DRAFT
ENVIRONMENTAL ASSESSMENT FOR WILDFIRE MANAGEMENT ACTIONS AT MISSION GORGE RECREATION FACILITY; MURPHY CANYON VERNAL POOL PRESERVE; AND CHOLLAS HEIGHTS, EUCALYPTUS RIDGE, AND HOWARD GILMORE TERRACE NATURAL AREAS ON NAVAL BASE SAN DIEGO, CALIFORNIA

Prepared for:

Department of the Navy
Navy Region Southwest

April 2016

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ACRONYMS AND ABBREVIATIONS

BAER	Burned Area Emergency Rehabilitation
Basin Plan	Water Quality Control Plan for the San Diego Basin
BMP	best management practice
BO	Biological Opinion
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CDFG	California Department of Fish and Game
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
C.F.R.	Code of Federal Regulations
CHNA	Chollas Heights Natural Area
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRSW	Commander Navy Region Southwest
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
DoD	U.S. Department of Defense
DODINST	U.S. Department of Defense Instruction
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EIS	Environmental Impact Statement
ERNA	Eucalyptus Ridge Natural Area
FEMA	Federal Emergency Management Agency
FFD	Federal Fire Department
FMP	Fire Management Plan
FONSI	Finding of No Significant Impact
HCP	Habitat Conservation Plan
HGTNA	Howard Gilmore Terrace Natural Area
HU	Hydrologic Unit
I-15	Interstate 15
INRMP	Integrated Natural Resources Management Plan
MCVPP	Murphy Canyon Vernal Pool Preserve
MGRF	Mission Gorge Recreation Facility
mph	miles per hour

MSCP	Multiple Species Conservation Program
NAVFAC	Naval Facilities Engineering Command
Navy	U.S. Department of the Navy
NBSD	Naval Base San Diego
NCCP	California Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
OPNAVINST	Naval Operations Instruction
PPV	public/private venture
PA	Programmatic Agreement
RECON	Regional Environmental Consultants
ROI	Region of Influence
RONA	Record of Non-Applicability
PRBO	Point Reyes Bird Observatory
RWQCB	Regional Water Quality Control Board
SDFH	San Diego Family Housing
SDG&E	San Diego Gas & Electric
SWRCB	State Water Resources Control Board
TDI	Tierra Data Inc.
U.S.	United States
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USDI	U.S. Department of the Interior
USDON SWDIV	U.S. Department of the Navy, Southwest Division
USFWS	U.S. Fish and Wildlife Service
WUI	wildland-urban interface

EXECUTIVE SUMMARY

The United States Department of the Navy has prepared this Environmental Assessment (EA) to evaluate the potential environmental effects of implementing fire management actions to help reduce and prevent wildfires on five properties located on Naval Base San Diego (NBSD) in San Diego County, California. These properties are the Mission Gorge Recreation Facility, the Murphy Canyon Vernal Pool Preserve, the Chollas Heights Natural Area, the Eucalyptus Ridge Natural Area, and the Howard Gilmore Terrace Natural Area.

This EA was prepared in compliance with the National Environmental Policy Act (NEPA), which is found at 42 U.S. Code §§ 4321–4370h. The Regulations for Implementing NEPA, which are promulgated by the President's Council on Environmental Quality, are found at 40 Code of Federal Regulations (C.F.R.) §§ 1500–1508. The Navy's Procedures for Implementing NEPA are found at 32 C.F.R. § 775.

The purpose of the Proposed Action is to implement projects to reduce fuel load, restore habitat, and prevent erosion, and is needed to sustain mission functions at NBSD to meet ongoing Navy requirements. Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military assets that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities will improve fire resistance and survivability of buildings, utilities, and other infrastructure. Additionally, post-fire suppression rehabilitation efforts will ensure natural resource recovery and prevent high-value natural resources from being lost.

Given the guidance provided in Naval Operations Instruction 5090.1D, a lack of controversy surrounding potential impacts of the Proposed Action, and the fact that environmental impacts from the Proposed Action are anticipated to be minor, only the Proposed Action was identified (along with the No Action Alternative) as an alternative for analysis within this EA.

This EA evaluates the potential temporary, permanent, direct, indirect, and cumulative impacts to the following resource areas: topography, geology, and soils; water quality and hydrology; biological resources; and public health and safety.

A summary of environmental consequences with implementation of the Proposed Action and the No Action Alternative is presented in Table ES-1. With the incorporation of conservation measures discussed in this EA, implementation of the Proposed Action would not result in significant impacts to topography, geology, and soils; water quality and hydrology; biological resources; and public health and safety.

1
2 **Table ES-1**
3 **Summary of Effects**

Resource	Proposed Action Proposed Action	No Action Alternative
3.1 Topography, Geology, and Soils	Impacts: No significant adverse impacts to topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils would be offered through rehabilitation actions. Impact Avoidance and Minimization Measures: None.	Impacts: No effects on topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils that would result from the implementation of the Proposed Action would not occur. Impact Avoidance and Minimization Measures: None.
3.2 Water Quality and Hydrology	Impacts: No significant hydrology or water quality impacts would occur. Potential beneficial post-fire suppression impacts to receiving waters would be offered through rehabilitation actions. Impact Avoidance and Minimization Measures: • Comply with OPNAVINST 5090.1D during fire management and post-fire suppression rehabilitation activities, with specific attention to the following: o Implement sediment and erosion control measures as specified in the Integrated Natural Resources Management Plan to reduce the amount of soil disturbance, minimize erosion and sediment transport into receiving waters, and avoid pollutants in site runoff. o Prior to herbicide application, assessing soil types, weather conditions, location of surface water, depth to groundwater, and the site's sensitivity to trampling from herbicide application must be considered. Use of the RAVE system to determine the potential for ground water contamination.	Impacts: No effects on hydrology and water quality. Impact Avoidance and Minimization Measures: None.
3.3 Biological Resources	Impacts: No significant impacts to biological resources. Small amounts of coastal sage scrub habitat in linear and disjointed locations may be affected due to vegetation treatment and thinning. Impact Avoidance and Minimization Measures: • Where revegetation efforts are required, the revegetation plant palette would be approved by NBSD Natural Resources Manager. It would consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting habitat for federally listed plants and animals and blending with adjacent native vegetation communities. • All vegetation treatments during bird breeding season (15 February–15	Impacts: No effects on biological resources. Potential beneficial impacts to habitat resulting from implementation of post-fire suppression rehabilitation components of the Proposed Action would not be realized. Impact Avoidance and Minimization Measures: None.

Resource	Proposed Action Proposed Action	No Action Alternative
	September) would utilize nest clearance surveys to comply with the Migratory Bird Treaty Act. • Native vegetation (fuel) treatments would not occur in riparian areas. • Where necessary to stabilize the soil and prevent erosion, grass and other vegetation would not need to be removed; other measures would be considered to reduce fuel continuity (e.g., trimming and/or creating islands of vegetation). • Prior to herbicide application, assessing the target species, seasonal timing of the application, the presence of desirable species and communities. Use of the RAVE system to determine the potential for ground water contamination.	
3.4 Public Health and Safety	Impacts: No significant adverse impacts to public health and safety. Potential beneficial fire management and post-fire suppression rehabilitation impacts to public health and safety would be offered through the potential for decreased wildfire risk and intensity. Impact Avoidance and Minimization Measures: • Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and Department of Defense regulations. • Herbicides, insecticides, and pesticides would not be sprayed when there are wind velocities above 5 miles per hour or in foggy or rainy conditions. • Herbicides would be applied by licensed/certified pesticide applicators and all herbicide would be reported monthly on the Naval Facilities Engineering Command Online Herbicide Reporting System.	Impacts: No effects on public health and safety. Impact Avoidance and Minimization Measures: None.

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CHAPTER 1.0
PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

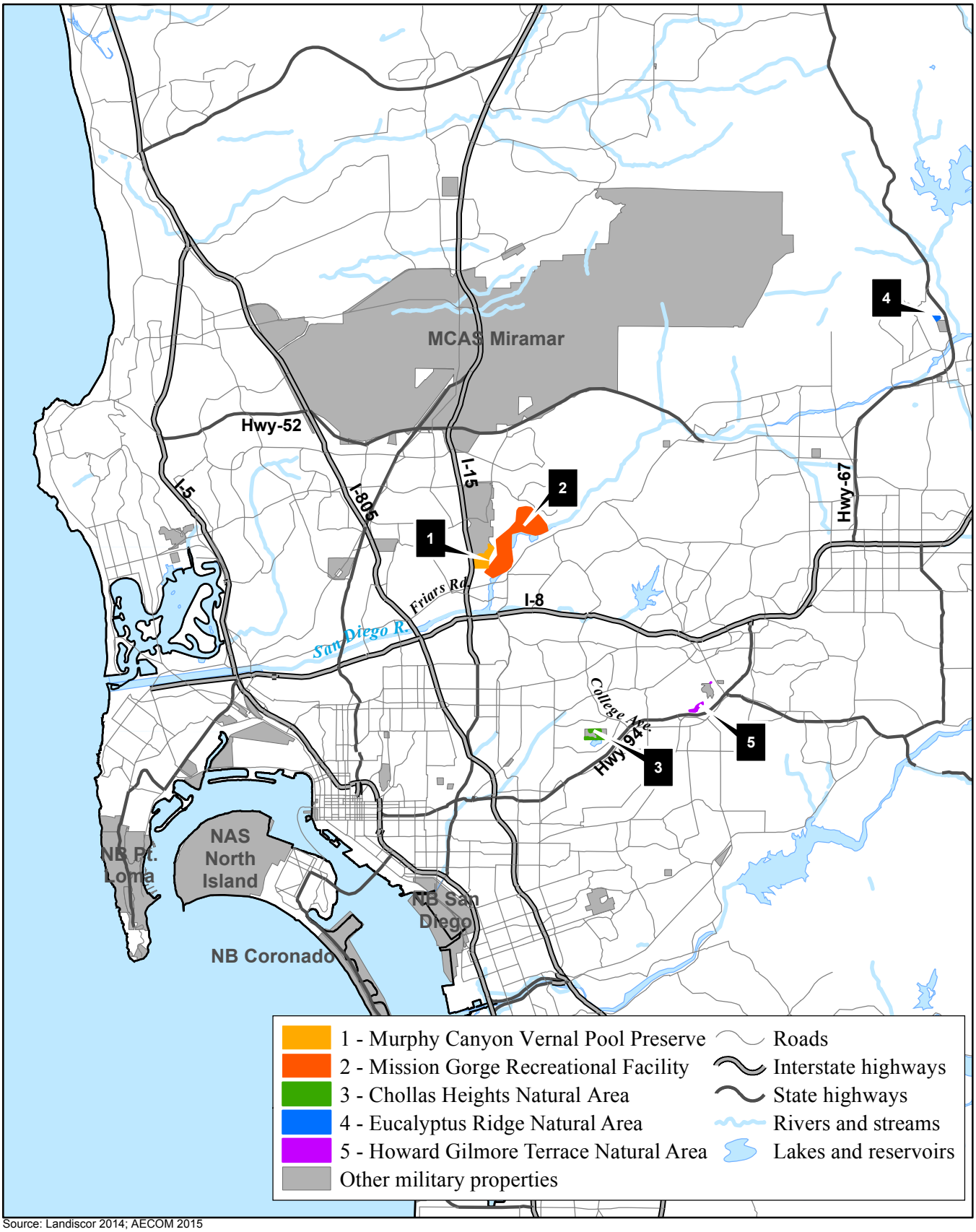
The United States (U.S.) Department of the Navy (Navy) has prepared this Environmental Assessment (EA) to evaluate the potential environmental effects of implementing fire management actions to help reduce and prevent wildfires on five properties located on Naval Base San Diego (NBSD) in San Diego County, California. These include the Mission Gorge Recreation Facility (MGRF), the Murphy Canyon Vernal Pool Preserve (MCVPP), the Chollas Heights Natural Area (CHNA), the Eucalyptus Ridge Natural Area (ERNA), and the Howard Gilmore Terrace Natural Area (HGTNA) (Figure 1-1).

This EA was prepared in compliance with the National Environmental Policy Act (NEPA), which is found at 42 U.S. Code (U.S.C.) §§ 4321–4370h. The regulations for implementing NEPA, which are promulgated by the President's Council on Environmental Quality (CEQ), are found at 40 Code of Federal Regulations (C.F.R.) §§ 1500–1508. The Navy's procedures for implementing NEPA are found at 32 C.F.R. § 775.

1.2 BACKGROUND

According to the *Naval Base San Diego Fire Management Plan for Mission Gorge Recreation Facility; Murphy Canyon Vernal Pool Preserve; and the Chollas Heights, Eucalyptus Ridge, and Howard Gilmore Terrace Natural Areas* (hereafter referred to as the "FMP"), currently in preparation (U.S. Navy n.d.), there are no readily available on-site fire history data for the Navy's natural areas. None of San Diego County's large wildfires of 2003 and 2007 burned through MGRF, MCVPP, CHNA, ERNA, or HGTNA (Figure 1-2). The general perimeter fire map of the 2003 Cedar Fire indicates that ERNA was near or within the boundary. However, a more detailed fire map from the California Department of Forestry, Fire Incident Command Team 5 (California Department of Forestry 2003) indicates that the fire did not pass through the property.

There have, however, been a number of small wildfires that have been quickly suppressed by the City of San Diego Fire–Rescue Department on MGRF and MCVPP. At least one of the most recent fires started within the California Department of Transportation (Caltrans) right-of-way adjacent to the MCVPP property and several others have started outside of the Navy property along roads and burned into the Navy's MGRF and MCVPP properties. These fires occurred



Source: Landiscor 2014; AECOM 2015

5 2.5 0 5 Miles

Scale: 1:200,000

Figure 1-1
Project Vicinity

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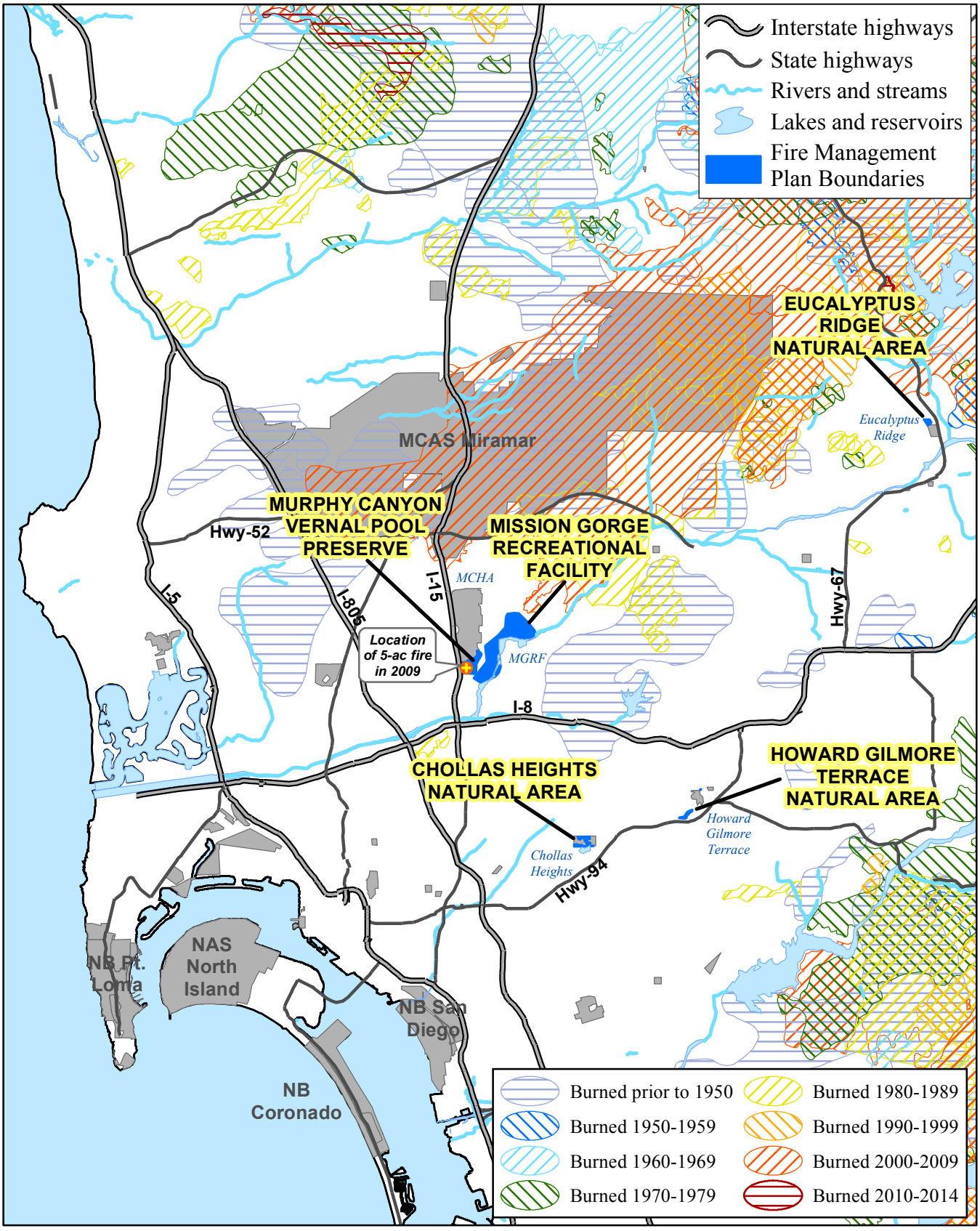

Figure 1-2
Area Fire History

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig1-2_Fire_History.mxd, 12/17/2015, augellop

when the City of San Diego Fire–Rescue Departments firefighting resources, including water-dropping helicopters, were immediately available and burning conditions were not extreme (U.S. Navy n.d.).

There has been a history of wildfires burning on MGRF and MCVPP. In the fall of 2005, a wildfire burned near the southeast edge of MGRF and threatened several nearby structures. A vehicle going northbound on Interstate 15 (I-15) caught fire and pulled over just south of the intersection with Aero Drive in the fall of 2007. The resulting wildfire swept rapidly upslope, threatening structures in MCVPP. Quick action by the City of San Diego Fire–Rescue Department and City Copter 1 physically prevented the loss of any structures. More recently, two fires occurred at MCVPP in 2009. One burned from the I-15 freeway very similar to the 2007 fire (15 June 2009). A second burned in the preserve area under the San Diego Gas & Electric (SDG&E) power lines (23–24 May 2009). These wildfires were not burning while other wildfires were burning and when firefighting resources were unavailable. All of these wildfires were attacked quickly and rapidly contained (U.S. Navy n.d.).

The City of San Diego Fire–Rescue Department Watch Commander and the Communications Center Director indicated that a number of fire and medical emergency responses are made to MGRF, MCVPP, and CHNA each year. Wildland fire hazard is often high due to the extended dry periods that occur throughout southern California and the ongoing influences of human activities, which can serve as ignition sources for the available fuel. Fires can spread during any part of the year; however, fire season (periods of elevated fire hazard) usually extends from May through at least November or December, or even into January or February of the following calendar year, depending upon fuel moisture levels. The California Department of Forestry and Fire Protection (CAL FIRE) and the City of San Diego have designated much of the area as a Very High Fire Hazard Severity Zone (U.S. Navy n.d.).

Although the five areas have not experienced fire in recent years, the Navy has identified actions that could be taken to further protect resources and mission capabilities. These specific actions are identified in Chapter 2.

1.3 PROPOSED ACTION LOCATIONS

The wildfire management actions addressed in this EA would apply to five properties: MGRF, MCVPP, CHNA, ERNA, and HGTNA (Figure 1-3 and Figure 1-4). All five properties are located in the metropolitan San Diego area and lie within areas designated as wildland-urban interface (WUI) zones by CAL FIRE for fire management purposes.

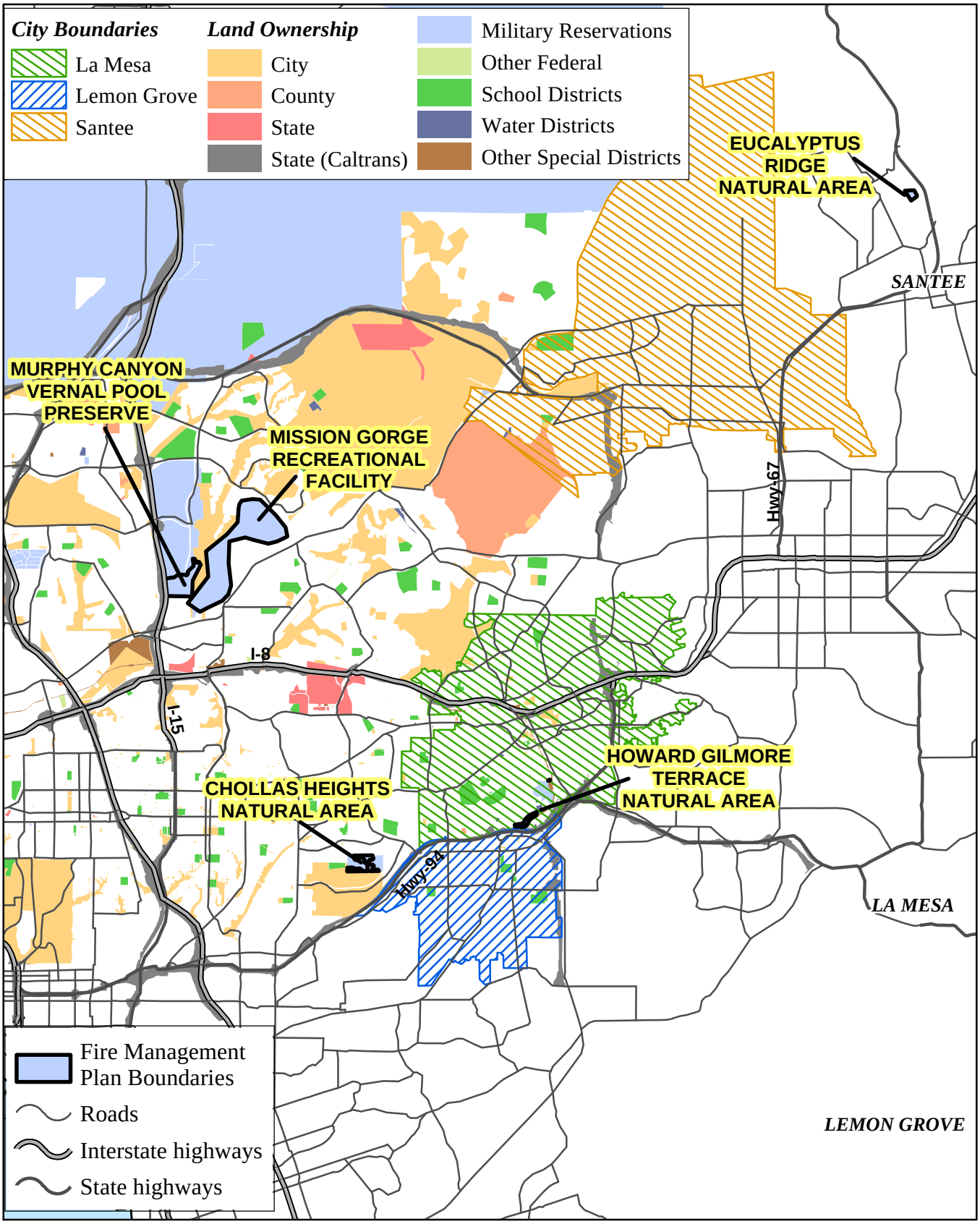

Figure 1-3
Land Ownership and City Boundaries

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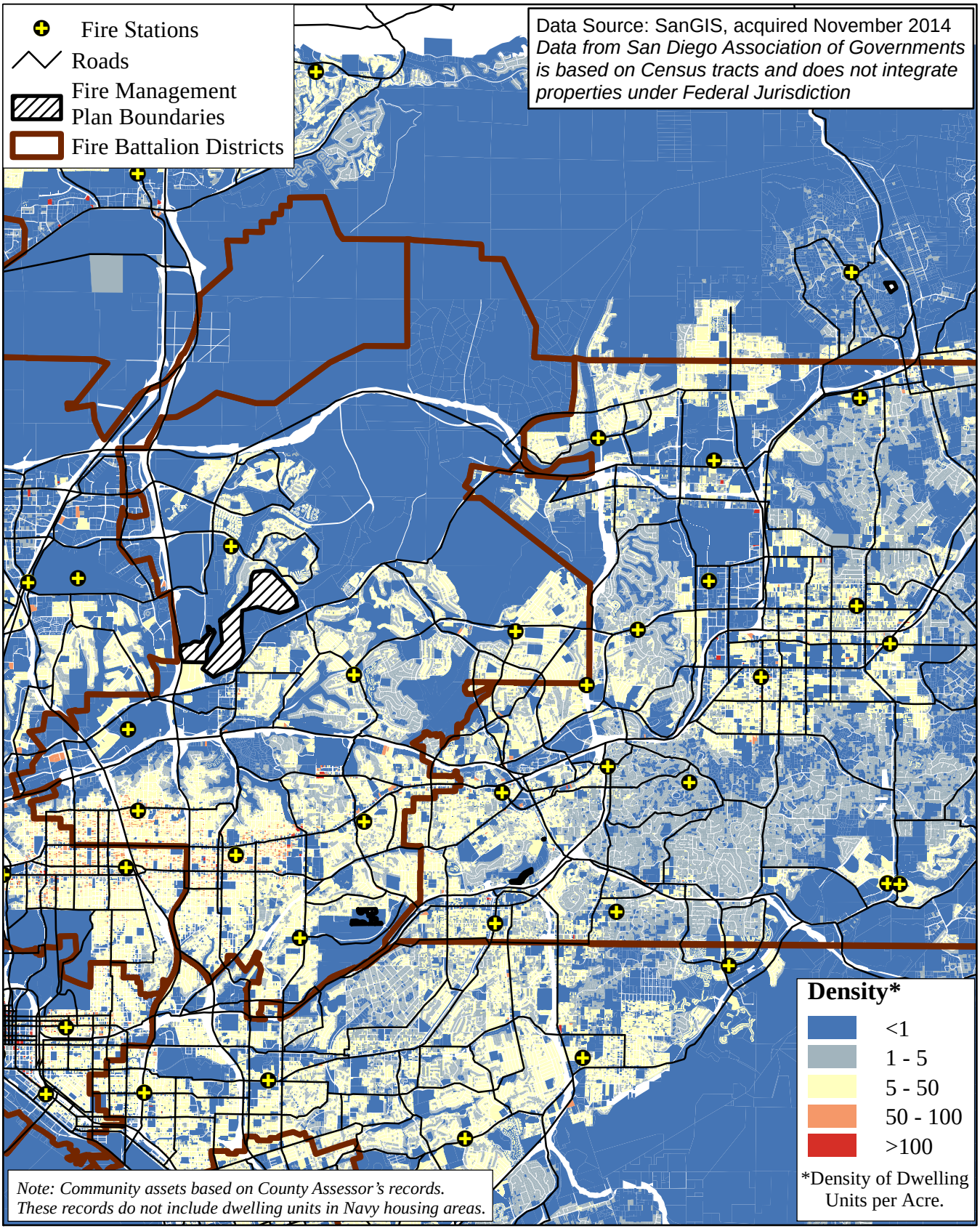

Figure 1-4
Community Assets at Risk Based on Density of Structures

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With the exception of MGRF, each of the areas that would be subject to these wildfire management actions is adjacent to public/private venture (PPV) military housing developments on lands leased from the federal government. Fire management on these leased lands is the responsibility of the PPV lessees, not the Navy; as such, these leased lands are not subject to controls analyzed in this EA. Similarly, the PPV lessees are not responsible for fire management on adjacent Navy nonleased lands, with one exception (in the Murphy Canyon area) as discussed in Section 2.2.2.2. Table 1-1 includes the approximate number of acres of Navy lands that are subject to the FMP and analyzed in this EA, as well as those lands under PPV leases or that are otherwise not subject to the FMP (and not analyzed in this EA) for each of the sites. In the following Proposed Action location discussions, descriptions of adjacent PPV developments are provided for orientation and to establish the context of the Proposed Action in relation to those federally owned lands under PPV lessee control.

Table 1-1
Approximate Areas of Land Analyzed in this Environmental Assessment (acres)

Site Name	Analyzed in this EA	Not Analyzed in this EA		Total Navy-Owned Lands (acres)
	Natural Areas Subject to the FMP (acres)	PPV Lease Lands Not Subject to FMP (acres)	Other Lands Not Subject to FMP (acres)	
Murphy Canyon	86	607	38	731
Mission Gorge Recreational Facility	442	0	0	442
Chollas Heights	23	50	0	73
Eucalyptus Ridge	10	32	0	41
Howard Gilmore Terrace	12	39	0	50
Total	573	728	38	1,339

EA = Environmental Assessment; FMP = Fire Management Plan

1.3.1 Existing Land Use at Mission Gorge Recreation Facility

MGRF is located north of the community of Allied Gardens within the City of San Diego along the San Diego River (Figure 1-5). The facility is located east of I-15, north of Friars Road, west of Mission Gorge Road, and south of Marine Corps Air Station Miramar. MGRF is a multifaceted recreational facility for military personnel consisting of the 36-hole Admiral Baker Golf Course, a driving range, picnic and camping areas, and various other support facilities (e.g., tennis and volleyball courts, baseball fields, and a recreational vehicle camping area) geared toward recreation and well-being of military personnel and their dependents. Access to the Admiral Baker Golf Course and clubhouse facilities is off Friars Road and then 0.2 mile on Santo Road, which is a no-outlet road, to Admiral Baker Road. Privately owned single-family homes also border the golf course. Several industrial and commercial buildings are located in the corridor to the west of I-15. The San Diego River courses through Admiral Baker Field. Portions of the river bottom area have been leased out by the City to sand and gravel operators, resulting

in ponds that border the east side of the golf course on the southern perimeter and provide waterfowl habitat. The Murphy Canyon Housing Area is approximately 1 mile north of MGRF.

MGRF is part of the City of San Diego's open space preserve system. All of the ridge tops to the north and east of MGRF have been developed and support privately owned single-family homes that are located within the community of Tierrasanta.

1.3.2 Murphy Canyon Vernal Pool Preserve

MCVPP (Figure 1-6) was established as partial mitigation for the loss of vernal pools and coastal sage scrub habitat that supported the coastal California gnatcatcher at the Murphy Canyon Housing Area site (as well as the Chollas Heights Housing Area site) under U.S. Fish and Wildlife Service (USFWS) Biological Opinion (BO) 1-6-94-F-23 (January 1995). The MCVPP property contains easements for Caltrans (along I-15) and for SDG&E. A 6-foot chain-link fence divides MCVPP property from the Caltrans right-of-way. SDG&E has an approved (1995) Habitat Conservation Plan (HCP) under California's Natural Communities Conservation Plan (NCCP) (hereafter "NCCP/HCP") through a separate agreement with state and federal wildlife agencies. Through the City's Multiple Species Conservation Program (MSCP), the conserved lands (in Murphy Canyon) are required to develop a habitat management and monitoring plan that includes area-specific directives for the land and those species listed as "covered" under take authorizations of the MSCP.

The Murphy Canyon Housing Area is located on PPV lease lands adjacent to MCVPP and overlooks the San Diego River drainage. The entire housing area sits on top of a ridge system surrounded by native vegetation on the east and south slopes, and by native vegetation and dense groves of eucalyptus on the west slopes above I-15. The Murphy Canyon Housing Area is the largest Navy family housing project in the San Diego region, consisting of 1,100 duplex and fourplex units and single-family homes that house 2,319 military families. A school is immediately adjacent to MCVPP on the north.

