, or cumulative impacts to any biological resources.

5.5 Any Probable Adverse Environmental Effects that Cannot be Avoided and are not Amenable to Mitigation

This SEA has determined that the Proposed Action would not result in any significant unmitigable impacts; therefore, there are no probable adverse environmental effects that cannot be avoided or are not amenable to mitigation.

6.0 Persons and Agencies Contacted or Consulted

United States Government

California Office of Historic Preservation

Tristan Tozer, State Historian

California Coastal Commission

Larry Simon, Federal Consistency Coordinator

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7.0 List of Preparers

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