

*Draft*

# Environmental Assessment

Addressing Maintenance, Repair, and  
Upgrades to Infrastructure at Navy Auxiliary  
Landing Field  
San Clemente Island, California



February  
2016

## ABBREVIATIONS AND ACRONYMS

ACM	asbestos-containing materials	FONSI	Finding of No Significant Impact
APE	Area of Potential Effect	FY	fiscal year
ASBS	Areas of Special Biological Significance	GCM	General Conservation Measure
AVMC	Assault Vehicle Maneuver Corridor	GHG	greenhouse gases
BMP	best management practice	HERO	Hazards of Electromagnetic Radiation to Ordnance
BTR	Biological Technical Report	ICRMP	Integrated Cultural Resources Management Plan
CAA	Clean Air Act		
CARB	California Air Resources Board	INRMP	Integrated Natural Resources Management Plan
CEQ	Council on Environmental Quality	IRP	Installation Restoration Project
CFR	Code of Federal Regulations		
CO	carbon monoxide	km	kilometer(s)
CO <sub>2</sub>	carbon dioxide	kW	kilowatt(s)
CONBC	Commanding Officer Naval Base Coronado	L	liter(s)
CRPM	Cultural Resources Program Manager	LBP	lead-based paint
CTS	Cable Termination Shelter	MBTA	Migratory Bird Treaty Act
CWA	Clean Water Act	MCA	Medieval Climactic Anomaly
dba	A-weighted decibel	µg/m <sup>3</sup>	micrograms per cubic meter
DERP	Defense Environmental Restoration Program	mg/m <sup>3</sup>	milligrams per cubic meter
DoD	Department of Defense	NAAQS	National Ambient Air Quality Standards
EA	Environmental Assessment	NALF	Navy Auxiliary Landing Field
EIS	Environmental Impact Statement	Navy	U.S. Department of the Navy
EO	Executive Order	NBC	Naval Base Coronado
ESA	Endangered Species Act	NDB	non-directional beacon
ESQD	Explosive Safety Quantity Distance	NEPA	National Environmental Policy Act
FMP	Fire Management Plan	NHPA	National Historic Preservation Act

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		RCRA	Resource Conservation and Recovery Act
NO <sub>2</sub>	nitrogen dioxide	RDT&E	Research, Development, Test, and Evaluation
NOA	Notice of Availability	ROC	Range Operations Center
NRO	Natural Resources Office	RYBP	radioactive years before present
NRHP	National Register of Historic Places	South Coast Air Quality Management District	(SCAQMD)
O <sub>3</sub>	ozone		
OP	Ordnance Pamphlet	SCI	San Clemente Island
OP-3	Observation Post 3	SDS	Safety Data Sheets
OPNAVINST	Chief of Navy Operations Instruction	SERG	Soil and Ecology Restoration Group
OSHA	Occupational Safety and Health Administration	SHOBA	Shore Bombardment Area
PA	Programmatic Agreement	SO <sub>2</sub>	sulfur dioxide
Pb	lead	SOCAL	Southern California
PCB	polychlorinated biphenyl	SPCC	Spill Prevention, Control and Countermeasures
pCi/L	picoCuries per liter	SWMP	Storm Water Management Plan
PM <sub>10</sub>	particulate matter with an aerodynamic size less than or equal to 10 microns	SWPPP	Storm water Pollution Prevention Plan
PM <sub>2.5</sub>	particulate matter with an aerodynamic size less than or equal to 2.5 microns	SWRCB	State Water Resources Control Board
ppb	parts per billion	TCP	Traditional Cultural Property
PPE	personal protective equipment	TMDL	Total Maximum Daily Loads
ppm	parts per million	U.S.C.	United States Code
PWO	Public Works Office	USACE	U.S. Army Corps of Engineers
NAVFACSW	Naval Facilities Engineering Command, Southwest	USEPA	U.S. Environmental Protection Agency
NPDES	National Pollutant Discharge Elimination System	USFWS	U.S. Fish and Wildlife Service
NWP	Nationwide Permit	UXO	unexploded ordnance
RAA	Restricted Access Area	WWTP	wastewater treatment plant



1 **DRAFT**  
2 **ENVIRONMENTAL ASSESSMENT**  
3 **ADDRESSING MAINTENANCE, REPAIR, AND UPGRADES TO INFRASTRUCTURE**  
4 **AT NAVAL AUXILIARY LANDING FIELD**  
5 **SAN CLEMENTE ISLAND, CALIFORNIA**

6 **FEBRUARY 2016**

7 **Lead Agency:** U.S. Department of the Navy  
8 **Title of Proposed Action:** Maintenance, Repair, and Upgrades to Infrastructure at Naval  
9 Auxiliary Landing Field San Clemente Island, California  
10 **Designation:** Environmental Assessment  
11 **Prepared By:** U.S. Department of the Navy, Naval Facilities Engineering  
12 Command  
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17 **Abstract**

18 This Environmental Assessment (EA) has been prepared to analyze the proposal from the  
19 U.S. Department of the Navy (Navy) to conduct maintenance, repair, and upgrades at Naval  
20 Auxiliary Landing Field (NALF) San Clemente Island (SCI), California, for existing infrastructure,  
21 including fences and gates, roads and crossovers, drainage structures, utility infrastructure  
22 (i.e., electrical and water systems), and existing and temporary facilities (buildings, airfield,  
23 landfill, and borrow pit).

24 In order to quantify impacts, the Navy established survey areas that include (1) 50-foot- (15.2-  
25 meter) corridors from the center line of all existing utilities and roads to support ongoing and  
26 future maintenance, repair, upgrades, and vegetation management; and (2) 100-foot (30.5  
27 meter) maintenance corridors around all assets (e.g., buildings and structures) to support  
28 ongoing and future maintenance and for protection from potential wildfire damage. These areas  
29 were surveyed for natural resources that could be impacted by maintenance, repair, and  
30 upgrading activities.

31 This EA carries forward one action alternative for detailed analysis, the Proposed Action.  
32 Council on Environmental Quality (CEQ) guidance recommends consideration of the No Action  
33 Alternative. The No Action Alternative does not meet the purpose of and need for the Proposed  
34 Action. It does, however, serve as a baseline against which the impacts of the Proposed Action  
35 can be evaluated. Under the No Action Alternative, the Navy would not have access to conduct  
36 maintenance, repair, and upgrades to all utilities, assets, and roads. Each project would require  
37 individual consultation with other federal and state agencies and impede response to non-  
38 emergency situations.

1 This EA has been prepared in accordance with the National Environmental Policy Act (NEPA)  
2 (42 United States Code §§ 4321–4370h), the CEQ Regulations for Implementing the Procedural  
3 Provisions of NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508), and Navy  
4 Regulations for Implementing NEPA (32 CFR § 775). This EA evaluates the potential direct,  
5 indirect, and cumulative impacts of implementation of the Proposed Action and No Action  
6 Alternative on the following resource areas: noise; air quality; safety; geological resources;  
7 water resources; biological resources; infrastructure, utilities, and transportation; hazardous  
8 materials and wastes; and cultural resources.

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**ENVIRONMENTAL ASSESSMENT  
ADDRESSING  
MAINTENANCE, REPAIR, AND UPGRADES TO  
INFRASTRUCTURE  
AT  
NAVAL AUXILIARY LANDING FIELD  
SAN CLEMENTE ISLAND, CALIFORNIA**

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**FEBRUARY 2016**



# 1 Executive Summary

2 This Environmental Assessment (EA) has been prepared by the U.S. Department of the Navy  
3 (Navy) in accordance with the National Environmental Policy Act of 1969 (NEPA) and other  
4 applicable laws. The Navy prepared this EA to analyze the proposal to conduct maintenance,  
5 repair, and upgrades at Navy Auxiliary Landing Field (NALF) San Clemente Island (SCI),  
6 California, for existing infrastructure and existing and temporary facilities. The EA provides the  
7 basis for well-informed decisions to be made before determining whether to implement the  
8 Proposed Action. The analysis in this EA will also determine if the Proposed Action warrants an  
9 Environmental Impact Statement (EIS). The Proposed Action and No Action Alternative are  
10 analyzed in this EA.

11 The purpose of the Proposed Action is to support ongoing and future maintenance; repair; and  
12 upgrades to the infrastructure, road systems, and facilities at NALF SCI. Additionally, fire  
13 protection through vegetation management is proposed to protect mission critical assets. The  
14 Proposed Action ensures future mission and facility requirements are met by facilitating  
15 environmental coordination on maintenance and upgrades on critical infrastructure at NALF  
16 SCI. The Proposed Action is needed to sustain mission functions at NALF SCI to meet ongoing  
17 installation and Department of Defense (DOD) mission requirements. To complete mission  
18 requirements, roads, utilities, and assets on NALF SCI require ongoing maintenance, repair,  
19 and necessary upgrades.

20 These actions are being analyzed in a single EA to facilitate the NEPA review and compliance  
21 process, eliminate segmentation, facilitate coordination of land use planning, expedite project  
22 execution, improve the evaluation of potential cumulative environmental impacts, assist in  
23 maintaining a baseline for future analyses, encourage agency coordination, and provide cost  
24 savings.

25 Selection standards were used to develop the reasonable range of alternatives. To be  
26 considered reasonable, an alternative must be consistent with the following criteria:

- 27 • provide access to conduct vegetation management around installation assets to protect  
28 buildings and facilities from wildfire damage and remove invasive species
- 29 • provide access to conduct maintenance and repairs for utilities, roads, and installation  
30 assets
- 31 • keep impacts to resources to a minimum
- 32 • keep project and life cycle costs to a minimum
- 33 • not cause delays or disruptions in current installation mission or function.

34 Under the Proposed Action, the Navy would conduct maintenance, repair, and necessary  
35 upgrades at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI), California, for  
36 existing infrastructure, including fences and gates, roads and crossovers, drainage structures,  
37 utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities  
38 (buildings, airfield, landfill, and borrow pit).

1 In order to quantify impacts, the Navy established survey areas that include (1) 50-foot- (15.2-  
2 meter) corridors from the center line of all existing utilities and roads to support ongoing and  
3 future maintenance, repair, upgrades, and vegetation management; and (2) 100-foot (30.5  
4 meter) maintenance corridors around all assets (e.g., buildings and structures) to support  
5 ongoing and future maintenance and for protection from potential wildfire damage. These areas  
6 were surveyed for natural resources that could be impacted by maintenance, repair, and  
7 upgrading activities.

8 Under the No Action Alternative, the Navy would not have access to conduct maintenance,  
9 repair, and upgrades to all utilities, assets, and roads. In addition, those projects that might pose  
10 an impact to the quality of the human environmental may require individual consultation with  
11 other federal and state agencies, and might impede response to non-emergency situations.

12 This EA evaluates the potential direct, indirect, and cumulative impacts of implementation of the  
13 Proposed Action and No Action Alternative on the following resource areas: noise; air quality;  
14 safety; geological resources; water resources; biological resources; socioeconomics;  
15 infrastructure, utilities, and transportation; hazardous materials and wastes; and cultural  
16 resources. Potential environmental consequences from implementing the Proposed Action and  
17 No Action Alternative and mitigation measures are summarized in **Table ES-1**.

18 **Table ES-1. Summary of Potential Impacts and Avoidance/Mitigation Measures**

Resource Area	Proposed Action	No Action Alternative
<b>Noise</b>	Maintenance and repair associated with the Proposed Action could cause a temporary increase in sound above the ambient level during times when, or in areas of NALF SCI where, the noise environment is not dominated by aircraft operations or munitions noise. These impacts would be less than significant.	The maintenance and repair that would be allowed to occur due to limited access could cause a temporary increase in sound above the ambient level during times when, or in areas of NALF SCI where, the noise environment is not dominated by aircraft operations or munitions noise. The impacts would be less than significant.
<b>Air Quality</b>	Impacts from the Proposed Action on air quality would be less than significant. Yearly maintenance and repair would generate air emissions, but at levels that do not exceed significance thresholds. The requirements of the General Conformity Rule do not apply because the Proposed Action entails routine maintenance and repair and routine operation of facilities, mobile assets, and equipment. No air permitting implications would occur from the Proposed Action.	Impacts from reduced maintenance actions due to limited actions would be less than significant on air quality. Yearly maintenance and repair would generate air emissions, but at levels that do not exceed significance thresholds. The requirements of the General Conformity Rule do not apply because the No Action Alternative entails routine maintenance and repair and routine operation of facilities, mobile assets, and equipment. No air permitting implications would occur from the No Action Alternative.

Resource Area	Proposed Action	No Action Alternative
<b>Safety</b>	Impacts on safety from maintenance and repair would be less than significant. All activities would be conducted in accordance with the appropriate Occupational Safety and Health Administration (OSHA) and DOD regulations.	Impacts could result from a lack of established corridors around various assets, which could potentially create a more hazardous environment for future maintenance and repair of infrastructure. These impacts would normally be less than significant. However, a lack of vegetation control could create a safety issue due to the potential for wildfires to occur on SCI.
<b>Geological Resources</b>	Impacts on geology and soils from maintenance and repair would be less than significant, because the majority of activities would occur within existing footprints and appropriate best management practices (BMPs) would be used to control erosion.	No impacts on geological resources would be expected under the No Action Alternative.
<b>Water Resources</b>	Impacts on water resources would be less than significant. BMPs would be used to minimize impacts on surface water. The majority of maintenance would not be located in or adjacent to wetlands, or would be conducted in a manner to minimize impacts on wetlands and would be covered by applicable wetland permits.	Impacts on water resources would be less than significant under the No Action Alternative. BMPs would be used to minimize impacts on surface water. The majority of maintenance would not be located in or adjacent to wetlands, or would be conducted in a manner to minimize impacts on wetlands and would be covered by applicable wetland permits.
<b>Biological Resources</b>	Impacts on biological resources from maintenance and repair under the Proposed Action would be less than significant, based on adherence to all stipulations in the NALF SCI Integrated Natural Resources Management Plan, and consultation with the U.S. Fish and Wildlife Service (USFWS) for species protected by the ESA, as applicable.	Impacts on biological resources from maintenance and repair under the No Action Alternative would be less than significant based on adherence to all stipulations in the NALF SCI INRMP, and consultation with USFWS for species protected by the ESA, as applicable.
<b>Infrastructure, Utilities, and Transportation</b>	Less than significant impacts would be expected on utilities, infrastructure, and transportation due to potential temporary interruptions in service during construction and maintenance. Long-term beneficial impacts would also be expected, due to upgrades to the NALF SCI utilities, infrastructure, and transportation systems.	The condition of the utilities and infrastructure would continue to deteriorate. Maintenance issues obscured by vegetation may not be discovered and repaired in a timely manner leading to interruptions in service or decreases in efficacy.

Resource Area	Proposed Action	No Action Alternative
<b>Hazardous Materials and Wastes</b>	<p>Less than significant impacts on hazardous and materials and wastes would be expected under the Proposed Action. All hazardous materials would be handled in accordance with applicable regulations and identification/site characterization of hazardous materials would be conducted prior to maintenance and repair. If potential hazardous materials were identified during implementation of the Proposed Action, the contractor or installation personnel would immediately stop work, report the discovery to the installation, and implement appropriate safety measures.</p>	<p>Impacts under the No Action Alternative would be similar to those noted for the Proposed Action.</p>
<b>Cultural Resources</b>	<p>Maintenance and repair would not result in significant impacts on cultural resources on NALF SCI, based on adherence to all stipulations in the NALF SCI Programmatic Agreement (PA), and consultation with the NALF SCI Cultural Resources Program Manager (CRPM), as necessary.</p>	<p>No significant impacts on cultural resources would be expected under the No Action Alternative, similar to the Proposed Action.</p>

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# 1. Purpose of and Need for the Proposed Action

## 1.1 Introduction

This Environmental Assessment (EA) has been prepared by the U.S. Department of the Navy (Navy) in accordance with the National Environmental Policy Act of 1969 (NEPA) and other applicable laws. The Navy prepared this EA to analyze the proposal to conduct maintenance, repair, and upgrades at Naval Auxiliary Landing Field (NALF) San Clemente Island (SCI), California, for existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities (buildings, airfield, landfill, and borrow pit).

These actions are being analyzed in a single EA to facilitate the NEPA review and compliance process, eliminate segmentation, facilitate coordination of land use planning, expedite project execution, improve the evaluation of potential cumulative environmental impacts, assist in maintaining a baseline for future analyses, encourage agency coordination, and provide cost savings.