1.3.3 Chollas Heights Natural Area

Located north of State Route 94 and west of College Avenue in the southeast portion of San Diego (Figure 1-7), CHNA was established under USFWS BO 1-6-94-F-23 (January 1995). When constructed, the footprint of the adjacent 419 housing units in the Chollas Heights Housing Area on PPV lease lands impacted federally protected coastal sage scrub and vernal

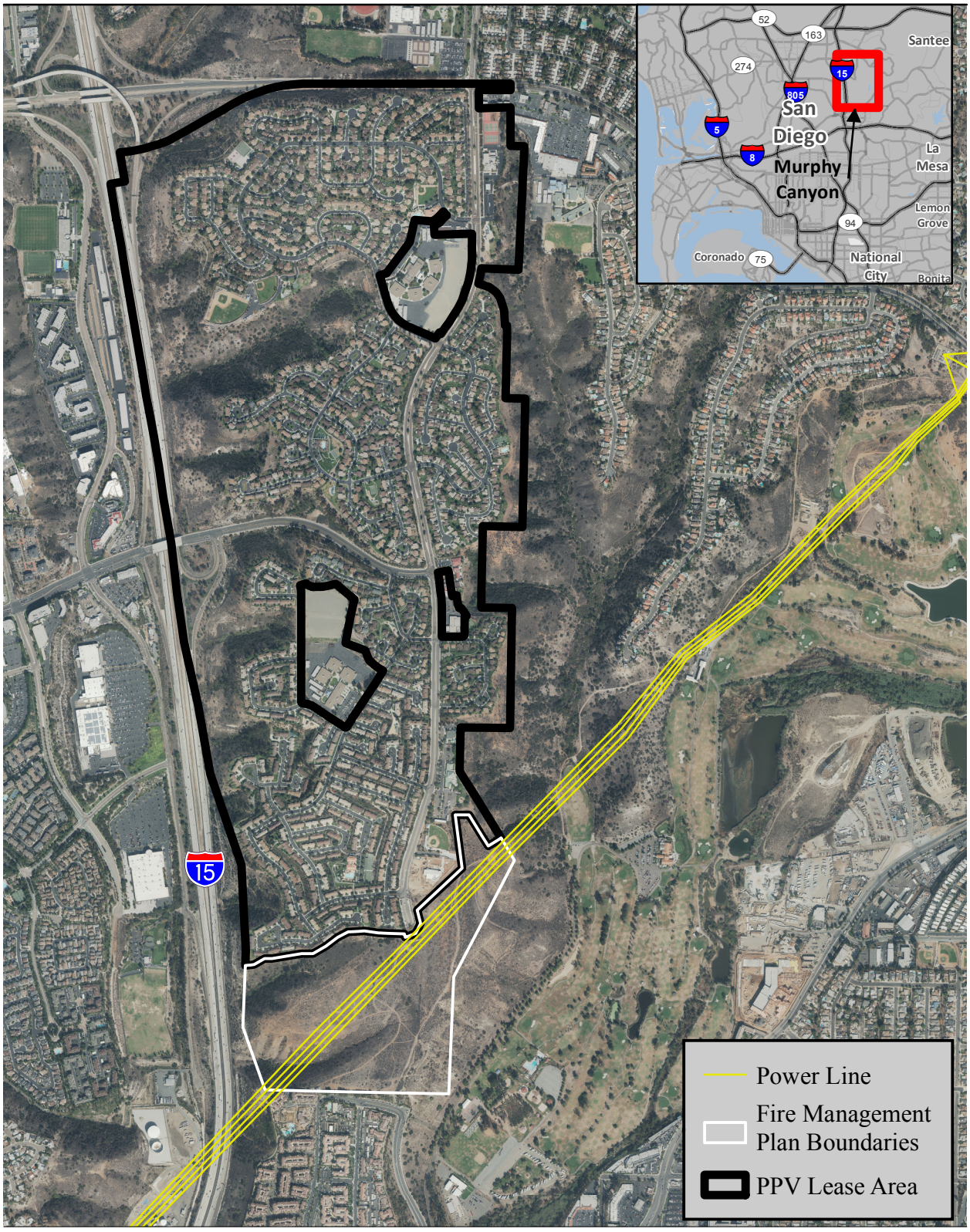
Source: SANDAG 2014

1,500 750 0 1,500 Feet

Scale: 1:18,000; 1 inch = 1,500 feet

Figure 1-5
Mission Gorge Recreational Facility
FMP Boundary

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig1-5_MGRF.mxd, 12/17/2015, paul_moreno



Source: SANDAG 2014

1,500 750 0 1,500 Feet

Scale: 1:18,000; 1 inch = 1,500 feet

Figure 1-6
Murphy Canyon Vernal Pool Preserve
FMP Boundaries and Adjacent PPV Lease Area

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Source: SANDAG 2014

400 0 400 Feet

Scale: 1:4,800; 1 inch = 400 feet

Figure 1-7
Chollas Heights Natural Area
FMP Boundaries and Adjacent PPV Lease Area

pool habitats. As mitigation, USFWS required that these displaced resources be compensated for by preserving additional habitat on MCVPP and CHNA. Twelve pools were restored on CHNA.

CHNA is surrounded by dense urban development on the west, north, and east sides, with the south side directly abutting the City of San Diego Chollas Community Park and Chollas Heights Reservoir facility. CHNA is approximately 3 miles east of HGTNA and 5 miles south of MGRF.

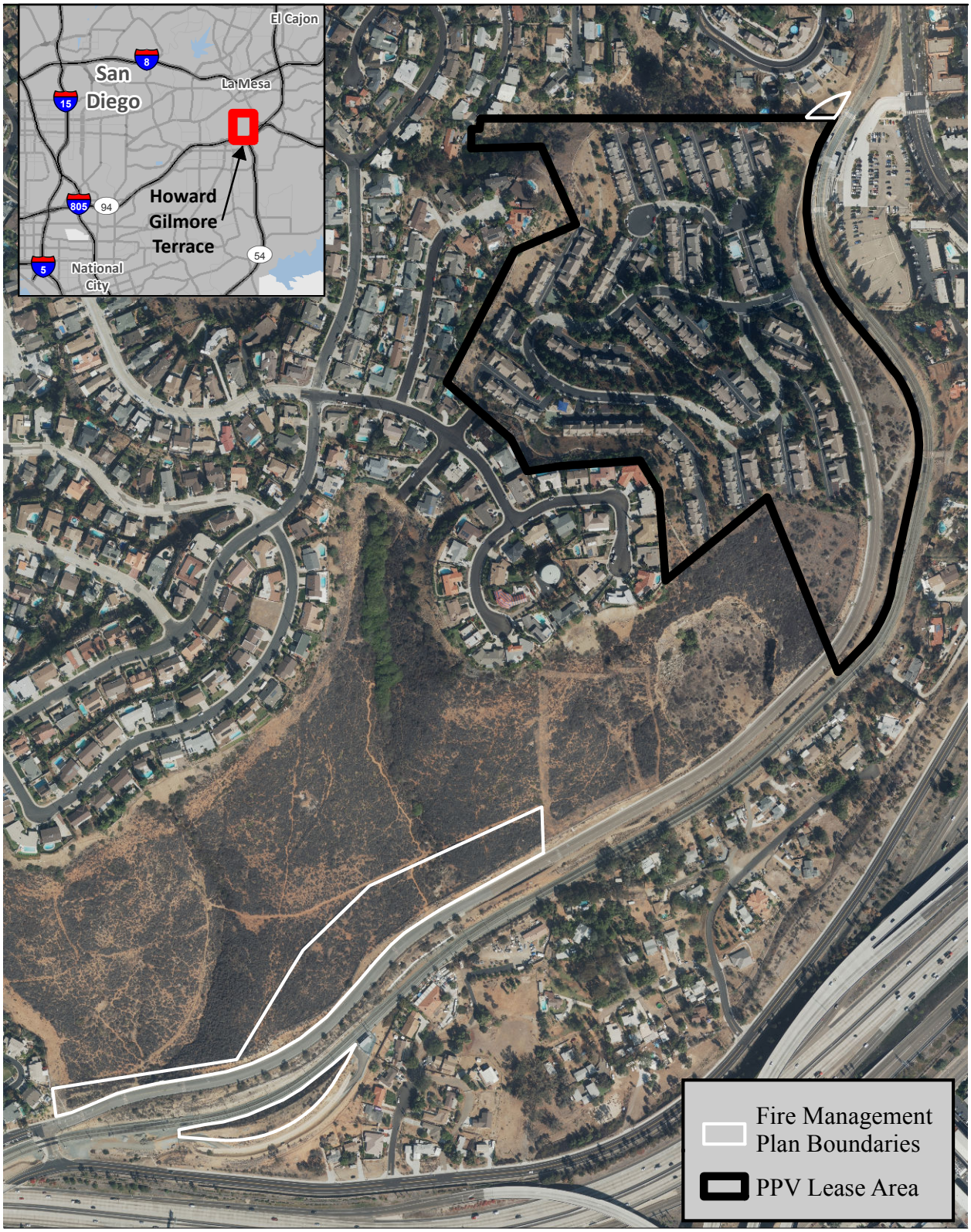
A historic Chollas Heights radio transmitter site is located on Transmitter Road. Chollas Lake Park is to the south/southwest of CHNA. Within the park are a City-owned reservoir built in 1901 that now serves as a recreational fishing lake; maintained open space with a ball field and trails; and eucalyptus trees on the perimeter immediately adjacent to CHNA. To the east of CHNA, single-family homes and a shopping mall are alongside State Route 94. A school is on the west boundary, and all other perimeter areas are single-family homes at moderate density.

1.3.4 Eucalyptus Ridge Natural Area

Located in the community of Lakeside approximately 22 miles east of San Diego, ERNA consists of open space adjacent to the Eucalyptus Ridge Housing Area (Figure 1-9). ERNA is the northernmost of the five properties analyzed in this EA, approximately 11 miles northeast of MGRF and MCVPP. ERNA is centered on a small knoll on the western edge of the neighborhood. Another area of open space is located on Navy lands in the same general vicinity, but it is within the southern boundary of San Diego Family Housing (SDFH) Ground Lease area of the PPV neighborhood homes and therefore is not analyzed in this EA. This southern open space area is subject to an easement that the Navy granted to SDG&E, prior to execution of the SDFH Ground Lease. SDG&E maintains this southern natural area in accordance with SDG&E's countywide NCCP, which is in place for all SDG&E sites in San Diego County. The Eucalyptus Ridge Housing Area contains 290 townhome-style units in multiplex, multistory buildings.

1.3.5 Howard Gilmore Terrace Natural Area

HGTNA, located in the City of La Mesa about 3 miles east of CHNA, contains open space along High Street approximately 1,000 feet to the southeast of the Howard Gilmore Terrace Housing Area (Figure 1-8). The vegetation communities documented within HGTNA include non-native vegetation, ornamental landscaping, and coastal sage scrub.



Source: SANDAG 2014

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 1-8
Howard Gilmore Terrace Natural Area
FMP Boundaries and Adjacent PPV Lease Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig1-6_HGT_WFMP_PPV_aerial.mxd, 2/25/2016, Paul_Moreno

Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 1-9
Eucalyptus Ridge Natural Area
FMP Boundaries and Adjacent PPV Lease Area

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The Howard Gilmore Terrace Housing Area, with 244 townhome-style units in multiplex, multistory buildings, is located on PPV lease land. The PPV lease land, which itself includes some open space in the southeast corner of the development, is bounded by single-family residential properties to the north, west, and east.

1.4 PURPOSE AND NEED OF THE PROPOSED ACTION

The purpose of the Proposed Action is to implement projects to reduce fuel load, restore habitat, and prevent erosion, in order to sustain mission functions at NBSD to meet ongoing Navy requirements. Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military assets that would result from a large fire. Fuel treatment to protect occupied structures and high-value facilities will improve fire resistance and survivability of buildings, utilities, and other infrastructure. Additionally, post-fire suppression rehabilitation efforts will ensure post-fire natural resource recovery and prevent high-value natural resources from being lost.

1.5 DECISION TO BE MADE

The decision to be made as a result of the analysis in this EA is to decide whether preparation of an environmental impact statement (EIS) is needed. An EIS would need to be prepared if it is determined that implementation of the Proposed Action would have significant impacts to the human or natural environment. Should an EIS be deemed unnecessary based on the analysis of environmental impacts for the Proposed Action selected, the decision would be documented in a Finding of No Significant Impact (FONSI).

1.6 SCOPE OF ANALYSIS

In compliance with NEPA, CEQ regulations, and Navy procedures for implementing NEPA, the analysis of environmental consequences focuses only on those resources potentially subject to impacts. In addition, the level of analysis is commensurate with the anticipated level of impact. The range of issues analyzed in this EA was determined from initial Navy evaluation of the Proposed Action. Accordingly, the discussion of the affected environment and associated environmental consequences focuses on topography, geology, and soils (Section 3.1); water quality and hydrology (Section 3.2); biological resources (Section 3.3); and public health and safety (Section 3.4).

Conversely, several resource areas were not carried forward for detailed analysis in this EA because potential impacts were determined nonexistent or negligible. These include air quality and greenhouse gases; coastal resources and uses; cultural resources; utilities and infrastructure;

public services; socioeconomic resources and environmental justice; traffic and transportation systems; land use; and visual quality/aesthetics. These resources are briefly summarized in Table 1-2 and are then not addressed further in this EA.

Table 1-2
Resource Areas Minimally or Not Impacted (and not carried forward for detailed analysis)

Resource Area	Reason Minimally or Not Impacted
Air Quality/ Greenhouse Gases	Only short-term, ephemeral effects on air quality would occur from equipment operation associated with routine vegetation management/fuel treatment activities, post-fire suppression rehabilitation activities, and from vehicles used for travel to and from the Proposed Action sites. Machinery and vehicles used and the amount of emissions produced while performing activities would vary by the activity. No prescribed burning is included in the Proposed Action. The net effect of post-fire suppression rehabilitation work in the long-term would be an improvement in air quality through erosion control by native vegetation. A Record of Non-Applicability (RONA) was signed on March 8, 2016stating that the Navy determined that the potential actions and management practices outlined in this EA are exempt from conformity requirements of the Clean Air Act since these activities would result in no emission increase or an increase that is clearly de minimis (Appendix A). All air quality impacts to natural resources would be minor and not significant; therefore, air quality is not carried forward for detailed analysis.
Coastal Resources and Uses	The Proposed Action would not occur in the coastal zone. It is not anticipated that the Proposed Action would have any direct or indirect influence on the coastal resources and uses. The Proposed Action would not change coastal access or any existing coastal uses.
Cultural Resources	Compliance with Section 106 of the National Historic Preservation Act is accomplished through conformance with the 36 Code of Federal Regulations (C.F.R.) 800 process, and is the responsibility of Naval Base San Diego (NBSD). The potential for effects on historic properties from the implementation of the proposed fire management actions and any future and emergent implementation projects are to be considered on an individual basis as separate undertakings and require review by authorized NBSD cultural resource personnel, and in compliance with the installation's existing operating procedures for the environmental review process, as per the NBSD ICRMP (Pumphrey 2010) and the CNRSW Metro PA (U.S. Navy2003). Pursuant to 36 C.F.R. 800, such efforts include determining (1) the area of potential effects; (2) the identification of historic properties within the area of potential effects; and (3) the effect on historic properties within the area of potential effects. As identified in the NBSD ICRMP (Pumphrey 2010), two prehistoric sites (CA-SDI-12088 and CA-SDI-12089) are located within MGRF. Additionally, intact segments of the National Register of Historic Places-listed/California State Historic Landmark (No. 52)/City of San Diego Landmark – Old Mission dam and flume are located near the MGRF, and additional segments may still exist under the golf course. No historic built environment properties are located at this facility. There are no historic properties within CHNA. However, as discussed in the 1995 Memorandum of Agreement for adverse effects to demolition of the existing Naval Radio Transmitter Facility historic district, Building 1 (transmitter building) was maintained on-station and adaptively reused as a community center and museum. Maintenance of the building is in keeping with the Secretary of the Interior's Standards for Rehabilitating Historic Buildings. There are no known archaeological sites at this facility. The Proposed Action would decrease the risk of wildfires occurring and/or spreading and would decrease the intensity of fires that may still occur in areas where vegetation/fuel treatment components of the Proposed Action would be implemented, minimizing or avoiding potential wildfire-related impacts to cultural resources when compared to existing conditions. Conversely, a No Action would threaten cultural resources through an increased risk of wildfire occurrence and intensity. There is a potential for previously unknown archaeological resources to be encountered during post-fire suppression rehabilitation activities that are part of the Proposed Action; in such cases,

Resource Area	Reason Minimally or Not Impacted
	authorized NBSD cultural resources personnel would be consulted on site-appropriate actions that would comply with the NBSD ICRMP and CNRSW Metro PA.
Noise	The Proposed Action would result in a minor, temporary increase in noise during initial fuel modification activity. For human sensitive noise receptors, it is assumed that the short-duration, infrequent fuel modification activities nearest to adjacent residential areas would be comparable to typical non-federal landscape management activities on PPV lease lands or privately held lands that occur closer to the structures (e.g., shrub trimming and grass mowing). Otherwise, sensitive receptors on- and off-installation would not experience a change in ambient noise conditions as a result of the Proposed Action or No Action Alternative. Potential impacts of this noise increase on wildlife are covered in the analysis of biological resources.
Public Services	The Proposed Action and No Action Alternative would not impact public services. Public services (e.g., schools, police, solid waste management, and cable TV), are associated with the project footprint, but they would not be managed any differently and would not be impacted as a result of the Proposed Action or No Action Alternative on NBSD.
Socioeconomic Resources and Environmental Justice	The Proposed Action and No Action Alternative would not include projects that result in changes to socioeconomic conditions or disproportionately affect on- or off-installation minority populations or low-income populations. Therefore, no impact to socioeconomic resources or environmental justice issues would occur.
Traffic and Transportation Systems	No traffic issues or effects on transportation systems on or in the vicinity of NBSD would be anticipated from the implementation of the Proposed Action and No Action Alternative.
Utilities and Infrastructure	No modification of or impacts on utilities or infrastructure would occur as a result of the implementation of the Proposed Action or No Action Alternative on NBSD. Therefore, no impact would occur on utilities or infrastructure.
Land Use	The Proposed Action and No Action Alternative would not impact land use. No new land uses are proposed, nor are any changes to existing land uses.
Visual Quality/ Aesthetics	No adverse effects on visual resources or aesthetics would result from the implementation of the Proposed Action or No Action Alternative on NBSD. The visual character of the areas where fire management actions would occur would remain consistent with the visual character of adjacent areas.

1.7 INTERGOVERNMENTAL COORDINATION

This EA was prepared in accordance with applicable federal regulations, instructions, and public law. As part of the NEPA compliance process, coordination and consultation with appropriate government agencies will be initiated to obtain regulatory input and guidance related to the Proposed Action and alternatives. The purpose of this intergovernmental coordination is to ensure that all applicable laws, rules, regulations, and policies are complied with for the Proposed Action and alternatives. The Proposed Action may require specific regulatory decisions and approvals from federal and state agencies, as summarized in Table 1-3.

Table 1-3
Regulatory Coordination Status

Statutes	Agency/Organization	Coordination Status
Endangered Species Act (1973, as amended)	U.S. Fish and Wildlife Service (USFWS)	Due to a No Effects determination, consultation with the USFWS was not required. However, iterative drafts of the Wildland Fire Management Plan were sent to the USFWS on 16 June 2015 and 16 December 2015 for informational purposes; a site visit was also held with USFWS personnel on 29 September 2015. USFWS previously (January 1995) issued a Biological Opinion (BO 1-6-94-F-23), which established preserves at both MCVPP and CHNA.
National Historic Preservation Act of 1966, as amended (1994); Archaeological Resources Protection Act of 1979; National Register of Historic Places (1977); and Native American Graves Protection and Repatriation Act of 1990	California Historic Preservation Officer, Native American Tribes	The potential for effects on historic properties are to be considered on an individual basis as separate undertakings and require review by authorized NBSD cultural resource personnel in compliance with the installation's existing operating procedures for the environmental review process, as per the NBSD ICRMP (Pumphrey 2010) and the CNRSW Metro PA (DON 2003). Consultation and coordination with California State Historic Preservation Officer and the Tribes is expected to be completed in 2016.

1.8 PUBLIC AND AGENCY PARTICIPATION

NEPA requirements help ensure that environmental information is made available to the public during the decision-making process and before actions are taken. The premise of NEPA is that the quality of federal decisions will be enhanced if federal proponents of an action provide information to state and local governments and the public and involve them in the planning process. The public involvement process augments the Navy's opportunity to cooperate with and consider state and local views in implementing a federal proposal.

A Notice of Availability was published in the San Diego Union-Tribune newspaper on April 9, 2016, indicating that a draft EA had been prepared and was available for review through April 23, 2016 online at *www.cnic.navy.mil/NBSD_Fire_Management_EA* and at the San Diego Central Library in San Diego, California. Public comments will be considered in the preparation of a Final EA. Once the EA is finalized and provided to the Navy chain of command, a decision will be made to prepare a FONSI for the Proposed Action or to prepare an EIS. If the Proposed Action includes items that may have a significant environmental impact, additional NEPA

documentation in the form of an EIS would be prepared prior to implementing the Proposed Action. An additional Notice of Availability will be published after the decision document is signed.

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CHAPTER 2.0
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Alternatives to the Proposed Action must be considered in accordance with NEPA, CEQ Regulations for Implementing NEPA, and Department of Navy Procedures for Implementing NEPA. However, only those alternatives determined to be reasonable require detailed analysis.

2.1 REASONABLE ALTERNATIVE SCREENING FACTORS

To be considered reasonable, an alternative must be consistent with the purpose and need identified in Chapter 1 and meet the following alternative selection criteria:

(1) Prevent the spread of wildland fire onto Navy property and to adjacent properties.

(2) Ensure the perpetuation of native habitats and rare species.

(3) Minimize the total cost of fire pre-suppression, suppression, and resource losses on lands owned and managed by the U.S. Navy.

CEQ's regulations require that an EA include a brief discussion of alternatives to a Proposed Action that involves unresolved conflicts concerning alternative uses of available resources (40 C.F.R. § 1508.9(b)). EAs that address proposals where there is controversy surrounding potential impacts or where there is otherwise greater potential for significant environmental impacts from the Proposed Action may need to identify and analyze more alternatives than other EAs. Conversely, the smaller the impacts of the Proposed Action, the less need there is to consider alternatives. In other words, where a Proposed Action falls on the sliding scale will affect the alternatives analysis.

Per Office of the Chief of Naval Operations Instruction (OPNAVINST) 5090.1D (Section 10-3.15 [d]), all EA (except those prepared in support of implementing an Integrated Natural Resources Management Plan or INRMP) alternatives should, at a minimum, include the Proposed Action, no action, and at least one other reasonable action alternative. For actions associated with implementation of an INRMP, analysis of the Proposed Action and no action alternative is acceptable. The Navy has developed an INRMP, as required by Environmental Readiness Program Manual (OPNAVINST 5090.1D), to guide natural resources management. The wildfire actions covered in the EA are referenced in the INRMP.

Given the guidance provided in OPNAVINST 5090.1D, a lack of controversy surrounding potential impacts of the Proposed Action, and the fact that environmental impacts from the Proposed Action are anticipated to be minor, only the Proposed Action was identified (along with the No Action Alternative) as an alternative for analysis within this EA.

2.2 PROPOSED ACTION

The Proposed Action is to implement projects to help reduce and prevent wildfires aboard the five properties located on NBSD. The projects include reducing fuel load to manage fire risk as well as restoring habitat and preventing erosion as part of post-fire suppression rehabilitation efforts. Treatments to reduce wildland fuels are primarily needed to protect people and property, and to prevent loss of military assets that would result from a large fire. For example, fuel treatment to protect occupied structures and high-value facilities will improve fire resistance and survivability of buildings, utilities, and other infrastructure on MGRF. Additionally, post-fire suppression rehabilitation efforts would ensure post-natural resource recovery and prevent high-value natural resources from being lost. The Proposed Action consists of both general action items that would apply to all five subject properties and property-specific action items that apply to one or more of the properties, but fewer than all five properties.

2.2.1 General Action Items

General action items fall into three categories: research objectives that would lead to development and implementation of specific methods of managing habitat and fuel load; integrated pest management; and post-fire suppression rehabilitation of natural areas. Each is discussed below.

2.2.1.1 Research Objectives

Under the Proposed Action, research would be conducted to develop and implement methods that would simultaneously reduce fire risk, reduce invasive vegetation, enhance native habitat, and reduce long-term maintenance costs in all these areas. Implementation would include conducting on-the-ground restoration, enhancement, and landscaping with the developed techniques/designs. Research objectives and/or their outcomes may include:

- Siting appropriate native species that are resistant to fire versus site-appropriate species that contribute to the risk of wildfire;

- Determining the optimal amount of canopy thinning and/or trimming that would best protect against fire risk in the long term, given climate change, potential effects on soil moisture, and percent cover/canopy interactions with invasive vegetation;
- Identifying the most optimal and feasible level, type, and physical extent (e.g., out from buildings) of irrigation near buildings (but which minimize long-term maintenance costs and provide a truly functioning native landscape); and
- Determining optimal treatment methods for invasive vegetation to prevent flash fuels.

2.2.1.2 Integrated Pest Management Approach

An integrated pest management approach would be developed and used to control invasive species, both for fuel management actions and for post-fire suppression rehabilitation actions. Nonchemical methods would be considered and used if practical.

Herbicides may be used for fuel management if cost-efficient and environmentally safe. Herbicides currently used at the properties covered by the proposed fire management actions, listed in order from most to least regularly used, are:

- Roundup Pro Max®
- Roundup Custom™ (AquaMaster®)
- Garlon® 3A
- Garlon® 4
- Habitat®
- Telar®
- Milestone®
- Polaris®
- Fusilade® II
- Fusilade®

2.2.1.3 Post-Fire Suppression Rehabilitation of Natural Areas

Rehabilitation efforts would be undertaken for emergency stabilization. If requested, the U.S. Forest Service or Natural Resources Conservation Service would complete a Burned Area Emergency Rehabilitation (BAER) plan after a wildfire. The primary objectives of a BAER plan are to determine mitigation measures necessary to protect human life, property, and critical cultural and natural resources, and to mitigate the unacceptable effects of the fire on lands within and adjacent to the burned area.

Specifically, if prepared, the BAER plan would address emergency stabilization and rehabilitation of fire effects as a result of a wildland fire. BAER is the "first aid" plan offering immediate stabilization that often begins even before a fire is fully contained. BAER does not seek to replace what is damaged by fire, but seeks to reduce further damage due to the land being temporarily exposed in a fragile condition. In most cases, only a portion of the burned area is actually treated: severely burned areas; very steep slopes; places where water runoff would be excessive; and fragile slopes above homes, businesses, municipal water supplies, and other valuable facilities. Treatments are installed as soon as possible, generally before the next damaging storm. The spending authority granted for each BAER project covers only the most urgent treatments that cannot wait for normal funding processes. Special funds are authorized for these activities and costs vary with the severity of the fire season.

If a BAER plan is not requested, rehabilitation would be initiated by the NBSD Natural Resources Manager. In either case, reestablishment of plant cover after a fire is the most effective form of soil stabilization. Generally, nonnative seeding of burned areas is not recommended due to the unfavorable cost-versus-benefit ratio and concerns about nonnatives interfering with the establishment of the native plant species. However, several factors influence whether an area should be allowed to revegetate naturally or be artificially aided. Considerations include:

- Soil type and slope.
- Past history of the site and condition of the seedbank—is there sufficient seed in the soils or neighboring unburned sites to promote natural recovery or has the site been burned in such a way that the seedbank is depleted or dominated by invasive species?
- Recovery time available before the start of the rainy season around November. Many natives are slow growing.
- Need for control of invasive nonnative grasses.
- Regulatory concerns such as impacts to threatened or endangered species or wetlands.
- Other uses of the site.

Rehabilitation of sites affected by wildland fire management practices would be conducted so that there is no permanent loss of natural resources values. In general, erosion control measures would follow practices established in the NBSD INRMP, with activities under the Proposed Action potentially varying only in schedule and scale, based on the urgent need to take action to

preserve resources due to increased erosion vulnerability during post-fire suppression rehabilitation.

- Firelines and bladed areas disturbed by fire suppression activity following a fire by ripping compacted swales, installing water bars, broad rolling dips, mulching with native material, or other appropriate activity would be rehabilitated immediately.
- Areas with federally listed species would be avoided as much as possible and adverse effects minimized where avoidance is not possible.

Post-fire erosion control through seeding would not be conducted as a general practice, but only with proper justification in a written rehabilitation plan that contains success criteria. Seeding after fires is generally not considered effective for erosion control and can be detrimental to native plant community development.

- Any post-fire seeding, such as of firelines and areas of concentrated fire suppression activities, would occur only if necessary on a case-by-case basis, to stabilize the site.
- After a burn, a post-fire suppression weed eradication plan would be formulated to prevent major infestations and establishment of invasive weeds. Those species that may take off after fire, may pose opportunity for better control post-fire, or may pose other detrimental harm that can be effectively addressed in the post-fire period would be prioritized.

The need to revegetate would be evaluated based on the following considerations:

- Estimated desired vegetation cover and actual vegetation cover post-fire. Revegetation would be considered if cover remains less than 30 percent and then only after a period of recovery has occurred and it is clear that the site will not regenerate on its own.
- Revegetation would typically occur only after high-severity fires.
- Invasive plant condition. Revegetation would be considered if cover of weeds is 20 percent to 80 percent.
- Steepness of slope and proximity to drainages.
- Threat to rare and endangered species.

Other rehabilitation considerations would include:

- Formulating and implementing a small patch eradication program by spraying or other method for targeted invasive weeds.
- Carefully timing mowing or weed whipping (line trimming) as an alternative for large infestations.
- Mulching as necessary to hold soil and provide for the establishment of seed.
- Using only native plants for post-fire seeding.
- If there is a potential for cultural resources to have been impacted by fire-related activity, the affected area would be examined by a qualified archaeologist as soon as possible to determine if any impacts to cultural resources actually occurred and to avoid any inadvertent impacts during natural resource rehabilitation efforts.

2.2.2 Property-Specific Action Items

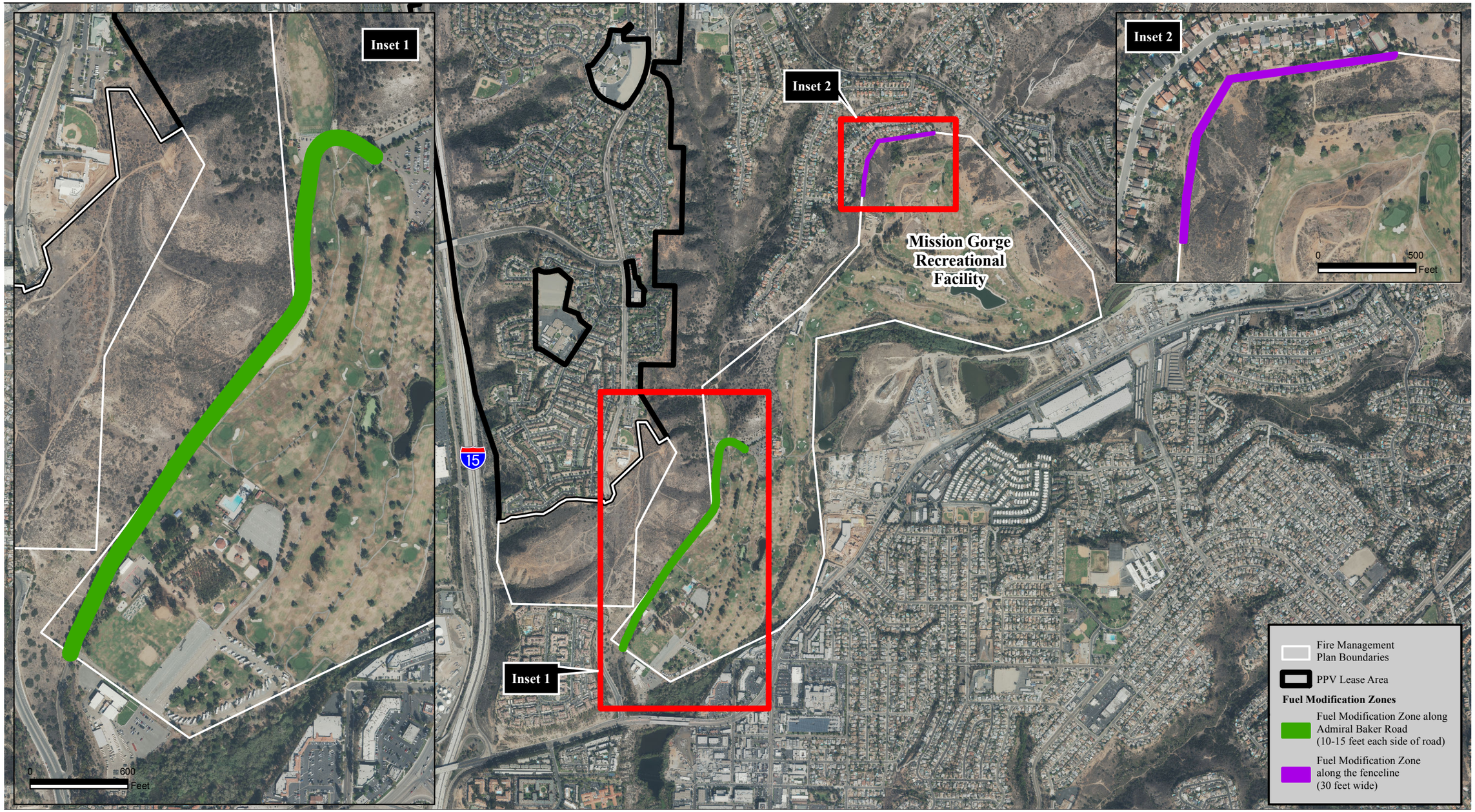
In addition to general action items, the Proposed Action also includes property-specific action items. Selected fuel modification zones for MGRF, the fire management zones for MCVPP, and the fire management zones for CHNA, discussed below, are shown in Figures 2-1, 2-2, and 2-3, respectively.

2.2.2.1 Mission Gorge Recreational Facility

MGRF-specific action items would include fuel modification for the site itself and access road fuel treatment. The establishment of generous and correctly developed, sustainable, low-fuel landscapes in the 100-foot fuel modification zone around structures at MGRF would reduce the possibility of ignitions from flame impingement and radiant heat. Among the five natural area properties subject to the proposed fire management actions and analyzed in this EA, MGRF is unique in its need for fuel modification related to on-site structures.

Fuel Modification Zone

The proposed fire management actions use defensible space principles to protect all facilities such that they would survive a wildfire without suppression assets. This requires maintenance of a 100-foot fuel modification zone, consisting of two subzones with different management practices, around all structures that cannot afford to be lost in a wildfire, consistent with California Public Resources Code 4291 (see CAL FIRE Clearance Code: General



Source: SANDAG 2014

1,500 750 0 1,500 Feet

Scale: 1:18,000; 1 inch = 1,500 feet

Figure 2-1
Fuel Modification Zones -
Mission Gorge Recreational Facility

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig4-2_MGRF_FuelMod.mxd, 2/25/2016, Paul_Moreno

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Murphy Canyon Vernal Pool Preserve
30-ft. Fire Management Zone (PPV Responsibility)*
Caltrans Right-of-Way
San Diego Fairy Shrimp - Critical Habitat
Data Source: SANDAG 2000

***Leased Land:** It is the LLC's responsibility to manage the natural areas within the leased property for the duration of the lease term. This responsibility includes the annual maintenance of 30- foot firebreaks from the PPV housing fence lines.