## 1.2 Project Location and Mission

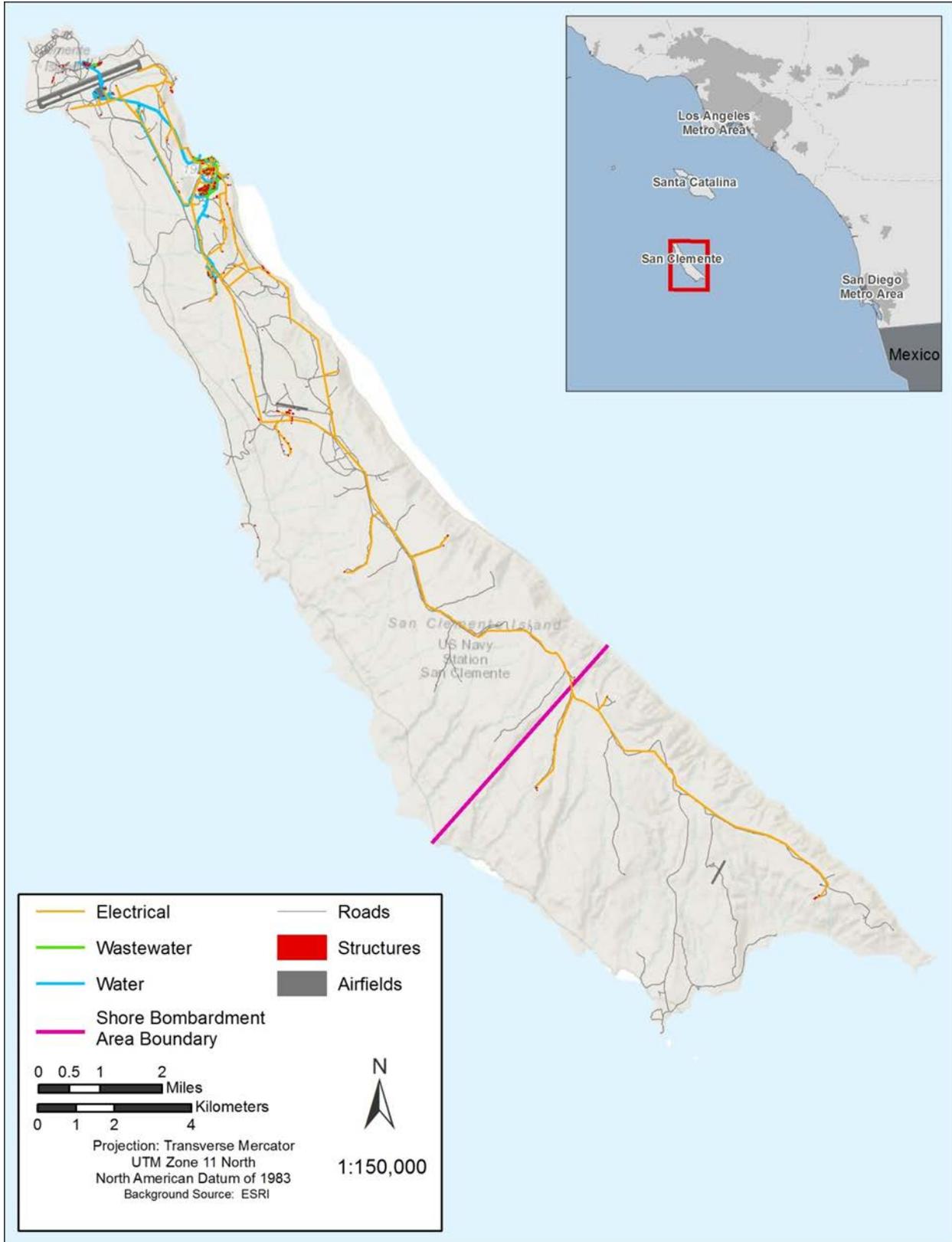
The Southern California (SOCAL) Range Complex encompasses surface and subsurface ocean operating areas, over-ocean military airspace, and NALF SCI. SCI is owned and operated by the Navy and is overseen by Naval Base Coronado (NBC). It is the southernmost island of an archipelago of eight major Channel Islands in the Southern California Bight. SCI is located 68 nautical miles (NM) west of San Diego and 55 NM south of Long Beach, California. The island is oriented northwest to southeast (see **Figure 1-1**). It is approximately 21 miles (34 kilometers [km]) long, 4 miles (6 km) at its widest point, and 56 square miles (145 square kilometers) or 35,840 acres (14,504 hectares) in total (Navy 2013a, Navy 2013b).

The primary mission of NALF SCI is to provide military departments with air, land, and sea space to conduct realistic training events in support of operational readiness requirements in a maritime environment (Navy 2013b).

## 1.3 Purpose of and Need for Proposed Action

The purpose of the Proposed Action is to support ongoing and future maintenance; repair; and upgrades to the infrastructure, road systems, and facilities at NALF SCI. Additionally, fire protection through vegetation management is proposed to protect mission critical assets. The Proposed Action supports future missions by enabling maintenance requirements on NALF SCI facilities and infrastructure to transpire through an expedited environmental coordination and review process.

The Proposed Action is needed to sustain mission functions at NALF SCI to meet ongoing installation and Department of Defense (DoD) mission requirements. To complete mission requirements, roads, utilities, and assets on NALF SCI require ongoing maintenance, repair and upgrades.



1

2 Figure 1-1. Location of SCI and Surrounding Areas

## 1 1.4 Decision to be Made

2 The analysis in this EA will determine if an Environmental Impact Statement (EIS) needs to be  
3 prepared. An EIS would need to be prepared if it is anticipated that the Proposed Action would  
4 have significant impacts on the human or natural environment that cannot be mitigated to below  
5 significant levels. Should an EIS not be deemed necessary, the Proposed Action or No Action  
6 Alternative would be selected for implementation. This would be documented in a Finding of No  
7 Significant Impact (FONSI).

## 8 1.5 Selection Standards

9 Selection standards were used to develop the reasonable range of alternatives. To be  
10 considered reasonable, an alternative must be consistent with the following criteria:

- 11 • Provide access to conduct vegetation management around installation assets to protect  
12 buildings and facilities from wildfire damage and remove invasive species
- 13 • Provide access to conduct maintenance and repairs for utilities, roads, and installation  
14 assets
- 15 • Minimize impacts to resources
- 16 • Minimize project and life cycle costs
- 17 • Minimize delays or disruptions in the installation mission or functions.

## 18 1.6 Scope of Analysis

19 The EA provides the basis for well-informed decisions to be made before the Proposed Action is  
20 implemented. The following resource areas are evaluated in this EA for the Proposed Action  
21 and the No Action Alternative because these resource areas compose the main issues relevant  
22 to the Proposed Action at NALF SCI:

- 23 • Noise
- 24 • Air quality
- 25 • Safety
- 26 • Geological resources
- 27 • Water resources
- 28 • Biological resources
- 29 • Infrastructure, utilities, and transportation
- 30 • Hazardous materials and wastes
- 31 • Cultural resources.

32 Some environmental resource areas were eliminated from further detailed analysis in this EA  
33 because there would be no impacts on these resource areas from implementing the Proposed  
34 Action. The resource areas eliminated from further detailed analysis in this EA, and the basis for  
35 their exclusions, are as follows:

- 1 • **Land Use.** There would be no land use category changes as a result of the Proposed  
2 Action. There are eight land use categories applicable to NALF SCI: Bachelor Housing;  
3 Medical; Port Operations; Research, Development, Test, and Evaluation  
4 (RDT&E)/Communications; Recreation/Community Supply; Supply; Utilities; and Natural  
5 Resources (Navy 2013b). In addition, the Proposed Action would not introduce any new  
6 Land Use Controls. Therefore, no impacts on land use would be expected. Accordingly,  
7 the Navy eliminated further detailed examination of land use in this EA.
- 8 • **Recreation.** There are no recreational resources located at or near any of the areas  
9 associated with the Proposed Action. Public access on SCI is restricted by the Navy and  
10 is limited to military and civilian personnel, their immediate families, and their guests.  
11 Recreation facilities on SCI include a golf driving range, bowling alley, gymnasium, and  
12 hiking and jogging trails (Navy 2013a). Boating, fishing, surfing, and diving opportunities  
13 are available to the general public in non-restricted offshore and nearshore areas. The  
14 Proposed Action would not involve any activities that would alter recreational areas or  
15 impact recreational activities at or around SCI. No impacts on recreation would be  
16 expected with implementation of the Proposed Action. Accordingly, the Navy eliminated  
17 further detailed examination of recreation in this EA.
- 18 • **Community/Emergency Services.** Implementation of the Proposed Action would not  
19 result in any changes to public services. Public access on SCI is restricted by the Navy.  
20 Many areas on the island have additional limitations and restricted access. Fire and  
21 police services on NALF SCI are provided by on-island personnel (Navy 2013a). No  
22 impacts on community/emergency services would be expected. Accordingly, the Navy  
23 eliminated further detailed analysis of community/emergency services in this EA.
- 24 • **Socioeconomics.** The Proposed Action would not directly affect activities or populations  
25 outside of NALF SCI. Activities associated with the Proposed Action would be performed  
26 by existing on-island personnel; no off-island personnel would be necessary and no jobs  
27 would be created. There would be no population changes or additional housing required.  
28 Accordingly, the Navy eliminated further detailed examination of socioeconomics in this  
29 EA.
- 30 • **Environmental Justice.** The Proposed Action would not involve any activities that  
31 disproportionately impact minority or low-income populations or children (Executive  
32 Order [EO] 12898, *Environmental Justice for Low Income and Minority Populations* and  
33 EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*).  
34 Activities associated with the Proposed Action would occur entirely on SCI. Therefore,  
35 no impacts on minority or low-income populations or populations of children would be  
36 expected. Accordingly, the Navy eliminated further detailed examination of  
37 environmental justice in this EA.
- 38 • **Airspace Management.** The Proposed Action does not involve any activities that would  
39 impact military airspace or military aircraft operations conducted within military airspace.  
40 None of the activities associated with the Proposed Action would interfere with military  
41 airspace. Accordingly, the Navy eliminated further detailed examination of airspace  
42 management in this EA.

- **Visual Resources.** The Proposed Action does not involve any activities that would significantly alter the aesthetic qualities of the area or landscape. The Proposed Action would be consistent with the current characteristic features of the area and landscape. Accordingly, the Navy eliminated further detailed examination of visual resources in this EA.

## 1.7 The Environmental Review Process

### 1.7.1 National Environmental Policy Act

NEPA (42 United States Code [U.S.C.] §§ 4321–4370h) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed major Federal actions before those actions are taken. NEPA established the Council on Environmental Quality (CEQ), which was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR) §§ 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (CEQ regulations). According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively” (40 CFR § 1500.2). The NEPA process does not replace procedural or substantive requirements of other environmental statutes and regulations; it addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of key environmental issues and requirements associated with a Proposed Action.

An EIS is prepared for Federal actions that might significantly affect the quality of the natural or human environment. An EA is a concise document that provides sufficient analyses for determining whether the potential environmental impacts of a Proposed Action are significant, requiring the preparation of an EIS, or not significant, resulting in the preparation of a FONSI.

The Navy implements NEPA through the *Procedures for Implementing the National Environmental Policy Act* (32 CFR § 775). Additional guidance is found in Secretary of the Navy Instruction 5090.6A, *Environmental Planning for Department of the Navy Actions*, and Chief of Navy Operations Instruction (OPNAVINST) M-5090.1, *Environmental Readiness Program Manual*.

### 1.7.2 Agency Coordination

The Navy conducts inter-agency coordination on many of their projects. Below is a summary of the agency and any anticipated permits or approvals that may be needed for this project.

**United States Fish and Wildlife Service.** For the Proposed Action, the Navy is consulting with USFWS under the Endangered Species Act (ESA) to identify potential impacts to Threatened and Endangered Species. The Navy is currently corresponding with USFWS under Section 7 of the ESA. A Biological Assessment was submitted to USFWS with estimated take allowances. The Navy expects to receive a Biological Opinion confirming these estimates and instructions on future correspondence for projects at SCI.

1 **U.S. Army Corps of Engineers.** For the Proposed Action, the Navy is coordinating with the  
2 USACE in accordance with the Clean Water Act to estimate impacts to Waters of the U.S. At  
3 this time, it is unknown if Water of the U.S. will be impacted and if permits would be required for  
4 fill or discharge into a wetland. The Navy would need to coordinate on a project-by-project  
5 basis.

6 **State Historic Preservation Office.** For the Proposed Action, the Navy is coordinating with the  
7 California State Historic Preservation Office under the National Historic Preservation Act  
8 (NHPA). The Navy currently has a memorandum of understanding with the SHPO and  
9 coordinates with that office to keep them informed on SCI undertakings that may affect historic  
10 resources.

11 **California Coastal Commission.** For the Proposed Action, the Navy is coordinating with the  
12 California Coastal Commission (CCC) under the Coastal Zone Management Act (CZMA). The  
13 Navy and the CCC will come to a conclusion on whether the Proposed Action will need a  
14 coastal consistency determination.

### 15 **1.7.3 Public Involvement**

16 Through the public involvement process, the Navy makes an effort to get public input for the EA.  
17 The Navy also coordinates with relevant Federal, state, and local agencies and notifies them of  
18 the Proposed Action. The public involvement process provides the Navy with the opportunity to  
19 consider state and local agency/organization input, and input from the general public, in its  
20 decision regarding implementation of this Federal proposal. Input from agency responses will be  
21 incorporated into the analysis of potential environmental impacts.

22 Once the Draft EA is finalized, a Notice of Availability (NOA) will be published in the *San Diego*  
23 *Union Tribune*. The published NOA will solicit comments on the Draft EA and is intended to  
24 involve the local community in the decisionmaking process.

25 The Draft EA will be made available to the public for a 15-day review period. Comments  
26 received from the public and Federal, state, and local agencies will be considered prior to  
27 finalizing the EA and deciding whether an EIS or FONSI is appropriate. If a FONSI is  
28 appropriate, an NOA will be published in a local newspaper, made available in a local library,  
29 and on the Navy Region website ([www.piersystem.com](http://www.piersystem.com)) to announce to the public the  
30 finalization of the EA and issuance of the FONSI. If a FONSI is not appropriate, a Notice of  
31 Intent to prepare an EIS will be prepared should the Navy continue to desire to implement this  
32 Proposed Action.

### 33 **1.7.4 Related Environmental and Planning Documents**

34 While not a comprehensive list, the following related planning documents were considered in  
35 the preparation of this document and are summarized in the following subsections.

#### 36 **1.7.4.1 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN NAVAL AUXILIARY** 37 **LANDING FIELD SAN CLEMENTE ISLAND, CALIFORNIA**

38 In 2013, the Navy completed an Integrated Natural Resources Management Plan (INRMP) for  
39 NALF SCI. The INRMP provides NALF SCI with an implementable framework for managing

1 natural resources on the land and water it owns or controls. Required by the Sikes Act (as  
2 amended), an INRMP is the primary means by which natural resources compliance and  
3 stewardship priorities are set and funding requirements are determined for DOD installations.  
4 The INRMP provides goals and objectives for the use and conservation of natural resources on  
5 NALF SCI which integrate regional ecosystem, military, social (i.e., community), and economic  
6 concerns. It establishes planning and management strategies; identifies natural resources  
7 constraints and opportunities; supports the resolution of land use conflicts; provides baseline  
8 descriptions of natural resources necessary for the development of conservation strategies and  
9 environmental assessment; serves as the principal information source for the preparation of  
10 future environmental documents for proposed NALF SCI actions; and provides guidance for  
11 annual natural resources management reviews, internal compliance audits, and annual budget  
12 submittals (Navy 2013b).

13 **1.7.4.2 ENVIRONMENTAL ASSESSMENT FOR NAVAL BASE CORONADO, NAVAL AUXILIARY**  
14 **LANDING FIELD, SAN CLEMENTE ISLAND INTEGRATED NATURAL RESOURCES**  
15 **MANAGEMENT PLAN**

16 In 2013, the Navy completed the EA for NBC, NALF SCI, INRMP, Los Angeles County,  
17 California (Navy 2013a). The EA addressed the potential environmental impacts associated with  
18 the implementation of the natural resources management strategies outlined in the 2013 INRMP  
19 for NALF SCI (see **Section 1.6.3.1**). The EA analyzed two alternatives: the Proposed Action,  
20 which proposed adoption and implementation of the 2013 INRMP, and a No Action Alternative  
21 that would continue to use the 2002 INRMP and maintain current approaches to natural  
22 resources management.

23 **1.7.4.3 SOUTHERN CALIFORNIA RANGE COMPLEX ENVIRONMENTAL IMPACT**  
24 **STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT**

25 In 2008, the Navy completed the *Southern California Range Complex Environmental Impact*  
26 *Statement/Overseas Environmental Impact Statement* (SOCAL EIS/OEIS) (Navy 2008). The  
27 SOCAL EIS/OEIS addressed the potential environmental impacts associated with ongoing and  
28 proposed naval activities within the Navy's existing SOCAL Range Complex. The SOCAL  
29 Range Complex encompasses surface and subsurface ocean operating areas, over-ocean  
30 military airspace, and NALF SCI. The EIS/OEIS provided an assessment of environmental  
31 impacts associated with current and proposed training and RDT&E activities, force structure (to  
32 include new weapons systems and platforms), and range investments in the SOCAL Range  
33 Complex.

34 **1.7.4.4 HAWAII-SOUTHERN CALIFORNIA TRAINING AND TESTING ENVIRONMENTAL IMPACT**  
35 **STATEMENT/OVERSEAS ENVIRONMENTAL IMPACT STATEMENT**

36 In 2013, the Navy completed the *Hawaii-Southern California Training and Testing EIS/OEIS*  
37 (HSTT EIS/OEIS) (Navy 2013c). The HSTT EIS/OEIS addressed the potential environmental  
38 impacts associated with the current, emerging, and future training and testing activities in the  
39 Hawaii-Southern California Study Area. The Hawaii-Southern California Study Area is made up  
40 of the airspace and ocean areas off of Southern California, around the Hawaiian Islands, and  
41 the spaces connecting them (including NALF SCI). Three alternatives were analyzed in the  
42 HSTT EIS/OEIS: the No Action Alternative, Alternative 1, and Alternative 2. The No Action  
43 Alternative represents those training and testing activities as set forth in previously completed

- 1 environmental planning documentation. Alternative 1 includes training and testing activities
- 2 addressed in the No Action Alternative, plus an adjustment to the Hawaii Study Area boundaries
- 3 and proposed adjustments to types, locations, and levels of training and testing. Alternative 2
- 4 includes all elements of Alternative 1, plus it establishes new range capabilities, modifies
- 5 existing capabilities, and adjusts the type and tempo of training and testing.

## 2. Proposed Action and Alternatives

### 2.1 Description of the Proposed Action

Under the Proposed Action, the Navy would conduct maintenance, repair, and necessary upgrades at NALF SCI for existing infrastructure; this includes but is not limited to the following:

- Fences and gates
- Roads, parking areas, and crossovers
- Drainage structures (i.e. culverts, cuts, concrete spillways)
- Utility infrastructure (i.e., electrical and water systems)
- Airfield and supporting infrastructure
- Landfill, borrow pits
- Existing and temporary building, recreational areas, or assets.

The Navy proposes corridors around the entire infrastructure listed above. The purpose of the corridors is to establish workspace that has quantified resources that could potentially be impacted. The Navy conducted natural resources surveys in these corridors and used this data to formulate conclusions in this EA. The corridors gave boundaries to the survey team and do not necessarily represent the extent of work areas (e.g., roads were given 50-foot centerline survey corridors, but work areas may vary from 2-50 feet). The following are the survey corridors:

- 50-foot (15.2-meter) corridors from the center line of all existing utilities and roads to support ongoing and future maintenance, upgrades, and vegetation management
- 100-foot (30.5-meter) maintenance corridors around all assets (e.g., buildings, structures, and airfield) to support ongoing and future maintenance and for protection from potential wildfire damage.

Table 2-1. Corridor Lengths and Sizes

Name of Attribute	Corridor Length in Linear Feet/Miles (km)	Corridor Size in Acres (Hectares)
Electrical System (Transmission Lines)	207,463/39.29 (63.23)	*N/A
Electrical System (Transmission Lines) All	213,771/40.49 (65.16)	*N/A
Electrical System (Wind Turbines)	N/A	2.20 (0.89)
Potable Water Utility	78,068/14.79 (23.80)	*N/A
Wastewater Lines	18,091/3.43 (5.51)	*N/A
All Buildings (263 records plus the proposed water storage tank)	N/A	194.7 (78.78)
Roads Excluding RAAs and Impact Ranges	625,920/118.55 (190.78)	1,355.1 (548.39)
All Roads	683,677/129.48 (208.39)	1,488.8 (602.50)
<b>Total Excluding RAAs and Impact Ranges</b>	<b>929,542/176.06 (283.32)</b>	<b>1,552.0 (628.07)</b>
<b>Total Including RAAs</b>	<b>993,607/188.19 (302.86)</b>	<b>1,685.7 (682.17)</b>

1 Note: \*Utility corridors would generally coincide within road corridors.

2 The Proposed Action does not include maintenance, repair, or upgrades for major in-water  
3 infrastructure (e.g., new piers) because these were deemed major projects that may need  
4 additional planning, coordination with appropriate agencies, and additional surveys. Minor in-  
5 water, or over-water, work that is included in this EA may include but is not limited to  
6 maintaining boat ramps and moorings, painting structures, repairing pier decks and seawalls,  
7 and replacing electrical equipment. Navy project managers should coordinate efforts with the  
8 base environmental/natural resources office.

9 **Figures 2-1 through 2-16** at the end of this section provide an overview of existing  
10 infrastructure locations and proposed maintenance corridors on NALF SCI; for detailed maps  
11 showing the areas potentially impacted see **Appendix A: Biological Assessment**.

12 The combined analysis of the maintenance, repair, and upgrades with all utilities, roads, and  
13 assets is intended to streamline environmental review and permitting, including requirements for  
14 compliance with the NEPA, Endangered Species Act (ESA), and National Historic Preservation  
15 Act (NHPA) review process. The combined analysis will eliminate segmentation, facilitate  
16 coordination of land use planning, expedite project execution, improve the evaluation of  
17 potential cumulative environmental impacts, assist in maintaining a baseline for future analysis,  
18 encourage agency coordination, and provide cost savings. Details of the Proposed Action are  
19 provided in **Section 2.1.1**.

## 20 **2.1.1 Summary of Maintenance and Repair**

21 Under the Proposed Action, the Navy would conduct maintenance, repair, and upgrades at  
22 NALF SCI for existing infrastructure, including fences and gates, roads and crossovers,  
23 drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and  
24 temporary facilities (buildings, airfield, landfill, and borrow pit). **Figures 2-1 through 2-16** at the  
25 end of this section show the probable corridors for the utilities, paved and unpaved roads, the  
26 Shore Bombardment Area (SHOBA) boundary, and other assets. The majority of maintenance  
27 and repair would be conducted from existing roads and other disturbed areas.

28 Occasionally heavy equipment would be driven off existing roads to conduct maintenance and  
29 repair. These disturbances would be infrequent.

### 30 **2.1.1.1 ELECTRICAL SYSTEM**

31 NALF SCI has approximately 40 miles (64.4 km) of overhead 15-kilovolt electrical distribution  
32 lines. Reliability of the grid depends on routine maintenance and emergency access to all  
33 portions of the electrical distribution system. The majority of these distribution lines traverse  
34 remote areas with access only by dirt roads and two-track trails. Annual inspections of  
35 distribution line inspections require driving along the distribution route in some of the most  
36 remote areas of SCI. Some of these routes are not traveled frequently enough to establish a  
37 visible roadway. A 50-foot (15.2-meter) corridor would be established on each side of the  
38 distribution line to allow large bucket trucks to access the distribution line, maneuver around the  
39 transmission poles to perform routine maintenance on electrical components (e.g., transformers,  
40 guy wires, and lightning arresters). In addition, a 25-foot (7.6-meter) corridor around the

1 transmission poles would be established and would be cleared of vegetation using a weed-  
2 whacker on an annual basis. There are approximately 975 transmission poles on NALF SCI.  
3 Emergency access to restore power due to downed distribution lines, blown fuses, and  
4 damaged transmission poles is diminished without routine maintenance capabilities.

5 Electrical system maintenance and repair could include, but is not limited to replacement of  
6 burned-out light bulbs, restoring/replacing damaged power lines or onsite power-generating  
7 systems (e.g., transformers, guy wires, and lightning arresters), repair and replacement of  
8 associated electrical components, and, where necessary, vegetation clearing and debris  
9 removal. Maintenance on underground electrical lines (approximately 15,000 feet [4,572  
10 meters]) would be through existing vaults. Replacement of electrical poles would occur within  
11 the same, or immediately adjacent to, the existing location and within the vegetation clearance  
12 corridor for that pole. Heavy equipment potentially needed to maintain electrical systems  
13 includes lifts, drill rigs, track-hoes, backhoes, excavators, weed-whackers, all-terrain vehicles,  
14 and flatbed trucks.

15 Electrical system maintenance and repair would occur within the proposed maintenance  
16 corridor.

#### 17 **2.1.1.2 WATER SYSTEM**

18 NALF SCI has approximately 7 miles (11.2 km) of aboveground and underground water lines. A  
19 50-foot (15.2-meter) corridor on each side of every water line would be established to ensure  
20 access for maintenance and emergency repairs. Maintenance activities could include, but are  
21 not limited to sampling points along the water line, annual valve exercising, flushing, rust  
22 control, painting, stanchion maintenance, remote pumping station maintenance, air check valve  
23 maintenance, vegetation control, annual power-washing, and annual visual inspections.  
24 Occasionally water lines can develop a leak (e.g., from rust), be damaged from contact with a  
25 vehicle, or leak at a pipe joint or flange. With a limited amount of stored water at NALF SCI, it is  
26 critical that the operators have access to valves along the water line to stop leaks if they occur  
27 and the flexibility to excavate around the water line to make repairs. Egress and ingress routes  
28 to water lines would be designated on a project basis, but would be within the corridor.

29 Water system maintenance and repair might require trenching, boring underground, dragging  
30 large hoses, welding, mowing, grubbing, and using generators. Soil removed during trenching  
31 activities would be backfilled into trenches. Heavy equipment potentially needed to maintain  
32 water systems includes boom trucks, backhoes, excavators, jackhammers, forklifts, and valve-  
33 turning trucks. All work on the water system would occur within the proposed corridors.

#### 34 **2.1.1.3 ROADS**

35 Many of the roadways (paved and unpaved) and culverts on NALF SCI are in need of repair.  
36 Maintenance on roads would occur within corridors approximately 50 feet (15.2 meters) from the  
37 centerline of the road on both sides. The lengths of the corridors are classified by roads outside  
38 of the Restricted Access Areas (RAAs) and all roads including those within the RAAs. The  
39 RAAs include areas that have been identified as having or previously having unexploded  
40 ordnance, and therefore, are restricted.

1 Maintenance and repair of roads could consist of, but is not limited to, filling in potholes, re-  
2 grading road surfaces, improving water drainage measures, controlling vegetation and debris,  
3 and adding lost road surface material (i.e., gravel and fill) to reestablish intended surface  
4 elevation needed for adequate drainage. Other maintenance activities could include, but are not  
5 limited to, reasphalting existing asphalt surfaces, upgrading asphalt surfaces to concrete  
6 surfaces, repaving, adding slurry seal, remilling, installing road barriers, as well as painting  
7 roads, striping, and installing road signs and markers. There are approximately 188.19 miles  
8 (302.86 km) of road within the Action Area. Approximately 12.13 miles (19.52 km) are located in  
9 RAAs or impact ranges; these roads could not be surveyed, but are included in the impact  
10 analysis. The remaining 176.06 miles (283.34 km) of roads within the Action Area were  
11 surveyed for resources from February to October of 2014. Most road activities would occur  
12 within the existing footprint; however, equipment would occasionally need to be driven off  
13 existing roads. All maintenance and repair on roads would occur within the proposed corridors.

14 Grading of existing dirt and previously graded roads would be conducted. Heavy equipment  
15 would be needed for activities such as grading, filling, and compacting. Grading with the use of  
16 commercial equipment (e.g., graders, bulldozers, dump trucks, and rollers) would be used to  
17 restore an adequate surface to graded earth roads. Graded roads would be slightly crowned  
18 and absent of windrows in the gutter line to avoid ponding and channeling within the road during  
19 rain events. Any associated roadside drainage would be maintained to ensure that runoff is  
20 removed from the road surface quickly and effectively without creating further erosion issues.  
21 The addition of material to these roads would be kept to the minimum needed to restore an  
22 adequate surface to graded earth roads. Most of the gravel and fill material would come from an  
23 on-island borrow pit. Occasionally gravel and sand would be delivered from an off-island source  
24 depending on resource availability. Importing soil and fill from the mainland would be avoided to  
25 the extent possible to prevent the transfer of invasive species. If soil and fill are not available on  
26 the island, it would be heat-treated, when feasible, before being transferred to NALF SCI.

27 Vegetation control would be conducted along roads from 2.0 to 5.0 feet (0.6 to 1.5 meters) from  
28 the roadside depending on conditions (e.g., steep drop offs or un-safe conditions). Vegetation  
29 control could include, but is not limited to, mowing where possible and effective. In areas where  
30 terrain is prohibitive or where herbicide treatment would be more biologically effective, spot- or  
31 broadcast-application herbicide treatment would be necessary. Vegetation control would  
32 typically occur on a quarterly basis, but would be triggered by vegetation conditions.

#### 33 2.1.1.4 FACILITIES

34 NALF SCI needs to protect its assets (e.g., buildings, airfield, and other structures) from  
35 potential wildfire damage. Maintenance and upgrades (e.g., additions, painting, and roof repair)  
36 are also required for some of the assets at NALF SCI. Therefore, a 100-foot (30.5-meter)  
37 corridor has been established around all of the assets on NALF SCI to support maintenance  
38 and upgrades and for protection from potential wildfire damage (see **Table 2-1**).

39 Existing facilities, including buildings, the airfield, wind turbines, borrow pits, walkways,  
40 generators, septic tanks, and parking lots and other infrastructure components would be  
41 maintained, repaired and upgraded throughout NALF SCI. Most of the maintenance and repair  
42 would occur in the developed areas of NALF SCI. These activities could include, but are not

1 limited to, painting, power-washing, roof repair/replacement, cleaning and replacing gutters,  
2 repairing and maintaining concrete structures (e.g., on stairs or sidewalks), maintaining existing  
3 generators, disposing of septic tank contents annually, vegetation control, demolition of exiting  
4 infrastructure, and movement of temporary facilities. These activities might involve the use of  
5 heavy equipment including excavators, bulldozers, dump trucks, pavers, cranes, forklifts, and  
6 scrapers. If major upgrades are required, including adding or replacing existing wind turbines  
7 with another model, or upgrading an emergency generator, coordination with regulatory  
8 agencies would be conducted to ensure that current permits and consultations are appropriate  
9 for the action.

10 Vegetation control including mowing and herbicide treatment would be implemented as  
11 conditions dictate (estimated to be quarterly within 50 feet (15.2 meters) of all structures in  
12 accordance with the defensible space parameters set forth in the Fire Management Plan (FMP)  
13 (Navy 2009).

14 NALF SCI would remove degraded, unsafe, and unused facilities. Removal of the facilities is  
15 necessary to minimize safety concerns, reduce maintenance costs, and clear land for new  
16 construction to avoid increased impacts to undeveloped areas. Asbestos and lead paint  
17 abatement would be performed per regulations prior to demolition. The majority of demolition  
18 activities would occur in developed areas and might involve ground disturbance; and the  
19 removal of existing facilities, associated equipment, parking lots, and fencing. These activities  
20 may require use of heavy equipment including excavators, bulldozers and dump trucks. Some  
21 demolition activities may occur in more remote areas.

22 Most facility maintenance and repair would occur within the existing facility footprint; however,  
23 equipment would occasionally need to be driven off previously disturbed areas. Some  
24 maintenance and repair would require temporary disturbance areas for laydown, staging, and  
25 stockpiling. These disturbances would be infrequent and would not occur outside of the  
26 established maintenance corridors.

#### 27 **2.1.1.5 FENCES AND GATES**

28 Maintenance, repair, and upgrade of existing fences, gates, and other fence-related  
29 components such as bollards and signs could consist of, but is not limited to welding metal  
30 fence components, replacing damaged or structurally compromised components, reinforcing or  
31 bracing foundations, repairing weather-related damage, and removing vegetation and  
32 accumulated debris. Work that would involve flame or sparks from welding, cutting, or grinding  
33 can pose a fire hazard. Precautions will be put in place to prevent ignitions. The risk of fire  
34 would also be mitigated by not conducting high risk activities during extreme and very high fire  
35 danger ratings as defined in the SCI Wildland FMP (Navy 2009).

36 Earth moving could be necessary for fence and gate maintenance. To replace damaged or  
37 structurally compromised portions of fences and gates, heavy equipment might be needed for  
38 filling, compacting, and trenching. On-road haul trucks and excavators, or other such  
39 equipment, could be required to replace heavy fence and gate parts. Most fence and gate  
40 maintenance and repair would occur within the existing structure footprint; however, equipment

1 would occasionally need to be driven off existing roads. These disturbances would be infrequent  
2 and would not occur outside of the defined maintenance corridors.

### 3 **2.1.1.6 DRAINAGE MANAGEMENT STRUCTURES**

4 Maintenance and repair of drainage management structures could consist of, but is not limited  
5 to, cleaning blocked culverts of trash and debris and repairing/replacing nonfunctional or  
6 damaged structures where necessary. Replacement, repair, and installation of new culverts or  
7 flow structures would occur, as necessary, to maintain proper functionality. Riprap and other  
8 erosion-control structures would be repaired, resized, or installed to reduce erosion and improve  
9 water flow. In addition, maintenance and repair of low-water crossings would occur when  
10 necessary to maintain proper functionality. All debris and trash removed from culverts and  
11 grates would be disposed of at an appropriate disposal facility.

12 Low-water crossings consist of riprap at the edges and articulated matting or some similar  
13 hardened material in the middle. The riprap protects the articulated matting from washing away  
14 and enhances the stability and longevity of the materials. Maintenance and repair could consist  
15 of, but is not limited to, restoring and replacing damaged/displaced riprap. Articulated matting  
16 would be restored, replaced, or strengthened to maintain its functionality. Debris would also be  
17 removed to create a sustainable, efficient low-water crossing.

18 Restoration and replacement of culverts that would be restored or replaced might occur outside  
19 of their existing footprints, but would be within the maintenance corridor. Culvert replacements  
20 and repairs would take place as needed. New culverts installed to protect the integrity of the  
21 road could be constructed outside of the existing footprint, but would be within the maintenance  
22 corridor. All new culverts would be constructed and installed in accordance with industry  
23 standards. Heavy equipment such as on-road haul trucks, cranes, and excavators would be  
24 required for replacing culverts, low-water crossings, and riprap for the maintenance and repair  
25 of drainage structures.

### 26 **2.1.1.7 VEGETATION CONTROL**

27 Vegetation control would consist of trimming, mowing, grubbing, weed-whacking, plant removal,  
28 and applying selective herbicides on a quarterly basis or as vegetative conditions dictate.  
29 Vegetation encroaching upon roads and other infrastructure would be maintained for safety  
30 reasons to ensure visibility, minimize fox road kills, and protect assets from wildfire. Mechanical  
31 removal of an entire shrub or tree and tree trimming would be completed on a limited basis.  
32 Heavy equipment needed would include mowers, herbicide application equipment, trimmers,  
33 and mechanical grubbing equipment.