Within 30 Feet of the Fence Line in Navy-Retained Parcel: The lease requires the LLC to annually maintain 30-foot firebreaks starting from perimeter of the PPV housing fence lines. The LLC's responsibility to maintain these firebreaks does not depend on the boundaries of the leased parcel. Because a PPV fence line on the leased parcel abuts the southern (Navy-retained) parcel, the LLC must maintain a firebreak on Navy land. However, the Navy retains ultimate responsibility for natural resources on the southern parcel as well as the right to direct how the firebreak work is done.

Beyond 30 Feet from the Fence Line in the Navy-Retained Parcel: Defensible (firebreak) space and natural resource management on the southern parcel that is located beyond 30 feet from the PPV housing fence line lies solely within the Navy's purview. The LLC has no responsibility under the terms of the lease to maintain defensible space on the southern parcel beyond this point.

Source: bing

500 250 0 500 Feet

Figure 2-2
Fire Management Zones -
Murphy Canyon Vernal Pool Preserve

Source: bing

500 250 0 500 Feet

Figure 2-3
Fire Management Zones - Chollas Heights Natural Area

Guidelines for Creating Defensible Space, 08 February 2006). It is also consistent with City of San Diego fire protection regulations (City of San Diego Municipal Code Chapter 14, Article 2, Division 4, §§ 142.0402, 142.0403, 142.0412) and Brush Management Guide (2009)[1] referenced when developing the fuel modification zones. State, county, and city guidelines, with concurrence of the California Department of Fish and Wildlife (CDFW) by means of a Memorandum of Understanding (MOU), all provide for removal of hazardous fuels within the first 100 feet of structures. The fuel modification zone also includes 10–15 feet on each side of access roads within MGRF. The zone includes landscaping of all developed areas with fire-resistant plant materials (see FMP Appendix E [U.S. Navy n.d.]).

In March 2010, the California Native Plant Society (CNPS) adopted the Native Plants and Fire Safety Policy. The goal of the policy was to persuade legislators and regulators to approve "fire-safe practices that maximize conservation of native plants and native plant ecosystems, while protective of citizens, firefighters, and property" (CNPS 2010). The Scripps Ranch Fire Safety Council prepared a list of undesirable plants susceptible to burning, due to rough or peeling bark; production of large amounts of litter; vegetation that contains oils, resin, wax, or pitch; large amounts of dead material in the plant; or plantings with a high dead-to-live fuel ratio. These species, which include black sage, chamise, coastal sagebrush, and common or California buckwheat, are highly flammable and should be avoided when planting within the first 50 feet adjacent to a structure (Scripps Ranch Fire Safety Council 2006).

The California Public Resources Code Standards (2006) were adopted by the CNPS in its "Native Plants and Fire Safety Policy" (CNPS Chapter Council 13 March 2010). The City of San Diego Bulletin #1, Brush Management Guide indicates that the outer treatment area would need all dead wood removed and thinning by 50 percent. The fire management action guidelines found in the applicable fire management plan (U.S. Navy n.d.) are generally consistent with this except that the four most volatile species (black sage, chamise, coastal sagebrush, and California buckwheat) are recommended for removal from the 100-foot zone due to dangerous flammability; these four species would be removed from the 100-foot zone as a part of the Proposed Action. (A list of acceptable plants can be found in Appendix E of the FMP [U.S. Navy n.d.], and a list of prohibited plants in Appendix F of the FMP [U.S. Navy n.d.]. These lists serve as a resource for the current and future property managers.)

Hazard reduction around all buildings would be accomplished using hand tools such as pole saws, pruning shears, and line trimmers for pruning, cutting, and thinning out the surrounding vegetation. Cut vegetation would be clipped to 4-inch lengths and left on the site as mulch, not to exceed 4 inches in depth, or removed from the site.

[1] The 2009 Brush Management Guide (Bulletin #1) can be found online at http://www.sandiego.gov/fireandems/pdf/brushpdf.pdf.

In general, a 100-foot fuel modification zone has been designated around occupied and high-value structures, but would not extend into designated open space areas. Zone A comprises the first 30 feet out from the structures. Zone B extends from the edge of Zone A out to 100 feet as measured horizontally from all sides of each structure.

Requirements for both Zone A and Zone B are:

- Perform weed control annually to prevent the accumulation of thatch from invasive nonnative plants. Reduce continuous ground fuels by removing dead or dry biomass. NBSD Natural Resources Manager must confirm dead status, as many native shrubs would appear dead due to drought- deciduous nature of native plants.
- Vegetation "islands" can be created (i.e., irregularly grouped plants) by creating horizontal and vertical spacing between plants to interrupt continuous ground fuels. Leave the root structure intact. Do not completely remove all vegetation and leave the ground bare.
- Where revegetation efforts are required, the revegetation plant palette will be approved by NBSD Natural Resources Manager. It should consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting habitat for federally listed plants and animals and blending with adjacent native vegetation communities.
- All vegetation treatments during bird breeding season (15 February–15 September) must utilize nest clearance surveys to comply with the Migratory Bird Treaty Act.
- Native vegetation (fuel) treatments will not occur in riparian areas.
- Where necessary to stabilize the soil and prevent erosion, grass and other vegetation need not be removed; other measures can be considered to reduce fuel continuity (e.g., trimming and/or creating islands of vegetation).
- On a case-by-case basis, trim shrubs up and away from the ground to create space between shrubs and any nearby trees such that flames cannot spread as easily from one shrub or tree to the other.
- Perform year-round maintenance, inspection, and enforcement of all fuel modification zones (defense zones) and fuel treatments.

Zone A (0–30 feet) requirements are:

- Remove all dead wood from trees adjacent to or overhanging a building.

- To reduce the risk of a vertical fire ladder where continuous ground fuels are adjacent to the tree, remove limbs from bottom third of tree, up to a maximum of 6 feet above the ground. Remove all limbs within 10-foot radius of the chimney stack opening.
- Remove leaves, needles, or other dead vegetative growth from all roofs and gutters and under trees.
- Locate firewood, propane tanks, and combustible material a minimum of 30 feet from all structures.
- Construct any future structures (e.g., windbreaks, decks, and storage sheds) with noncombustible materials. Wood fencing should not be used.
- Use existing nonflammable paved parking/storage lots, patios, driveways, walkways, boulders, rock, and gravel to break up fuel continuity.

Zone B (30–100 feet) requirements are:

- If it is determined that 30 feet is not sufficient to provide reasonable protection, fuels can be thinned under the direction of NBSD Natural Resources Manager. If total percent vegetation canopy cover within 100 feet of buildings is >70 percent, trees and shrubs can be trimmed into islands (i.e., irregularly in a grouped fashion) such that total percent canopy cover of the area is reduced to 50–70 percent.
- The northeast side of facilities should be the highest priority because wildfire is more likely to be pushed by Santa Ana winds coming from the northeast.

Fuel modification zone treatments would apply only to MGRF lands under Navy management (and therefore subject to the proposed fire management actions). The Navy can and should, however, provide appropriate fuel modification along the property boundaries that abut privately owned structures consistent with vegetation modification standards that apply to land near developments. These measures, however, would not protect the adjacent single-family homes and condominium complexes unless the homeowners take similar actions to make their properties that abut the Navy property as ignition resistant as possible through fuel modification and structural modifications.

- While, as stated above, the Navy can break up the continuous fuel beds of native fuels that border the property line, the homeowners could also make important improvements. These improvements include enclosing wooden decks and removing highly combustible shrubs and trees within 100 feet of their structures.

- The clumps of invasive pampas grass should be removed and eliminated from the entirety of the MGRF property. If flowering, the plumes should be cut off and bagged to be disposed of and the plant sprayed with glyphosate (e.g., Roundup®) or Garlon®.

Access Road Fuel Treatment

Admiral Baker Road, the access road for MGRF, is paved with a minimum 10-foot shoulder from the intersection of Santo Road to the Admiral Baker Golf Course club house parking lot. The road would be posted with "No Parking at Any Time" signs on both sides of the access road, from the intersection with Santo Road to the club house parking lot. This is needed to provide unrestricted emergency access 24 hours a day, 7 days a week. The pine trees on both sides of this road would be limbed up a minimum of 10 feet from the ground and all ground fuels would be reduced to a 4-inch stubble height a minimum of 10 feet out from the drip line of each pine tree. Along the ground, the fuels would be trimmed down to a 4-inch stubble height. The road should also have 14 feet of vertical clearance above the road and should be able to support a 75,000-pound bearing weight. The roadside fuel modification zones on MGRF would be maintained as needed by the golf course maintenance crew.

2.2.2.2 Murphy Canyon Vernal Pool Preserve

Fuel Modification Zones

The PPV lessee is responsible for maintaining all developed areas in the Murphy Canyon Housing Area to Zone 1 and Zone 2 fuel modification standards, but is not subject to the proposed fire management actions themselves. The PPV lessee is not allowed to modify vegetation within the vernal pool preserve except for the southern boundary along the fence line. Roads within MCVPP are unpaved and are for emergency, utility, and natural resources access only.

The PPV lessee is responsible for maintenance of the structures and the first 30 feet of the yards as measured from the edge of each structure. State, County, and City Fire Codes require a minimum of 100 feet of fuel modification between the perimeter of the structure and undisturbed native vegetation (fuel).

According to the terms of the Management Plan executed concurrently with the San Diego Family Housing (SDFH) Ground Lease, it is the PPV lessee's responsibility to annually maintain 30-foot fuelbreaks from the housing fence lines along the southern boundary.

Uniquely among the properties subject the fire management actions included in this EA, if the 30-foot distance from the fence line extends beyond the PPV lessee's lease boundary onto Navy-retained land, it is still the PPV lessee's responsibility to treat the fuels irrespective of the lease boundary. The Navy has the right to direct how fuels are treated in these areas.

Beyond the housing fence lines, the PPV lessee does not have natural resource responsibilities under the terms of the business agreements between the PPV and the Department of the Navy, and fuel treatment lies within the purview of the Navy (exclusive of the exception noted immediately above).

A list of plants, shrubs, and trees that are prohibited in High Fire Hazard Severity Zones can be found in Appendix E of the FMP (U.S. Navy n.d.). This list would serve as a resource for the current and future property managers.

The privately owned homes that abut the Navy property fall under the jurisdiction of the City of San Diego Fire-Rescue Department. Some of the existing interior landscaping threatens the survivability of structures near MCVPP and removal has begun of some of the more hazardous eucalyptus and pine trees and other flammable vegetation. The landscaping and structural problems on these privately owned properties would be pointed out to the City of San Diego Fire – Rescue Department in the annual preparedness meetings.

Vernal Pool Management

This site contains critically important endangered and threatened species of plants and animals that inhabit vernal pools. Vernal pool habitats would be managed in order to maintain the endangered and threatened resources per BO FWS-SDG-08B0150-08I0145. Roads exist through MCVPP to facilitate utility access to transmission towers. These roads may impact vernal pool habitat if traversed during the wet season or if there was a proposal to treat habitat adjacent to the road beds. The general intent is that fires are prevented from occurring within the vernal pool site. Fires have been known to increase presence of weedy species to the detriment of the native and sensitive vernal pool species. The vernal pools that are more than 60 feet from structures in most cases would not pose a particular issue if excluded from vegetation management activities.

2.2.2.3 Chollas Heights Natural Area

Fuel Modification Zone

It may be necessary to maintain a 30-foot-wide strip of treated vegetation along the fenceline between CHNA and the housing area in order to prevent fires from entering or leaving the site.

The southern portion of the site contains dense stands of eucalyptus and coastal sage scrub habitat adjacent to the Chollas Reservoir as part of the park-like habitat there. College Grove Way provides a fuel break to prevent fires from the south from entering the property. Within the housing area, ornamental trees are also located close to the buildings and could serve as an intermediary ladder to carry fire into the site. Consideration should be given to reviewing the ornamental trees on the outer portions of the housing area to ensure that those posing a fire hazard are trimmed or removed.

Vernal Pool Management

This site also contains critically important vernal pool resources. The general intent is that fires are prevented from occurring within the vernal pool site. Properties adjacent to the site should maintain fuel clearing on their properties to prevent fires from their land entering CHNA and affecting the vernal pool area. However, as indicated above, it may also be necessary to maintain a 30-foot-wide strip of treated vegetation around the outer edge of CHNA to prevent fires from entering or leaving the site.

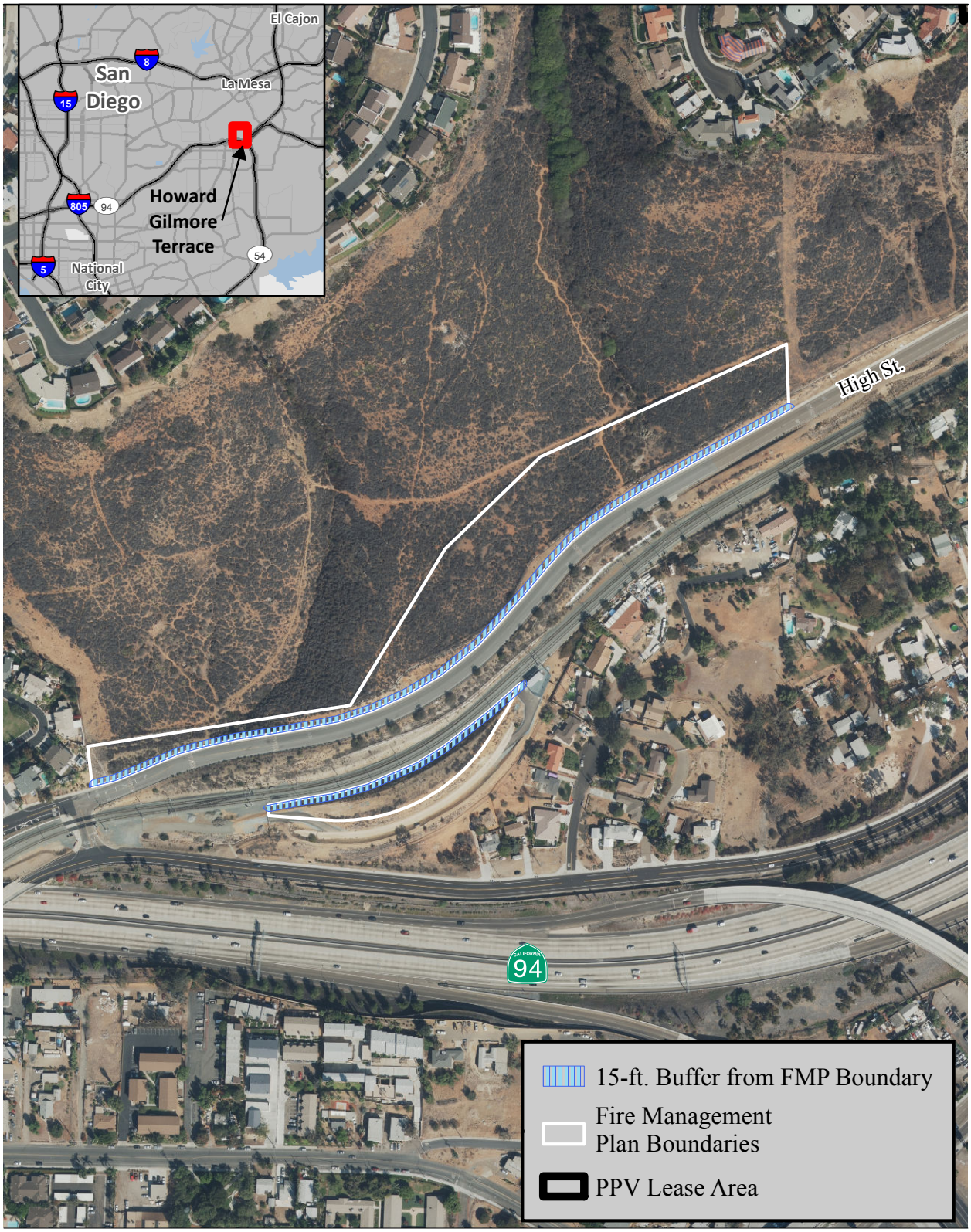
2.2.2.4 Eucalyptus Ridge Natural Area

Parking spaces, housing road, and ornamental landscaping are adjacent to the ERNA fenceline on three sides. Fuel modifications will include treating weeds and assessing the vegetation annually. In addition, the fenceline will be repaired where there has been illegal trespassing and more trespassing signs will be posted.

2.2.2.5 Howard Gilmore Terrace Natural Area

Access Road Fuel Treatment

HGTNA extends uphill from High Street toward a housing area. The vegetation adjacent to High Street should be treated 10–15 feet from the road to reduce the risk of a fire starting at the bottom of the hill and being carried up the slope to the housing there (Figure 2-4).



Source: SANDAG 2014

350 175 0 350 Feet

Scale: 1:4,200; 1 inch = 350 feet

Figure 2-4
Fuel Modification Zones -
Howard Gilmore Terrace Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig 4-5_HGT_Fuelmod.mxd, 2/25/2016, Paul_Moreno

2.3 NO ACTION ALTERNATIVE

Existing conditions would continue under the No Action Alternative. The Navy's Federal Fire Department (FFD) would continue to provide fire prevention and inspection services to MGRF. The FFD has no fire prevention responsibilities at any of the other four Navy properties (David Salerno, Training Division FFD Fire & Emergency Services, Navy Region Southwest, pers. comm.). The FFD's responsibility comes under the umbrella of a broad, national fire planning framework, with the current U.S. Department of Defense (DoD) Wildland Fire Policy (DoD Instruction [DODINST] 6055.6) mandating compliance with federal fire policy.

Firefighting and Medical Emergency services would continue to be provided by the City of San Diego Fire – Rescue Department under an Automatic Aid Agreement signed by the City of San Diego and the Commander, NBSD and approved by the San Diego City Council in September of 1991 (see Appendix D of the FMP [U.S. Navy n.d.])). All 9-1-1 calls for fire or medical emergency services are routed directly to the City of San Diego Fire – Rescue Department Emergency Operations Center. The FFD is notified each time the City of San Diego Fire – Rescue Department responds to an incident on any of these Navy properties. The FFD may follow up by sending out an investigator. The treatment direction for the necessary fuels reduction is provided for Navy property managers, the City of San Diego Fire–Rescue Department, and the FFD to use in making all proposed structures on both properties reasonably safe from future wildland wildfires.

Under the No Action Alternative, there would be no comprehensive fire management actions to address the overall wildland fire hazards and risks that may threaten life and property, as well as associated natural/cultural resources at the five relevant properties. Integrated short-term and long-term fuel modification actions required to minimize any projected fire hazards and risks would not occur, nor would integrated assignments of annual maintenance responsibilities for each of the required fuel modification actions. The No Action Alternative would not meet the purpose and need of the Proposed Action however, as required by NEPA, it is carried forward for analysis in this EA.

2.4 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSES

Per the discussion in Section 2.1, no reasonable alternatives to the Proposed Action were identified; thus, no other alternatives were carried forward for detailed analysis.

2.5 SUMMARY COMPARISON OF ALTERNATIVES

A summary comparison of the potential environmental impacts and impact avoidance and minimization measures for each of the alternatives is presented in Table 2-1.

Table 2-1
Summary of Effects

Resource	Proposed Action	No Action Alternative
3.1 Topography, Geology, and Soils	Impacts: No significant adverse impacts to topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils would be offered through rehabilitation actions. Impact Avoidance and Minimization Measures: None.	Impacts: No effects on topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils that would result from the implementation of the Proposed Action would not occur. Impact Avoidance and Minimization Measures: None.
3.2 Water Quality and Hydrology	Impacts: No significant hydrology or water quality impacts would occur. Potential beneficial post-fire suppression impacts to receiving waters would be offered through rehabilitation actions. Impact Avoidance and Minimization Measures: • Comply with Order 2009-0009-DWQ (Construction General Permit) during fire management and post-fire suppression rehabilitation activities, with specific attention to the following: o Implement sediment and erosion control measures as specified in the Integrated Natural Resources Management Plan to reduce the amount of soil disturbance, minimize erosion and sediment transport into receiving waters, and avoid pollutants in site runoff.	Impacts: No effects on hydrology and water quality. Impact Avoidance and Minimization Measures: None.
3.3 Biological Resources	Impacts: No significant impacts to biological resources. Small amounts of coastal sage scrub habitat in linear and disjointed locations may be affected due to vegetation treatment and thinning. Impact Avoidance and Minimization Measures: • Where revegetation efforts are required, the revegetation plant palette would be approved by NBSD Natural Resources Manager. It would consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting habitat for federally listed plants and animals and blending with adjacent native vegetation communities. • All vegetation treatments during bird breeding season (15 February–15 September) would utilize nest clearance surveys to comply with the Migratory Bird	Impacts: No effects on biological resources. Potential beneficial impacts to habitat resulting from implementation of post-fire suppression rehabilitation components of the Proposed Action would not be realized. Impact Avoidance and Minimization Measures: None.

Resource	Proposed Action	No Action Alternative
	Treaty Act. • Native vegetation (fuel) treatments would not occur in riparian areas. • Where necessary to stabilize the soil and prevent erosion, grass and other vegetation would not need to be removed; other measures would be considered to reduce fuel continuity (e.g., trimming and/or creating islands of vegetation).	
3.4 Public Health and Safety	Impacts: No significant adverse impacts to public health and safety. Potential beneficial fire management and post-fire suppression rehabilitation impacts to public health and safety would be offered through the potential for decreased wildfire risk and intensity. Impact Avoidance and Minimization Measures: • Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and Department of Defense regulations. • Herbicides, insecticides, and pesticides would not be sprayed when there are wind velocities above 5 miles per hour or in foggy or rainy conditions. • Herbicides would be applied by licensed/certified pesticide applicators and all herbicide would be reported monthly on the Naval Facilities Engineering Command Online Herbicide Reporting System.	Impacts: No effects on public health and safety. Impact Avoidance and Minimization Measures: None.

1

CHAPTER 3.0
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the conditions of the affected environment and environmental consequences for resources potentially affected by implementation of the Proposed Action and the No Action Alternative, as described in Chapter 2. As described in Chapter 1, resources potentially affected include topography, geology, and soils (Section 3.1); water quality and hydrology (Section 3.2); biological resources (Section 3.3); and public health and safety (Section 3.4).

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3.1 TOPOGRAPHY, GEOLOGY, AND SOILS

3.1.1 Affected Environment

3.1.1.1 Region of Influence

For the Proposed Action, the topography, geology, and soils region of influence (ROI) would be confined to the five properties MGRF, MCVPP, CHNA, ERNA, and HGTNA. As designated by CAL FIRE, all properties are located in the metropolitan San Diego area and lie within wildland-urban interface zones for fire management purposes. Only within these areas would soil and geologic disturbance occur under the Proposed Action. Regional seismic activity could affect the Proposed Action but the effects would occur on-site; the Proposed Action would not affect or influence seismic conditions in the region.

3.1.1.2 Topography

MGRF, MCVPP, and CHNA are located in a moderately hilly, inner mountain zone approximately 9.7 miles inland and ranging from 76 feet to 480 feet above sea level. The survey sites are located on the U.S. Geological Survey 7.5-minute topographic map, La Mesa quadrangle, Townships 15 South and 16 South, Range 2 West. Two of these properties lie below or above steep slopes and canyons bordering the north side of San Diego River drainage. MGRF is located along the San Diego River primarily on the alluvial plain at the foot of steep slopes. MCVPP lies on the mesa above Murphy Canyon, a drainage that separates, in part, the two properties. MGRF itself has slopes ranging from 0 to 5 percent in the lowlands. Steep canyons and ridges are adjacent to the relatively flat alluvial plain area to the west and north, with upland slopes ranging between 9 and 50 percent. MCVPP elevations range from 190 to 350 feet above mean sea level. Slopes range from the relatively level housing area perimeter to steep east-west drainages that terminate at I-15. CHNA is located on the high point of a wide ridge that tops out at 420 to 480 feet in elevation above sea level and is surrounded by moderate downhill slopes ranging from 5 to 25 percent. The geologic composition of MGRF, MCVPP, and CHNA consists of four formations from the Cenozoic era: alluvium and slope wash, stream terrace deposits, stadium conglomerate, and Friars Formation. The ERNA site, ranging in elevation from about 490 feet to about 620 feet, is centered on a small knoll with slopes of 9 to 30 percent. HGTNA consists of open space that ranges in elevation from about 500 feet in the southwest to about 590 feet in the northeast. Straddling High Street, it contains slopes of 9 to 30 percent and is located downslope of additional vegetated open space and housing developments that line the ridgetops above.

3.1.1.3 Geology and Soils

San Diego County lies almost entirely within the Peninsular Ranges geomorphic province (Burns 1997) and rides atop the Pacific plate, following a northwesterly path while grinding against the North American Plate. As a result, grinding, earthquakes, and past volcanic activity, in combination with weathering processes, have largely shaped San Diego County into a geologically diverse area (U.S. Navy 2006).

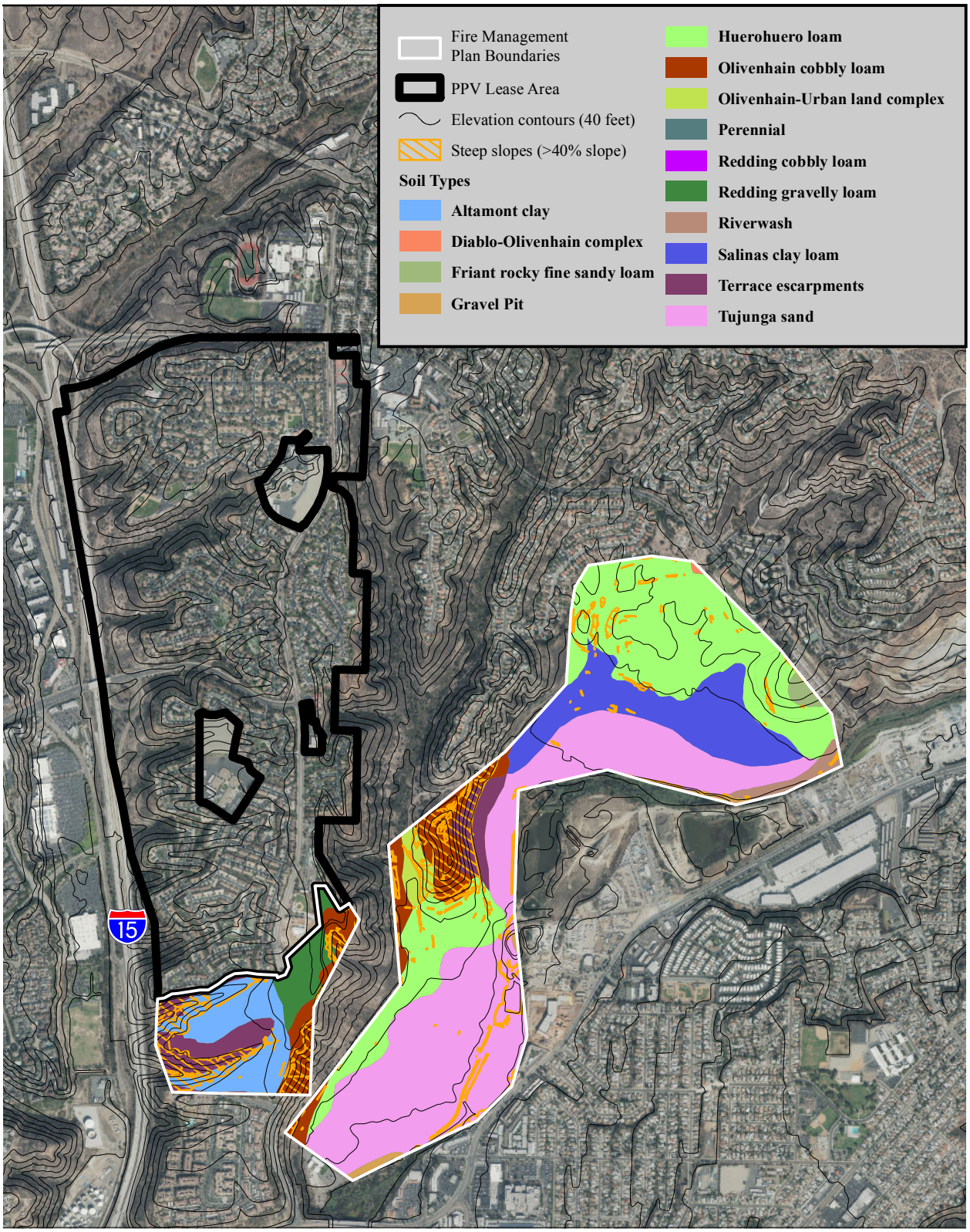
MCVPP and MGRF areas have a relatively diverse range of soil types, including Altamont clay, Redding gravelly loam, Olivenhain cobbly loam, and terrace escarpments in MCVPP and Tujunga sand, Huerhuero loam, Salinas clay loam, Olivenhain cobbly loam, terrace escarpments, and riverwash in MGRF, which also features a number of gravel pits. CHNA largely consists of the Redding-Urban land complex, with a relatively small proportion of Olivenhain cobbly loam. Several areas in the south part of the site include steep slopes in excess of 40 degrees.

Two soil types were mapped on ERNA: Fallbrook-Vista sandy loam and Vista rocky coarse sandy loam (NRCS 2011), with much of the area featuring steep slopes of greater than 25 percent. The ERNA site is composed of granitic rock overlain by sandy loam soils. Neither is prone to mass wasting after fire.

Nearly all of the soil present on the HGTNA site is composed of Friant rocky fine sandy loam (NRCS 2011). The HGTNA site is composed of metasedimentary rock, which is a hard, metamorphosed durable rock type.

The soils found at all of the properties consist of well-drained, moderately deep loams, well-drained cobbly loams, to well-drained, undulating to steep, gravelly loams (U.S. Department of Agriculture 1973) (Figures 3.1-1 through 3.1-4). Most of the nonalluvial soils have a clay subsoil and/or hard rock base. Runoff is medium rapid, and the erosion hazard ranges from moderate to high. On MCVPP, terrace escarpments have formed on the nearly even fronts of terraces or alluvial fans, between the narrow floodplain and adjoining uplands and the very steep sides of drainage ways that are entrenching into fairly level uplands. They consist of loamy or gravelly soil over soft marine sandstone, shale, or gravelly sediments. Soil type descriptions are summarized in the NBSD INRMP (USDON SWDIV 2014). The geologic types are summarized in the NBSD INRMP and from Geology of the San Diego Metropolitan Area, California (California Division of Mines and Geology 2001).