34 In many areas, vegetation would be controlled by mowing. In areas deemed too difficult to mow,  
35 such as under guardrails, within riprap, in areas with limited access due to safety concerns, and  
36 where most biologically effective, herbicides would be used, as appropriate. Herbicides are  
37 most commonly applied using broadcast and directed application. Broadcast application is  
38 commonly used along road sides and would be affixed to tractors or trucks. Directed application  
39 uses a spot-spray applicator either mounted on a back-pack or hand held. Herbicide use would  
40 be part of an integrated approach that uses minimal quantities of herbicide and would be  
41 conducted by a licensed pesticide applicator in accordance with management described in the

1 NALF SCI Integrated Natural Resources Management Plan (INRMP) (Navy 2013b) and the  
2 NBC Integrated Pest Management Plan.

## 3 **2.2 Alternatives Analysis**

4 Under NEPA, a reasonable range of alternatives to implement a Proposed Action must be  
5 considered in an EA. Considering alternatives helps avoid unnecessary impacts and analyzes  
6 reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative  
7 must be considered reasonable. To be considered reasonable, an alternative must be capable  
8 of implementation and meeting the purpose of and the need for an action.

9 No alternatives were identified that meet the selection criteria in **Section 1.5**. Thus, none were  
10 considered further in this EA.

## 11 **2.3 No Action Alternative**

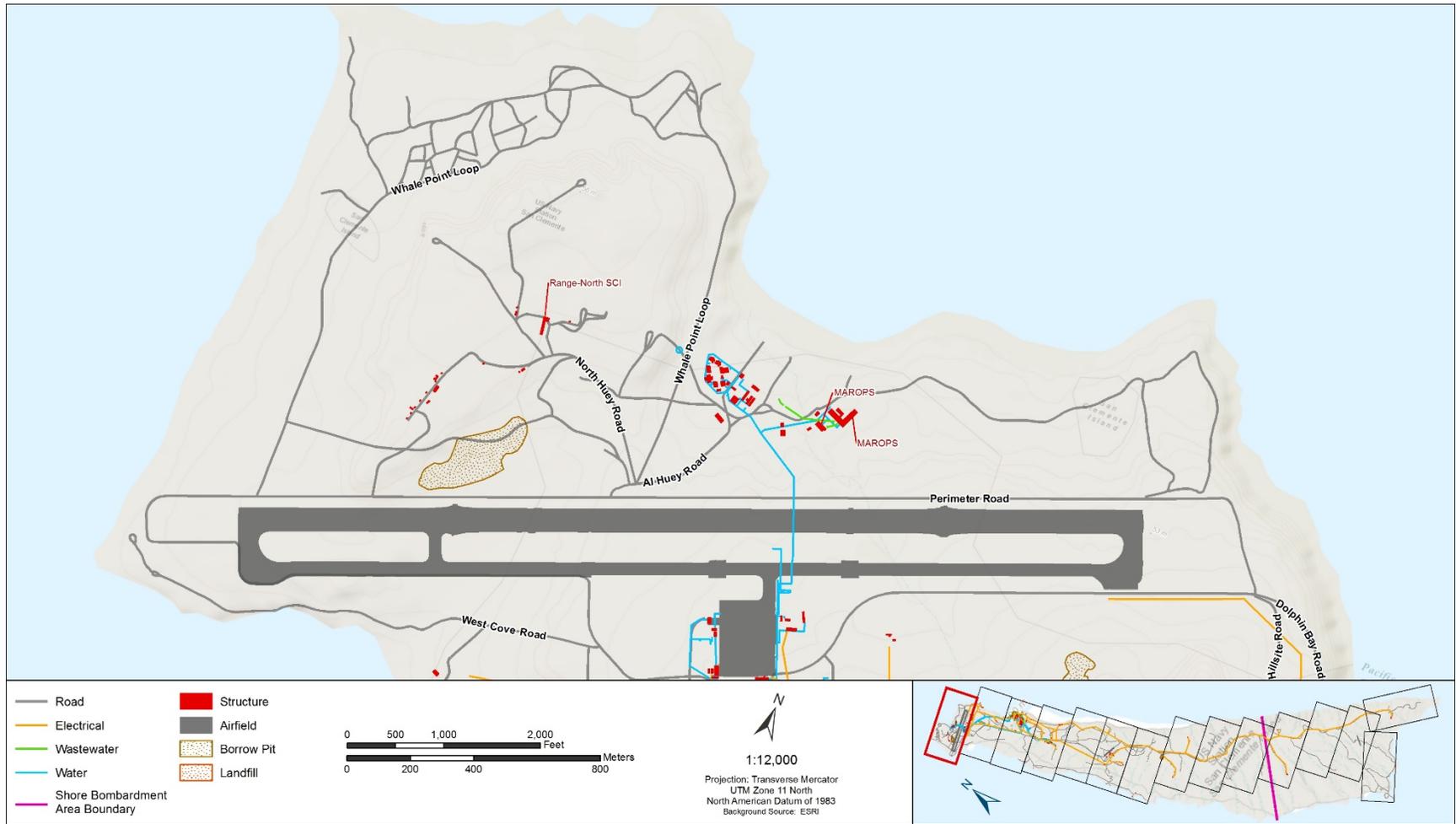
12 CEQ guidance recommends consideration of the No Action Alternative. The No Action  
13 Alternative does not meet the purpose of and need for the Proposed Action (as described in  
14 **Section 1.3**) or the selection standards (**Section 1.5**). However, it serves as a baseline against  
15 which the impacts of the Proposed Action can be evaluated. Under the No Action Alternative,  
16 the Navy would not achieve the required levels of operational readiness for the NALF SCI  
17 mission. The No Action Alternative has been carried forward for detailed analysis in this EA as a  
18 baseline for comparison with the Proposed Action.

19 Under the No Action Alternative, the Navy would not have access to conduct maintenance,  
20 repair, and upgrades to all utilities, assets, and roads. Each project would require individual  
21 consultation with other federal and state agencies and impede response to non-emergency  
22 situations.



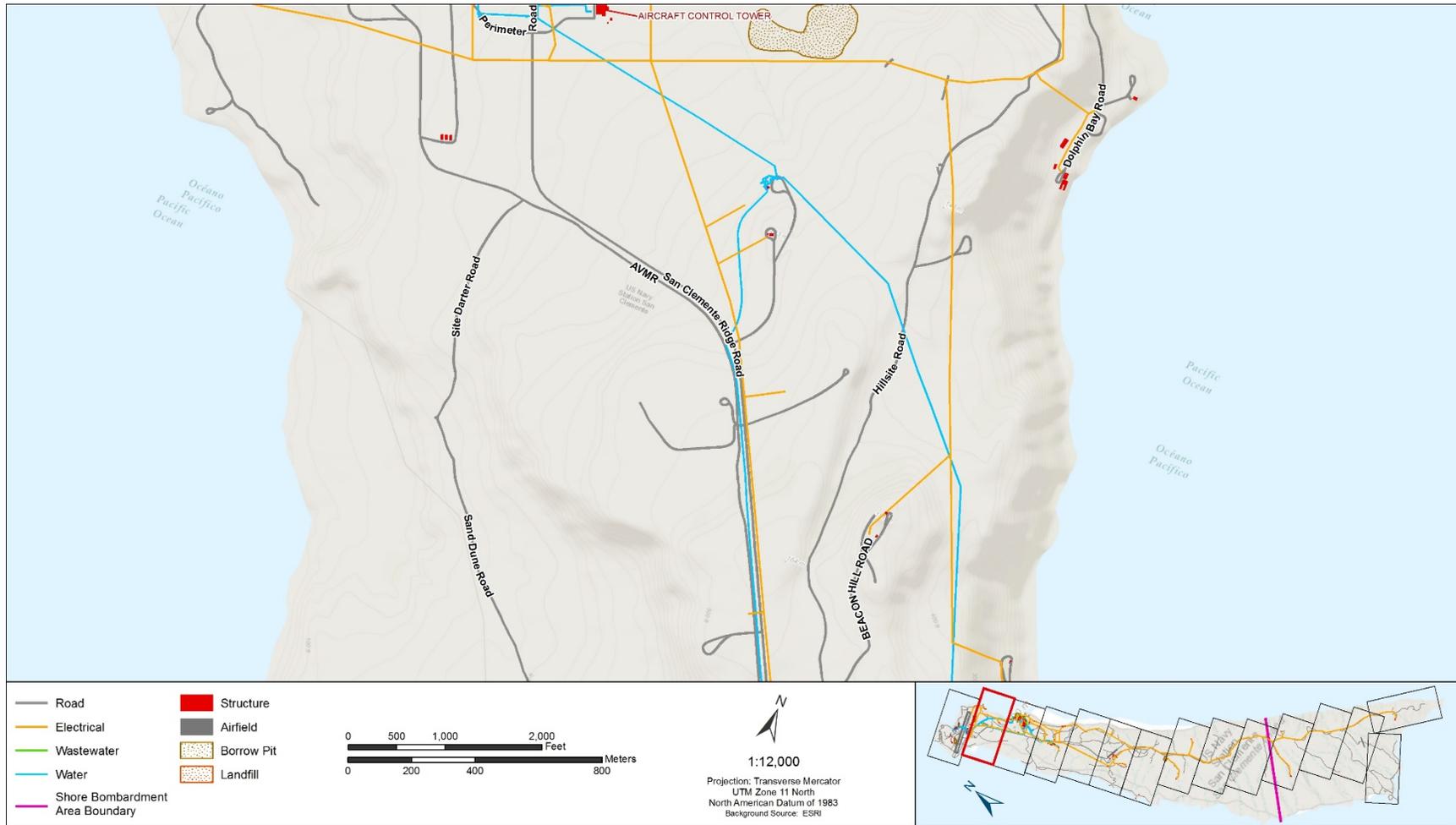
1

2 **Figure 2-1. Overview of SCI's Utilities, Roads, and other Assets**



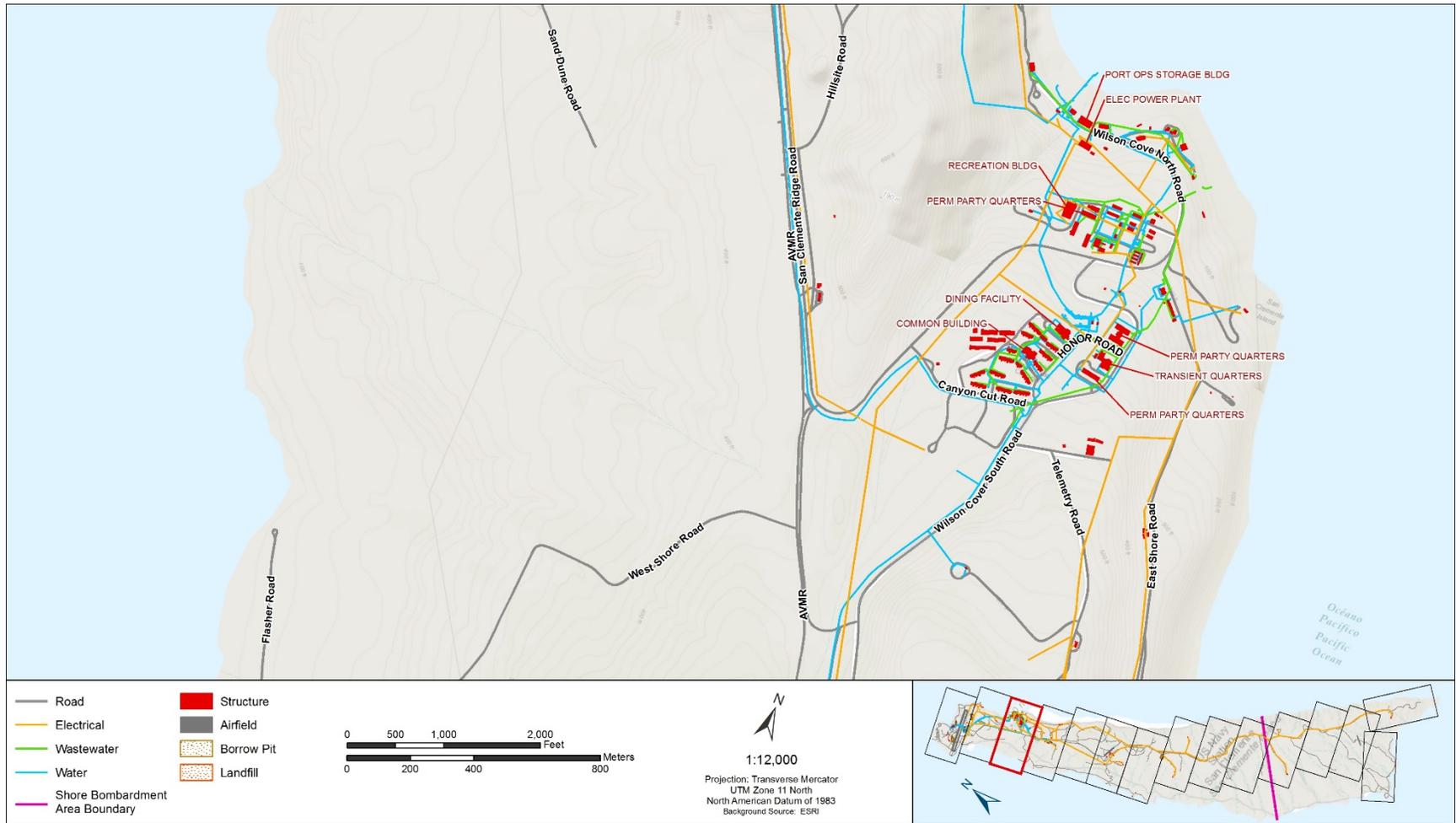
1

2 **Figure 2-2. Grid One of Utilities, Roads, and other Assets**



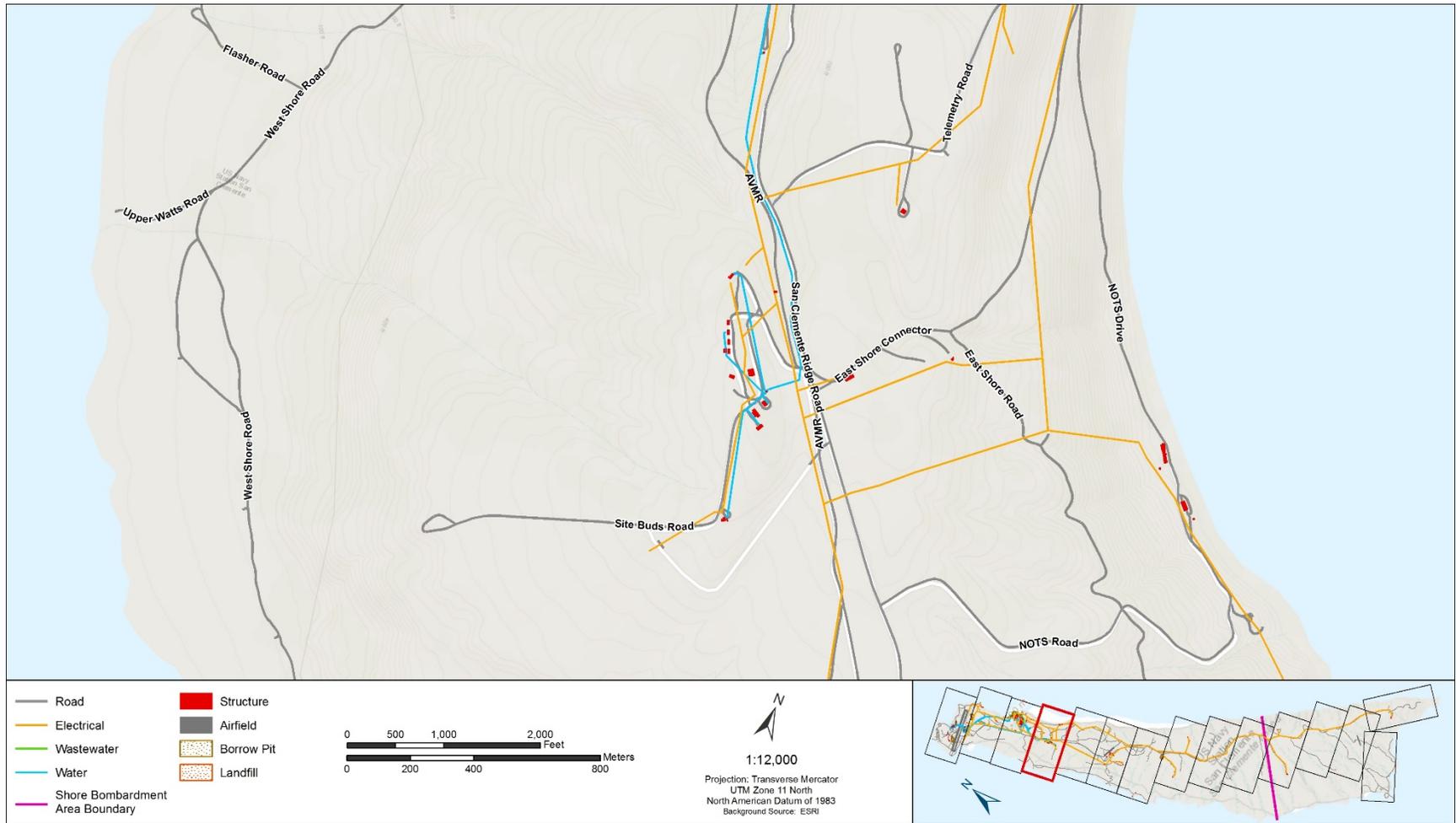
1

2 **Figure 2-3. Grid Two of Utilities, Roads, and other Assets**



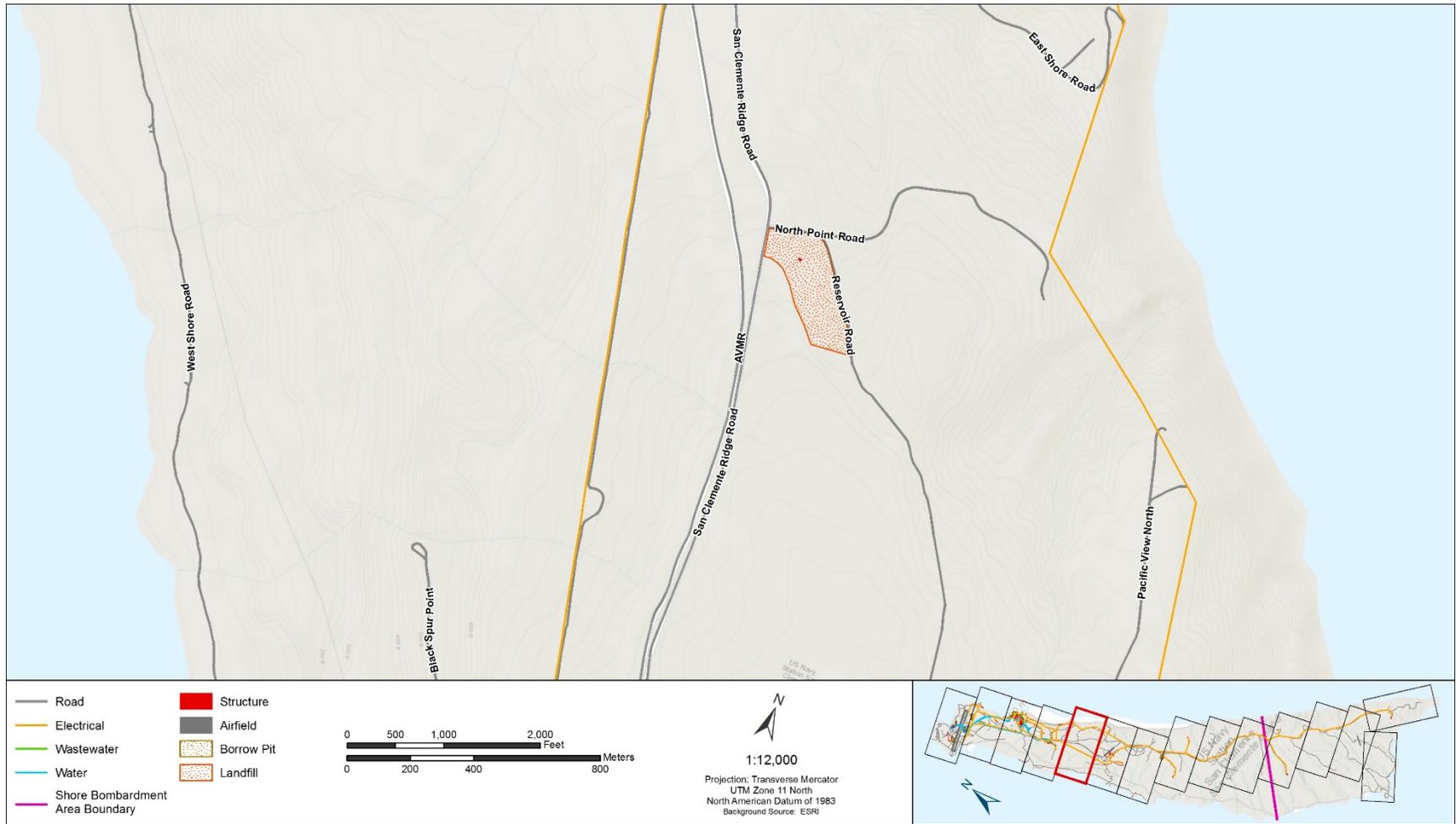
1

2 **Figure 2-4. Grid Three of Utilities, Roads, and other Assets**



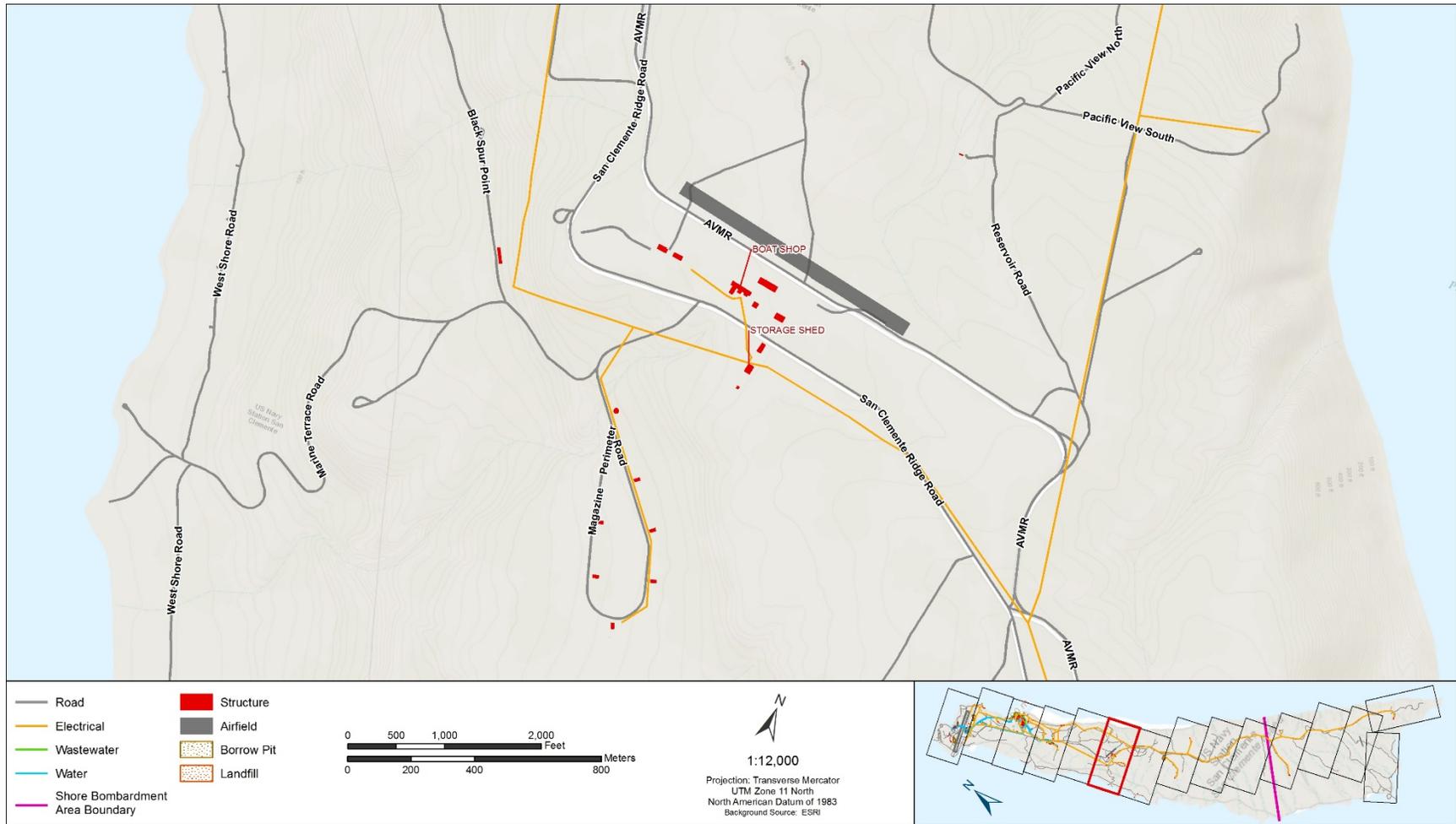
1

2 **Figure 2-5. Grid Four of Utilities, Roads, and other Assets**



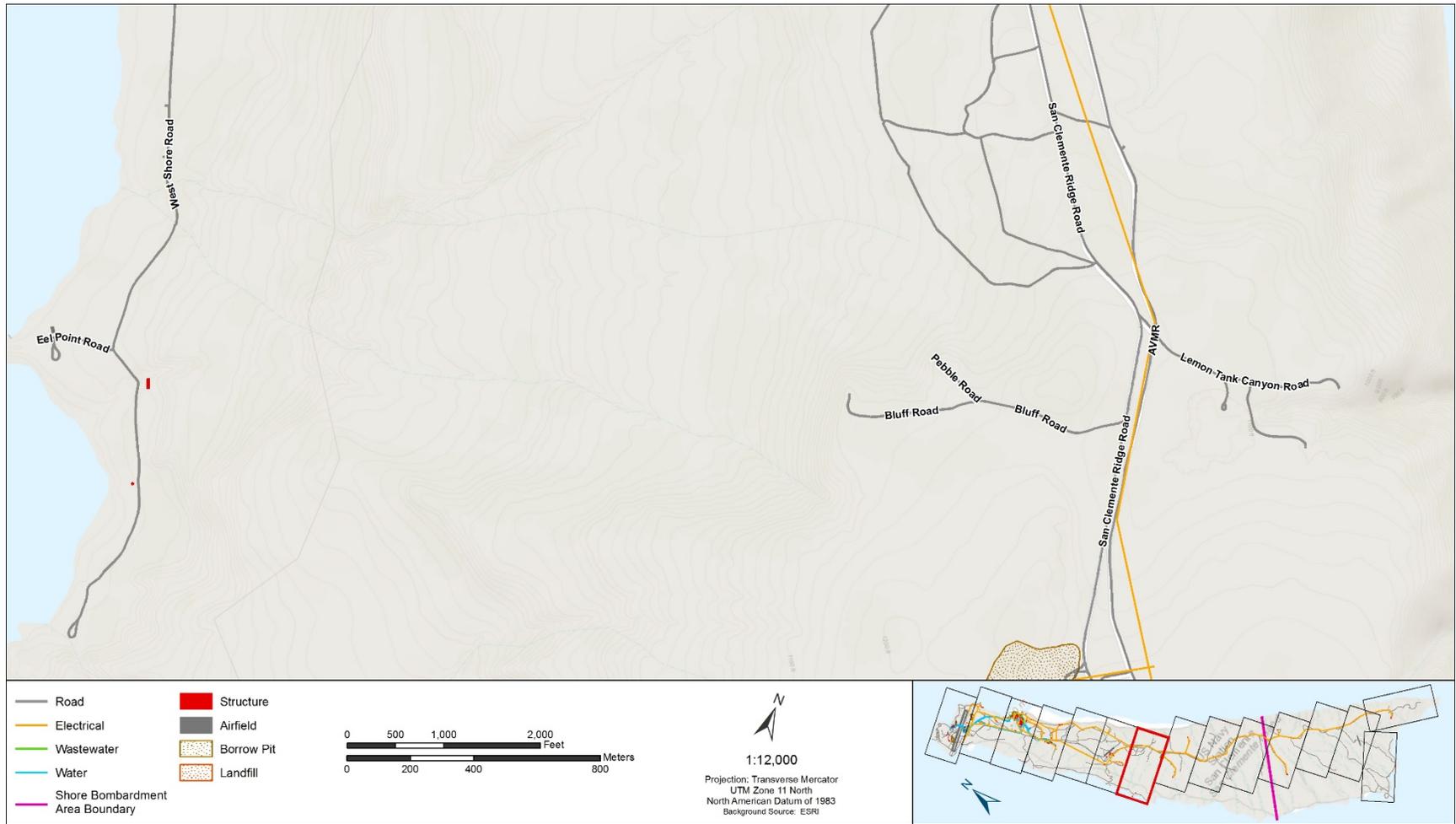
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2 Figure 2-6. Grid Five of Utilities, Roads, and other Assets



1

2 **Figure 2-7. Grid Six of Utilities, Roads, and other Assets**



1

2 **Figure 2-8. Grid Seven of Utilities, Roads, and other Assets**



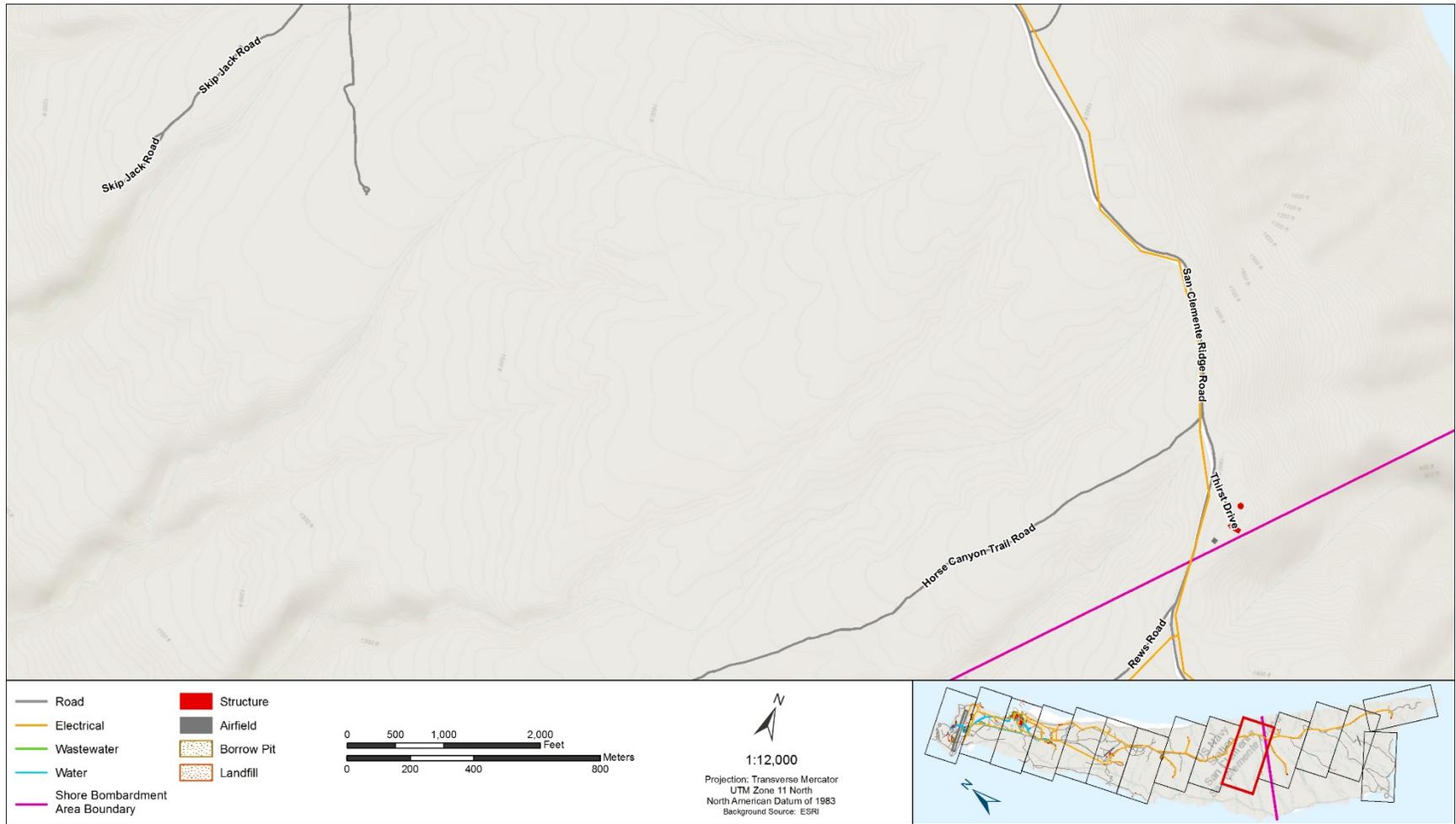
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2 **Figure 2-9. Grid Eight of Utilities, Roads, and other Assets**