Large, intense fires often have a negative effect on site productivity and water quality because of associated soil erosion, and the resulting sedimentation into watercourses. The magnitude of



Source: SANDAG 2014

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

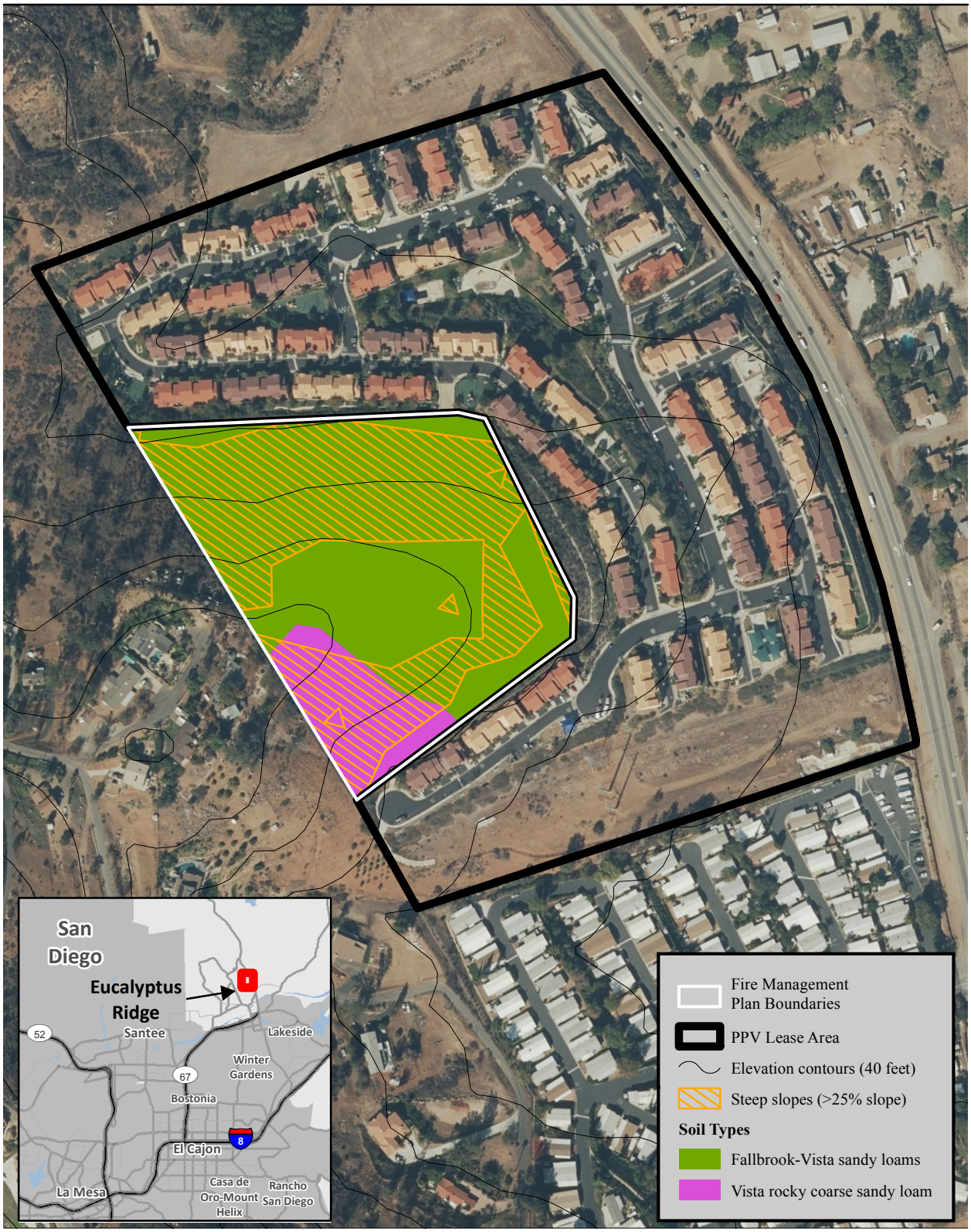
Figure 3.1-1 Topography and Soils at Murphy Canyon Vernal Pool Preserve and Mission Gorge Recreational Facility

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3.1-1_MCVPP_MGRF_soils.mxd, 12/22/2015, augellop

Figure 3.1-2
Topography and Soils at Chollas Heights Natural Area

EA for Wildfire Management Actions at MGRF, MCVPP, and the Chollas Heights, Eucalyptus Ridge, and Howard Gilmore Terrace Natural Areas

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3.1-2_CHNA_soils.mxd, 12/17/2015, paul_moreno



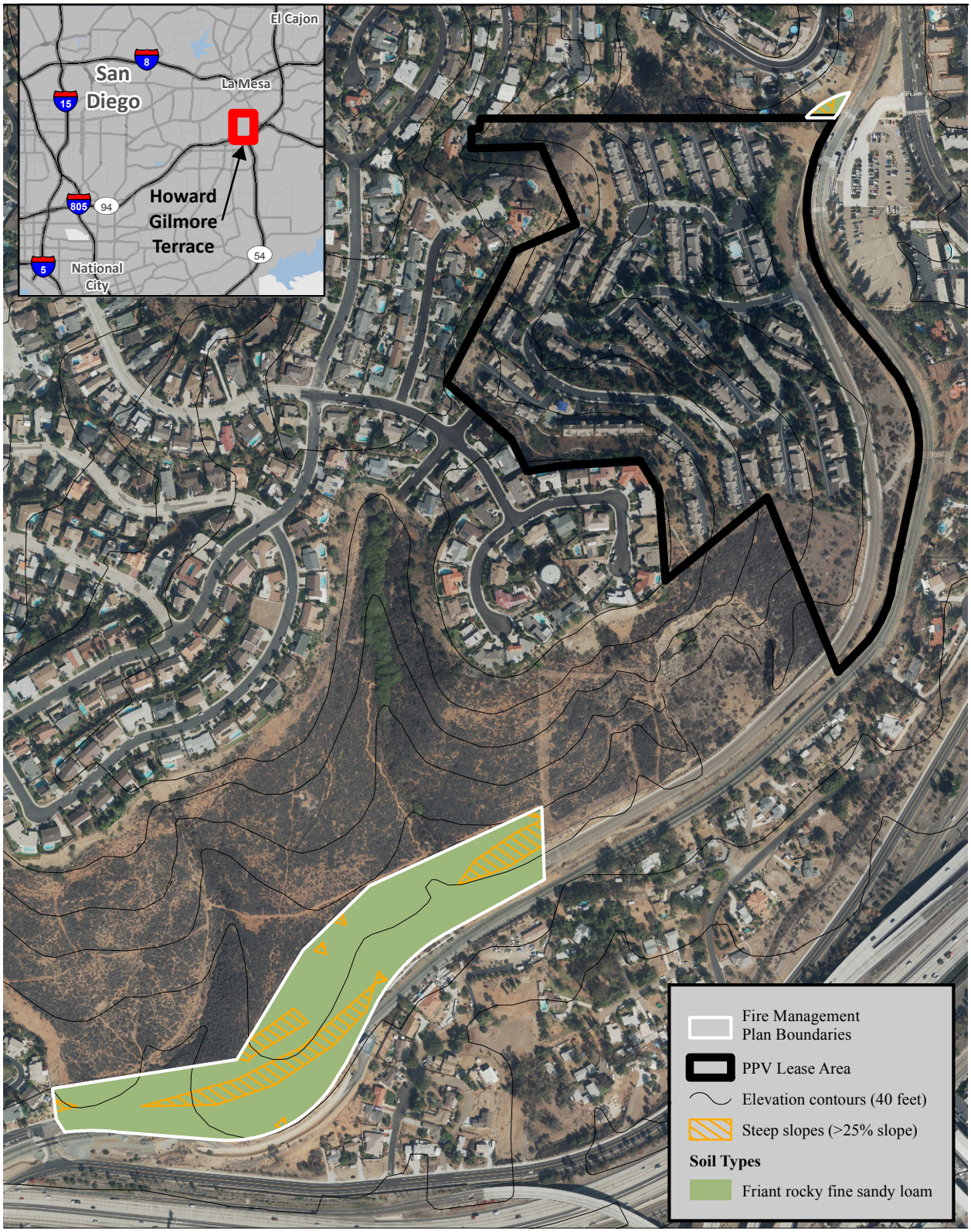
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 3.1-3
Topography and Soils at
Eucalyptus Ridge Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_1-3_ER_soils.mxd, 12/17/2015, paul_moreno



Source: SANDAG 2014

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 3.1-4
Topography and Soils at
Howard Gilmore Terrace Natural Area

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post-fire erosion and sedimentation depends upon soil type and its moisture content at the time of a fire, type, and condition of vegetation cover on watershed slopes, steepness, aspect, fire intensity, proximity to the nearest drainage, and timing and intensity of storms that follow the fire. In most shrub communities, erosion rates are highest post-fire, and then return to pre-fire levels within a few years.

3.1.1.4 Geologic Hazards

Seismicity

The California Geological Survey classifies faults as either active or potentially active, according to the Alquist-Priolo Special Studies Zone Act of 1972. The California Geological Survey defines an active fault as a fault that has exhibited surface displacement within the Holocene Epoch (the last 11,000 years). 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. Earthquake magnitude is measured according to the Richter scale. San Diego County is an active seismic region. Major active or potentially active faults in the San Diego area are the San Jacinto Fault, Elsinore Fault, La Nacion Fault, and Rose Canyon Fault.

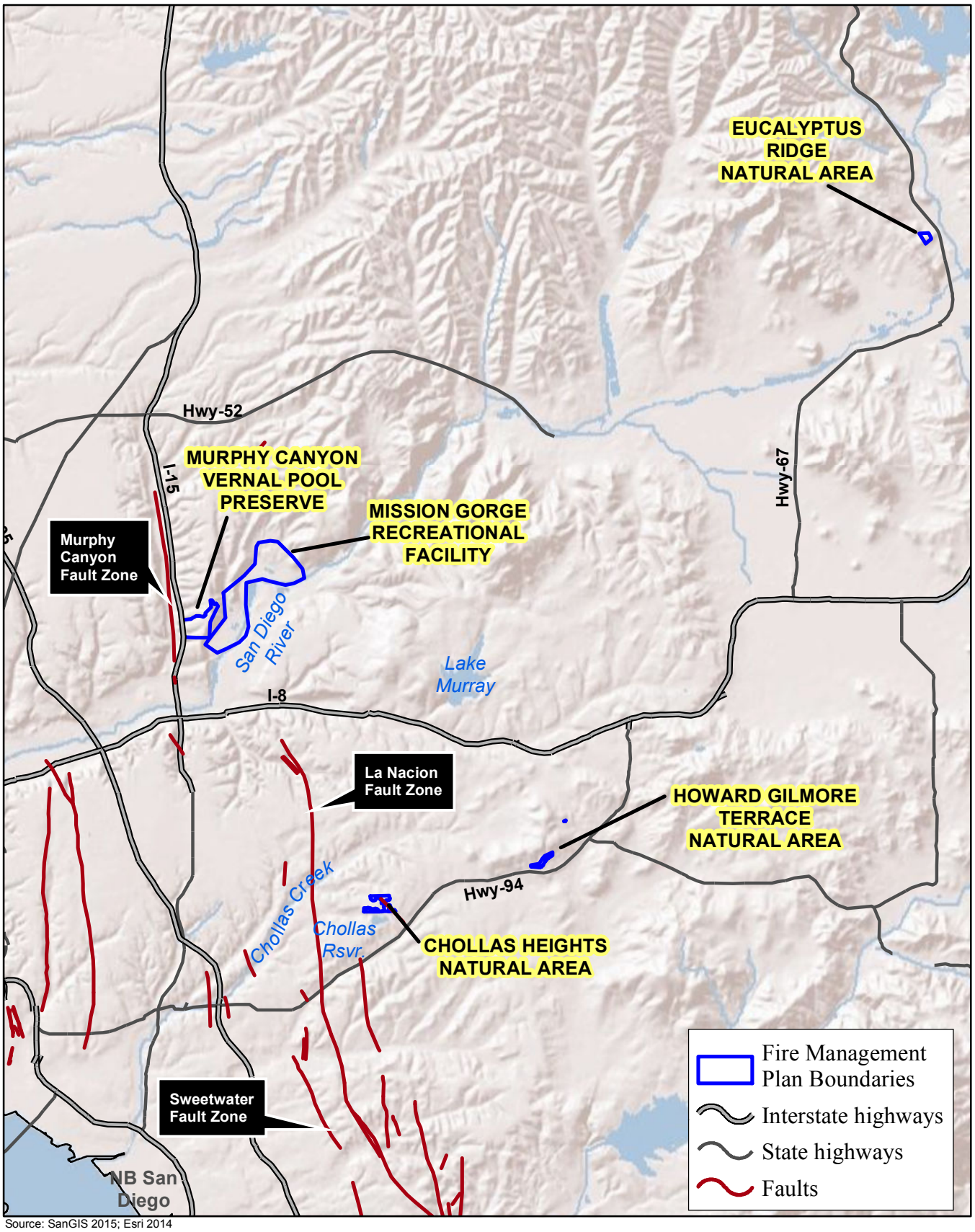
Fault zones are the network of interconnected fractures representing the surficial expression of a fault. Several fault zones occur near the five Proposed Action properties. The Murphy Canyon fault zone is located near MGRF and MCVPP. The La Nacion and Sweetwater fault zones are located near CHNA and HGTNA while ERNA is approximately 10 miles from the Murphy Canyon fault zone (Figure 3.1-5).

Liquefaction

Liquefaction could result from a large earthquake generated on a major regional or locally active fault. Liquefaction is defined as the transformation of soils from a solid to a liquid during ground shaking, thus amplifying destructive effects. Liquefaction generally requires loose, unconsolidated silts or sands at or near the groundwater table. Liquefaction can result in differential settlement of structures, damaged foundations, and downed utility lines. Based on the soil types found, the risk of seismically induced liquefaction at the Proposed Action sites is low.

Landslide

Landslides typically occur on steep slopes in soils with high shrink-swell characteristics, such as clay. As identified in Sections 3.1.1.2 and 3.1.1.3, MGRF, MCVPP, CHNA, ERNA, and



Source: SanGIS 2015; Esri 2014

2 1 0 2 Miles

Scale: 1:125,000

Figure 3.1-5
Project Area Faults

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3.1-5_Faults.mxd, 12/22/2015, augellop

HGTNA all contain steep slopes. However, because of the soil composition the potential for landslides is low.

3.1.2 Environmental Consequences

3.1.2.1 Approach to Analysis

This section evaluates potential impacts to topography, geology, and soil resources from implementation of the alternatives. In evaluating the potential impacts of the alternatives on geology and soil resources, the analysis considers the protection of unique geological features and minimization of soil erosion. Additionally, geological and soil conditions are analyzed for their ability to affect the proposed alternatives, as geology and soils may have an influence on fire management activities.

3.1.2.2 Proposed Action

Impacts

Topography

Under the Proposed Action, fire management actions would not result in substantial changes to existing landforms. No grading or complete vegetation removal would occur in any area. In the event of a wildfire, post-fire suppression rehabilitation actions would function to preserve topography. No significant impacts to topography would occur.

Geology and Soils

The fire management actions identified for the Proposed Action sites would include trimming, mowing, and pruning of vegetation. No vegetation would be completely removed at any of the Proposed Action sites and no significant impacts to geological and soil resources would occur.

With the implementation of the fire management actions, the chance of wildfire would be reduced as would the intensity of potential impacts from fires that could still occur. If a fire does occur, soils can be directly affected by the burning of organic material in the top layers of the soil horizon, and indirectly by removing vegetation that stabilizes soils on slopes. Post-fire suppression rehabilitation activities including the Proposed Action, however, would result in a post-burn assessment and development of an erosion control and restoration plan. Implementation of post-fire suppression rehabilitation actions would minimize the adverse

impact to geology and soils that would otherwise occur following a wildfire. No significant impacts to geological and soil resources would occur.

Geological Hazards

SEISMICITY

The fire management actions and post-fire suppression rehabilitation activities identified for the Proposed Action sites would not construct any new structures that would have the potential to be impacted by seismic activity. Therefore, seismic impacts from the implementation of the fire management actions or post-fire suppression rehabilitation activities would not be significant.

LIQUEFACTION

The soils found at all of the properties consist of well-drained, moderately deep loams, well-drained cobbly loams, to well-drained, undulating to steep, gravelly loams. Most of the nonalluvial soils have a clay subsoil and/or hard rock base. These soil types are not susceptible to liquefaction and settlement from ground shaking during an earthquake.

LANDSLIDES

The fire management actions identified for the Proposed Action sites would include trimming, mowing, pruning, and potentially herbicide control of vegetation. However, vegetation would not be completely removed at any of the Proposed Action sites and therefore no significant increase in the risk of landslides would occur.

In the event of a fire, post-fire suppression rehabilitation activities would occur and include a post-burn assessment and development of an erosion control and restoration plan. Implementation of post-fire suppression rehabilitation would avoid or minimize the adverse impacts and risk of landslides that would otherwise potentially increase following a wildfire. No new risks of landslides would occur from post-fire suppression rehabilitation activities.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures are needed. Fire management actions and post-fire suppression rehabilitation actions would serve as avoidance and minimization measures for impacts that would otherwise occur in the absence of implementation of the Proposed Action, with the net result that the implementation Proposed Action would result in beneficial impacts compared to existing conditions were a wildfire to occur.

3.1.2.3 No Action Alternative

Under the No Action Alternative, integrated assignments of annual maintenance responsibilities for each of the required fuel modification actions would not occur. Integrated short-term and long-term fuel modification actions minimizing wildfire fire occurrence risks and the intensity of whatever wildfires still were to occur would not be implemented. As a result, adverse post-fire suppression impacts to topography, geology, and soils at the five relevant properties would not be minimized. The No Action Alternative would not meet the purpose and need of the Proposed Action.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures are proposed.

3.1.3 Unavoidable Adverse Environmental Effects

No unavoidable adverse effects on topography, geology, and soils would occur as a result of implementation of any of the alternatives.

3.1.4 Summary of Effects

Table 3.1-1 summarizes the effects of the Proposed Action and the No Action Alternative.

Table 3.1-1
Summary of Topography, Geology, and Soils Effects

Alternative	Effects	Impact Avoidance and Minimization Measures
Proposed Action	No significant adverse impacts to topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils would be offered through rehabilitation actions.	None
No Action Alternative	No effects on topography, geology, and soils. Potential beneficial post-fire suppression impacts to topography, geology, and soils that would result from the implementation of the Proposed Action would not occur.	None

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3.2 WATER QUALITY AND HYDROLOGY

Water resources at the five NBSD properties consist of all surface and receiving waters. Surface waters include rivers, irrigation/drainage ponds, and drainage channels (pipes, earthen drainage swales, concrete culverts, and drainage ditches). Receiving waters are the surface waters into which drainages flow. The San Diego River, Sweetwater River, Chollas Creek, San Diego Bay, and the Pacific Ocean are the receiving waters for drainages and runoff from the NBSD properties in the San Diego County region.

3.2.1 Affected Environment

This section describes water quality and hydrologic resources that are known or expected to occur in areas affected by the Proposed Action. Water quality describes the chemical and physical composition of water as affected by natural conditions and human activities. Hydrology describes water circulation, movement, and distribution, and includes surface water flow, flooding, and groundwater. Floodplains are generally located adjacent to rivers and other bodies of water and in low-lying areas near a water source. A 100-year floodplain is an area that has a 1 percent probability of flooding any given year.

Large, intense fires often have a negative effect on site productivity and water quality because of associated soil erosion, and the resulting sedimentation into watercourses. The magnitude of post-fire suppression erosion and sedimentation depends upon soil type and its moisture content at the time of a fire, type, and condition of vegetation cover on watershed slopes, steepness, aspect, fire intensity, proximity to the nearest drainage, and timing and intensity of storms that follow the fire. In most shrub communities, erosion rates are highest post-fire suppression, and then return to pre-fire levels within a few years.

3.2.1.1 Region of Influence

The ROI for water quality and hydrology includes those areas in which construction or operation of the Proposed Action alternatives would potentially affect surface or coastal receiving waters. The ROI for the Proposed Action includes drainages in the San Diego River Hydrologic Unit (HU); the Pueblo San Diego HU, which drains directly into the San Diego Bay; and the Sweetwater HU. The ROI for water quality and hydrology extends from proposed areas of ground disturbance downstream in any affected drainages that flow to the San Diego River, Sweetwater River, Chollas Creek, San Diego Bay, and ultimately the Pacific Ocean. The ROI includes surface water (including floodplains) and receiving water resources.

Winter rainfall and runoff commonly erode soil surfaces lacking protective vegetation following wildfire. Erosion of fertile topsoil causes a reduction in site productivity for plant species adapted to stable sites. Deposition of eroded soil into a water body is called sedimentation. Sedimentation affects water quality by suffocating living organisms in the downslope drainage. Whether soil erosion results in downstream sedimentation depends upon a number of factors: inherent soil erodibility, slope position, distance to the drainage, steepness, rainfall intensity, and duration; saturation condition of the soil; and the amount of protective vegetation on the soil surface. Proper watershed functioning supports riparian habitats, which can contain some of the most concentrated biological values. Precipitation collects in vernal pools, which are notable for high levels of species diversity and endemism.

3.2.1.2 Inland Surface Waters

Mission Gorge Recreation Facility. MGRF, commonly known as Admiral Baker Field, is located in the City of San Diego within the Mission San Diego Hydrologic Subarea (907.11) of the Lower San Diego Hydrologic Area (907.10) of the San Diego River HU (907.00). MGRF lies along the San Diego River (Figure 3.2-1). The hydrologic source within the San Diego River is from direct seasonal rainfall and runoff flows from the surrounding watershed, which includes areas up to the mountains in eastern San Diego County. The majority of the San Diego River has been channelized to protect the golf course and adjacent off-site urban areas from flooding. The golf course contains several created irrigation/drainage ponds, some of which support southern willow scrub and freshwater marsh vegetation. Most of these ponds are interconnected through pipes, earthen drainage swales, and concrete culverts. Development surrounding the northeastern property boundaries has necessitated the construction and alteration of a few earthen drainage ditches to protect the golf course landscaping from flooding. The Navy has been diverting water from the San Diego River since 1955 and currently diverts approximately 730 acre-feet per year to irrigate 220 acres of the golf course. The water is pumped from one diversion point on the river into holding ponds located on the golf course. From the holding ponds, the water is drawn into the MGRF irrigation system.

Murphy Canyon Vernal Pool Preserve. MCVPP is also part of the San Diego River watershed (Figure 3.2-1). With Murphy Canyon's steep slopes separating the two sites (MCVPP and MGRF) and the 100-year floodplain of the San Diego River encompassing the majority of the MGRF property, post-fire suppression erosion and sedimentation could be a concern.

Chollas Heights Natural Area. CHNA lies within the Chollas Creek watershed, which is a sub-watershed in the Pueblo San Diego HU that drains directly into San Diego Bay, and is part of the San Diego Bay Watershed Management Area, as identified by the Water Quality Control Plan for the San Diego Basin (Basin Plan; RWQCB 1994). The Pueblo San Diego watershed is the

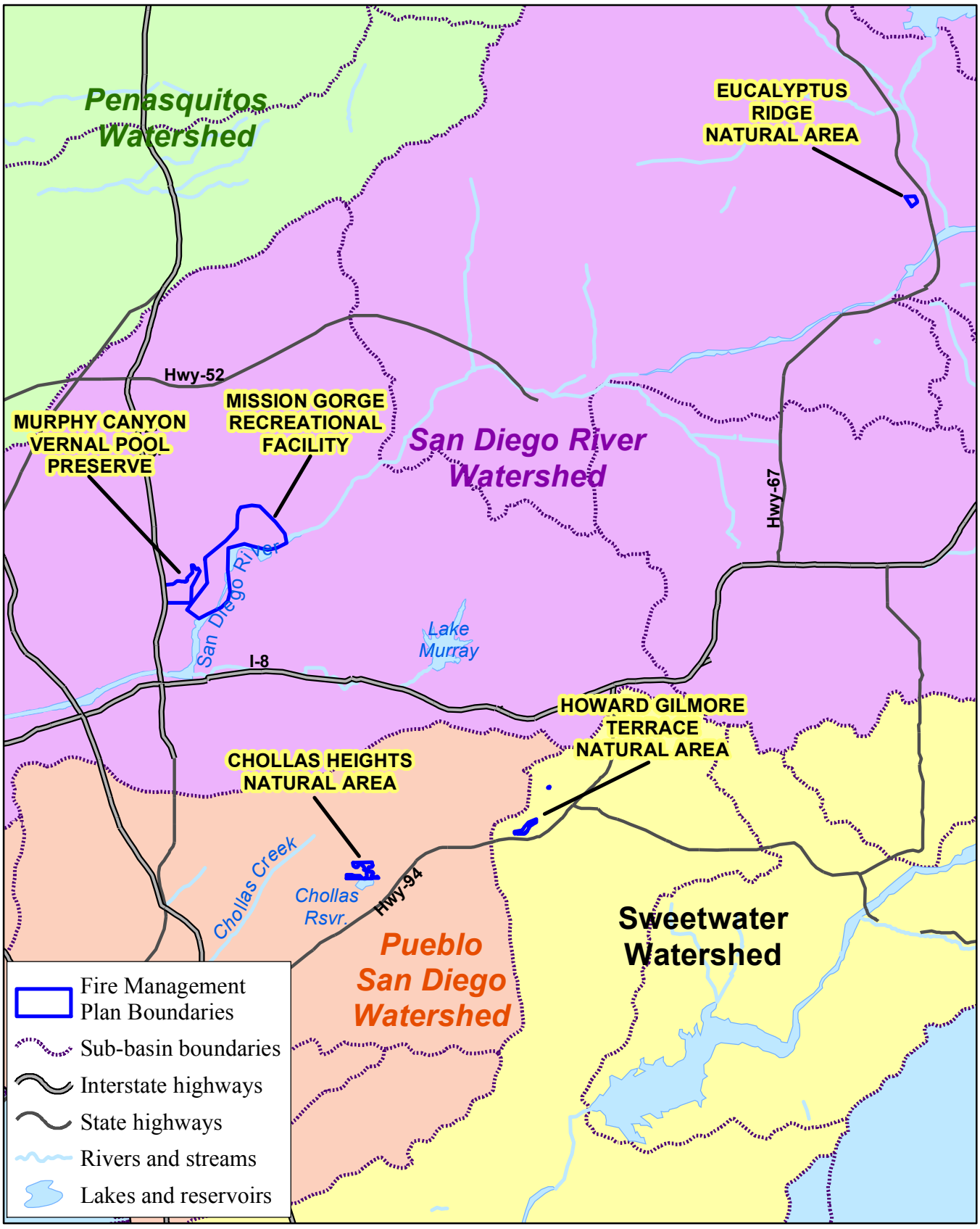

Figure 3.2-1
Project Area Watersheds

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smallest hydrologic unit in San Diego County, encompassing 60 square miles of predominately urban landscape (hardscape) in the cities of San Diego, La Mesa, Lemon Grove, and National City. The Pueblo San Diego watershed is bounded on the north by the San Diego River watershed and on the south by the Sweetwater River watershed. CHNA has no direct impact on the water quality of the Chollas Creek watershed.

Eucalyptus Ridge Natural Area. ERNA also lies in the watershed of the San Diego River on the west side of Morena Valley traversed by the San Vicente Creek tributary to the San Diego River.

Howard Gilmore Terrace Natural Area. HGTNA is located on the western edge of the Sweetwater River watershed, adjacent to the Pueblo San Diego watershed. It is on the edge of an urban area and has little effect on the flows.

3.2.1.3 Receiving Waters

Receiving waters in the vicinity of the study area include the San Diego River, Sweetwater River, Chollas Creek, San Diego Bay, and the Pacific Ocean.

Beneficial uses for the San Diego River as described in the Basin Plan (RWQCB 1994) are as follows:

- Municipal and Domestic Supply (MUN)
- Agricultural Supply (AGR)
- Industrial Service Supply (IND)
- Industrial Process Supply (PROC)
- Contact Water Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Warm Freshwater Habitat (WARM)
- Cold Freshwater Habitat (COLD)
- Wildlife Habitat (WILD)

The San Diego River (lower) is listed as impaired on the State Water Resources Control Board (SWRCB) Clean Water Act (CWA) Section 303(d) list (SWRCB 2015) for enterococcus, fecal coliform, low dissolved oxygen, manganese, nitrogen, phosphorus, total dissolved solids, and toxicity.

Beneficial uses for the Sweetwater River are as follows (RWQCB 1994):

- Municipal and Domestic Supply (MUN)
- Agricultural Supply (AGR)
- Industrial Service Supply (IND)
- Industrial Process Supply (PROC)
- Contact Water Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Warm Freshwater Habitat (WARM)
- Cold Freshwater Habitat(COLD)
- Wildlife Habitat (WILD)
- Spawning, Reproduction, and/or Early Development (SPWN)

The Sweetwater River is listed as impaired on the SWRCB CWA Section 303(d) list (SWRCB 2015) for enterococcus, fecal coliform, phosphorus, selenium, total dissolved solids, total nitrogen as N, and toxicity.

Beneficial uses for Chollas Creek are as follows (RWQCB 1994):

- Non-Contact Water Recreation (REC-2)
- Warm Freshwater Habitat (WARM)
- Wildlife Habitat (WILD)

Chollas Creek is listed as impaired on the SWRCB CWA Section 303(d) list (SWRCB 2015) for copper, diazinon, indicator bacteria, lead, phosphorus, total nitrogen as N, trash, and zinc.

Beneficial uses for the San Diego Bay are as follows (RWQCB 1994):

- Industrial Service Supply (IND)
- Navigation (NAV)
- Contact Water Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Commercial and Sport Fishing (COMM)
- Preservation of Biological Habitats of Special Significance (BIOL)
- Estuarine Habitat (EST)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Marine Habitat (MAR)

- Migration of Aquatic Organisms (MIGR)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Shellfish Harvesting (SHELL)

The San Diego Bay is listed as impaired on the SWRCB CWA Section 303(d) list (SWRCB 2015) for polychlorinated biphenyls

Beneficial uses for the Pacific Ocean are as follows (RWQCB 1994):

- Industrial Service Supply (IND)
- Navigation (NAV)
- Contact Water Recreation (REC-1)
- Non-Contact Water Recreation (REC-2)
- Commercial and Sport Fishing (COMM)
- Preservation of Biological Habitats of Special Significance (BIOL)
- Wildlife Habitat (WILD)
- Rare, Threatened, or Endangered Species (RARE)
- Marine Habitat (MAR)
- Aquaculture (AQUA)
- Migration of Aquatic Organisms (MIGR)
- Spawning, Reproduction, and/or Early Development (SPWN)
- Shellfish Harvesting (SHELL)

The Pacific Ocean shoreline is listed as impaired on the SWRCB CWA Section 303(d) list (SWRCB 2015) for enterococcus and total coliform.

3.2.1.4 Floodplains

Floodplains are defined as lowland and relatively flat areas adjoining inland and coastal waters that are subject to a 1 percent or greater chance of flooding in any given year. The potential for flooding in the project area is low. The climate is semiarid and the seasonal precipitation is highly variable in frequency, magnitude, and location. Infrequent large bursts of rain can flood areas unexpectedly. Flooding at the NBSD properties in the San Diego County region and the rest of southern California most frequently occurs during winter storm events from November through April, and occasionally during the summer when a tropical storm makes landfall in the region.

MGRF, MCVPP, CHNA, and HGTNA lie in the coastal plain zone, which is characterized by a subtropical climate with average temperatures ranging from 46 to 68 degrees Fahrenheit. Annual rainfall averages 12.2 inches. Most of the precipitation occurs between October and early April, when the average "rainy season" rainfall total is 11.7 inches. Humidity averages approximately 70 percent. Days are warm and sunny and nights moderate, with warm summers and mild winters. Prevailing northwest winds are moderated by the Pacific Ocean. ERNA stands in the interior valley portion of the coastal zone at the base of the foothills. The average temperatures on this site are similar to those in the El Cajon station in the coastal zone. Average seasonal precipitation is also similar but potentially an inch or two greater due to its geographic location (U.S. Navy n.d.).

Areas along the San Diego River are within the Federal Emergency Management Agency (FEMA) 100-year and 500-year flood zones and portions of the 100-year and 500-year flood zones occur on NBSD property (Figure 3.2-2). MGRF is the only NBSD property located near the FEMA 100-year and 500-year flood zones.

3.2.2 Environmental Consequences

3.2.2.1 Approach to Analysis

Water quality and hydrology resources could be affected where components of the Proposed Action alternatives cross drainages, encounter floodplains, or fail to properly control runoff from NBSD properties during wildfire fuel management actions (vegetation clearing) and post-fire suppression rehabilitation (erosion-control and replanting). Surface water quality is therefore evaluated with respect to possible releases of pollutants and erosion-induced sedimentation resulting from the Proposed Action. The Proposed Action is analyzed to determine whether pollutants found in storm water runoff from vegetation clearing or rehabilitation efforts would impact surface water quality or result in increased flooding potential.

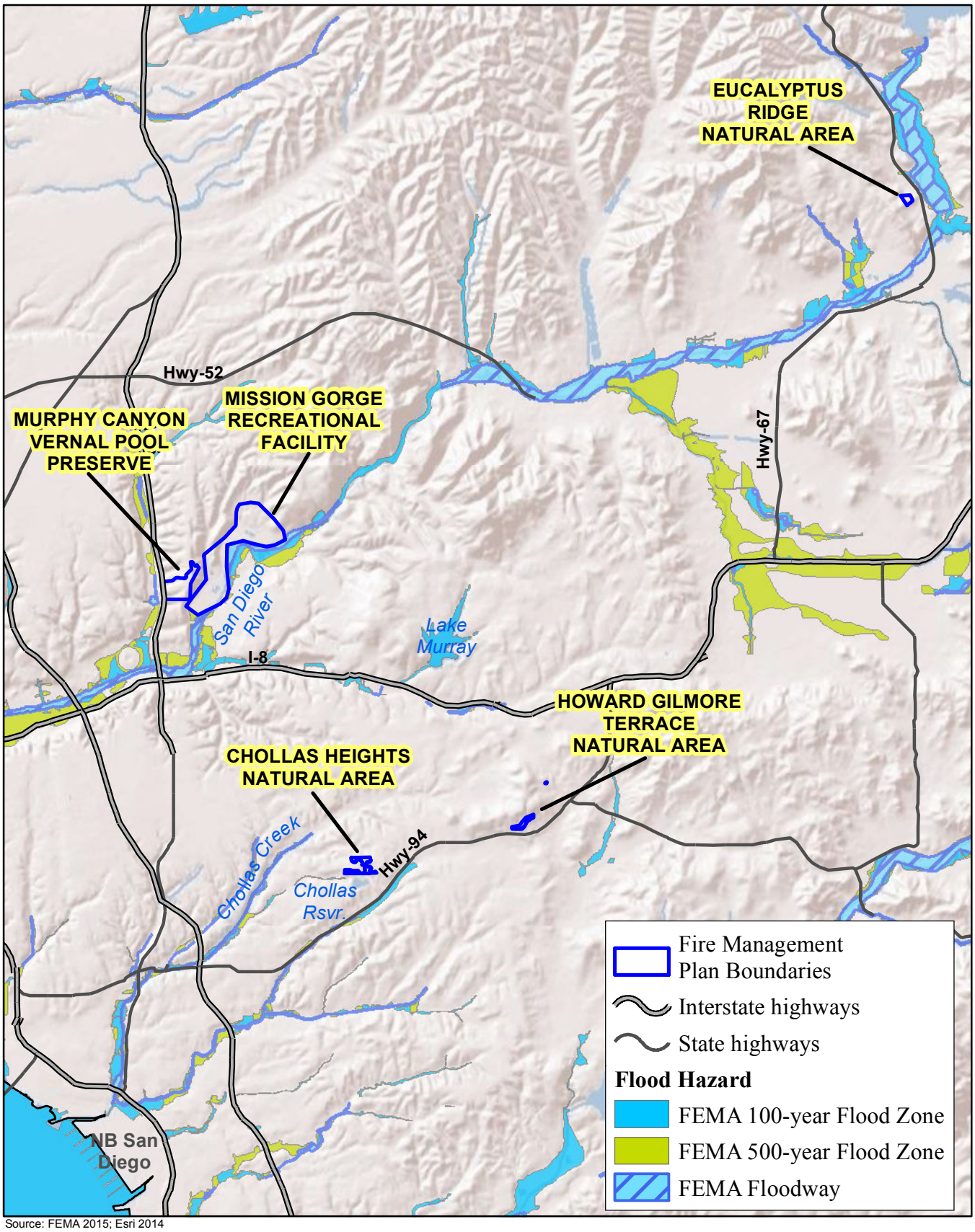
3.2.2.2 Proposed Action

Impacts

Fire Management Actions

INLAND SURFACE WATERS AND COASTAL WATERS

Without implementation of appropriate best management practices (BMPs) to prevent significant erosion on slopes or the release of pollutants (e.g., sediment, vegetative matter, herbicides),



Source: FEMA 2015; Esri 2014

2 1 0 2 Miles

Scale: 1:125,000

Figure 3.2-2
Project Area Flood Zones

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3.3-2_floodzones.mxd, 12/22/2015, augellop

wildfire fuel management actions could have the potential to impact water quality. Any type of soil disturbance during vegetation mowing, trimming, or clearing would expose soil to erosion from wind and water that could result in sedimentation to receiving waters (i.e., San Diego River, Sweetwater River, Chollas Creek, San Diego Bay, and Pacific Ocean).

Fuel modification zone guidance applies only to MGRF. It is not applicable to any of the natural areas on the four other properties. Fuel management activities associated with the Proposed Action would be subject to applicable storm water regulatory requirements and standards to avoid and/or minimize potential impacts of soil erosion, sediment transport, and storm water runoff pollution to surface waters. BMPs that reduce erosion and subsequent pollutant transport (e.g., fiber rolls, straw bale check dams, and native seed application and hydroseeding) would be implemented during construction activities in compliance with OPNAVINST 5090.1D which requires that installation sources of dust, runoff, silt, and erosion debris be controlled to prevent damage to land, water resources, equipment, and facilities, including adjacent properties (USDON SWDIV 2014). An erosion-and-sediment-control plan would be developed am implemented and would include construction site BMPs to control and minimize the identified pollutants (e.g., sediment/silt, herbicides) in runoff.

Given the proximity to sea level, the erosion-and-sediment-control plan developed for the Proposed Action would need to consider weather and water elevation concerns, primarily during the winter season. Scheduling of vegetation management activities outside the wet season (or at least ground disturbance for vegetation clearing) would need to be coordinated carefully to avoid runoff, particularly in areas immediately adjacent to the banks of watercourses.

Herbicide application has the potential for ground water contamination. Prior to herbicide application, assessing the soil types, weather conditions, location of surface water, depth to groundwater, and the site's sensitivity to trampling from herbicide application must be considered. The Relative Aquifer Vulnerability Evaluation (RAVE) model is one method of evaluating the impacts of herbicide application to water resources. The RAVE system includes a model that addresses irrigation systems developed by Montana State University (MSU 1999) and one that addresses natural precipitation systems developed by the Forest Service (Forest Service 1992).

To determine the potential for ground water contamination, the RAVE system considers several factors: irrigation practice, depth to ground water, distance to surface water, percent organic matter, pesticide application frequency, pesticide application method, pesticide leachability, and topographic position. Values are assigned to each of these factors and then totaled. The total value is then compared to a "scorecard interpretation scale" to determine the potential for ground water contamination by an individual pesticide. Higher To determine the potential for ground

water contamination, the RAVE system considers several factors: irrigation practice, depth to ground water, distance to surface water, percent organic matter, pesticide application frequency, pesticide application method, pesticide leachability, and topographic position. Values are assigned to each of these factors and then totaled. The total value is then compared to a "scorecard interpretation scale" to determine the potential for ground water contamination by an individual pesticide. Higher scores indicate a higher vulnerability of ground water to pesticide application.

If a pesticide is determined to have a high potential for ground water contamination, an alternative pesticide or alternative application method is selected and results are compared. The alternative that has the lowest potential for ground water contamination and that has an acceptable score is then selected (NPS 2008).

Compliance with applicable regulatory requirements and use of the RAVE model would serve to minimize pollutants in runoff that would otherwise impact surface water or receiving water quality. Therefore, no significant temporary impacts to water resources would occur during construction of the Proposed Action.

FLOODPLAINS

Given the small footprint under the Proposed Action, wildfire fuel management activities at MGRF would not be expected to impact the floodplain of the San Diego River. Therefore, no significant temporary impacts to floodplains would occur during fire management activities under the Proposed Action.

Post-Fire Suppression Rehabilitation of Natural Areas

INLAND SURFACE WATERS AND RECEIVING WATERS

Implementation of post-fire suppression rehabilitation efforts (i.e., erosion-control, reestablishment/replanting) associated with the Proposed Action would be subject to applicable storm water regulatory requirements and standards to avoid and/or minimize potential water quality impacts to surface and coastal waters. BMP requirements would be implemented in compliance with OPNAVINST 5090.1D to reduce the amount of soil disturbance and minimize erosion and pollutant (e.g., pesticides, herbicides) transport into receiving waters during planting/rehabilitation efforts. Following implementation of rehabilitation efforts, erosion-control measures and replanting would offer a long-term beneficial impact to water quality within NBSD properties by providing soil stabilization, and thereby reducing erosion and sedimentation into receiving waters.

Compliance with applicable regulatory requirements would minimize pollutants in runoff and their potential impacts to receiving water quality. Implementation of erosion-control measures would offer a long-term beneficial impact to water quality within the Proposed Action properties. Therefore, no significant impacts to water resources would occur with implementation of post-fire suppression rehabilitation efforts under the Proposed Action.

FLOODPLAINS

Implementation of erosion control BMPs and replanting efforts associated with the Proposed Action would not be anticipated to result in floodplain impacts. Given the small footprint under the Proposed Action, implementation of post-fire suppression rehabilitation activities at MGRF would not be expected to impact the floodplain of the San Diego River; therefore, no significant impacts to floodplains would occur under the Proposed Action.

Impact Avoidance and Minimization Measures

The following measures are proposed to avoid and minimize potential impacts to hydrology and water quality:

- Comply with OPNAVINST 5090.1D during fire management and post-fire suppression rehabilitation activities, with specific attention to the following:
    - Implementing sediment and erosion control measures consistent with the Integrated Natural Resources Management Plan to reduce the amount of soil disturbance, minimize erosion and sediment transport into receiving waters, and avoid pollutants (particularly 303(d)-listed impairments) in site runoff.

3.2.2.3 No Action Alternative

Impacts

Under the No Action Alternative, the Proposed Action would not occur. Baseline water resources conditions would remain unchanged. Therefore, no impacts to water quality or hydrology would occur with implementation of the No Action Alternative. Existing water erosion and flood impingement issues would not be addressed.

Impact Avoidance and Minimization Measures

No avoidance and minimization measures are proposed.

3.2.3 Unavoidable Adverse Environmental Effects

No unavoidable adverse effects on hydrology and water quality would occur as a result of implementation of any of the alternatives.

3.2.4 Summary of Effects

Table 3.2-1 summarizes the effects of the Proposed Action and the No Action Alternative.

Table 3.2-1
Summary of Hydrology and Water Quality Effects

Alternative	Impacts	Impact Avoidance and Minimization Measures
Proposed Action	No significant hydrology or water quality impacts would occur. Potential beneficial post-fire suppression impacts to receiving waters would be offered through rehabilitation actions.	• Comply with OPNAVINST 5090.1D during fire management and post-fire suppression rehabilitation activities, with specific attention to the following: • Implement sediment and erosion control measures as specified in the Integrated Natural Resources Management Plan to reduce the amount of soil disturbance, minimize erosion and sediment transport into receiving waters, and avoid pollutants in site runoff. • Prior to herbicide application, assessing soil types, weather conditions, location of surface water, depth to groundwater, and the site's sensitivity to trampling from herbicide application must be considered. Use of the RAVE system to determine the potential for ground water contamination.
No Action Alternative	No effects on hydrology and water quality.	None

3.3 BIOLOGICAL RESOURCES

This section describes the native and naturalized plants and animals that occur in the terrestrial and wetland habitats within or adjacent to the Proposed Action area and thus may be directly or indirectly affected by the Proposed Action. Throughout the resource descriptions in this section, discussions of these resources are organized as follows: (1) plant communities and other cover types, (2) special-status species, and (3) waters of the U.S.

3.3.1 Region of Influence

For the purposes of analysis within this EA, the biological resources study area was limited to the natural habitats within MCVPP, MGRF, CHNA, ERNA, and HGTNA. It is not anticipated that potential impacts to any listed species would occur within this area. Table 1-1 indicates the number of acres of natural habitat that occur in the study areas. A number of federally listed species occur on these sites, particularly associated with the vernal pools and the riparian woodland habitats. However, these habitats are not going to be affected by the vegetation management activities that are proposed. There is a slight potential that the need for vegetation treatment adjacent to the Murphy Canyon Housing Area would impact natural habitats. However, the sensitive species associated with vernal pools on MCVPP would not be expected to be affected because the vernal pool habitats are farther away from the residential development than the required distance for vegetation treatment. The same is true for the CHNA vernal pool habitats.

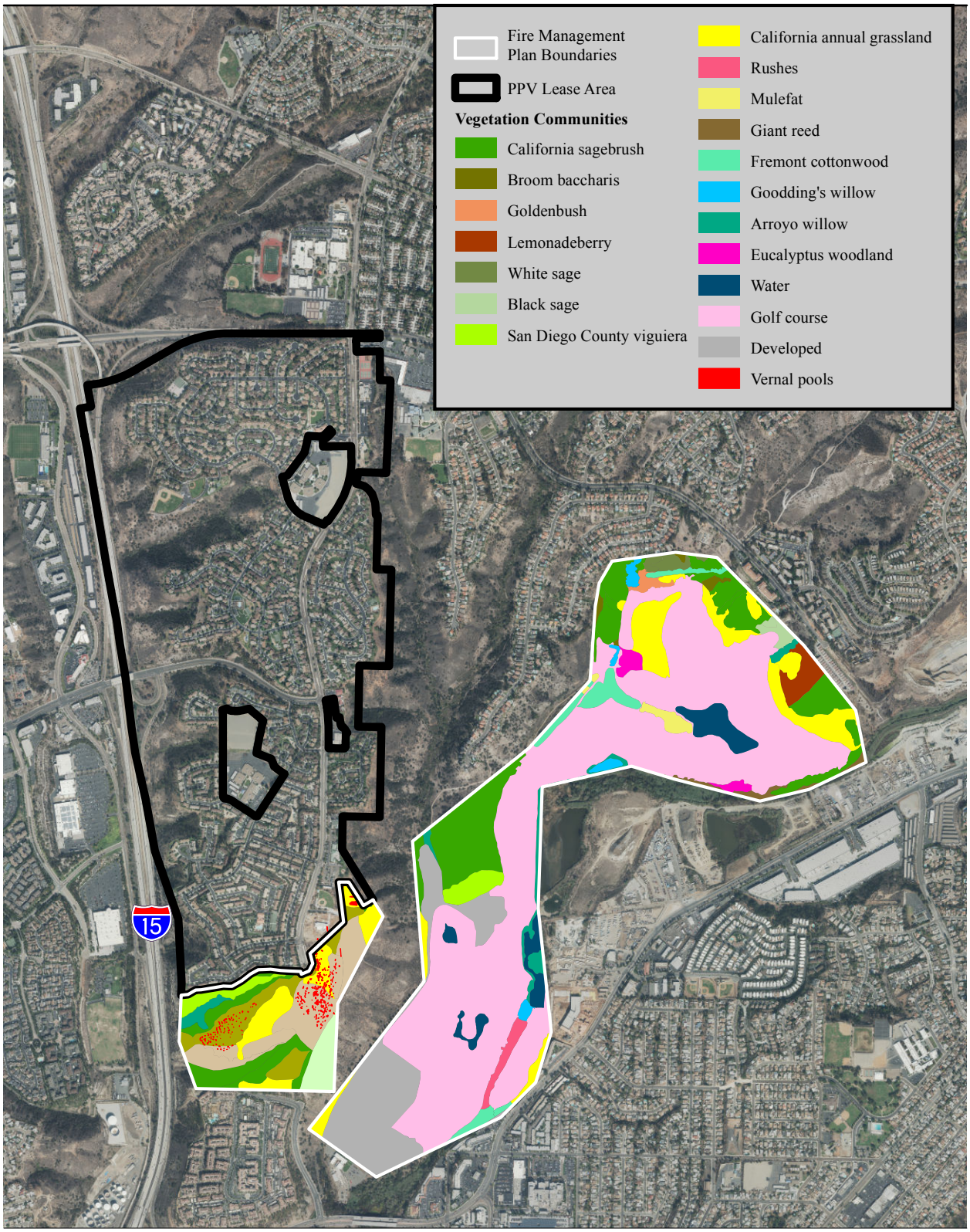
All of the sites may need some remedial perimeter treatments in key locations to reduce the level of flammable vegetation along the edge of the natural habitats and adjacent to private land. However, a number of the private properties adjacent to the natural lands themselves contain highly flammable vegetation and a number of structures on those private lands have wooden decks and flammable landscape materials that place them at risk.

Information about biological resources in this section is based on existing data, the FMP for the five sites (U.S. Navy n.d.), and the INRMP (USDON SWDIV 2014). Available biological data were reviewed and analyzed.

3.3.2 Affected Environment

3.3.2.1 Plant Communities and Other Cover Types

The plant communities of MGRF, MCVPP, CHNA, ERNA, and HGTNA are shown in Figures 3.3-1 through 3.3-4. Table 3.3-1 summarizes the vegetation communities and associated



Source: SANDAG 2014

2,000 1,000 0 2,000 Feet

Scale: 1:24,000; 1 inch = 2,000 feet

Figure 3.3-1 Vegetation Communities at Murphy Canyon Vernal Pool Preserve and Mission Gorge Recreational Facility

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_4_1_MCVPP_MGRF_veg.mxd, 12/17/2015, paul_moreno

Source: SANDAG 2014

400 0 400 Feet

Scale: 1:4,800; 1 inch = 400 feet

Figure 3.3-2
Vegetation Communities at Chollas Heights Natural Area

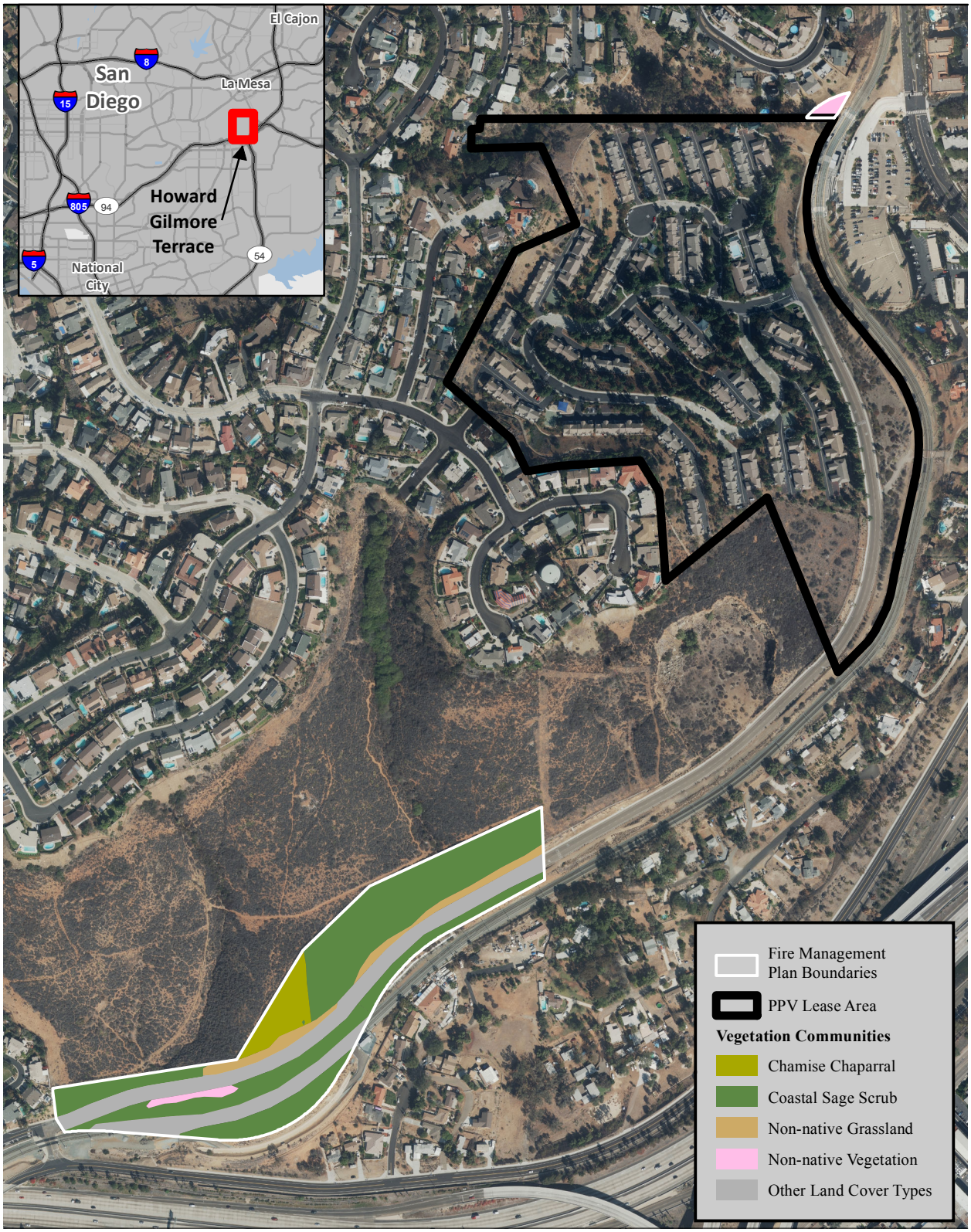
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 3.3-3
Vegetation Communities at Eucalyptus Ridge Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig2-12_ER_veg.mxd, 12/3/2015, augellop



Source: SANDAG 2014

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 3.3-4
Vegetation Communities at
Howard Gilmore Terrace Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_4_04_HGT_veg_EA.mxd, 1/15/2016, lauren_rizzo

Table 3.3-1
Vegetation communities and land cover types on Mission Gorge Recreation Facility, Murphy Canyon Vernal Pool Preserve, Chollas Heights Natural Area, Eucalyptus Ridge Natural Area, and Howard Gilmore Terrace Natural Area

Vegetation Community/Land Cover Type	Mission Gorge Recreation Facility (acres)	Murphy Canyon Vernal Pool Preserve (acres)	Chollas Heights Natural Area (acres)	Eucalyptus Ridge Natural Area (acres)	Howard Gilmore Terrace Natural Area (acres)
Diegan Coastal Sage Scrub	**72.4**	**67.9**	**12.0**	**9.5**	**6.8**
California Sagebrush (*Artemisia californica*) Alliance	52.8	15.4	-	5.2	-
California Sagebrush-California Buckwheat (*Artemisia californica-Eriogonum fasciculata*) Alliance	-	15.4	11.0	4.2	4.2
Coyote Bush (*Baccharis sarothroides*) Alliance	1.8	-	-	-	2.6
California Encelia (*Encelia californica*) Alliance	-	7.1	-	-	-
California Buckwheat (*Eriogonum fasciculat*a) Alliance	-	25.3	-	-	-
Coast Goldenbush (*Isocoma menziesii*) Alliance	1.8	-	-	-	-
Laurel Sumac (*Malosma laurina*) Alliance	-	-	1.0	-	-
Lemonadeberry (*Rhus integrifolia*) Alliance	5.5	-	-	-	-
White Sage (*Salvia apiana*) Alliance	3.01	-	-	-	-
Black Sage (*Salvia mellifera*) Alliance	2.3	-	-	-	-
San Diego Sunflower (*Bahiopsis laciniata*) Alliance	5.1	4.7	-	-	0.002
Chaparral	-	-	-	-	0.8
Chamise Chaparral *(Adenostoma fasciculatum)*	-	-	-	-	0.8
California Annual Grasslands	**32.1**	**16.0**	**9.4**	**-**	**0.7**
Non-native Grasslands Mapping Unit* (dominated by *Bromus* spp., *Avena* spp., and various other native and non-native annual forbs and grasses)	32.1	16.0	9.4	-	0.7
Vernal pools**	-	1.4	0.7	-	-
Willow Riparian Woodlands	**21.8**	**2.4**	**0.4**	**-**	**-**
Black Willow (*Salix gooddingii*) Alliance	3.7	-	0.4	-	-
Red Willow (*Salix laevigata*) Alliance	-	-	-	-	-
Arroyo Willow (*Salix lasiolepis*) Alliance	7.5	2.4	-	-	-
Fremont Cottonwood *(Populus fremontii*) Alliance	10.6	-	-	-	-
Other Riparian Communities	**6.5**	**-**	**-**	**-**	**-**
Mulefat Scrub (*Baccharis salicifolia*) Alliance	3.2	-	-	-	-
Giant Reed (*Arundo donax*) Alliance	3.3	-	-	-	-
Other Land Cover Types	**309.2**	**0.14**	**1.4**	**01**	**3.6**
Eucalyptus (*Eucalyptus* sp.) Woodlands Alliance	3.4	0.11	0.4	-	0.1
Freshwater marsh (52400)	3.3	-	-	-	-

Vegetation Community/Land Cover Type	Mission Gorge Recreation Facility (acres)	Murphy Canyon Vernal Pool Preserve (acres)	Chollas Heights Natural Area (acres)	Eucalyptus Ridge Natural Area (acres)	Howard Gilmore Terrace Natural Area (acres)
Ponds	14.2	-	-	-	-
Golf course/landscaped (12000)	240.9	-	0.8	0.003	0.2
Urban/Developed (12000)	47.4	.03	0.2	0.1	3.2
TOTAL	**442.0**	**86.4**	**23.3**	**9.5**	**11.9**

*A Mapping Unit represents a cover type that does not represent a definable community based on dominance of a given species. Non-native grasslands within the project area contain a wide assortment and highly variable array of native and non-native grasses and forbs that occur as a highly complex mosaic across the landscape.
** Vernal pool acreages shown here represent a subset of the surrounding predominant vegetation and are not added into the total acreage in the last row.
Note: (1) Only the overstory Alliances are given below for shrub and tree communities, but all but the most dense shrub polygons include an understory of native and non-native grasses and forbs (i.e., the 'Non-Native Grassland Mapping Unit listed in the table).
Source: Derived from TDI 2010

acreage mapped in 2009 (TDI 2010). The vegetation community names and descriptions are based on the protocol developed by Sawyer et al. (2009), which has become the state-wide standard for vegetation mapping. This classification protocol classifies vegetation communities based on the dominant (or otherwise characteristic overstory) species identified for each polygon, as well as dominant/characteristic understory species. Up to three species may be used to assign each polygon to what is called an Alliance, such that a polygon dominated solely by California sagebrush is assigned to the "California Sagebrush Alliance."

Mission Gorge Recreation Facility. The MGRF facility primarily consists of cultivated or landscaped habitat with various ornamental trees, shrubs, and grasses (e.g., pampas grass [*Cortaderia* spp.], Bermuda grass [*Cynodon dactylon*]) planted on the golf courses and surrounding areas. Natural habitat areas also occur, with riparian woodland along the San Diego River and coastal sage scrub adjacent to the golf course on the north and northwestern edges of the property. Most of the natural habitat on-site occurs either within the San Diego River or along very steep slopes (25 to 50 percent or greater) and is not suitable for development. Eight native vegetation communities are present at MGRF: California encelia series, California encelia-San Diego sunflower series, California sagebrush series, California sagebrush black sage series, coast goldenbush–coyotebush series, cottonwood–willow series, bulrush series, and mulefat series. Non-native plant communities include eucalyptus series, eucalyptus series–removed, wild oat series, giant reed series, and Russian thistle series. Other land cover types include open water, ruderal habitat, and developed land (U.S. Navy 2010).

Murphy Canyon Vernal Pool Preserve. A total of 116 plant species were documented within MCVPP during the 2009 natural resources inventory, which covered both the PPV lease housing area and MCVPP. Seventy of the documented species are native. MCVPP consists of open space

adjacent to the PPV lease lands housing development's firebreak. The majority of the open space areas encompass coastal sage scrub of varying quality, structure, and species composition. The non-native vegetation found within the firebreak and adjacent to road edges consists of common disturbance-related species including fountain grass, bromes, mustard, wild oat, and tocolote (*Centaurea melitensis*). MCVPP also contains vernal pools, a landform that supports unique species (U.S. Navy 2011).

Chollas Heights Natural Area. CHNA is surrounded by urban hardscape on the west, north, and east sides of the property and by City-owned open space, which directly abuts the south side of this property. The property contains a large amount of interior open space that supports coastal sage scrub species and 12 restored vernal pools. Forty-six species of plants were documented within the area during the 2009 natural resources inventory. Thirty-four species were identified to be native. CHNA contains open space located to the north, southwest, and southeast of the main Chollas Heights housing development. The northern open space area primarily consists of non-native grassland with smaller amounts of native grassland, coastal sage scrub, and non-native vegetation. In addition, a number of natural and created vernal pools are present in this area. The southwestern open space area primarily consists of coastal sage scrub with a component of maritime succulent scrub that is dominated by cactus species. In addition, a small riparian area dominated by willow species occurs at the base of a small canyon along the southern border. The southeastern open space area primarily consists of coastal sage scrub with a small patch of riparian vegetation along the western edge. In addition, an area of non-native vegetation dominated by eucalyptus occurs along the southern boundary of the site (U.S. Navy 2011).

Eucalyptus Ridge Natural Area. The vegetation communities documented within the open space areas in ERNA include non-native grassland and coastal sage scrub. Forty-seven species of plants were documented within ERNA during the 2009 natural resources inventory. Twenty-four species were identified to be native. ERNA contains open space located in two sections adjacent to the housing development. The northernmost section is on the western side of the area and the southernmost section is located within a power line corridor. The vegetation communities documented within the open space areas include non-native grassland and coastal sage scrub. The majority of the open space area primarily consists of coastal sage scrub with native shrubs, including California buckwheat and California sagebrush with a few small inclusions of non-native grassland habitat. The plant species in the grassland inclusions are filaree (*Erodium cicutarium)*, fountain grass, bromes, wild oat, common sow thistle (*Sonchus oleraceus*), and short-pod mustard (U.S. Navy 2011).

Howard Gilmore Terrace Natural Area. Fifty-eight species of plants were documented within HGTNA during the 2009 natural resources inventory. The vegetation communities documented

within the open space areas in HGTNA include non-native vegetation, ornamental landscaping, coastal sage scrub, and small area of chamise chaparral. Thirty-two of the species were identified to be native. A small portion of the open space is located within the housing development itself, while the majority occurs approximately 1,000 feet to the southeast along High Street. The majority of the open space areas consist of coastal sage scrub. The coastal sage scrub north of High Street is dominated by California sagebrush, California buckwheat, and laurel sumac (U.S. Navy 2011), while the coastal sage scrub south of High Street is dominated by broom baccharis (U.S. Navy 2011). The chamise chaparral habitat is found on the north side of the road, on the slope above the road cut near the center of the site where a small area of chamise (*Adenostoma fasciculatum*) was mapped. In addition, there are several patches of non-native grassland and non-native vegetation dominated by a variable mix of common disturbance-relayed species including tocolote, fountain grass, bromes, wild oat, fennel, and short-pod mustard (U.S. Navy 2011).

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is composed of mostly low, soft-woody subshrubs to about 3 feet high, many of which are facultatively drought-deciduous. These communities are typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water.

Mission Gorge Recreation Facility. A few limited areas of Diegan coastal sage scrub habitat are found within MGRF. The canyons and slopes that border the area to the west and northwest also support this vegetation community. The coastal sage scrub on MGRF is suitable habitat for the Hermes copper butterfly (*Hermelycaena hermes*) (USDON SWDIV 2014). The coastal sage scrub habitat on these properties is primarily composed of the California Sagebrush Alliance, with varying amounts of black sage *(Salvia mellifera*), California buckwheat, and San Diego County sunflower (*Bahiopsis laciniata*). Other shrubs present include coast cholla (*Opuntia prolifera*), common encelia (*Encelia californica*), laurel sumac, and white sage (*Salvia apiana*). In addition to the areas mapped as the California Sagebrush Alliance, a number of areas are divided among six other Sage Scrub Alliances (see Table 3.3-1). Shrub canopy cover across all Coastal Sage Scrub Alliances ranges from 15 to 80 percent absolute cover.

Murphy Canyon Vernal Pool Preserve. At MCVPP, establishment of coastal sage scrub in the preserve was part of a - BO FWS-SDG-08B0150-08I0145 to support the coastal California gnatcatcher (*Polioptila californica californica*), with goals for percent cover of native species and for the characteristic dominants of gnatcatcher habitat, California sagebrush, and California buckwheat (USDON SWDIV 2002; RECON 2002). The Sage Scrub Alliances at MCVPP are primarily composed of four main types: California Sagebrush Alliance, California Buckwheat

Alliance, California Sagebrush-California Buckwheat Alliance (wherein sagebrush and buckwheat are present at nearly equal cover), and Black Sage Alliance. The remaining areas of sage scrub at MCVPP are divided among five other Alliances of limited extent (see Table 3.3-1).

Some areas of coastal sage scrub are dominated by black sage and broom baccharis, while others are lower quality as habitat, supporting non-native species such as black mustard (*Brassica nigra*), non-native bromes, and fountain grass. The species composition includes a larger percentage of tall shrubs and small trees, including laurel sumac, lemonadeberry (*Rhus integrifolia*), and toyon (*Heteromeles arbutifolia*). In some areas, especially along the borders of drainages, Nuttall's scrub oak (*Quercus dumosa*) occurs within the coastal sage scrub community. Shrub canopy cover across all Coastal Sage Scrub Alliances ranges from 15 to 95 percent absolute cover (polygons with shrub canopies <10 percent are defined as grasslands).

Chollas Heights Natural Area. The open space located north of the main Chollas Heights Housing Area consists of coastal sage scrub dominated by barley (*Hordeum* spp.), golden tarplant (*Dienandra fasciculata*), graceful tarplant (*Holocarpha virgata* ssp. *elongate),* California buckwheat, coast goldenbush (*Isocoma menziesii*), laurel sumac, lemonadeberry, and California sagebrush. The southwestern open space area primarily consists of coastal sage scrub with a component of maritime succulent scrub that is dominated by cactus species. In addition, a small riparian area dominated by willow species occurs at the base of a small canyon along the southern border. In this open space area, the coastal sage scrub is dominated by California sagebrush, common encelia (*Encelia californica*), sticky monkey-flower (*Mimulus aurantiacus*), coastal cholla, broom baccharis, and lemonadeberry (USDON SWDIV 2014).

Eucalyptus Ridge Natural Area. The vegetation communities documented within the open space areas include non-native grassland and coastal sage scrub. The northernmost open space area primarily consists of coastal sage scrub. In this open space area, the coastal sage scrub is dominated by California sagebrush, California buckwheat, and spiny redberry (*Rhamnus crocea*) (USDON SWDIV 2014).

Howard Gilmore Terrace Natural Area. The majority of the open space areas consist of coastal sage scrub. The coastal sage scrub north of High Street is dominated by California sagebrush, California buckwheat, and laurel sumac, while the coastal sage scrub south of High Street is dominated by broom baccharis (USDON SWDIV 2014).

Chamise Chaparral

Chamise chaparral consists of areas dominated by chamise (*Adenostoma fasciculatum*) with California buckwheat. It typically grows in areas that have specific soils and somewhat greater

moisture levels than the areas where coastal sage scrub grows. It is one of the most widespread vegetation communities in California and in San Diego County, where it is found in some coastal areas such as Del Mar and Point Loma and northern mesas, as well as much of the central foothills and mountains of the county.

Howard Gilmore Terrace Natural Area. Of the five areas managed for sensitive habitats, only HGTNA has with this vegetation community. There, it grows in a small area north of the road in the central portion of the site. The site is located at the top of the road cut on the north side of the road in an area with a slight north-facing trend (USDON SWDIV 2014).

Willow Riparian Woodlands

Willow riparian woodlands generally consist of open to dense, broad-leaved, winter-deciduous riparian thickets dominated by several willow species in the tree canopy, as well as Fremont cottonwood (*Populus fremontii* ssp. *fremontii*) and western sycamore (*Platanus racemosa*) (Holland 1986). Various shrubs may be present in the understory, including coyote bush *(Baccharis pilularis),* laurel sumac, mulefat (*Baccharis salicifolia*), and sagebrush (*Artemisia* spp.).

Mission Gorge Recreation Facility. Most of the willow woodlands at MGRF are located along the east and southeastern border of the facility along the San Diego River. Three additional areas of willow woodlands are found along tributary drainages and ponds in the northern portion of the site. Nearly half of the riparian woodlands at MGRF are mapped as the Fremont Cottonwood Alliance, with varying presence of arroyo willow (*Salix lasiolepis*), black willow (*S. gooddingii*), narrow-leaved willow (*S. exigua*), and mulefat. Some areas are dominated by mature arroyo willow and black willow. The Arroyo Willow Alliance and Gooding's Willow Alliance compose the remainder of the riparian woodlands.

Murphy Canyon Vernal Pool Preserve. At MCVPP, the riparian woodlands are primarily in the Arroyo Willow Alliance or the Black Willow Alliance, with an additional area mapped as the Red Willow *(Salix laevigata)* Alliance. These riparian woodlands community have been disturbed by invasion of non-native ornamental species such as Canary Island date palm *(Phoenix canariensis*), eucalyptus *(Eucalyptus* spp.*),* myoporum *(Myoporum laetum),* and non-native grasses and annuals. This community is generally located within the drainages that run from east to west. These non-native weedy species with little wildlife value aggressively compete with and can permanently eliminate native vegetation unless actively controlled by selective removal.