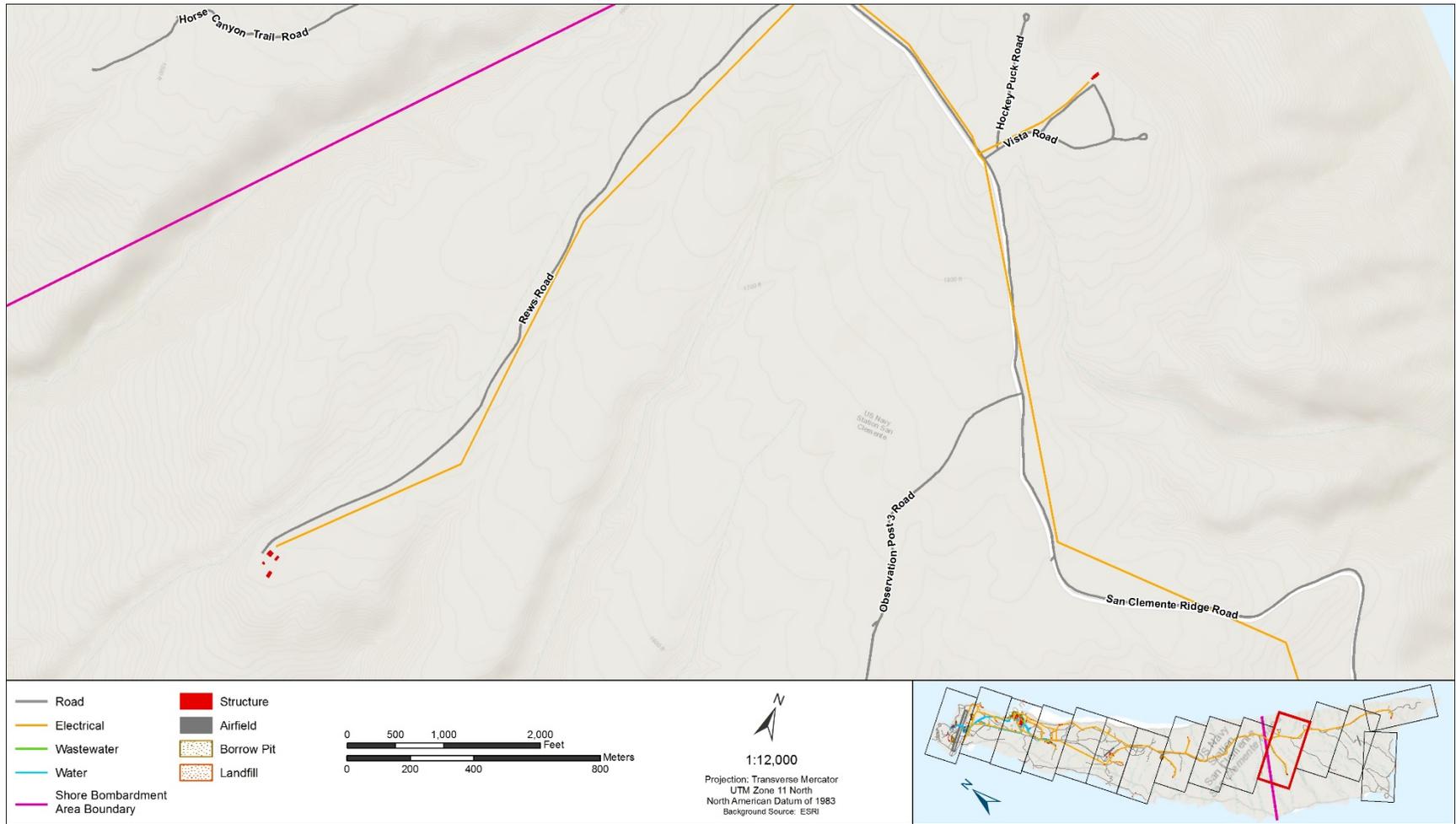
1

2 **Figure 2-10. Grid Nine of Utilities, Roads, and other Assets**



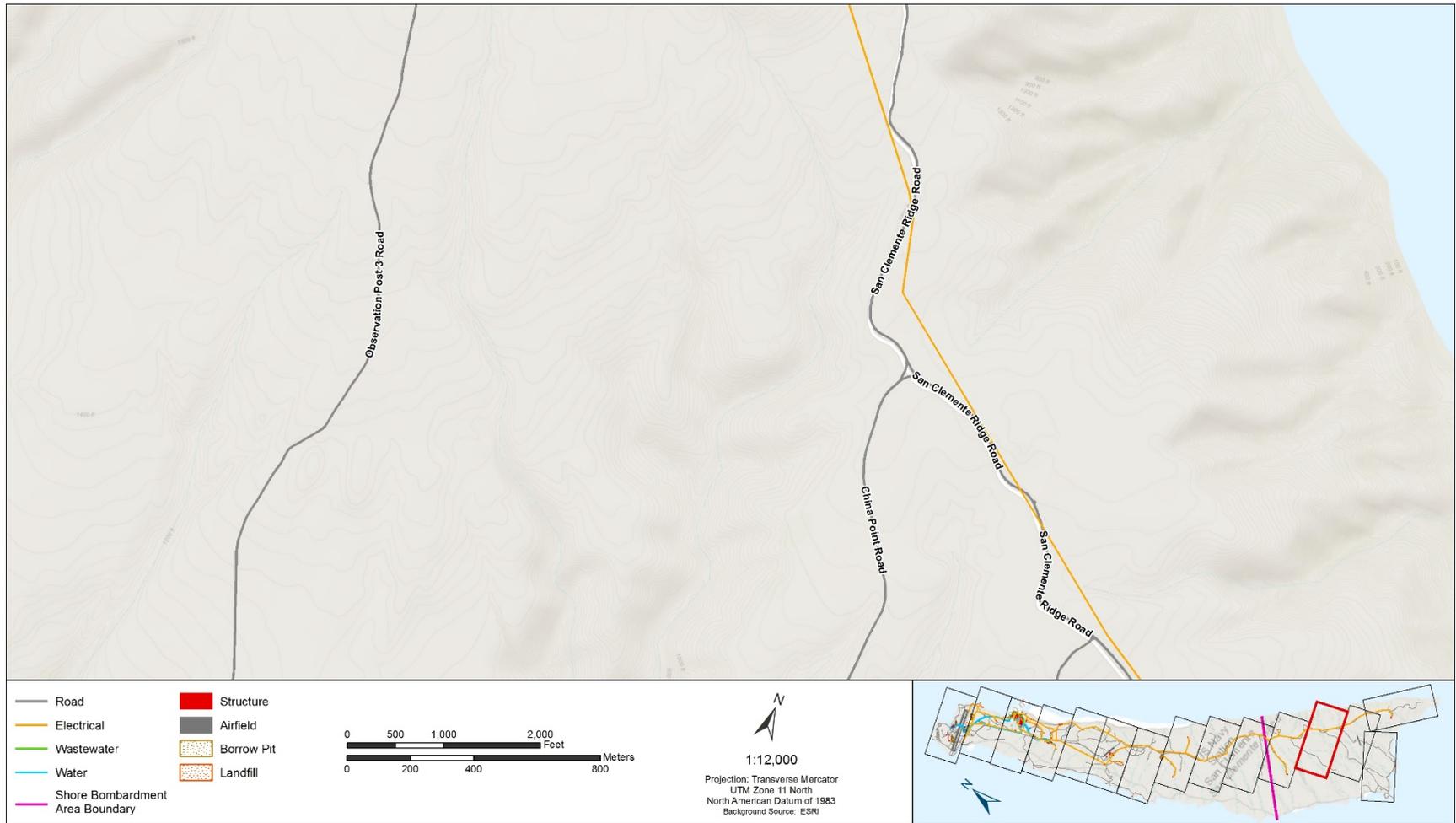
1

2 **Figure 2-11. Grid Ten of Utilities, Roads, and other Assets**



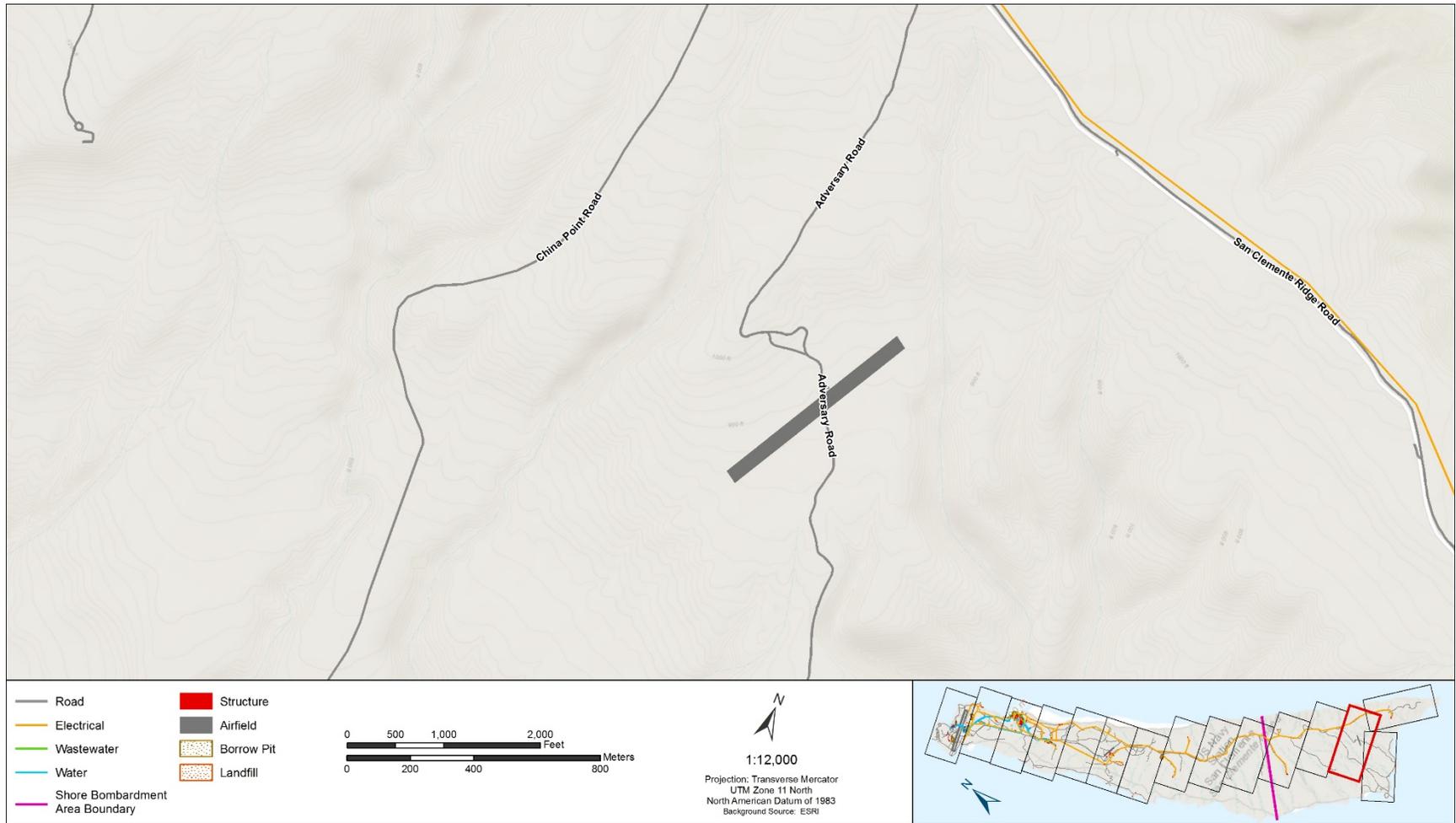
1

2 **Figure 2-12. Grid Eleven of Utilities, Roads, and other Assets**



1

2 **Figure 2-13. Grid Twelve of Utilities, Roads, and other Assets**



1

2 **Figure 2-14. Grid Thirteen of Utilities, Roads, and other Assets**





1

2 **Figure 2-16. Grid Fifteen of Utilities, Roads, and other Assets**

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# 3. Affected Environment and Environmental Consequences

This section describes the environmental resources and baseline conditions that could be affected by implementation of the Proposed Action. In addition, this section presents an analysis of the potential environmental consequences of implementing the Proposed Action, and the consequences of selecting the No Action Alternative. The Proposed Action analyzed in this EA is widespread across SCI, and is not concentrated in one location on the island. The term “Proposed Action Area” will be used throughout **Section 3** to refer to all areas on SCI and within NALF SCI that would potentially be affected by the Proposed Action. The Proposed Action Area includes all areas of potential disturbance, including the establishment of corridors, associated with the maintenance and repair of existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities.

**Affected Environment.** All potentially relevant environmental resource areas were initially considered for analysis in this EA. In compliance with NEPA, CEQ, and 32 CFR § 775 guidelines, the discussion of the affected environment focuses only on those resource areas potentially subject to impacts, and those with potentially significant environmental issues. Therefore, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impacts.

**Environmental Consequences.** The potential environmental consequences from implementing the Proposed Action and No Action Alternative and mitigation measures are summarized in **Table 3-1**.

“Significantly,” as used in NEPA, requires considerations of both context and intensity. Context means that the significance of an action must be analyzed in several settings such as society as a whole (e.g., human and national), the affected region, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action such as the Proposed Action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant (40 CFR §1508.27). Intensity refers to the severity of the impact (40 CFR § 1508.27).

**Table 3-1. Summary of Potential Impacts and Avoidance/Mitigation Measures**

Resource Area	Proposed Action	No Action Alternative
Noise (Section 3.1)	Maintenance and repair associated with the Proposed Action could cause a temporary increase in sound above the ambient level during times when, or in areas of NALF SCI where, the noise environment is not dominated by aircraft operations or munitions noise. These impacts would be less than significant.	The maintenance and repair that would be allowed to occur due to limited access could cause a temporary increase in sound above the ambient level during times when, or in areas of NALF SCI where, the noise environment is not dominated by aircraft operations or munitions noise. The impacts would be less than significant.

Resource Area	Proposed Action	No Action Alternative
<b>Air Quality (Section 3.2)</b>	Impacts from the Proposed Action on air quality would be less than significant. Yearly maintenance and repair would generate air emissions, but at levels that do not exceed significance thresholds. The requirements of the General Conformity Rule do not apply because the Proposed Action entails routine maintenance and repair and routine operation of facilities, mobile assets, and equipment. No air permitting implications are anticipated from the Proposed Action.	Impacts from reduced maintenance actions due to limited actions would be less than significant on air quality. Yearly maintenance and repair would generate air emissions, but at levels that do not exceed significance thresholds. The requirements of the General Conformity Rule do not apply because the No Action Alternative entails routine maintenance and repair and routine operation of facilities, mobile assets, and equipment. No air permitting implications would occur from the No Action Alternative.
<b>Safety (Section 3.3)</b>	Impacts on safety from maintenance and repair would be less than significant. All activities would be conducted in accordance with the appropriate Occupational Safety and Health Administration (OSHA) and DOD regulations.	Impacts could result from a lack of established corridors around various assets, which could potentially create a more hazardous environment for future maintenance and repair of infrastructure. These impacts would normally be less than significant. However, a lack of vegetation control could create a safety issue due to the potential for wildfires to occur on SCI.
<b>Geological Resources (Section 3.4)</b>	Impacts on geology and soils from maintenance and repair would be less than significant, because the majority of activities would occur within existing footprints and appropriate best management practices (BMPs) would be used to control erosion.	No impacts on geological resources would be expected under the No Action Alternative.
<b>Water Resources (Section 3.5)</b>	Impacts on water resources would be less than significant. BMPs would be used to minimize impacts on surface water. The majority of maintenance would not be located in or adjacent to wetlands, or would be conducted in a manner to minimize impacts on wetlands and would be covered by applicable wetland permits.	Impacts on water resources would be less than significant under the No Action Alternative. BMPs would be used to minimize impacts on surface water. The majority of maintenance would not be located in or adjacent to wetlands, or would be conducted in a manner to minimize impacts on wetlands and would be covered by applicable wetland permits.
<b>Biological Resources (Section 3.6)</b>	Impacts on biological resources from maintenance and repair under the Proposed Action would be less than significant based on adherence to all stipulations in the NALF SCI INRMP, and consultation with USFWS for species protected by the ESA, as applicable.	Impacts on biological resources from maintenance and repair under the No Action Alternative would be less than significant based on adherence to all stipulations in the NALF SCI INRMP, and consultation with USFWS for species protected by the ESA, as applicable.

Resource Area	Proposed Action	No Action Alternative
<b>Infrastructure, Utilities, and Transportation (Section 3.7)</b>	Less than significant impacts would be expected on utilities, infrastructure, and transportation due to potential temporary interruptions in service during construction and maintenance. Long-term less than significant beneficial impacts would also be expected, due to upgrades to the NALF SCI utilities, infrastructure, and transportation systems.	The condition of the utilities and infrastructure would continue to deteriorate. Maintenance issues obscured by vegetation may not be discovered and repaired in a timely manner leading to interruptions in service or decreases in efficacy.
<b>Hazardous Materials and Wastes (Section 3.8)</b>	Less than significant impacts on hazardous and materials and wastes would be expected under the Proposed Action. All hazardous materials would be handled in accordance with applicable regulations and identification/site characterization of hazardous materials would be conducted prior to maintenance and repair. If potential hazardous materials were identified during implementation of the Proposed Action, the contractor or installation personnel would immediately stop work, report the discovery to the installation, and implement appropriate safety measures.	Impacts under the No Action Alternative would be similar to those noted for the Proposed Action.
<b>Cultural Resources (Section 3.9)</b>	Maintenance and repair would not result in significant impacts on cultural resources on NALF SCI, based on adherence to all stipulations in the NALF SCI Programmatic Agreement (PA), and consultation with the NALF SCI Cultural Resources Program Manager (CRPM), as necessary.	No significant impacts on cultural resources would be expected under the No Action Alternative, similar to the Proposed Action.

1 **3.1 Noise**

2 **3.1.1 Definition of the Resource**

3 Sound is defined as a particular auditory effect produced by a given source, for example the  
4 sound of rain on a rooftop. Noise is defined as any sound that is undesirable because it  
5 interferes with communication, is intense enough to damage hearing, or is otherwise annoying.  
6 Noise can be intermittent or continuous, steady or impulsive, and can involve any number of  
7 sources and frequencies. It can be readily identifiable or generally nondescript. Human  
8 response to increased sound levels varies according to the source type, characteristics of the  
9 sound source, distance between source and receptor, receptor sensitivity, and time of day.