Chollas Heights Natural Area. A small riparian area within CHNA is dominated by willow species. This occurs at the base of a small canyon along the southern border. In addition to being a component of willow scrub communities at MGRF, mulefat can also occur as a separate vegetation Alliance, which may have a few scattered willows present. Mulefat communities develop after flooding or other disturbance and will eventually change through successional processes to willow-cottonwood or sycamore-dominated riparian forest/woodland in the absence of disturbance. The Mulefat Alliance occurs as scattered inclusions along the San Diego River and adjacent to some golf course ponds. This Alliance does not occur at the other properties.

Freshwater Marshes

Freshwater marsh communities are dominated by perennial, emergent monocots, which generally reach 5 meters tall. The monocots often form completely closed canopies and are found in areas permanently flooded by freshwater (Holland 1986). Freshwater marsh communities do not occur at the other properties with the exception of the following:

Mission Gorge Recreation Facility. Freshwater marsh occurs at MGRF around two golf course ponds. Bulrush-dominated (*Scirpus* sp.) and cattail-dominated areas occur.

Non-Native Grasslands

Mission Gorge Recreation Facility. In general, grassland vegetation at MGRF is dominated by non-native herbaceous annuals and grasses, which include black mustard, foxtail chess (*Bromus madritensis* ssp. *rubens*), radish (*Raphinus sativa*), ripgut grass (*Bromus diandrus*), yellow star-thistle (*Centaurea solstitialis*), and wild oat. These grasslands are located primarily in the northern portion of MGRF. Soil disturbance and native vegetation removal associated with grading and clearing for access roads and fuel breaks have encouraged the growth of weedy annual herb and grass species that invade disturbed sites. Along the river, extensive stands of giant reed (*Arundo donax*) line the banks, displacing native riparian trees and shrubs. This non-native plant is an aggressive competitor with little wildlife habitat value and can permanently eliminate native vegetation unless actively controlled by selective removal. The plants also burn readily when cured; curing usually occurs by 1 May of each year.

A variety of eucalyptus species are used for ornamental landscape purposes at MGRF, including blue gum (*Eucalyptus globulus*), bushy yate (*E. lehmannii*), lemon scented gum (*E. citriodora*), mana gum (*E. viminalis*), and red iron bark (*E. sideroxylon*). Other plant species used in the landscape design include the following: Allepo pine (*Pinus halepensis*), Bermuda grass, Canary Island date palm, Canary Island pine (*P. canariensis*), Chinese hibiscus (*Hibiscus rosa-sinensis*), golden wattle (*Acacia longifolia*), green ash (*Fraxinus lanceolata*), lemonadeberry, Mexican

palm (*Washingtonia robusta*), mock orange (*Philadelphus mexicanus*), Monterey pine (*P. radiata*), pampas grass, natal plum (*Carissa grandiflora*), toyon, western sycamore, and white poplar (*Populus alba*). Blue gum and pampas grass are on the California Invasive Pest Plant Council A-1 List of Most Invasive Wildland Pest Plants.

Murphy Canyon Vernal Pool Preserve. The areas identified as landscaped at MCVPP include the brush management zones located along the perimeter of the residential area. The landscaped areas run along Aero Drive and are dominated by lantana (*Lantana camera*), pines, and broom baccharis. At MCVPP, non-native grasslands are similar in composition to those described for MGRF.

Chollas Heights Natural Area. Non-native grasslands are also present at CHNA.

Eucalyptus Ridge Natural Area. The southernmost open space area, which is within land managed by the PPV and within an SDG&E right-of-way, primarily consists of non-native vegetation and non-native grasslands with scattered native shrubs including California buckwheat and California sagebrush (U.S. Navy 2011). The dominant plant species include filaree, fountain grass, bromes, wild oat, common sow thistle, short-pod mustard, and tamarisk (U.S. Navy 2011). Because this portion of open space remains within the PPV and is within an SDG&E lease area, it is not affected by this FMP.

Howard Gilmore Terrace Natural Area. There are several patches of non-native grassland and non-native vegetation dominated by a variable mix of common disturbance-relayed species including tocolote, fountain grass, bromes, wild oat, fennel, and short-pod mustard.

Eucalyptus Woodland

Eucalyptus woodland is dominated by several species of eucalyptus. Some species of eucalyptus excrete toxic substances from the roots in order to create conditions that are unfavorable for most other plant species to grow. Because of this allelopathic property of eucalyptus trees, there is a very sparse understory, if any at all, in this type of woodland. This association is dominated by planted ornamental species such as eucalyptus, pepper tree, and lantana. Eucalyptus woodland occurs in MGRF, MCVPP, and CHNA.

Sensitive Habitats

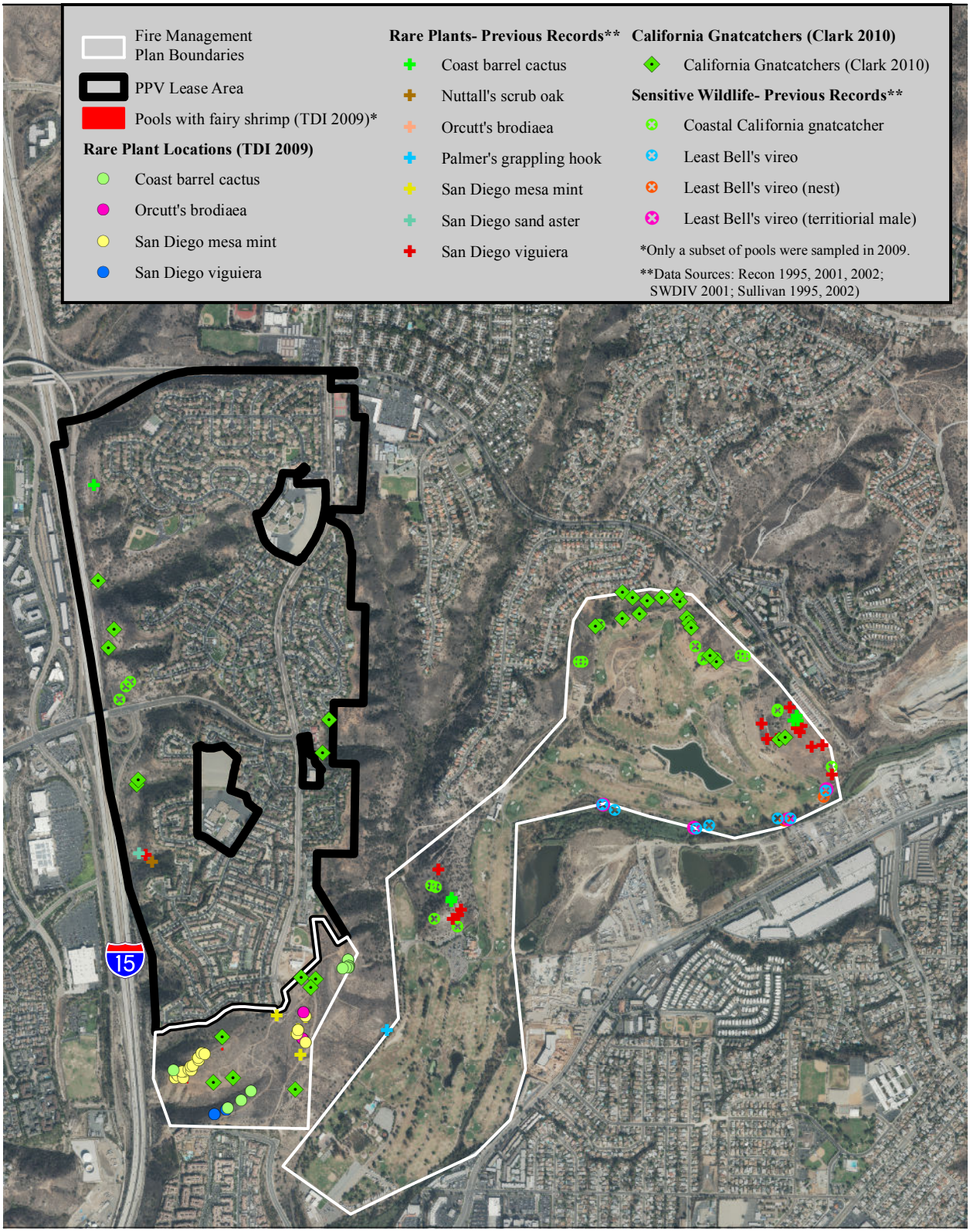
Sensitive habitats are those considered uncommon in the region, support special-status or rare plants or animals, or receive regulatory protection. In addition, CDFW (formerly California Department of Fish and Game [CDFG]) Natural Diversity Data Base (CNDDB) has designated a number of communities as rare; these communities are given the highest inventory priority

(Holland 1986). Five native vegetation communities on the property are considered rare and sensitive by CNDDB, Holland, and the City of San Diego MSCP: Diegan coastal sage scrub, maritime succulent scrub, southern willow scrub, mulefat scrub, and freshwater marsh. The Navy's policy of environmental stewardship promotes the conservation of each of these communities to the maximum extent feasible while fulfilling the Navy's mission.

Diegan coastal sage scrub is given the highest inventory priority by the CNDDB. This habitat is also considered sensitive by USFWS because it is the preferred nesting habitat of the federally listed coastal California gnatcatcher. Diegan coastal sage scrub was listed as the third most extensive vegetation community in San Diego County over 50 years ago (CDFG 1965); however, most is gone due to urban development. Evidence of the decline of this once common habitat is the growing number of declining plant and animal species dependent upon it, including the coastal California gnatcatcher, coastal cactus wren *(Camphylorhynchus brunneicapillus couesi),* southern California rufous-crowned sparrow *(Aimophila ruficeps canescens),* San Diego horned lizard *(Phrynosoma coronatum blainvillii),* Belding's orange-throated whiptail *(Aspidoscelis hyperythra beldingi),* and many rare plant species.

All wetland communities, including southern willow scrub, mulefat scrub, and freshwater marsh, are considered sensitive habitats due to their historic loss, as are wetland buffer areas. CDFW, under the California Fish and Game Code, considers all riparian plant communities to be sensitive biological resources. In addition, federal resource agencies as well as local jurisdictions and private conservation organizations consider riparian habitats to be rare and sensitive. In southern California, approximately 95 to 97 percent of riparian habitats, such as southern willow scrub, have been lost to agriculture, flood control, urbanization, and other human activities (Faber et al. 1989). This loss has resulted in the adoption of federal and state-level regulatory actions to conserve wetlands as important resources. These actions include compliance with the conservation guidelines of Sections 1600–1603 of the California Fish and Game Code and Sections 404 and 401 of the federal CWA.

Mission Gorge Recreation Facility. MGRF contains quality nesting habitat for several avian species, particularly within and around the Admiral Baker Golf Course (Figure 3.3-5). Raptors were observed foraging at MGRF, including Cooper's hawk (*Accipiter cooperi*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus elegans*). MGRF supports tall riparian habitat along the San Diego River and in patches in the northeast portion of the site, and eucalyptus groves and other tall ornamental trees associated with the golf course. Each of these areas can potentially support nesting raptors. The undisturbed habitat around the Admiral Baker Golf Course provides good-quality foraging sites for raptor species (U.S. Navy 2010).



Source: SANDAG 2014

Figure 3.3-5
Sensitive Natural Resources at Murphy Canyon Vernal Pool Preserve and Mission Gorge Recreational Facility

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_3_5_MCVPP_MGRF_snr.mxd, 1/26/2016, augellop

Murphy Canyon Vernal Pool Preserve. MCVPP (Photo 3.3-1 and Photo 3.3-2) was established as a mitigation site to offset the impacts to vernal pools as a result of the construction of Navy family housing at CHNA. To fulfill obligations of BO 1-6-94-F-23 (05 January 1995), a combination of crediting proactive, previous restoration efforts, enlarging existing vernal pools, restoring damaged pools, and protection of additional pools by fencing was implemented for over 42,000 square feet of pool surface area. Over 200 pools exist on an upper and lower mesa area (Figure 3.3-5 and Figure 3.3-6). Some of these pools support the federally endangered San Diego mesa mint (*Pogogyne abramsii*), and numerous pools contain the federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) (Black 2002). Although the footprint of CHNA negatively impacted the pre-development resources on this property, the project was designed to provide for internal open space areas that support a coastal sage scrub plant community and 12 reconstructed vernal pools (Black 2002).

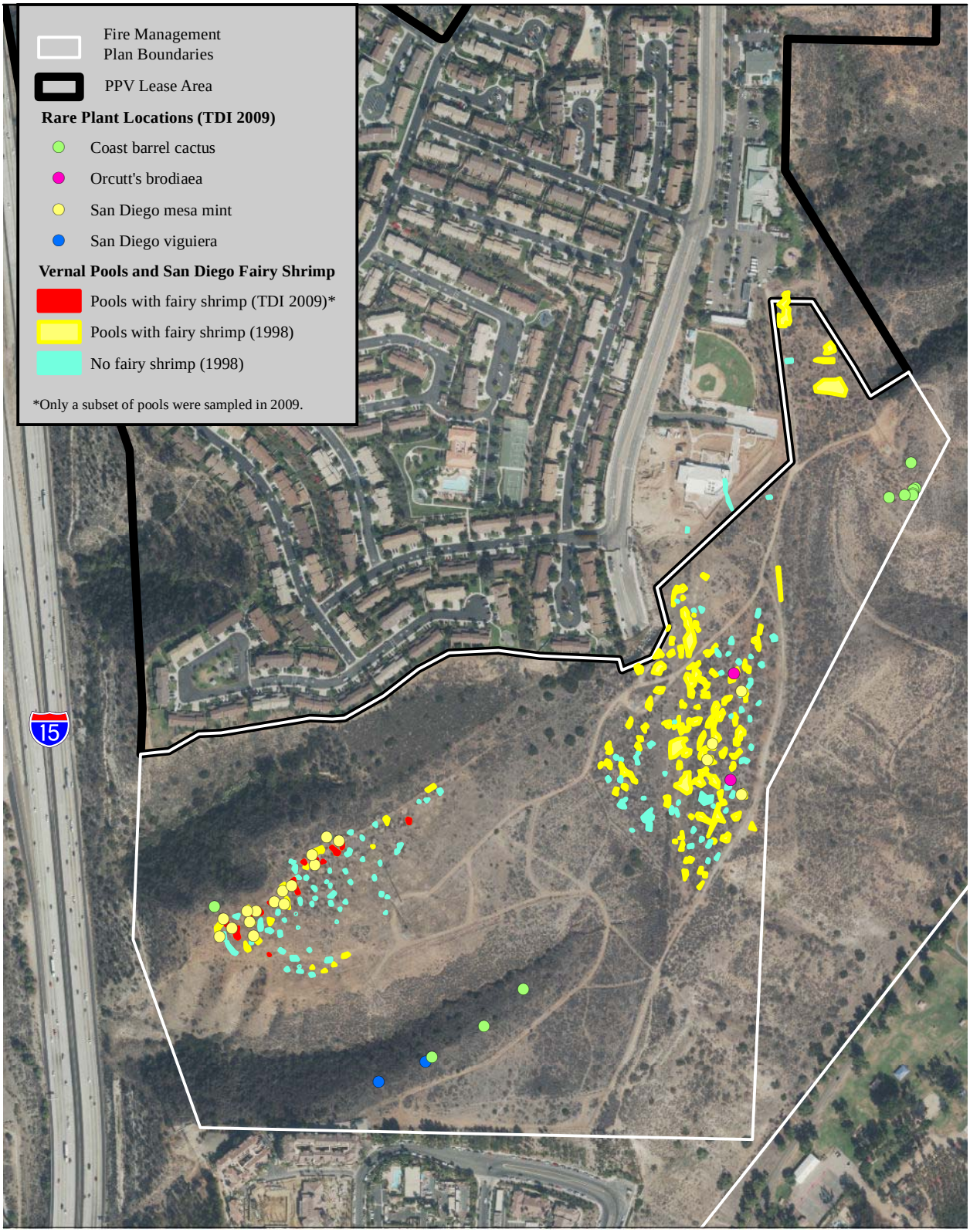
Chollas Heights Natural Area. Critical habitat was designated for the federally endangered San Diego fairy shrimp in December 2007 (72 Federal Register 70648–70714). The designation included vernal pools within Chollas Heights Housing Area open space (Figure 3.3-7). A total of 0.10 acre of wetlands and 0.05 acre of non-wetland jurisdictional waters of the U. S. were delineated within the housing area (U.S. Navy 2011). In addition, 0.13 acre of isolated wetlands was delineated along the east central edge of the Chollas Heights Housing Area. Vernal pools were mapped during surveys conducted in 1999, but these pools were not delineated again during surveys conducted in 2009 (U.S. Navy 2011). This site consists of mesa tops with seasonal wetlands, a complex of vernal pools, and a series of urban drainages connected via culverts (U.S. Navy 2011). The wetlands are located to the south of College Grove Way and the vernal pool complex is primarily located within the open space areas north of College Grove Way (U.S. Navy 2011).

Eucalyptus Ridge Natural Area. ERNA does not contain wetlands or other waters of the U.S. (U.S. Navy 2011). There is no designated critical habitat for any of the listed species in ERNA (Figure 3.3-8).

Howard Gilmore Terrace Natural Area. HGTNA does not contain wetlands or other waters of the U.S. (U.S. Navy 2011). There is no designated critical habitat for any of the listed species in HGTNA (Figure 3.3-9).

Photo 3.3-1. Murphy Canyon Vernal Pool Preserve.

Photo 3.3-2. San Diego Mesa Mint at Murphy Canyon Vernal Pool Preserve, 2009.



Source: SANDAG 2014

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 3.3-6
Sensitive Natural Resources at Murphy Canyon Vernal Pool Preserve

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig2-15_MCVPP_NatRes.mxd, 12/4/2015, augellop

Figure 3.3-7
Sensitive Natural Resources at Chollas Heights Natural Area

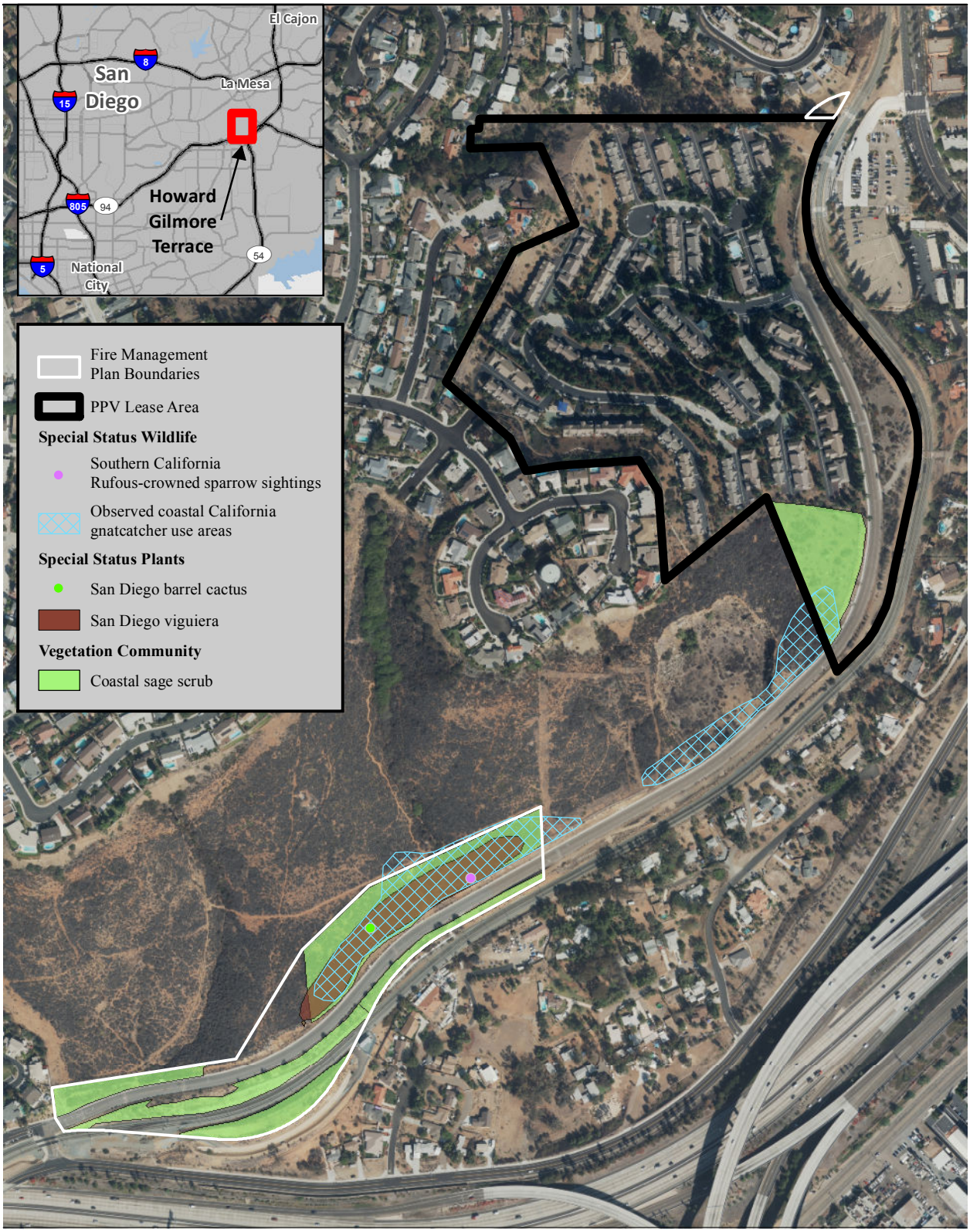
Source: SANDAG 2014

300 150 0 300 Feet

Scale: 1:3,600; 1 inch = 300 feet

Figure 3.3-8
Sensitive Natural Resources at Eucalyptus Ridge Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\WFMP\Fig2-17_ER_snr.mxd, 12/3/2015, paul_moreno



Source: SANDAG 2014

500 250 0 500 Feet

Scale: 1:6,000; 1 inch = 500 feet

Figure 3.3-9
Sensitive Natural Resources at
Howard Gilmore Terrace Natural Area

Path: P:\2014\60331898_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_3-9_HGT_snr.mxd, 1/27/2016, augellop

3.3.2.2 Special-Status Species

The first survey for special-status species was conducted during the 2009 natural resources survey of NBSD housing areas, which included adjacent Navy-owned natural areas. Special-status plant and wildlife species for MCVPP, CHNA, HGTNA, and ERNA are listed in Table 3.3-2 and MGRF in Table 3.3-3. Brief descriptions of the federally listed species are below.

Special-Status Plants

Federal Endangered, California Endangered, CNPS List 1B

San Diego Mesa Mint *(Pogogyne abramsii)*. San Diego mesa mint is an annual herb endemic to San Diego County alone, and restricted to vernal pools. Following adequate rainfall seasons, it blooms profusely, sometimes carpeting pool basins with aromatic purple flowers. Individual flowers may bloom late well into the summer. During drought years, populations can be sparse and patchy. Growing sympatrically with this species are usually toothed downingia (*Downingia cuspidata*) and San Diego button celery (*Eryngium aristulatum* ssp. *parishii*).

Murphy Canyon Vernal Pool Preserve. This fragrant mint has been reintroduced into pools that it previously did not occupy as part of the mitigation program at MCVPP and CHNA, although it is currently known only from MCVPP (USDON SWDIV 2014).

Chollas Heights Natural Area. This fragrant mint has been reintroduced into pools that it previously did not occupy as part of the mitigation program at MCVPP and CHNA, although it is currently known only from MCVPP (USDON SWDIV 2014).

San Diego Button Celery *(Eryngium aristulatum parishii)*. A member of the parsley family, San Diego button celery is one of very few annual or perennial herbs adapted to life in vernal pools. It is restricted to a small area from Riverside County to northern Baja California. This plant is distinctly amphibious. When the pools are flooded, the bright green leaves look like little more than leaf stems. These emerge like a grass or rush out of the water, and are soft and without spines or with small, soft spines. Portions of the leaf are hollow, apparently to help with oxygen diffusion or storage. As the pool dries, the leaves develop lobes and become grayish and spiny, giving the plant a prickly appearance. The inconspicuous flowers develop usually well after the pools are dry.

Table 3.3-2
Special-Status Species Observed or with the Potential to Occur at Murphy Canyon Vernal Pool Preserve and Chollas Heights, Howard Gilmore Terrace, and Eucalyptus Ridge Natural Areas

Common Name	Scientific Name	Federal Status	State Status	Area(s)
Plants				
San Diego button celery	*Eryngium aristulatum* var. *parishii*	FE	SE, CNPS Rank 1B,1	CHNA
San Diego barrel cactus	*Ferocactus viridescens*	--	CNPS Rank 2.1	MCVPP CHNA HGTNA
Graceful tarplant	*Holocarpha virgata* ssp. *Elongate*	--	CNPS Rank 4.2	MCVPP CHNA
San Diego goldenstar	*Muilla clevelandii*	--	CNPS Rank 1B	MCVPP
San Diego mesa mint	*Pogogyne abramsii*	FE	SE, CNPS Rank 1B	MCVPP
San Diego sunflower	*Bahiopsis laciniata*	--	CNPS Rank 4.2	MCVPP CHNA HGTNA
Birds				
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	--	WL	MCVPP HGTNA
Coastal California gnatcatcher	*Polioptila californica californica*	FT	SSC	MCVPP CHNA ERNA HGTNA
Least Bell's vireo	*Vireo bellii pusillus*	FE	SE	CHNA
Reptiles				
Belding's orange-throated whiptail	*Aspidoscelis hyperythrus beldingi*	--	SSC	MCVPP ERNA
Invertebrates				
San Diego fairy shrimp	*Branchinecta sandiegonensis*	FE	--	MCVPP CHNA
Hermes copper butterfly	*Hermelycaena hermes*	FC	--	ERNA*

Source: U.S. Navy 2011; CDFG 2011a, 2011b

* An August 2015 report states that there was one Hermes copper butterfly observation at MGRF during 2015 surveys, but it was not confirmed through the peer-review process (the butterfly flew away before a photograph was taken) (Vernadero 2015).*

Key:

Federal Status: FE = Federal Endangered, FT = Federal Threatened, FC = Federal Candidate, BCC = Birds of Conservation Concern

State Status: SE = State Endangered, ST = State Threatened, SSC = Species of Special Concern, WL = Watch List, FP = Fully Protected, CNPS = California Native Plant Society, List 1B = Rare, threatened, or endangered in California and elsewhere. 0.1: Seriously threatened in California, CNPS List 2.1 = List 2: Rare, threatened, or endangered in California, but more common elsewhere. 0.1: Seriously threatened in California, CNPS List 4.2 = Limited distribution (Watch list). 0.2: Moderately threatened in California.

Table 3.3-3
Special-Status Species Observed or with the Potential to Occur on Mission Gorge Recreational Facility

Common Name	Scientific Name	Federal Status	State Status	NBSD Presence
Plants				
San Diego barrel cactus	*Ferocactus viridescens*	--	CNPS Rank 2.1	Known to occur and observed during 2009 surveys.
Palmer's grappling hook	*Harpagonella palmeri*	--	CNPS Rank 4.2	Known to occur, not observed during 2009 surveys.
Spiny rush	*Juncus acutus* ssp. *leopoldii*	--	CNPS Rank 4.2	Known to occur and observed during 2009 surveys.
California box-thorn	*Lycium californicum*	--	CNPS Rank 4.2	Known to occur and observed during 2009 surveys.
San Diego sunflower	*Bahiopsis laciniata*	--	CNPS Rank 4.2	Known to occur and observed during 2009 surveys.
Birds				
Cooper's hawk	*Accipiter cooperii*	--	WL	Observed in riparian habitat along San Diego River; although no nests were observed, there is the potential to nest on-site.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	--	WL	Detected in the California sagebrush habitat at MGRF and is expected to breed on-site.
Sharp-shinned hawk	*Accipiter striatus velox*	--	SSC	Detected at MGRF during the 1995/1996 surveys. This species has the potential to forage on-site, but would not be expected to nest on-site.
Yellow warbler	*Dendroica petechia*	BCC	SSC	Detected in cottonwood-willow series vegetation at MGRF. Breeds on-site and occupies the majority of available suitable habitat on-site.
White-tailed kite	*Elanus leucurus*	--	FP	No nests were observed; this species has the potential to nest in the trees on-site.
Yellow-breasted chat	*Icteria virens auricollis*	--	SSC	Detected in the cottonwood-willow series vegetation at MGRF. This migratory species is expected to breed on-site.
American white pelican	*Pelecanus erythrorhynchos*	--	SSC	Observed resting on the open water within the San Diego River at MGRF.
Double-crested cormorant	*Phalacrocorax auritus albociliatus*	--	WL	Species is expected to forage along the San Diego River, but is not expected to breed on-site.
Coastal California gnatcatcher	*Polioptila californica californica*	FT	SSC	Observed during focused surveys on MGRF and known to breed in coastal sage scrub at MGRF.
Least Bell's vireo	*Vireo bellii pusillus*	FE	SE	Observed during focused surveys nesting along San Diego River at MGRF.
Reptiles and Amphibians				
Belding's orange-throated whiptail	*Aspidoscelis hyperythrus beldingi*	--	SSC	Observed throughout the coastal sage habitat.
Mammals				
Western red bat	*Lasiurus blossevillii*	--	SSC	Detected east of MGRF along the San Diego River; moderate potential to occur.
San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	--	SSC	Last observed in 1995.
San Diego desert woodrat	*Neotoma lepida intermedia*	--	SSC	Observed during trapping studies at MGRF.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	--	SSC	Last observed in 2002.

Common Name	Scientific Name	Federal Status	State Status	NBSD Presence
Big free-tailed bat	*Nyctinomops macrotis*	--	SSC	Known to occur on San Diego River at MTRP. Moderate potential for this species to occur.
Invertebrates				
Hermes copper butterfly	*Hermelycaena [Lycaena] hermes*	FC	--	Not documented on-site, but host plant is present.*

Source: U.S. Navy 2010; CDFG 2011a

* An August 2015 report states that there was one Hermes copper butterfly observation at MGRF during 2015 surveys, but it was not confirmed through the peer-review process (the butterfly flew away before a photograph was taken) (Vernadero 2015).

Key:

Federal Status: FE = Federal Endangered, FT = Federal Threatened, FC = Federal Candidate, BCC = Birds of Conservation Concern

State Status: SE = State Endangered, ST = State Threatened, SSC = Species of Special Concern, WL = Watch List, FP = Fully Protected, CNPS = California Native Plant Society, List 4.2 = Limited distribution (Watch list). 0.2: Moderately threatened in California, CNPS List 2.1 = List 2: Rare, threatened, or endangered in California, but more common elsewhere. 0.1: Seriously threatened in California.

Special-Status Wildlife

Federally Endangered and Threatened Species

Wildlife species that occur at MGRF are typical of species found within riparian and coastal sage scrub ecosystems of San Diego County. Those with federal status of some kind are described below.

San Diego Fairy Shrimp (*Branchinecta sandiegonensis*). The San Diego fairy shrimp is a small crustacean found in vernal pools and other seasonally filled soil depressions in coastal southern California, from Santa Barbara County to northern Baja California, Mexico. As water evaporates from these pools during early spring and summer, various endemic, short-lived plant and animal species adapted to these ephemeral conditions complete their life cycles. Shrimp appear after late fall, winter, or spring rains sufficiently fill their small shallow pools with enough water to remain inundated for up to several months at a time. The shrimp are filter feeders that digest microscopic particles of plant and animal detritus. Birds and other invertebrates prey upon the fairy shrimp that develop in these pools. One unique feature of fairy shrimp biology is their ability to remain in the soil, as egg-like cysts, for many years without hatching. Eggs settle under the gravel or in mud cracks of vernal pool bottoms, remaining for as long as 10 years for the return of sufficient rain to risk hatching and completing the species' life cycle. The San Diego fairy shrimp can occur in ephemeral pools or even road ruts that contain no vernal pool indicator plants.

Least Bell's Vireo (*Vireo bellii pusillus*). This species frequents lowland riparian willow habitat, primarily seeking insects for food. It is the westernmost subspecies of Bell's vireo, breeding entirely within California and northern Baja California. It was listed by the State of California as

endangered in 1980. By the time the species was federally listed in 1986, it had been extirpated from most of its historic range, and numbered just 300 pairs statewide (PRBO 2009). In the decade since listing, least Bell's vireo numbers have increased six-fold, and the species is expanding into its historic range. In 1998, the population size was estimated at 2,000 pairs (PRBO 2009). The majority of birds occur in San Diego County, and roughly half of the current vireo population occurs on drainages within Marine Corps Base Camp Pendleton (USFWS 1998 cited in PRBO 2009).

Mission Gorge Recreation Facility. Four least Bell's vireo territories (pairs) were detected during the 2007 surveys at MGRF. The three territories on the south side of the river within proximity to each other were observed during the majority of the surveys, and fledglings were positively observed with one of these pairs (USDON SWDIV 2014).

Coastal California gnatcatcher (*Polioptila californica californica*). The coastal California gnatcatcher is nonmigratory and restricted to coastal areas of southern California and Baja California, Mexico. There are many examples of occupied habitat patches isolated by extensive development (PRBO 2009), similar to their occurrence on these properties. The federally listed threatened coastal California gnatcatcher has been detected in coastal sage scrub at all properties.