10 How an individual responds to the sound source will determine if the sound is viewed as  
11 pleasant or as annoying noise. Affected receptors are specific (e.g., schools, churches, or  
12 hospitals) or broad (e.g., nature preserves or designated districts) areas in which occasional or  
13 persistent sensitivity to noise above ambient levels exists.

14 **Noise Metrics and Regulations.** Although human response to noise varies, measurements  
15 can be calculated with instruments that record instantaneous sound levels in decibels. A-  
16 weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human

1 ear. “A-weighted” denotes the adjustment of the frequency range to what the average human  
 2 ear can sense when experiencing an audible event. The threshold of audibility is generally  
 3 within the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper  
 4 boundary of audibility, which is normally in the region of 135 dBA (USEPA 1981).

5 **Table 3-2** compares common sounds and shows how they rank in terms of the effects of  
 6 hearing. As shown, a whisper is normally 30 dBA and considered to be very quiet while an air  
 7 conditioning unit 20 feet (6.1 meters) away is considered an intrusive noise at 60 dBA. Noise  
 8 levels can become annoying at 80 dBA and very annoying at 90 dBA. To the human ear, each  
 9 10-dBA increase seems twice as loud (USEPA 1981).

10 **Table 3-2. Sound Levels and Human Response**

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

Source: USEPA 1981 and \*HDR extrapolation

11 A noise sensitive receptor is any property where frequent exterior human use occurs and where  
 12 a lowered noise level would be beneficial. In locations where there is no exterior activity to be  
 13 affected by traffic noise, interior noise levels may be assessed (FHWA 2006a). Examples of  
 14 sensitive receivers may include residential homes, parks, hospitals, nursing homes, educational  
 15 facilities, and libraries. Sensitive noise receptors could also include supporting habitat for certain  
 16 wildlife species.

17 **Federal Regulations.** Under the Noise Control Act of 1972, OSHA established workplace  
 18 standards for noise. The minimum requirement states that constant noise exposure must not  
 19 exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can  
 20 be constantly exposed to is 115 dBA and exposure to this level must not exceed 15 minutes  
 21 within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to  
 22 140 dBA. If noise levels exceed these standards, employers are required to provide hearing  
 23 protection equipment to reduce sound levels to acceptable limits.

24 DOD Instruction 6055.12, *Hearing Conservation Program*, requires that installations develop  
 25 plans that consider new equipment for purchase so that they have the lowest sound emissions  
 26 levels that are technologically and economically feasible and compatible with performance and  
 27 environmental requirements in order to protect personnel audible safety.

1 The *Navy Safety and Occupational Health Program Manual*, OPNAVINST 5100.23G, describes  
 2 the Navy Hearing Conservation Program procedures employed at Navy facilities. Navy  
 3 standards require hearing protection whenever a person is exposed to steady-state noise of 85  
 4 dBA or more, or impulse noise of 140 decibels sound pressure level or more, regardless of  
 5 duration.

6 **3.1.2 Affected Environment**

7 The predominant sources of noise on NALF SCI consist of aircraft operations in the northern  
 8 portion of the island, generator noise from the power plant in the Wilson Cove area, and vehicle  
 9 and equipment use on the island’s roads. Noise on the southern portion of the island within the  
 10 SHOBA is generated primarily from military training activities including shore bombardment,  
 11 artillery and mortar operations, and close air support training. The island’s population consists  
 12 solely of military personnel and military contractors and there are no measured, site-specific  
 13 noise data available for baseline noise levels on NALF SCI. Minor, temporary levels of noise  
 14 above ambient conditions is experienced from vehicles and maintenance equipment performed  
 15 at current levels.

16 **3.1.3 Environmental Consequences**

17 **3.1.3.1 PROPOSED ACTION**

18 **All Maintenance and Repair**

19 A variety of sound levels would be emitted during all types of maintenance and repair from  
 20 loaders, trucks, cranes, jackhammers, excavators, trenchers, scaffolds, lifts, booms, mowers,  
 21 weed eaters, and other work equipment. Individual equipment used for maintenance and repair  
 22 would be expected to result in noise levels at a distance of 50 feet (15.2 meters), comparable to  
 23 those shown in **Table 3-3**. Noise from maintenance and repair would vary depending on the  
 24 type of equipment being used, the area that the action would occur in, and the distance from the  
 25 noise source.

26 **Table 3-3. Predicted Noise Levels from Construction Equipment**

<b>Construction Category and Equipment</b>	<b>Measured Noise Level at 50 feet (dBA)</b>
<b>Clearing and Grading</b>	
Bulldozer	82
Grader	85
Truck	74–81
Roller	80
<b>Excavation</b>	
Backhoe	78
Jackhammer	89
<b>Building Construction</b>	
Concrete mixer	79
Welder	74
Pile driver	101

Crane	81
Paver	77

Source: FHWA 2006b

1 To predict how these activities would potentially have an impact on adjacent populations, noise  
 2 from the use of a combination of probable equipment was estimated. Construction usually  
 3 involves several pieces of equipment (e.g., bulldozers and trucks) that are operated  
 4 simultaneously. Cumulative noise from equipment use during the busiest day of maintenance  
 5 and repair under the Proposed Action was estimated to determine the total impact of noise at a  
 6 given distance. Expected cumulative construction noise levels during daytime hours at specified  
 7 distances are shown in **Table 3-4**. These levels were estimated by combining the noise from  
 8 several pieces of equipment and then calculating the decrease in noise levels at various  
 9 distances from the source.

10 **Table 3-4. Estimated Noise Levels from Construction**

Distance from Noise Source (feet)	Estimated Noise Level (dBA)
50	90–94
100	84–88
150	81–85
200	78–82
400	72–76
800	66–70
1,200	< 64

11 Maintenance, repair, and upgrades associated with the Proposed Action could cause an  
 12 increase in sound above the ambient level during times when, or in areas of NALF SCI where,  
 13 the noise environment is not dominated by aircraft operations or munitions noise. The  
 14 cumulative equipment noise presented in **Table 3-4** would be temporary, intermittent, and would  
 15 cease when maintenance and repair is completed. However, noise generated by vegetation  
 16 control would be recurring, as needed to respond to vegetation regrowth. The proposed  
 17 maintenance and repair would occur during regular work hours except in the case of an  
 18 emergency. Equipment operators would comply with applicable OSHA and DOD hearing  
 19 protection regulations. Because there are only military personnel, civilian government  
 20 employees, and contractors on NALF SCI, these personnel are the only receptors and they are  
 21 habituated to the ambient noise environment on the island. The noise generated from the  
 22 Proposed Action would be temporary and intermittent, and noise levels at 1,200 feet (365.8  
 23 meters) and greater from the activities would not exceed 65 dbA. Most receptors would be more  
 24 than 1,200 feet from proposed activities. Therefore, implementation of the Proposed Action  
 25 would not have significant impacts on the noise environment.

26 For noise impacts on wildlife see **Section 3.6**, Biological Resources.

1 **3.1.3.2 NO ACTION ALTERNATIVE**

2 Under the No Action Alternative, the Navy would continue to conduct maintenance and repair on  
3 NALF SCI without the proposed corridors as described in **Section 2.1.1**, and continue to not  
4 achieve the required levels of operational readiness for the NALF SCI mission. Significant  
5 impacts on the noise environment would not occur under the No Action Alternative. The noise  
6 environment would remain the same as discussed in **Section 3.1.2**.

7 **3.2 Air Quality**

8 **3.2.1 Definition of the Resource**

9 Air quality is measured by the concentration of criteria pollutants in the atmosphere, as defined  
10 by the Clean Air Act (CAA). The air quality in a region is a result not only of the types and  
11 quantities of atmospheric pollutants and pollutant sources in an area, but also surface  
12 topography, the size of the topological “air basin,” and the prevailing meteorological conditions  
13 in that region.

14 **3.2.2 Affected Environment**

15 **National Ambient Air Quality Standards (NAAQS)**. The CAA, as amended, requires the U.S.  
16 Environmental Protection Agency (USEPA) to set NAAQS for pollutants considered harmful to  
17 public health and the environment. The USEPA characterizes ambient air quality in terms of  
18 compliance with the primary and secondary NAAQS. Primary NAAQS provide public health  
19 protection, including protecting the health of “sensitive” populations such as asthmatics,  
20 children, and the elderly. Secondary NAAQS provide public welfare protection, including  
21 protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

22 The USEPA has established NAAQS for six criteria pollutants:

- 23 • Carbon monoxide (CO)
- 24 • Lead (Pb)
- 25 • Nitrogen dioxide (NO<sub>2</sub>)
- 26 • Ozone (O<sub>3</sub>), which is measured as nitrogen oxides and volatile organic compounds
- 27 • Sulfur dioxide (SO<sub>2</sub>)
- 28 • Particulate matter (with an aerodynamic size less than or equal to 10 microns [PM<sub>10</sub>] and  
29 with an aerodynamic size less than or equal to 2.5 microns [PM<sub>2.5</sub>]).

30 States may either adopt the NAAQS or establish their own more stringent standards. **Table 3-5**  
31 provides the primary and secondary NAAQS and California ambient air quality standards.

32 **Attainment Versus Nonattainment and General Conformity**. USEPA classifies the air quality  
33 in a region according to whether the concentrations of criteria pollutants in ambient air exceed  
34 the NAAQS. Areas are therefore designated as either “attainment,” “nonattainment,”  
35 “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the  
36 air quality is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed  
37 NAAQS; maintenance indicates that an area was previously designated nonattainment but is  
38 now attainment; and an unclassified air quality designation means that there is not enough

1 information to appropriately classify an area, so the area is considered attainment. For some  
2 pollutants, nonattainment and maintenance areas are further classified based on the severity of  
3 the air quality conditions. The California Air Resources Board (CARB) has established similar air  
4 quality designations as the USEPA. **Table 3-6** provides the USEPA and CARB attainment  
5 designation for each criteria pollutant on SCI. NALF SCI is within the South Coast Air Quality  
6 Management District (SCAQMD) and reports changes in emissions to them. SCAQMD also  
7 issues and maintains any updates to SCI's Title V air quality permit.

8 **Table 3-5. National and California Ambient Air Quality Standards**

Pollutant	Averaging Time	Primary Standard		Secondary Standard
		Federal	California	
CO	8-hour <sup>(1)</sup>	9 ppm (10 mg/m <sup>3</sup> )	Same as Federal	None
	1-hour <sup>(1)</sup>	35 ppm (40 mg/m <sup>3</sup> )	20 ppm	None
Pb	Rolling 3-Month Average <sup>(2)</sup>	0.15 µg/m <sup>3</sup> <sup>(3)</sup>	None	Same as Primary
	30 Days	None	1.5 µg/m <sup>3</sup>	None
NO <sub>2</sub>	Annual <sup>(4)</sup>	53 ppb <sup>(5)</sup>	30 ppb	Same as Primary
	1-hour <sup>(6)</sup>	100 ppb	180 ppb	None
PM <sub>10</sub>	24-hour <sup>(7)</sup>	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	Same as Primary
	Annual	None	20 µg/m <sup>3</sup>	None
PM <sub>2.5</sub>	Annual <sup>(8)</sup>	12 µg/m <sup>3</sup>	Same as Federal	15 µg/m <sup>3</sup>
	24-hour <sup>(6)</sup>	35 µg/m <sup>3</sup>	None	Same as Primary
O <sub>3</sub>	8-hour <sup>(9)</sup>	0.075 ppm <sup>(10)</sup>	0.070 ppm	Same as Primary
	1-hour	None	0.09 ppm	None
SO <sub>2</sub>	1-hour <sup>(11)</sup>	75 ppb <sup>(12)</sup>	0.25 ppm	None
	3-hour <sup>(1)</sup>	None	None	0.5 ppm
	24-hour block	None	0.04 ppm	None
Hydrogen Sulfide	1-hour	None	0.03 ppm	None
Sulfates	24-hour	None	25 µg/m <sup>3</sup>	None
Visibility Reducing Particles	8-hour	None	0.23 per kilometer <sup>(13)</sup>	None
Vinyl Chloride	24-hour	None	0.01 ppm	None

Sources: USEPA 2011 and CARB 2013

Notes: Parenthetical values are approximate equivalent concentrations.

1. Not to be exceeded more than once per year.
2. Not to be exceeded.
3. Final rule signed 15 October 2008. The 1978 standard for Pb (1.5 µg/m<sup>3</sup> as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved. The USEPA designated areas for the new 2008 standard on 8 November 2011.
4. Annual mean.
5. The official level of the annual NO<sub>2</sub> standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of cleaner comparison to the 1-hour standard.
6. 98th percentile, averaged over 3 years.
7. Not to be exceeded more than once per year on average over 3 years.
8. Annual mean, averaged over 3 years.
9. Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years.
10. Final rule signed 12 March 2008. The 1997 O<sub>3</sub> standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, USEPA revoked the 1-hour O<sub>3</sub> standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard ("anti-backsliding"). The 1-hour O<sub>3</sub> standard is attained when the expected

- number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
11. 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.
  12. Final rule signed 2 June 2010. The 1971 annual (0.3 ppm) and 24-hour (0.14 ppm) SO<sub>2</sub> standards were revoked in that same rulemaking. However, these standards remain in effect until 1 year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.
  13. Extinction coefficient of 0.23 per km – visibility of 10 miles or more due to particles when relative humidity is less than 70 percent.

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

1 **Table 3-6. Attainment Designation for Criteria Pollutants on SCI**

<b>Pollutant</b>	<b>Federal</b>	<b>State</b>
<b>CO</b>	Maintenance–Serious	Attainment
<b>Pb</b>	Attainment	Attainment
<b>NO<sub>2</sub></b>	Maintenance	Attainment
<b>PM<sub>10</sub></b>	Maintenance–Serious	Nonattainment
<b>PM<sub>2.5</sub></b>	Nonattainment–Moderate	Nonattainment
<b>O<sub>3</sub></b>	Nonattainment–Extreme	Nonattainment
<b>SO<sub>2</sub></b>	Attainment	Attainment
<b>Sulfates</b>	Not Applicable	Attainment
<b>Hydrogen Sulfide</b>	Not Applicable	Attainment
<b>Visibility Reducing Particles</b>	Not Applicable	Attainment

Sources: USEPA 2014a and CARB 2014

2 The General Conformity Rule applies only to significant Federal actions in nonattainment or  
 3 maintenance areas. This rule requires that any Federal action meet the requirements of a State  
 4 Implementation Plan or Federal Implementation Plan. More specifically, CAA conformity is  
 5 ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an  
 6 increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of  
 7 any NAAQS, interim progress milestones, or other milestones toward achieving compliance with  
 8 the NAAQS. As per 40 CFR §§ 93.153(c)(2)(iv) and 93.153(c)(2)(xiii), General Conformity Rule  
 9 requirements do not apply to Federal actions that entail routine maintenance and repair,  
 10 including repair and maintenance of roads, trails, and facilities, and routine operation of  
 11 facilities, mobile assets, and equipment.

12 **Greenhouse Gas Emissions.** Greenhouse gases (GHG) are gaseous emissions that trap heat  
 13 in the atmosphere. These emissions occur from natural processes and human activities.  
 14 Human-caused GHGs are produced primarily by the burning of fossil fuels and through  
 15 industrial and biological processes. The most common GHGs emitted from human activities  
 16 include carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide; however, because CO<sub>2</sub> emissions  
 17 account for approximately 92 percent of all energy-related GHG emissions in the United States,  
 18 they are used for analyses of GHG emissions in this assessment. The U.S. Department of  
 19 Energy, Energy Information Administration estimates that 2011 gross CO<sub>2</sub> emissions in  
 20 California and the United States were 346 million metric tons and 5,491 million metric tons,  
 21 respectively (U.S. EIA 2014).

### 1 3.2.3 Environmental Consequences

2 The environmental consequences on local and regional air quality conditions from a proposed  
3 Federal action are determined based upon the increases or decreases in regulated air pollutant  
4 emissions and upon existing conditions and ambient air quality. The evaluation criteria are  
5 dependent on whether the proposed action is located in an attainment, nonattainment, or  
6 maintenance area for criteria pollutants.

7 **Attainment Areas.** For attainment areas, impacts from a proposed action would be considered  
8 significant if the net increases in attainment pollutant emissions would result in any one of the  
9 following scenarios:

- 10 • Cause or contribute to a violation of any national or California ambient air quality  
11 standard
- 12 • Expose sensitive receptors to substantially increased pollutant concentrations
- 13 • Exceed any evaluation criteria established by a state implementation plan.

14 **Nonattainment and Maintenance Areas.** Effects on air quality in nonattainment and  
15 maintenance areas are considered significant if the net changes in these project-related  
16 pollutant emissions result in any of the following scenarios:

- 17 • Cause or contribute to a violation of any national or state ambient air quality standard
- 18 • Increase the frequency or severity of a violation of any ambient air quality standard
- 19 • Delay the attainment of any standard or other milestone contained in the SIP.

#### 20 3.2.3.1 PROPOSED ACTION

##### 21 All Maintenance and Repair

22 Establishing the 100-foot-wide (30.5-meter-wide) corridors along and around all existing utilities  
23 and roads and around all existing assets is largely an administrative action that would entail no  
24 ground disturbance and would not produce air emissions. However, maintenance to the  
25 corridors would entail ground disturbance in certain locations, when needed, to clear overgrown  
26 vegetation and stabilize the ground surface. Such maintenance would generate air emissions  
27 from the disturbance of the ground and the use of equipment such as trucks, industrial  
28 lawnmowers, heavy construction equipment, and all-terrain vehicles. These air emissions would  
29 not exceed significance thresholds.