As reported in the 2014 NBSD INRMP, coastal California gnatcatchers were noted in the coastal sage scrub on MGRF during surveys. In 2007, five pairs of coastal California gnatcatchers were observed on MGRF, and fledglings were observed with three of the five pairs. In 2011, in-house surveys detected approximately 11 use areas. Coastal California gnatcatchers were also observed at MCVPP, CHNA, ERNA, and HGTNA (USDON SWDIV 2014).

Reptiles and Amphibians

Mission Gorge Recreation Facility. A total of five amphibian and 14 reptilian species were detected on MGRF during surveys performed on NBSD as part of the 2010 natural resources inventory (U.S. Navy 2010) and on the housing areas as part of the 2011 natural resources inventory (U.S. Navy 2011). Amphibian species include the following: California (= western) toad (*Anaxyrus boreas halophilus),* Baja California treefrog (*Pseudacris hypochondriaca hypochondriaca),* bullfrog (*Rana catesbeiana),* western spadefoot (*Spea hammondii),* African clawed frog (*Xenopus laevis).* Reptilian species include the following: Blainville's horned lizard or coast horned lizard (*Phrynosoma blainvillii),* Great Basin fence lizard (*Sceloporus occidentalis longipes),* western side-blotched lizard (*Uta stansburiana elegans),* Coronado skink (*Eumeces skiltonianus interparietalis),* Belding's orange-throated whiptail (*Aspidoscelis hyperythrus beldingi),* coastal whiptail (*Aspidoscelis tigris stejnegeri),* California legless lizard (*Anniella pulchra),* San Diego alligator lizard (*Elgaria multicarinata webbi),* San Diego ringneck

snake (*Diadophis punctatus similis),* California kingsnake (*Lampropeltis getula californiae),* chaparral whipsnake (*Masticophis lateralis lateralis),* two-striped gartersnake (*Thamnophis hammondii),* red diamond rattlesnake (*Crotalus ruber),* and southern pacific rattlesnake (*Crotalus viridis helleri)* (USDON SWDIV 2014).

Murphy Canyon Vernal Pool Preserve. Reptilian and amphibian species observed within the Murphy Canyon Heights Housing Areas during the 2009 natural resources inventory include the western fence lizard and the Belding's orange-throated whiptail (USDON SWDIV 2014).

Chollas Heights Natural Area. Reptilian and amphibian species observed within CHNA during the 2009 natural resources inventory include the Baja California treefrog, western fence lizard, and California kingsnake (USDON SWDIV 2014).

Eucalyptus Ridge Natural Area. Belding's orange-throated whiptail was the only reptile species observed within ERNA during the 2009 natural resources inventory (USDON SWDIV 2014).

Howard Gilmore Terrace Natural Area. The western fence lizard was the only reptile species observed within HGTNA during the 2009 natural resources inventory (USDON SWDIV 2014).

Avian Species

Mission Gorge Recreation Facility. MGRF provides foraging and nesting habitat for a variety of resident and migratory birds. MGRF contains quality nesting habitat for several avian species, particularly within and around the Admiral Baker Golf Course. MGRF supports tall riparian habitat along the San Diego River and in patches in the northeastern portion of the site as well as eucalyptus groves and other tall ornamental trees associated with the golf course. Each of these areas can potentially support nesting raptors. The undisturbed habitat around the Admiral Baker Golf Course provides good-quality foraging sites for raptor species (U.S. Navy 2010). Bird nomenclature is from American Ornithologists' Union (1998).

Raptor species that use the available habitat on MGRF include American kestrel (*Falco sparverius*), Cooper's hawk, red-shouldered hawk, red-tailed hawk (*Buteo jamaicensis*), and sharp-shinned hawk (*Accipiter striatus velox*). Many species of ducks use the golf course ponds and the open areas of the San Diego River, including bufflehead (*Bucephala albeola*), common goldeneye (*Bucephala clangula americana*), mallard (*Anas platyrhynchos*), red-breasted merganser (*Mergus serrator*), and ruddy duck (*Oxyura jamaicensis rubida*).

Bird species commonly occurring within the three survey areas include Anna's hummingbird (*Calypte anna*), bushtit (*Psaltriparus minimus*), California towhee (*Pipilo crissalis*), lesser

goldfinch (*Carduelis psaltria*), western scrub-jay (*Aphelocoma californica*), wrentit (*Chamaea fasciata*), and yellow-rumped warbler (*Dendroica coronata*). Observed at MGRF were barn swallow (*Hirundo rustica erythrogaster*), cliff swallow (*Petrochelidon pyrrhonata tachina*), northern rough-winged swallow (*Stelgidopteryx serripennis*), song sparrow (*Melospiza melodia*), and tree swallow (*Tachycineta bicolor*). Orange-crowned warblers (*Vermivora celata*), white-crowned sparrows (*Zonotrichia leucophrys*), and yellow-rumped warblers were observed during the winter months. Red-tailed hawks were the only raptors detected during surveys.

Murphy Canyon Vernal Pool Preserve. Native bird species observed within the Murphy Canyon Heights Housing Area during the 2009 natural resource inventory include the red-tailed hawk, Nuttall's woodpecker (*Picoides nuttallii*), and coastal California gnatcatcher (USDON SWDIV 2014).

Chollas Heights Natural Area. Native bird species observed within CHNA during the 2009 natural resource inventory include the Cooper's hawk, least Bell's vireo, and common raven (*Corvus corax clarionensis*) (U.S. Navy 2011). The red-crowned parrot (*Amazona viridigenalis*), a non-native species, was also observed within the housing area (USDON SWDIV 2014).

Eucalyptus Ridge Natural Area. Native bird species observed within ERNA during the 2009 natural resource inventory include the red-tailed hawk, spotted towhee (*Pipilo maculatus*), and house finch (U.S. Navy 2011). The house sparrow (*Passer domesticus*), a non-native species, was also observed within the housing area (USDON SWDIV 2014).

Howard Gilmore Terrace Natural Area. Native bird species observed within HGTNA during the 2009 natural resource inventory include the red-tailed hawk, coastal California gnatcatcher, and house finch (USDON SWDIV 2014).

Mammals

Naturally vegetated areas provide cover and foraging opportunities for a variety of mammals, whereas disturbed areas provide limited opportunities. Many mammal species are nocturnal and are therefore difficult to observe directly during daytime surveys. These mammals are often detected by sign. Small rodents may go undetected without a trapping program. Mammal nomenclature follows that of Jones et al. (1997).

Mission Gorge Recreation Facility. The following mammals are known or have the potential to occur at MGRF:

- Big free-tailed bat (*Nyctinomops macrotis)*

- Black rat (*Rattus rattus)*
- Bobcat (*Lynx rufus)*
- Cactus mouse (*Peromyscus eremicus)*
- California ground squirrel (*Spermophilus beecheyi)*
- California mouse (*Peromyscus californicus)*
- California pocket mouse (*Chaetodipus californicus)*
- Coyote (*Canis latrans)*
- Deer mouse (*Peromyscus maniculatus)*
- Desert cottontail rabbit (*Sylvilagus audubonii)*
- Dusky-footed woodrat (*Neotoma fuscipes)*
- Gray fox (*Urocyon cinereoargenteus)*
- House mouse (*Mus musculus)*
- Southern mule deer (*Odocoileus hemionus)*
- Opossum (*Didelphis virginiana)*
- Pocketed free-tailed bat (*Nyctinomops femorosaccus)*
- Raccoon (*Procyon lotor)*
- San Diego black-tailed jackrabbit (*Lepus californicus) bennettii)*
- San Diego desert woodrat (*Neotoma lepida intermedia)*
- Southwestern pocket gopher (*Thomomys bottae)*
- Striped skunk (*Mephitis mephitis)*
- Western mastiff bat (*Eumops perotis californicus)*
- Western red bat (*Lasiurus blossevillii)*
- Yuma myotis (*Myotis yumanensis)*

Murphy Canyon Vernal Pool Preserve. Mammalian species observed within the Murphy Canyon Heights Housing Area during the 2009 natural resources inventory include the desert cottontail, California ground squirrel, coyote, and southern mule deer (U.S. Navy 2011).

Chollas Heights Natural Area. Mammalian species observed within CHNA during the 2009 natural resources inventory include the desert cottontail, California ground squirrel, and striped skunk (USDON SWDIV 2014).

Eucalyptus Ridge Natural Area. Mammalian species observed within ERNA during the 2009 natural resources inventory include the California ground squirrel and coyote (USDON SWDIV 2014).

Howard Gilmore Terrace Natural Area. Mammalian species observed within HGTNA during the 2009 natural resources inventory include the desert cottontail and coyote (USDON SWDIV 2014).

Invertebrates

Mission Gorge Recreation Facility. Invertebrate species diversity on MGRF is moderate due to habitat fragmentation. The species observed or with the potential to occur include San Diego fairy shrimp, Hermes copper butterfly, and Quino checkerspot butterfly (*Euphydryas editha quino)* (USDON SWDIV 2014).

Murphy Canyon Vernal Pool Preserve. Invertebrate species observed within the Murphy Canyon Heights housing area during the 2009 natural resources inventory include San Diego fairy shrimp, bee flies, and bees (USDON SWDIV 2014).

Chollas Heights Natural Area. Invertebrate species observed within CHNA during the 2009 natural resources inventory include San Diego fairy shrimp, shorthorn grasshoppers (family Acrididae), and the honey bee (family Apidae) (USDON SWDIV 2014).

Eucalyptus Ridge Natural Area. Invertebrate species observed within ERNA during the 2009 natural resources inventory include crab spiders, Argentine ants (*Linepithema humile*), and the honey bee (USDON SWDIV 2014).

Howard Gilmore Terrace Natural Area. Invertebrate species observed within HGTNA during the 2009 natural resources inventory include jumping spiders, scarab beetle, and shorthorn grasshoppers (USDON SWDIV 2014).

3.3.2.3 Waters of the U.S.

Wetlands, as defined by the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers (USACE), are “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (USACE 1987).

Waters of the U.S. generally include all waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide; all interstate waters, including interstate "wetlands"; and all other waters such as interstate lakes, rivers, streams (including intermittent streams), mudflats,

sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce. As was described above, only three of the sites contain any waters of the U.S.

Murphy Canyon Vernal Pool Preserve. Two short drainages pass across the site to the southwest but they do not have any stream designation on U.S. Geological Survey maps. Vernal pools may be considered waters of the United States if there is a significant nexus to downstream waters based on specific evaluation and they are likely to be found jurisdictional in most cases (Snider 2015).

Wetlands and non-wetland jurisdictional waters of the U.S. were delineated at the Murphy Canyon Heights Housing Area. An expansive complex of vernal pools were mapped during surveys conducted in 1999 (U.S. Navy 2011) but were not delineated during surveys conducted in 2009 (U.S. Navy 2011). The Murphy Canyon Heights Housing Area contains mostly upland habitat with 0.35 acre of wetland and non-jurisdictional waters of the U.S.

Mission Gorge Recreation Facility. The MGRF site includes the San Diego River stream course and open water associated with the river as well as ponds within the area of the golf course. Wetlands and non-wetland waters of the U.S., as defined by USACE, were delineated on MGRF during the 2006 and 2008 natural resources survey for MGRF. As shown in Table 3.3-4, a total of 22.3 acres of wetlands and 6.8 acres of other USACE regulated waters of the U.S. were identified on MGRF (U.S. Navy 2010).

Table 3.3-4
Mission Gorge Recreational Facility Jurisdictional Waters

Jurisdictional Waters on MGRF	Acres
Wetland	22.3
Non-wetland waters of the U.S.	6.8
Total	**29.1**

Source: U.S. Navy 2010
MGRF = Mission Gorge Recreation Facility; USACE = U.S. Army Corps of Engineers
Note: As stated in 33 Code of Federal Regulations Part 328, areas excavated from uplands—which include golf course ponds—are not USACE jurisdictional. At MGRF, and additional 12.5 acres of resources are likely exempt from USACE jurisdiction, including 4.3 acres of wetlands and 8.2 acres of nonwetland waters. To date, USACE has not confirmed delineation results.

The federal no net loss policy for wetlands is the principle by which counties, agencies, and governments strive to balance unavoidable habitat, environmental and resource losses with replacement of those items on a project-by-project basis so that further reductions to resources may be prevented. Avoidance, minimization, or compensatory mitigation may be required through the permitting process to offset any impacts to waters of the U. S., including wetlands.

Wetland management strategies vary depending primarily on the wetland classification, which is determined by the value of a particular wetland area. A wetland's value is decided by the quality of the functions and services it provides or has the potential to provide, including its biomass production, habitat, erosion control, storm water storage, water quality protection, aquifer recharge potential, and low flow augmentation. Some of the factors used to measure the quality of these functions are the wetland's size, its location in the watershed, the amount of development in the watershed, vegetative structure and composition, rate of water flow through the wetland, the size of natural buffers, and surrounding land uses. Regardless of the habitat value, wetland areas are almost always poor choices for building sites or for most activities, other than providing nonconsumptive enjoyment of the outdoors. Installation natural resources staff would ensure during the program/project review processes that program/project managers are aware of the laws and regulations and permitting process regarding the protection of wetlands and nonwetland waters of the U.S. Specific concerns with respect to the preservation of wetlands include:

- Development/anthropogenic disturbances,
- Invasive species encroaching into wetland habitat,
- Climate change,
- Erosion and sedimentation from either anthropogenic or natural causes, and
- Pollution.

Jurisdictional delineations for waters of the U. S., including wetlands, are conducted as needed on MGRF based on mission and development initiatives. As long as delineations are conducted, associated Jurisdictional Determinations are obtained on MGRF on a regular basis, and information from the delineations is maintained in the geographic information system database, management of wetlands should not pose an issue at MGRF.

Chollas Heights Natural Area. A number of natural and created vernal pools are present in this area. A total of 0.10 acre of wetlands and 0.05 acre of non-wetland jurisdictional waters of the U.S. have been delineated within CHNA Figure 3.3-10 (U.S. Navy 2011). In addition, 0.13 acre of isolated wetlands was delineated along the eastern edge of the southern open space area in the Chollas Heights Housing Area.

Vernal pools were mapped during surveys conducted in 1999, but these pools were not delineated again during surveys conducted in 2009 (U.S. Navy 2011). This site consists of mesa tops with seasonal wetlands, a complex of vernal pools, and a series of urban drainages connected via culverts (U.S. Navy 2011). The wetlands are located to the south of College Grove Way and the vernal pool complex is primarily located within the open space areas north of College Grove Way (U.S. Navy 2011).

EA for Wildfire Management Actions at MGRF, MCVPP, and the Chollas Heights, Eucalyptus Ridge, and Howard Gilmore Terrace Natural Areas

Source: SANDAG 2014

400 0 400 Feet

Scale: 1:4,800; 1 inch = 400 feet

Figure 3.3-10
Chollas Heights Natural Area
Soils and Water Resources

Path: P:\20141603189\8_GMI_NBSD_FMP\900-CAD-GIS\920 GIS\922_Maps\EA\Fig3_4_10_CHNA_wet.mxd, 12/23/2015, AugelloP

3.3.3 Environmental Consequences

3.3.3.1 Approach to Analysis

Under NEPA, biological resources may be either directly or indirectly affected by a project. Furthermore, direct and indirect impacts may be either permanent or temporary in nature. These impacts are defined below.

Direct: Direct impacts are caused by the action and occur at the same time and place as the action.

Indirect: Indirect impacts occur later in time or are farther removed in distance but are still reasonably foreseeable and attributable to project-related activities.

Permanent: All impacts that result in irreversible effects or removal of biological resources are considered permanent.

Temporary: Any impacts considered to have reversible effects on biological resources may be viewed as temporary.

This EA analyzes impacts of proposed fire management and post-fire rehabilitation actions to biological resources on MGRF, MCVPP, CHNA, ERNA, and HGTNA. Implementation of the plan would result in specific vegetation treatments around the periphery of the natural habitat areas. While most treatment areas exist in a semi-natural or disturbed condition with a preponderance of non-native and naturalized plants as well as landscape plants, there is a potential for impacts to some natural vegetation, though on a limited scale.

For MCVPP, the northern and southern boundaries of the preserve are adjacent to multi-family residential development. The habitats there with a potential to be impacted include non-native grassland, coastal sage scrub habitat, and habitat that is near individual areas of vernal pools. Clearing of vegetation to a bare earthen surface would result in impacts to vernal pools; however, simply maintaining an area so that it is not supporting flammable shrubs should not impact existing vernal pools in the area. Any vegetation treatments in the northeastern area of the site should be performed carefully. There is a 30-foot fire management zone extending from the PPV lease lands into MCVPP that is required to be maintained by the PPV lease holder. This would affect roughly 800 feet of coastal sage scrub habitat along the southern perimeter of the PPV lands. The MCVPP land may be subject to additional treatment downslope of the 30-foot buffer, including thinning of the coastal sage scrub. This is not in an area where the coastal California gnatcatcher has been observed on MCVPP, likely because it is steep slope land that is not utilized by gnatcatchers. The remainder of the northern perimeter of MCVPP on the southern end

of the PPV lands is grassland or other low-growing vegetation and land that already includes a vegetation treatment zone.

On the south side of the MCVPP, the native vegetation grows adjacent to other multi-family structures. An approximately 440-foot-long stretch of the MCVPP perimeter would need to be thinned and treated as much as 40 or 50 feet into MCVPP in order to create a defensible space for the existing buildings.

MGRF lies adjacent to residential development on the northwest, the northeast, and the east. The San Diego River extends along the southern boundary with heavy industrial and outdoor storage uses along Mission Gorge Road. Vegetation treatments on the northeast perimeter, roughly 1,800 feet of the perimeter adjacent to housing development, would impact coastal sage scrub habitat and vegetation in the goldenbush-coyote bush series and a small amount of cottonwood willow habitat. However, it is notable that the houses in the residential community in this area all have a space of approximately 100 feet separating the structures from the rear boundary that is in common with the MGRF boundary. Therefore, other than thinning of the vegetation and removing highly flammable species, broad-level vegetation treatment in this area should not fall as a major responsibility of MGRF. It is also notable that the landscape vegetation on a number of those lots is highly flammable and serves as a high fire hazard to the homes on those lots. On the eastern boundary of MGRF, there are additional multi-family structures, but they are set back from the property line by a distance of 100 feet. Habitat in this area on MGRF includes some coastal sage scrub vegetation and an area of Russian thistle non-native vegetation. The access road into this site would also need to be treated on the north side where it is adjacent to more natural habitat on steep sloping lands.

Except for the southern boundary adjacent to the Chollas Lake Park, CHNA is surrounded by residential development. The open space lands are in three parts. The northern portion is surrounded by single-family residential development on the northern boundary, and multi-family residential development within the Chollas Heights housing on its southern boundary except for a small segment that is bounded by College Grove Way. A fire break exists along approximately 1,500 feet of the northern boundary adjacent to the off-site residences. The vegetation within the majority of this portion of the area is quite open in configuration, but there are some larger shrubs as part of the coastal sage scrub habitat along its southwest and southeast perimeters that would need to be thinned at least 30 feet from the landscaped strip that exists along the back of the structures.

The southeastern portion of the open space lands is adjacent to multi-family residential to the west, College Grove Way to the north with residential uses on the northeast and east, and the Chollas Heights Child Development Center to the east. Two of the multi-family buildings near

College Grove Way are as close as 20 feet from the open space area where a number of eucalyptus and other ornamental trees grow. Treating that area would need consideration, including possibly removing the eucalyptus trees in order to create a defensible space. To the south of this southeastern open space segment is land that is part of Chollas Lake Park with some natural coastal sage scrub habitat and large growth eucalyptus trees.

The southwestern portion of CHNA is bounded on the north by roughly 1,000 feet of multi-family development, on the west by open coastal sage scrub land, and on the south by coastal sage scrub lands and large eucalyptus trees. The multi-family structures are in some cases less than 20 feet from native coastal sage scrub vegetation. Thinning and treating at least 10 to 30 feet is needed along this perimeter to create defensible space.

Maintenance of treatment areas adjacent to development would be necessary along the entire perimeter of the northern open space section, the west; northern and eastern boundaries of the southeastern portion of the open space; and the northern boundary of the southwestern piece of the open space.

ERNA is adjacent to multi-family residential development on three sides—north, east, and south. The eastern side is offset from the buildings by 90 feet down a cut slope; however, the slope has been revegetated with native coastal sage scrub plants. The residential development needs to be separated from the natural areas by a vegetation treatment zone, but it would be the responsibility of the residential development to maintain that area. On the west, ERNA is bounded by rural development with some natural lands, some semi-cleared lands, and a few residences. There are indications that the inner perimeter of ERNA has been treated in the past to reduce the vegetation density with a clear swath in some places that is 30 feet wide. However, weedy grasses have grown into the area and at the top of the somewhat rocky hill, and it also appears that landscape trees from the adjacent property have encroached into this site. On the north side, the structures are more than 30 feet from the ERNA boundary in many locations, but in others, they are closer, requiring some treatment within the natural area. The same is true for the southern boundary.

HGTNA is divided by High Street. To the north, it is adjacent to a nearly 50-acre patch of natural coastal sage scrub habitat that is located upslope. A residential development exists approximately 650 feet to the north of the site. A separation of the native vegetation from the road exists along a portion of the site due to the cut slopes that were generated with the construction of the road. However, in the western end of the elongated site, the natural vegetation grows adjacent to the road. It may be necessary for some vegetation treatment to occur along the road in that area to maintain a 15-foot clearance as well as for the removal of trash that has been dumped in that area.

Table 3.3-5 provides a rough estimate of the maximum area that would be subject to fire management action treatments in each of the five relevant properties. These acreages represent a maximum treatment/maximum impact scenario. Actual treatment area would like be substantially smaller. For example, in MGRF, the majority, if not all, of the adjacent lots owned or managed by private entities are large enough to support their own treatment areas without affecting non-lease lands that remain under Navy management. Nearly all of the vegetation that would be impacted as described above is coastal sage scrub though, in some locations, it is heavily affected by non-native shrubs.

Table 3.3-5
Rough Estimate of Maximum Area of Fire Management Treatments on MCVPP, MGRF, CHNA, ERNA, and HGTNA

Property	Maximum Area Potentially Treated (Acres)*
MCVPP	0.85
MGRF	1.2
CHNA	1.8
ERNA	0.67
HGTNA	0.14

Permanent direct impacts could occur from vegetation treatment activities inside of the perimeter of the native habitat areas through removal of shrubs and grasses, including permanent direct losses to native habitats, and sensitive species. Direct impacts may include the destruction of habitats necessary for species breeding, feeding, or sheltering. Direct impacts to plants can include trimming or mowing adult plants. The breadth, depth, and total area of the habitats that would need to be treated and the level of treatment through removal of shrubs would vary depending on the site and the conditions. In most cases, the amount of potential impact would be very low because of existing vegetation being grassland habitat that can be mowed with little impact, or shrubs that can be thinned and reduced with negligible impact to sensitive resources.

Potential indirect impacts may occur to biological resources adjacent to the vegetation treatment areas, but are unlikely.

Examples of indirect impacts to biological resources include the following:

- *Changes in Hydrology:* There is a very low potential for changes in erosion patterns resulting from thinning and mowing vegetation within the preserve lands and adjacent to existing structures. As described above, the actual areas of vegetation treatment are quite limited so the potential for alterations in sedimentation or increases in erosion would be very low.

- *Exotic Species:* Nonnative plant species may aggressively outcompete native species or otherwise harm sensitive species in areas where vegetation treatments take place. The majority of the weedy species that may benefit from vegetation treatments are already growing in these locations so that the increased negative effect of their presence in the areas subject to vegetation treatments would also be very limited. However, this is probably the impact with greatest potential to occur as a result of the vegetation treatments.

- *Herbicide Residue:* It may be cost-effective to use herbicides to treat some of the vegetation along the perimeter of the natural areas. While most modern herbicides are designed to break down in the soil and become inert, there is a small potential that pesticide residue could enter the ecosystem as a result of their use.

Permanent, indirect impacts to adjacent habitat could arise from increased human use of the area and the potential for long-term increased predation, increase in exotic species invasion, potential erosion, runoff, and sedimentation into riparian areas.

3.3.3.2 Proposed Action

Under the Proposed Action, the proposed project to treat the vegetation adjacent to residential and urban uses, there would be treatments within the preserves that would affect the vegetation. As described above, these treatments would be limited to specific portions of the preserve lands. If it is necessary to expand the treatment areas, the expansion areas would also be affected to a low level.

Impacts

Plant Communities and Other Cover Types

The area of greatest potential impact is identified in Table 3.3-5. The actual area of impact would generally be less than that identified under the maximum impact scenario. In reality, existing lot setbacks on residential development and the amount of the habitat identified as coastal sage scrub that is already growing in a low-density and thinned configuration, which would need little additional treatment, would serve to minimize impacts. Because the treatments involve thinning and mowing along existing habitats that have been significantly disturbed in the past and that support a large level of introduced weeds, actual impacts would likely be substantially less than the estimates provided in Table 3.3-5.

Waters of the U.S.

DIRECT IMPACTS

No areas consisting of waters of the U. S. would be impacted by the Proposed Action. A small area with a few riparian trees exists on the MGRF site near a residential area, but the houses in that location are located 100 feet from the MGRF boundary and should be able to maintain a cleared area within their parcels. Vernal pool habitats exist on the sites; however, the vegetation within vernal pools is low enough in stature that they do not need to be treated to reduce flammability.

INDIRECT IMPACTS

None are anticipated.

Federally Listed Plants

SAN DIEGO MESA MINT AND SAN DIEGO BUTTON-CELERY

San Diego mesa mint exists in the vernal pools within MCVPP but not in the areas near where vegetation treatment is likely to occur. San Diego button celery occurs in vernal pools within CHNA, but not in any areas that might be treated for creating defensible space.

DIRECT IMPACTS

No permanent impacts are anticipated because no listed plant species would be affected by the vegetation treatments.

INDIRECT IMPACTS

None are anticipated.

Nonfederally Listed Rare Plants

San Diego barrel cactus occurs in both CHNA and MCVPP but not in areas that would be affected by treatments. San Diego goldenstar and Nuttall's scrub oak also occurs within MCVPP area but not in areas that may be affected by the treatments. San Diego sunflower occurs in nearly all of the sites.

DIRECT IMPACTS

San Diego sunflower may be affected by some of the thinning activities associated with these preserves because it grows along the perimeter of several of the sites.

INDIRECT IMPACTS

None are anticipated

Federally Listed Wildlife

SAN DIEGO FAIRY SHRIMP

San Diego fairy shrimp occurs in a number of vernal pools within MCVPP as well as CHNA.

DIRECT IMPACTS

None are anticipated because the fairy shrimp vernal pool habitat would not be affected by vegetation treatments. The vernal pools on the edge of the CHNA preserve may be in treatment areas, but because the vegetation is low growing in vernal pools and the fairy shrimp are not dependent upon the vegetation, they would not be affected.

INDIRECT IMPACTS

There is a possibility for thatch from treatment areas to blow or fall into the vernal pools on the perimeter of the preserve areas. It can be minimized or avoided by careful application of treatments.

COASTAL CALIFORNIA GNATCATCHER

Based on surveys, all five sites include habitat that is occupied by the coastal California gnatcatcher.

DIRECT IMPACTS

There is little potential for impacts from the treatments on the coastal California gnatcatcher. Within MCVPP, the gnatcatcher occurs near the center of the site and the areas of treatment are steep slopes on the north and south sides of the site in areas where gnatcatchers are rarely found.

INDIRECT IMPACTS

Because a small amount of coastal sage scrub habitat would be affected by the treatments, even though the habitat is not in the areas favored by the gnatcatchers, indirect impacts would be limited. In the MGRF site, there is a potential that a small amount of habitat used by the coastal California gnatcatcher would be affected if the 100-foot setback for the houses adjacent to the site is not considered large enough for defensible space and any thinning is needed on Navy lands subject to the Proposed Action.

LEAST BELL'S VIREO

Least Bell's vireo has been observed to occupy portions of MGRF and one, likely a transitory bird, was observed on CHNA in a small area with a few trees.

DIRECT IMPACTS

None are anticipated.

INDIRECT IMPACTS

None are anticipated

Nonfederally Listed Rare Wildlife

Rufous-crowned sparrow has been observed in HGTNA in an area occupied by coastal California gnatcatcher. Orange-throated whiptail lizard has been observed in ERNA.

DIRECT IMPACTS

Neither of these areas where the observations took place is likely to be affected by the vegetation treatments.

INDIRECT IMPACTS

None are anticipated.

Wildlife Corridors

There are no anticipated direct or indirect impacts to wildlife corridors involving any of the five properties.

Impact Avoidance and Minimization Measures

- Where revegetation efforts are required, the revegetation plant palette would be approved by NBSD Natural Resources Manager. It would consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting habitat for federally listed plants and animals and blending with adjacent native vegetation communities.
- All vegetation treatments during bird breeding season (15 February–15 September) would utilize nest clearance surveys to comply with the Migratory Bird Treaty Act.
- Native vegetation (fuel) treatments would not occur in riparian areas.
- Where necessary to stabilize the soil and prevent erosion, grass and other vegetation would not need to be removed; other measures would be considered to reduce fuel continuity (e.g., trimming and/or creating islands of vegetation).
- Prior to herbicide application, assessing the target species, seasonal timing of the application, the presence of desirable species and communities. Use of the RAVE system to determine the potential for ground water contamination.

3.3.3.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. Baseline biological resources conditions would remain unchanged. Therefore, no direct impacts to biological resources would occur with implementation of the No Action Alternative. However, there may be indirect impacts associated with the potential for increases in fire frequency resulting from human-caused fires in areas without adequate defensible space. Increased fire frequency could impact coastal sage scrub habitat and generate more grassland habitat. This would most likely impact coastal California gnatcatcher and rufous-crowned sparrow habitat.

Impact Avoidance and Minimization Measures

No avoidance and minimization measures are proposed.

3.3.4 Unavoidable Adverse Environmental Impacts

Under the No Project Alternative, there is a potential that fire frequency would be high in areas that are affected by untreated vegetation, which allows them to be subjected to repeated fire that might result from a situation where defensible space is lacking.

3.3.5 Summary of Impacts

Table 3.3-6 summarizes the impacts of the Proposed Action and the No Action Alternative.

Table 3.3-6
Summary of Biological Resource Impacts

Alternative	Impacts	Impact Avoidance and Minimization Measures
Proposed Action	No significant impacts on biological resources. Small amounts of coastal sage scrub habitat in linear and disjointed locations may be affected due to vegetation treatment and thinning.	• Where revegetation efforts are required, the revegetation plant palette would be approved by NBSD Natural Resources Manager. It would consist of native plants that have a low probability of contributing to fuel hazards (e.g., through providing fuel ladders) while supporting habitat for federally listed plants and animals and blending with adjacent native vegetation communities. • All vegetation treatments during bird breeding season (15 February–15 September) would utilize nest clearance surveys to comply with the Migratory Bird Treaty Act. • Native vegetation (fuel) treatments would not occur in riparian areas. • Where necessary to stabilize the soil and prevent erosion, grass and other vegetation would not need to be removed; other measures would be considered to reduce fuel continuity (e.g., trimming and/or creating islands of vegetation). • Prior to herbicide application, assessing the target species, seasonal timing of the application, the presence of desirable species and communities. Use of the RAVE system to determine the potential for ground water contamination.
No Action Alternative	No effect on biological resources. Potential beneficial impacts to habitat resulting from implementation of post-fire suppression rehabilitation components of the Proposed Action would not be realized.	None

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3.4 PUBLIC HEALTH AND SAFETY

Public health and safety issues are defined as those elements of the Proposed Action that would directly affect the health and safety of individuals in the communities adjacent to MGRF, MCVPP, CHNA, ERNA, and HGTNA sites. The Navy's policy is to use every possible precaution in planning and executing all activities to prevent injury to people and damage to property. Effects that occur within Navy-controlled areas do not typically pose a substantial public safety or health concern because the public normally does not have access to these areas. This public health and safety assessment addresses effects that are not entirely contained within Navy-controlled areas, and activities that take place in areas of public use. Proposed Action effects that do not directly affect the health or safety of members of the public are not considered in this assessment; also, concerns that affect single individuals and isolated incidents may not rise to the level of a public health or public safety issue.

3.4.1 Affected Environment

3.4.1.1 Region of Influence

The ROI for public health and safety concerns for the Proposed Action is confined to the non-leased lands within MGRF, MCVPP, CHNA, ERNA, and HGTNA. Primary public health and safety concerns associated with the Proposed Action include emergency services that could be called upon in the event of wildfires and hazardous materials that may be used for vegetation control in fire management actions. Areas of heightened sensitivity to public health and safety concerns adjacent to the ROI include residential areas where substantial populations of people are present at all times of the day and night, and areas where large groups of people may gather, such as commercial areas, parks, and other recreational open spaces. These areas are discussed for reference but are not part of the Proposed Action.

3.4.1.2 Emergency Services

Fire protection at the Proposed Action sites are assigned to the Metro San Diego Division of the Navy's FFD. The FFD's organizational structure is shown in Figure 3.4-1. The DoD guidance currently identifies a mandate or mission for wildland fire suppression, but without forcing mechanisms for funding.

The FFD provides fire prevention and inspection services to MGRF. While the other properties are assigned to the FFD they have no fire prevention responsibilities at any of the other four Navy properties (David Salerno, Training Division FFD Fire & Emergency Services, Navy Region Southwest, pers. comm.). Firefighting and Medical Emergency services are provided by

NAVY REGION SOUTHWEST FIRE & EMERGENCY SERVICES
SAN DIEGO METRO

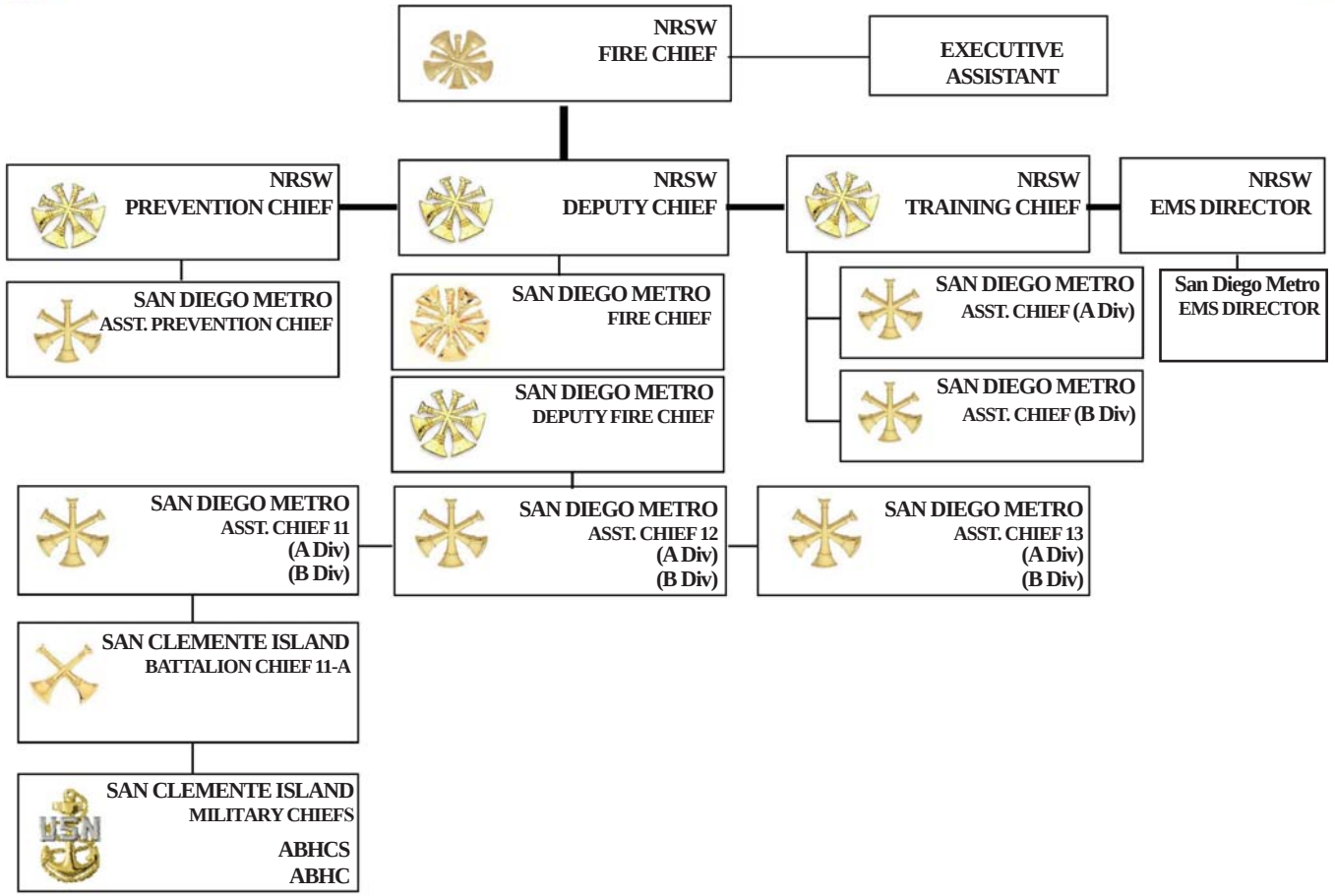

Figure 3.4-1
Organizational Chart for Federal Fire Department,
Navy Region Southwest Region, Metro San Diego Division

the City of San Diego Fire – Rescue Department under an Automatic Aid Agreement signed by the City of San Diego and the Commander, NBSD and approved by the San Diego City Council in September of 1991. All 9-1-1 calls for fire or medical emergency services are routed directly to the City of San Diego Fire – Rescue Department Emergency Operations Center. The FFD is notified each time the City of San Diego Fire – Rescue Department responds to an incident on any of these Navy properties. The FFD may follow up by sending out an investigator.

There is one City of San Diego Fire Station, Station 39, within 5 minutes of MCVPP. Fire Station 39 is located in Tierrasanta at the intersection of Baroque Lane and La Cuenta Drive, which is within 5 minutes of MCVPP. The next closest fire station, Station 31, is at the intersection of College Avenue and Camino Rico, which is about a mile and a half southeast of Mission Gorge Road. When traveling westbound on Mission Gorge Road, this road turns into Friars Road, which leads to Santo Road and Admiral Baker Road. The Admiral Baker Golf Course clubhouse on MGRF is approximately 4 miles from the fire station or approximately 10 minutes away. The next fire station, Station 34, is to the east of the Admiral Baker Golf Course at the intersection of Cowles Mountain Road and Navajo Road and is approximately 15 minutes away. If available, the City of San Diego Copter 1 would respond on WUI wildfires within the City limits. However, there is never any assurance when a wildfire threatens MGRF or MCVPP that any of these fire stations would be staffed, due to other emergencies. If not committed to an incident on Marine Corps Air Station Miramar, Federal Firefighters at Miramar may be available for a wildfire suppression assignment in MCVPP as additional reinforcements and, if available, two Air Tankers based at the joint CAL FIRE/U.S. Forest Service Ramona Air Attack Base are 20 minutes away. The tankers must be ordered through the CAL FIRE dispatcher by the City of San Diego Fire – Rescue Department.

One San Diego Fire Station is within 3 minutes of CHNA. The closest fire station, Station 26, is approximately 1.5 miles west of CHNA near the intersection of College Grove Drive and 54th Street. The next closest San Diego Fire Station, Station 10, is north of CHNA and is located at the intersection of Acorn Street and 62nd Street and is approximately 2 miles or 4 minutes away.

The closest fire station to ERNA is in Lakeside, Fire Station 2 (12216 Lakeside Avenue in Lakeside). This is approximately 0.8 mile south of ERNA.

The closest fire station to HGTNA is the Lemon Grove Fire Department (7853 Central Avenue). The Federal Fire Chief is currently pursuing an Automatic Aid Agreement with the City of San Diego, Lakeside, and Lemon Grove (David Salerno, Training Division FFD Fire & Emergency Services, Navy Region Southwest, pers. comm.).

3.4.1.3 Hazardous Materials

Federal Regulations

Hazardous materials and waste are regulated by federal laws and regulations. The relevant laws to the Proposed Action include the Resource Conservation and Recovery Act (42 U.S.C. § 6901 et seq.), the Hazardous Materials Transportation Act (49 U.S.C. § 5101 et seq.), the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9601 et seq.), the Emergency Planning and Community Right to Know Act (42 U.S.C. §§ 11,001–11,050), the Oil Pollution Act (33 U.S.C. § 2701 et seq.), the Toxic Substances Control Act, and the Pollution Prevention Act of 1990 (42 U.S.C. Chapter 133). Comprehensively, the regulations adopted to implement these laws govern the storage, use, and transportation of hazardous materials and waste from their origin to their ultimate disposal. The recovery and cleanup of environmental contamination resulting from accidental releases of these materials are also addressed in the regulations. California laws and regulations generally implement federal requirements, but broaden their application or impose additional regulatory requirements in some areas.

State Laws and Regulations

The California Environmental Protection Agency (CalEPA) develops, implements, and enforces the state's environmental protection laws that ensure clean air, clean water, clean soil, safe pesticides, and waste recycling and reduction. CalEPA is composed of several agencies, boards, departments, and offices, with no single entity having sole authority for hazardous materials and waste. Within CalEPA, DTSC is responsible for the use, storage, transport, and disposal of hazardous materials. The Department of Toxic Substances Control (DTSC) regulates hazardous waste, pollution prevention, and cleanup of contamination. However, CalEPA delegates much of its responsibility for hazardous materials management to local governments under the Certified Unified Program Agency (CUPA) program.

Local governments and communities form CUPAs to effectively manage the acquisition, maintenance, and control of hazardous materials in their jurisdictions, and to avoid overlapping roles among federal, state, and local agencies. In southern California, CUPAs have typically formed on a county-by-county basis. In San Diego County, the CUPA is the San Diego Department of Environmental Health, which is responsible for hazardous materials and hazardous waste regulation. State hazardous materials and hazardous waste laws are summarized in Table 3.4-1.

Table 3.4-1
State of California Laws

Law/Regulation	Description
Hazardous Materials Release Response Plans and Inventory Act (6.95 Health and Safety Code [HSC])/19 California Code of Regulations (C.C.R.), Division 2, Chapter 4	Requires facilities using hazardous materials to prepare hazardous materials business plans and establishes the California Accidental Release Prevention Program
Hazardous Waste Control Act (6.5 HSC/22 C.C.R., Division 4.5)	Regulates the generation, transportation, storage, treatment, and disposal of hazardous waste
Safe Drinking Water and Toxic Enforcement Act (Proposition 65; 6.6 HSC/22 C.C.R., Division 4)	Regulates the discharge of contaminants to groundwater

The Navy complies with applicable state regulations under Executive Order 13148, Greening the Government Through Leadership in Environmental Management; DoD Directive 4165.60, Solid Waste Management; and Navy guidelines for hazardous materials and waste management found in OPNAVINST 5090.1D (10 January 2014).

As noted in Section 2.2.1.2, approximately 10 different herbicides are known to have been recently used, or are currently being used, on the properties analyzed in this EA. Given the open space/undeveloped characteristics of each of the properties except MGRF, no other types or hazardous materials are known to be present on those properties. In the case of MGRF, while the area has been developed (for recreational use), there are no known hazardous waste sites within the property although it is assumed that the types of hazardous substances commonly used in similar facilities are present at MGRF.

3.4.2 Environmental Consequences

This section focuses on each of the Proposed Action alternatives and evaluates the potential impacts to emergency services and of the use and storage of hazardous materials, generation of hazardous wastes, or release of hazardous constituents to the environment.

3.4.2.1 Approach to Analysis

This resource section focuses on the fire management actions and post-fire suppression rehabilitation activities that could pose a credible risk to public health and safety.

3.4.2.2 Proposed Action

Impacts

Emergency Services

With the implementation of the fire management actions, the chance of wildfire would be reduced as would the intensity of potential impacts from fires that could still occur. Therefore, the Proposed Action would not result in an increase demand for fire protection. In the event of a fire, post-fire suppression rehabilitation activities would occur and include a post-burn assessment and development of an erosion control and restoration plan. Implementation of post-fire suppression rehabilitation would not result in an increased demand for fire protection or emergency medical services. No significant impacts to emergency services would occur.

Hazardous Materials

There are no known hazardous materials sites on any of the relevant properties analyzed in this EA, and the potential for adverse impacts resulting from inadvertent contact with previously unknown hazardous materials sites is minimized by the relative lack of soil disturbance in the vegetative control actions that would be taken for fire management purposes. If suspected hazardous materials are encountered during either fire management or post-fire suppression rehabilitation activities, work would be stopped until an appropriate course of action is determined based on the specific circumstances.

Under the Proposed Action, an integrated pest management approach would be developed and used to control invasive species, both for fuel management actions and for post-fire suppression rehabilitation actions. Nonchemical methods would be considered and used if practical. Pesticides and herbicides similar to those that have recently been or are currently being used on the properties may be used for fuel management if cost-efficient and environmentally safe. Chemical treatments used would comply with OPNAVINST 6250.4B, the Navy/Marine Corps Pest Management Program Instruction, and OPNAVINST 5090.1B CH-2, Chapter 13, which covers pesticide compliance ashore. Herbicides would be applied by licensed/certified pesticide applicators and all herbicide would be reported monthly on the Naval Facilities Engineering Command (NAVFAC) Online Herbicide Reporting System.

Post-fire suppression rehabilitation actions could include revegetation activities, involving watering and the use of herbicides, insecticides, and pesticides. Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and DoD regulations. Additionally, they would not be sprayed when there are wind velocities above 5 miles per hour

(mph) or in foggy or rainy conditions. These regulations would limit the potential for these materials to become a public health and safety issue. No significant impacts to public health and safety would occur under the Proposed Action.

Impact Avoidance and Minimization Measures

The following measures are proposed to avoid and minimize potential public health and safety impacts:

- Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and DoD regulations.
- Herbicides, insecticides, and pesticides would not be sprayed when there are wind velocities above 5 mph or in foggy or rainy conditions.
- Herbicides would be applied by licensed/certified pesticide applicators and all herbicide would be reported monthly on the NAVFAC Online Herbicide Reporting System.

3.4.2.3 No Action Alternative

Impacts

Under the No Action Alternative, integrated assignments of annual maintenance responsibilities for each of the required fuel modification actions would not occur. Integrated short-term and long-term fuel modification actions minimizing wildfire fire occurrence risks and the intensity of whatever wildfires still were to occur would not be implemented. As a result, wildfire risk and post-fire suppression impacts to public health and safety would not be minimized. The No Action Alternative would not meet the purpose and need of the Proposed Action.

Impact Avoidance and Minimization Measures

No impact avoidance and minimization measures are proposed.

3.4.3 Unavoidable Adverse Environmental Effects

No unavoidable adverse environmental effects to public health and safety would occur as a result of implementation of any the alternatives.

3.4.4 Summary of Effects

Table 3.4-2 summarizes the public health and safety effects of the Proposed Action and the No Action Alternative.

Table 3.4-2
Summary of Public Health and Safety Effects

Alternative	Effects	Impact Avoidance and Minimization Measures
Proposed Action	No significant adverse impacts to public health and safety. Potential beneficial fire management and post-fire suppression rehabilitation impacts to public health and safety would be offered through the potential for decreased wildfire risk and intensity.	• Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and DoD regulations. • Herbicides, insecticides, and pesticides would not be sprayed when there are wind velocities above 5 mph or in foggy or rainy conditions. • Herbicides would be applied by licensed/certified pesticide applicators and all herbicide would be reported monthly on the NAVFAC Online Herbicide Reporting System.
No Action Alternative	No effects on public health and safety.	None

CHAPTER 4.0
CUMULATIVE IMPACTS

4.1 PRINCIPLES OF CUMULATIVE IMPACTS ANALYSIS

The approach taken to analyze cumulative impacts (or cumulative effects) follows the objectives of NEPA of 1969, CEQ regulations, and CEQ guidance. CEQ regulations (40 C.F.R. §§ 1500–1508) provide the implementing procedures for NEPA. The regulations define "cumulative effects" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 C.F.R. § 1508.7).

CEQ provides guidance on cumulative impacts analysis in *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997). This guidance further identifies cumulative effects as those environmental effects resulting "from spatial and temporal crowding of environmental perturbations. The effects of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the effects of the first perturbation." Noting that environmental impacts result from a diversity of sources and processes, this CEQ guidance observes that "no universally accepted framework for cumulative effects analysis exists," while indicating that certain general principles have gained acceptance. One such principle provides that "cumulative effects analysis should be conducted within the context of resource, ecosystem, and community thresholds—levels of stress beyond which the desired condition degrades."

Cumulative impacts may occur when there is a relationship between a Proposed Action and other actions expected to occur in a similar geographic area or during a similar time period. Actions overlapping, or in proximity to, a Proposed Action can have more potential for cumulative impacts on "shared resources" than actions that are geographically separated. Similarly, actions that coincide temporally would tend to offer a higher potential for cumulative impacts. To the extent that details regarding such actions exist and the actions have a potential to interact with the Proposed Action outlined in this EA, these actions are included in the cumulative analysis.

4.1.1 Identifying Geographical Boundaries for Cumulative Impacts Analysis

Geographical boundaries or ROI for analyses of cumulative impacts in this EA vary for different resources and environmental media. For example, for terrestrial biological resources, the area in which Proposed Action activities occur, or are proposed to occur, is the appropriate geographical

area for assessing cumulative impacts. For wide-ranging or migratory wildlife, such as migratory birds, any impacts from the Proposed Action alternatives might combine with impacts from other sources within the ranges of each population.

4.1.2 Past, Present, and Reasonably Foreseeable Future Actions

The Navy identified past, present, and reasonably foreseeable actions in the vicinity of the Proposed Actions sites analyzed in this EA, with a focus on other NBSD projects (Table 4-1). These actions are neither part of the alternatives described in this EA, nor are they dependent on them. If applicable, environmental analyses of the other actions addressed in this section have been, or would be, conducted separately, with the results of those analyses incorporated into documents prepared specifically for those actions.

Table 4-1
Past, Present, and Reasonably Foreseeable Future Projects in the NBSD Fire Management Actions Region of Influence

No.	Project	Description	Status
1	P-405 NBSD Bachelors Quarters – Homeport Ashore	This recently completed project on Naval Base San Diego (NBSD) included construction of a 162,040-square-foot bachelor enlisted quarters able to house 772 unaccompanied personnel. The project also included construction of a seven-level, 284,167-square-foot parking garage. The new bachelor enlisted quarters and parking garage are located on the dry side of the base, near the intersection of Norman Scott Road and McHugh Street. The Navy completed a categorical exclusion (CATEX) for the project. Construction began in September 2012 and was completed in late 2013.	Past
2	Environmental Cleanup and Abatement Order R9-2012-0024 – Shipyard Sediment Remediation Project	In March 2012, the California Regional Water Quality Control Board, San Diego Region, issued Cleanup and Abatement Order R9-2012-0024 for the Shipyard Sediment Site. The order was issued to seven business and government entities determined responsible for elevated levels of pollutants in the site's marine sediments. These entities include the National Steel and Shipbuilding Company Shipyard facility, BAE Systems San Diego Ship Repair Facility, City of San Diego, Campbell Industries, San Diego Gas & Electric, NBSD, and the San Diego Unified Port District (responsible parties). The Shipyard Sediment Site is located near the eastern shore of San Diego Bay "approximately from the Sampson Street Extension to the northwest and Chollas Creek to the southeast, and from the shoreline out to the San Diego Bay main shipping channel to the west" (California Regional Water Quality Control Board, San Diego Region 2012).	Present

No.	Project	Description	Status
		The responsible parties are completing a sediment remediation project to comply with the cleanup and abatement order. The project includes dredging contaminated sediment at the site, dewatering the dredged material at an onshore stockpiling area, discharging the decanted water to the City of San Diego's sanitary sewer, and transporting the dewatered material to an appropriate landfill for disposal (Anchor QEA, L.P. 2012). A total volume of 52,600 cubic yards of sediment will be dredged from the bay. Contaminated sediments that will not be dredged from the site—because they are inaccessible or because the measured contamination is below target levels—will be covered with clean sand and gravel. Once the dredging work is complete, riprap may be placed next to underwater structures (i.e., seawalls, slopes, piers) to maintain their stability. The project began in December 2012 and is expected to be completed in 5 years (Anchor QEA, L.P. 2012). The California Regional Water Quality Control Board, San Diego Region completed a programmatic environmental impact report for the sediment remediation project in 2011 (LSA Associates, Inc. 2011).	
3	Jack in the Box Restaurant	A private developer is constructing a 2,588-square-foot Jack in the Box restaurant on a currently undeveloped site north of National Avenue at its intersection with South 29th Street. The Jack in the Box site is approximately 1,600 feet north of the 28th Street gas station site (Kimley-Horn and Associates 2014).	Present
4	7-Eleven	A private developer is renovating an unoccupied, 3,000-square-foot storefront in an existing shared-use building to develop a 7-Eleven. The 7-Eleven will be located at the northeast corner of the intersection of Main Street and Bryant Street, on the opposite side of Main Street from Mariner's Park (Kimley-Horn and Associates 2014).	Present
5	Pier 8 Replacement MILCON P-440	NBSD is planning to demolish Pier 8, located in San Diego Bay northwest of the 7th Street Channel (Paleta Creek) and the Gate 9 gas station site, and replace it with a general purpose berthing pier under Military Construction Project 440 (MILCON P-440). The new, single-deck pier would be constructed of a concrete deck supported by pre-stressed concrete piles and would be designed to meet the berthing needs of modern ships in the U.S. Pacific Fleet. The design would allow future upgrade of the shore-to-ship electrical infrastructure in order to meet the power needs of more advanced ship electronic systems. No dredging would be required to construct the replacement pier because the Pier 8 location already provides a deep draft. The pier design includes a storm water collection system with an	Future

No.	Project	Description	Status
		oil/water separator. The Navy is preparing an Environmental Assessment for this project, and construction is expected to begin in October 2015 and be completed by October 2016.	
6	Construction and Operation of Navy Exchange Service Command (NEXCOM) gas station and mini-mart on NBSD.	A new NEXCOM gas station and mini-mart would be constructed at Mariner's Park, which is located southeast of the 32nd Street and Main Street intersection at NBSD on Navy-owned property. Mariner's Park is entirely developed, with approximately 2.8 acres of the park dedicated to parking areas and driveways, including a 1.3-acre parking lot that covers the northwestern quadrant. Mariner's Park also provides recreational facilities, such as a playground, volleyball court, and basketball court, and a stadium with a stage and event seating. Chollas Creek runs along the southeastern boundary of the park. Main Street and 32nd Street, both public roads, provide access to Mariner's Park on its western boundary (at 32nd Street's intersection with Callagan Highway) and on its northeastern boundary (along Main Street). The access driveway on 32nd Street is gated to prevent trespassing. The access driveway on Main Street is currently gated and closed to vehicle traffic, except during emergencies, special events, or by permission. The new gas station and mini-mart would replace a deteriorating, outdated NEXCOM gas station on 32nd Street that would be demolished as part of the Proposed Action. The new gas station and mini-mart would remain in operation for a period of up to approximately 30 years.	Future

4.2 CUMULATIVE IMPACTS ANALYSIS

4.2.1 Topography, Geology, and Soils

Cumulative impacts within the five properties regarding terrestrial topography, geology, and soils would consist of the combined effects of the fire management actions and post-fire suppression rehabilitation actions that alter the local topography or disturb surface soils. No fire management actions would result in grading or complete vegetation removal in any area. In the event of a wildfire, post-fire suppression rehabilitation actions would function to preserve topography and retain soils. Therefore, when added to the impacts from other potentially cumulative projects, the Proposed Action would not result in significant cumulative impacts to topography, geology, and soils.

4.2.2 Water Quality and Hydrology

The ROI for water quality and hydrology is the project area and immediately surrounding areas. Implementation of fire management measures under the Proposed Action would be required to incorporate hydrology/water quality control measures mandated by OPNAVINST 5090.1D. In accordance with these requirements, an erosion-and-sediment control plan would be implemented to control erosion, minimize sediment transport, and protect surface waters. Implementation of post-fire suppression rehabilitation actions under the Proposed Action offers the potential for beneficial impacts to water quality through erosion control and rehabilitation actions that would minimize runoff and restore native vegetation. Therefore, when added to the impacts from other potentially cumulative projects, the Proposed Action would not result in significant cumulative impacts to water quality and hydrology.

4.2.3 Biological Resources

The combined biological impacts of the Proposed Action are discussed in Section 3.3 of this EA. All federal activities within NBSD potentially affecting federally protected species and habitats would be subject to Endangered Species Act Section 7 consultation. Due to a No Effects determination for the Proposed Action, however, consultation with the USFWS was not required in this instance. The Navy, in concert with USFWS, has established plans and conditions throughout NBSD to protect, preserve, and conserve natural resources to minimize significant cumulative impacts. These conditions are identified in several BOs issued by USFWS and the NBSD INRMP. The most sensitive species and habitats on the five properties subject to this EA are protected through these procedures and policies, and standard construction and conservation measures based on previous BOs would be implemented as relevant.

Implementation of the Proposed Action in conjunction with other projects within the cumulative ROI (listed in Table 4-1 of this EA) could result in the cumulative loss of biological resources in the form of vegetation, habitat, and species. The area of influence where cumulative impacts could occur varies among the resources affected. Due to the restricted range of several species on NBSD, the potential for cumulative impacts from various projects and actions across the geographic range of a species is possible when viewed from a population perspective. Future cumulative impacts could result from the collective loss of species habitat over time. The Proposed Action, however, is not anticipated to contribute to cumulative impacts to federally listed plants or wildlife because no occupied habitat would be permanently, directly impacted. Although there are permanent and temporary indirect impacts associated with the Proposed Action, these are not anticipated to adversely affect federally listed species or occupied habitat, and, therefore, would not contribute to cumulative impacts.

There are no unavoidable impacts to federally jurisdictional wetlands (as well as other waters of the U.S.) as a result of the implementation of the Proposed Action. The Proposed Action would not contribute to cumulative impacts to these resources.

4.2.4 Public Health and Safety/Hazardous Materials

Cumulative impacts to public health and safety could include emergency services that could be called upon in the event of wildfires and concerns associated with chemical treatments that may be used for vegetation control in fire management actions. Areas of heightened sensitivity to public health and safety concerns adjacent to the ROI for several of the relevant properties include residential areas where substantial populations of people are present at all times of the day and night. With the implementation of the fire management actions, however, the risk of wildfire spreading to or from the relevant properties would be reduced, as would the intensity of potential impacts from fires that could still occur. Therefore, when added to the impacts from other potentially cumulative projects, the Proposed Action would not result in significant cumulative emergencies services-related impacts.

Fire management actions and post-fire suppression rehabilitation activities could include the use of herbicides, insecticides, and pesticides. These would be similar to those that have recently been or are currently being used on these same properties. Herbicides, insecticides, and pesticides would be used in accordance with the defined label use and DoD regulations. Additionally, they would not be sprayed when there are wind velocities above 5 mph or in foggy or rainy conditions. These regulations would limit the potential for these materials to become a public health and safety issue. Therefore, when added to the impacts from other potentially cumulative projects, the Proposed Action would not result in significant cumulative hazardous materials-related impacts.

CHAPTER 5.0
OTHER CONSIDERATIONS REQUIRED BY NEPA

5.1 POSSIBLE CONFLICTS WITH OBJECTIVES OF FEDERAL, STATE, AND LOCAL PLANS, POLICIES, AND CONTROLS

Implementation of the Proposed Action would not conflict with the objectives or requirements of federal, state, regional, or local plans, policies, or legal requirements. The Navy has consulted with regulatory agencies as appropriate during the NEPA process and before implementation of the Proposed Action to ensure that requirements are met. Table 5-1 provides a summary of environmental compliance requirements that may apply.

Table 5-1
Summary of Environmental Compliance for the Proposed Action

Plans, Policies, and Controls	Responsible Agency	Status of Compliance
The National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] §§ 4321 et seq.); Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [C.F.R.] §§ 1500–1508); Department of the Navy Procedures for Implementing NEPA (32 C.F.R. § 775)	U.S. Navy	This Environmental Assessment (EA) was prepared in accordance with NEPA, CEQ regulations, and Navy NEPA procedures. Public participation and review have been conducted in compliance with NEPA.
Clean Air Act (42 U.S.C. §§ 7401 et seq.); Clean Air Act General Conformity Rule (40 C.F.R. § 93[B]); State Implementation Plan (SIP)	U.S. Environmental Protection Agency (USEPA), San Diego Air Pollution Control District	The Proposed Action would generate negligible emissions and would therefore be compatible with attainment and maintenance goals established in the SIP. A Clean Air Act conformity determination would not be required because emissions attributable to the Proposed Action alternatives would be below the *de minimis* thresholds for requiring a full conformity determination, and the General Conformity Rule is therefore not applicable. A Record of Non-Applicability has been prepared and is included as Appendix A to this EA.
Federal Water Pollution Control Act (Clean Water Act [CWA]) (33 U.S.C. §§ 1344 et seq.)	USEPA	CWA Section 401 water quality certification and CWA Section 404 permit would be prepared for the proposed construction activities.
Endangered Species Act (ESA) (16 U.S.C. §§ 1531 et seq.)	U.S. Navy, U.S. Fish and Wildlife Service	The EA and Fire Management Plan analyze potential effects to species listed under the ESA. Due to a No Effects determination, however, consultation with the USFWS was not required. However, iterative drafts of the Wildland Fire Management Plan were sent to the USFWS on 16 June 2015 and 16 December 2015 for informational purposes; a site visit was also held with USFWS personnel on 29 September 2015. USFWS previously (January 1995) issued a Biological Opinion (BO 1-6-94-F-23), which established preserves at both MCVPP and CHNA.

Plans, Policies, and Controls	Responsible Agency	Status of Compliance
The Sikes Act of 1960 (16 U.S.C. §§ 670a–670o, as amended by the Sikes Act Improvement Act of 1997, Pub. Law No. 105-85)	Department of Defense (DoD)	The Proposed Action alternatives would be implemented in accordance with the management and conservation criteria developed in the Sikes Act Integrated Natural Resources Management Plans for NBSD.
National Historic Preservation Act (16 U.S.C. §§ 470 et seq.) including the Archaeological Resources Protection Act	U.S. Navy	The Proposed Action would be implemented in compliance with Section 106 through the *Programmatic Agreement among the Commander Navy Region Southwest, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer Regarding Navy Region Southwest Undertakings within the San Diego Metropolitan Area, California*, and pursuant to the criteria developed by the Navy for cultural resources management practices.
National Register of Historic Places (NRHP) (36 C.F.R. § 60)	U.S. Navy	Cultural resources potentially affected by the Proposed Action were evaluated for eligibility for the NRHP pursuant to criteria specified in 36 C.F.R. § 60.
Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) Pub. Law 101-601)	U.S. Navy	Consultation required by NAGPRA with the appropriate culturally affiliated Native American tribes would be implemented if human remains and objects of cultural patrimony are encountered during implementation of the Proposed Action.
Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	U.S. Navy	Implementation of the Proposed Action alternatives was reviewed in accordance with EO 12898 and would not result in any disproportionately high and adverse human health or environmental effects on minority or low-income populations.
EO 13045, Protection of Children from Environmental Health Risks and Safety Risks	U.S. Navy	Implementation of the Proposed Action alternatives was reviewed in accordance with EO 13045 and would not result in disproportionate environmental health or safety risks to children.
EO 13112 Invasive Species	U.S. Navy	EO 13112 requires agencies to identify actions that may affect the status of invasive species and to take measures to avoid introduction and spread of these species. Adoption of avoidance and minimization measures incorporated into this EA fulfills this requirement.
EO 11990 Protection of Wetlands	U.S. Navy	Section 2(b) of EO 11990 requires federal agency action when there would be a significant impact to wetlands. Implementation of the Proposed Action alternatives would not have a significant impact on wetlands.
Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703–712)	USFWS	EO 13186 requires federal agencies to develop and implement a Memorandum of Understanding (MOU) with USFWS that shall promote the conservation of migratory bird populations. An MOU was established with DoD in 2006 that describes specific actions to advance migratory bird conservation and avoid take of migratory birds. Impact avoidance and minimization measures incorporated into the EA are designed to comply with the requirements of the MBTA, the MOU, and EO 13186.

5.2 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of

beneficial uses of the environment are of particular concern. The majority of activities addressed in this EA would be categorized as long term. For example, structural improvement activities (construction) would be of short duration, but ongoing operational activities would be long term and would, in turn, potentially affect the long-term productivity of environmental resources on-site. The Navy's proposal to improve fire management and post-fire suppression rehabilitation conditions through ongoing activities is an example of the balancing of long-term productivity of the environment with the need to address the shortfall of current fire management activities to support the mission of NBSD.

5.3 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of "any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy or minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site). Fire management activities at NBSD would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil) and gasoline (for maintenance equipment). Implementation of the Proposed Action alternatives would require fuels used by ground-based vehicles. Fuel use by ground-based vehicles involved in operational support activities would increase. Therefore, total fuel consumption would increase, and this nonrenewable resource would be considered irreversibly lost.

5.4 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

Implementation of the Proposed Action would not result in an increase in energy demand over the No Action Alternative (exclusive of construction itself).

5.5 NATURAL OR DEPLETABLE RESOURCE REQUIREMENTS AND CONSERVATION POTENTIAL

Resources that would be permanently consumed by Proposed Action implementation include water and fossil fuels during fire management activities. To the extent practical, pollution prevention considerations would be included as part of the Proposed Action. In addition, sustainable management practices are in place that protect and conserve natural and cultural resources.

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APPENDIX A

RECORD OF NON-APPLICABILITY (RONA)

Appendix A: Record of Non-Applicability

Department of Defense
U.S. Navy
Record of Non-Applicability (RONA)
Naval Base San Diego, California
Wildfire Management Actions

Pursuant to Section 176(c) of the Clean Air Act (CAA), as amended by the 1990 amendments; the general Conformity Rule at 40 CFR Parts 51 and 93; and the Chief of Naval Operation Interim Guidance on Compliance with the CAA Conformity Rule (CNO Guidance), the Department of Navy (DoN) determined that the potential actions and management practices outlined in the Wildfire Management Actions Environmental Assessment (EA) are exempt from conformity requirements in accordance with sections 40 CFR 93.153 (c)(2)(ii), (iv), (vi), (vii), (viii), (ix), (x), and (xiii). The EA outlines many routine and continuing wildfire prevention activities for Naval Base San Diego, located within the San Diego Air Basin (SDAB). These activities would result in no emission increase or an increase that is clearly *de minimis*. Development of projects and future implementation of planning guidelines for a range of activities, including fire prevention activities and habitat restoration projects, are also expected to result in emissions increases that would be *de minimis*; however, specific analyses would be performed to verify that emissions do not exceed *de minimis* levels when specific actions are proposed. Consequently, the proposed action is exempt from the conformity determination requirements of the Environmental Protection Agency's conformity rule.

To the best of my knowledge, the information contained in this Record of Non-Applicability is correct and accurate.

T. D. Williams

3-8-16
Date