30 Maintenance and repair to the existing facilities, infrastructure, and assets on NALF SCI would  
31 generate air emissions from ground disturbance and the operation of trucks; forklifts; industrial  
32 lawnmowers; heavy construction equipment such as backhoes, graders, bulldozers, and  
33 excavators; haul-trucks; welding equipment; and portable generators. The proposed  
34 maintenance and repair would occur intermittently, when such activities are needed, and would  
35 not generate air emissions that would exceed significance thresholds. Therefore,  
36 implementation of the Proposed Action would not have significant impacts on air quality.

37 The requirements of the General Conformity Rule do not apply to Federal actions that entail  
38 routine maintenance and repair and routine operation of facilities, mobile assets, and

1 equipment. Because this Proposed Action exclusively entails routine maintenance and repair,  
2 the requirements of the General Conformity Rule are not applicable. A Record of Non-  
3 Applicability is included in **Appendix B**.

4 The Proposed Action would also contribute directly to emissions of GHGs from the combustion  
5 of fossil fuels. These emissions would represent a negligible contribution towards California's  
6 GHG inventory and an extremely negligible contribution toward the national GHG inventory.

7 **Air Permitting.** The Proposed Action is not anticipated to alter air emissions from stationary  
8 sources because no generators, boilers, or other stationary emission sources would be added  
9 to or removed from NALF SCI. If actions are proposed that might impact the current Title V  
10 permit, personnel from NALF SCI would notify and coordinate with the SCAQMD District to  
11 ensure the permit is consistent with those activities. These actions may include upgrading  
12 generators or boilers and may include asphalt laying equipment. The Proposed Action is not  
13 anticipated to have any air permitting implications. All portable generators proposed to support  
14 maintenance and repair are assumed to already be on NALF SCI and properly permitted with  
15 appropriate regulatory bodies.

#### 16 3.2.3.2 NO ACTION ALTERNATIVE

17 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
18 to occur at current levels and potentially not achieve the required levels of operational readiness  
19 for the NALF SCI mission. No impacts on air quality would be expected under the No Action  
20 Alternative. Air quality and emissions would remain the same as discussed in **Section 3.2.2**.

### 21 3.3 Safety

#### 22 3.3.1 Definition of the Resource

23 Human health and safety includes consideration of any activities and operations that have the  
24 potential to affect the safety, well-being, or health of the public or military personnel. A safe  
25 environment is one in which the environment does not present, or presents an optimally  
26 reduced, potential for death, serious bodily injury or illness, or property damage. Various  
27 stressors in the environment can affect human health and safety. Identification and control or  
28 elimination of these stressors can reduce risks to health and safety to acceptable levels or  
29 eliminate risk entirely. This EA addresses human health and safety as it relates to military and  
30 contractor personnel on NALF SCI during implementation of the Proposed Action.

31 **Contaminated Materials.** Contaminated materials commonly found at Navy installations  
32 include asbestos, lead, 8-Resource Conservation and Recovery Act (RCRA) metals, and  
33 polychlorinated biphenyls (PCBs). Asbestos is regulated by USEPA. Identification of  
34 asbestos-containing materials (ACMs) in installation facilities is regulated by the *Occupational*  
35 *Safety and Health Act*, 29 U.S.C. §§ 669 et seq. Section 112 of the CAA regulates emissions of  
36 asbestos fibers to ambient air. Building materials in older buildings are assumed to contain  
37 asbestos. Lead is a heavy, ductile metal commonly used in house paint until the Federal  
38 government banned the use of most lead-based paint (LBP) in 1978. Metals that are included in  
39 the 8-RCRA are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.  
40 PCBs are man-made chemicals that persist in the environment and were widely used in

1 construction materials (e.g., caulk) and electrical products prior to 1979. Congress banned the  
2 manufacture and use of PCBs in 1976.

3 **Unexploded Ordnance.** OPNAVINST 8020.14A, *Department of the Navy Explosives Safety*  
4 *Management Policy Manual*, defines the Navy Explosives Safety Program. The program  
5 includes several elements, including explosive handling guidelines, reporting requirements,  
6 inventory management, and disposal procedures (Navy 2013d).

7 **Hazards of Electromagnetic Radiation to Ordnance.** The Navy's Hazards of Electromagnetic  
8 Radiation to Ordnance (HERO) program addresses the potential for electromagnetic radiation to  
9 unintentionally initiate electro-explosive devices contained within current Navy and Marine  
10 Corps ordnance systems. Radio and radar transmitting equipment produce high-intensity  
11 electromagnetic fields. Such fields can cause premature initiation of electro-explosive devices  
12 contained in ordnance systems. Per OPNAVINST 8023.2C, *U.S. Navy Explosives Safety*  
13 *Policies, Requirements, and Procedures*, planned transmitting and antenna installations must  
14 be regularly reviewed, and installations that handle ordnance must identify potential HERO  
15 problem areas.

16 **Explosive Safety Quantity Distance Arcs.** Fundamentally, Explosive Safety Quantity Distance  
17 (ESQD) arcs determine the distance between ordnance storage, facilities, and inhabitable  
18 areas. ESQD arcs are hazard zones that have been established by the DOD for the storage or  
19 handling of various quantities and types of ammunition and explosives. OPNAVINST 8020.14A,  
20 *Department of the Navy Explosives Safety Management Policy Manual*, identifies basic  
21 munitions and explosives safety standards and minimum ESQD criteria. These criteria apply to  
22 military and civilian personnel; units and forces; and to the siting, storage, handling, and  
23 transport of munitions and explosives. Minimum safety distances are prescribed for separating  
24 explosives from inhabited structures, public roads, and other explosives. In general, these  
25 distances are proportional to the quantity of explosives at each location. It is desirable to limit  
26 the total quantity of explosives at any one location to minimize the area encumbered by the  
27 hazard zone.

28 **Worker Health and Safety.** Construction site and worker safety is largely a matter of  
29 adherence to regulatory requirements imposed for the benefit of employees and implementation  
30 of operational practices (e.g., industrial hygiene) that reduce risks of illness, injury, death, and  
31 property damage. Industrial hygiene programs address exposure to hazardous materials, use of  
32 personal protective equipment (PPE), and availability of Safety Data Sheets (SDS). The health  
33 and safety of onsite military and civilian workers are safeguarded by DOD and Navy regulations  
34 designed to comply with standards issued by OSHA, USEPA, and state occupational safety and  
35 health agencies. These standards specify the amount and type of training required for industrial  
36 workers, the use of protective equipment and clothing, engineering controls, and maximum  
37 exposure limits for workplace stressors.

### 38 3.3.2 Affected Environment

39 **Contaminated Materials.** It is assumed that all structures on NALF SCI constructed prior to  
40 1978 potentially contain 8-RCRA metals and LBP, while structures constructed prior to 1979

1 might have PCB-containing materials (e.g., caulk). Structures built prior to 1989 would also be  
2 assumed to contain ACM.

3 NALF SCI is not listed on the USEPA's National Priorities List. Some infrastructure and facilities  
4 on NALF SCI intersect with existing, open Installation Restoration Program (IRP) sites. IRP sites  
5 that are known to overlap with existing infrastructure include: 2, 10E, 11, 12, 13, and 17. See  
6 **Section 3.8.2**, Hazardous Materials and Wastes, for a further discussion on IRP sites at NALF  
7 SCI.

8 **Unexploded Ordnance.** There could be unknown unexploded ordnance (UXO) present on  
9 some areas of NALF SCI. Anyone who comes to NALF SCI has the potential to encounter UXO;  
10 however, Explosive Ordnance Disposal personnel periodically remove UXO from NALF SCI or  
11 conduct blow-in-place operations in order to render areas safe. Work done within or around  
12 active ranges would be coordinated through the Range Safety Officer and the Range  
13 Operations Center (ROC) (Navy 2008, Navy 2012).

14 **Hazards of Electromagnetic Radiation to Ordnance.** Electromagnetic radiation can be  
15 generated from such things as radars, electronic jammers, and other radio transmitters on NALF  
16 SCI. As part of the HERO program, a 1996 study on the hazards of stationary electromagnetic  
17 radiation was completed on NALF SCI. The study found that no emissions from stationary  
18 sources of electromagnetic radiation exceeded the Maximum Allowable Environment for HERO-  
19 susceptible ordnance, which indicates the maximum amount of electromagnetic radiation in an  
20 area in terms of HERO susceptible weapons. Navy personnel and contractors performing  
21 maintenance and repair would comply with all restrictions on cellular telephones, and mobile  
22 and portable radios. Appropriate procedures would also be followed when conducting work near  
23 ordnance storage, transportation routes and operational locations. Therefore, because the  
24 Proposed Action does not involve ordnance, the movement of ordnance, and does not introduce  
25 new sources of electromagnetic radiation on NALF SCI, hazards of electromagnetic radiation to  
26 ordnance are removed from further analysis (Navy 2012).

27 **Explosive Safety Quantity Distance Arcs.** Ordnance on NALF SCI is stored at the Mills Circle  
28 Ordnance facility, which is located on the northeast portion of the island. The facility has a total  
29 of seven ammunition storage sites (magazines), each with their own ESQD arc. Procedures for  
30 handling and storing munitions are found in the Naval Sea Systems Command Ordnance  
31 Pamphlet (OP) 5, *Ammunition and Explosives Ashore, Safety Regulations for Handling, Storing,*  
32 *Production, Renovation, and Shipping.* Red Label areas are ordnance loading pads that are  
33 required for loading and off-loading explosives from cargo aircraft. The fixed-wing Red Label  
34 area is located at the western end of the Naval Auxiliary Landing Field airfield which is approved  
35 for up to 10,000-pounds (4,538-kilograms) of explosives while the other Red Label area located  
36 at the eastern end of the VC-3 airfield ramp is approved for 5,000-pounds (2,269-kilograms) of  
37 explosives. These areas on NALF SCI are approved as hazardous cargo areas for the  
38 unloading and transportation to storage areas for explosives (Navy 2008, Navy 2012).

39 There are a total of 12 ESQD arcs on NALF SCI. The largest arcs on the island, associated with  
40 the magazine storage facilities, are a total of 1,795 feet (547.1 meters) in diameter (Navy 2008).  
41 Most of the ESQD arcs are located in the northern portion of the island, just north of the airfield.

1 **Worker Health and Safety.** Contractors performing construction activities on NALF SCI are  
2 responsible for following ground safety regulations and workers compensation programs and  
3 are required to conduct construction activities in a manner that does not pose any risk to  
4 workers or personnel. Industrial hygiene programs address exposure to hazardous materials,  
5 use of PPE, and availability of SDS. Industrial hygiene is the responsibility of contractors, as  
6 applicable. Contractor responsibilities are to review potentially hazardous workplace operations;  
7 to monitor exposure to workplace chemicals (e.g., asbestos, lead, hazardous material), physical  
8 hazards (e.g., noise propagation), and biological agents (e.g., infectious waste); to recommend  
9 and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected  
10 or unexposed; and to ensure a medical surveillance program is in place to perform occupational  
11 health physicals for those workers subject to any accidental chemical exposures.

### 12 3.3.3 Environmental Consequences

13 The potential impacts from the Proposed Action at NALF SCI were analyzed by considering any  
14 impacts associated with human health and safety. This analysis examines how the Proposed  
15 Action and No Action Alternative would impact, or be impacted by, contaminated materials,  
16 ordnance, ESQD arcs, and worker health and safety.

#### 17 3.3.3.1 PROPOSED ACTION

##### 18 Electrical System

19 **Contaminated Materials.** Repair and replacement of electrical system components associated  
20 with the Proposed Action could contain ACMs, LBP, PCBs, or various 8-RCRA metals.  
21 Contamination present in the materials used in the electrical system would be handled in  
22 accordance with applicable policies and procedures, including inspection by a state-certified  
23 inspector prior to commencement of repair and replacement of parts. ACMs would be removed  
24 by state-certified individuals prior to demolition activities and disposed of at a USEPA-approved  
25 landfill. Construction materials containing PCBs (e.g., caulk) could be disposed of at a non-  
26 hazardous waste landfill. Contractors would be required to adhere to Federal and state  
27 regulations in addition to installation management plans. NALF SCI and the Navy have  
28 established measures and programs for the management of ACMs, LBP, and PCBs to ensure  
29 they are handled and disposed of in compliance with Federal and state environmental laws and  
30 regulations. No significant impacts on human health and safety would be expected from  
31 contaminated materials.

32 Maintenance and repair of the existing electrical system would occur and overlap with existing  
33 IRP site 17. Environmental contamination could be disturbed during activities in and around IRP  
34 sites; however, these impacts would be less than significant as installation and contractor  
35 personnel working in the areas of known IRP sites would be required to follow all DOD and  
36 NALF SCI IRP site protocols. For more information on impacts from IRP sites on NALF SCI see  
37 **Section 3.8.3.1, Hazardous Materials and Wastes.**

38 **Unexploded Ordnance.** Explosive ordnance disposal personnel would survey and remove  
39 UXO in areas that are likely to contain UXO. However, because maintenance and repair would  
40 occur on the existing electrical system, it would be unlikely for UXO to be present because it has  
41 been previously cleared. Therefore, no significant impacts on human health and safety would be  
42 expected from UXO.

1 **Explosive Safety Quantity Distance Arcs.** Ordnance is stored in numerous bunkers and  
2 magazines on NALF SCI that occur within the areas of the electrical system. Work on the  
3 electrical system that would occur in areas where ordnance is either used or stored would be  
4 coordinated through the ROC. Construction workers and contractors would be required to follow  
5 Federal, state, and installation-established safety procedures when working in areas where  
6 ordnance is stored. Maintenance and repair would be coordinated with installation personnel to  
7 ensure that transportation of ordnance avoids areas where maintenance and repair is occurring.  
8 In addition, OPNAVINST 8020 and Naval Sea Systems Command OP 5 would be followed in  
9 order to prevent impacts from ordnance.

10 In addition to ordnance storage, there are ESQD arcs that overlap existing electrical system  
11 infrastructure. Personnel working within an ESQD arc could be exposed to an increased risk of  
12 explosions. Maintenance and repair would be coordinated with the NALF SCI ROC (or other  
13 appropriate personnel) to ensure safety of personnel working in specific areas. As a result, no  
14 significant impacts on human health and safety would be expected while work is conducted in or  
15 near ESQD arcs.

16 **Worker Health and Safety.** During maintenance and repair of the electrical system,  
17 construction and contractor personnel would be exposed to increased demolition- and  
18 construction-related hazards during the average workday. All contractors and personnel would  
19 be required to follow and implement OSHA and Navy safety standards to establish and maintain  
20 a safe working environment. Workers would be required to wear appropriate PPE including ear  
21 protection, steel-toed boots, hard hats, and gloves. All suspected ACMs or lead-containing  
22 materials would be tested prior to disturbance. Proposed demolition or construction would not  
23 be expected to pose any new or unacceptable safety risks to workers. Workers would also be  
24 potentially exposed to contaminated materials (i.e., ACMs, LBP, and PCBs) during maintenance  
25 and repair (see **Contaminated Materials**). Work areas would be appropriately marked and  
26 fenced off to protect construction workers and aircraft alike when working near the airfields.  
27 Maintenance and repair would be coordinated with the control tower or other appropriate  
28 personnel to avoid or minimize impacts on construction or installation personnel. The proposed  
29 electrical system upgrades would meet anti-terrorism/force protection requirements, which  
30 would have a beneficial impact on the safety of installation personnel and contractors. No  
31 significant impacts on worker health or safety would be expected as a result of maintenance and  
32 repair of the electrical system.

### 33 Water System

34 **Contaminated Materials.** Impacts from contaminated materials during maintenance and repair  
35 of the water system would be similar to, but less than those described under **Electrical System**.  
36 Because PCBs are not found in water system infrastructure, no impacts from contaminated  
37 materials containing PCBs would be expected. Impacts could result from ACM and LBP  
38 exposure; however, all suspected ACMs and LBP would be tested prior to disturbance and  
39 would be handled or disposed of in compliance with Federal and state environmental laws.  
40 Therefore, these impacts would be less than significant.

1 Due to their proximity to the water system on NALF SCI, IRP sites 11 and 17 could be impacted  
2 by maintenance and repair of the water system. Impacts from work done within, or near IRP  
3 sites would be the same as those mentioned under **Electrical System**.

4 **Unexploded Ordnance.** Impacts from UXO would be the same as those mentioned under  
5 **Electrical System**.

6 **Explosive Safety Quantity Distance Arcs.** The water system infrastructure overlaps with  
7 existing ESQD arcs on NALF SCI. Impacts from ESQD arcs would be the same as those  
8 mentioned under **Electrical System**.

9 **Worker Health and Safety.** Impacts on worker health and safety would be similar to, yet slightly  
10 greater than those mentioned under **Electrical System**. Because water system repair and  
11 maintenance would require the use of more clearing equipment (e.g., mowers and weed  
12 whackers) impacts on workers or contractors would be increased. Implementing appropriate  
13 best management practices (BMPs) and use of PPE would prevent any additional impacts on  
14 worker health and safety from additional maintenance and repair of the water system. Impacts  
15 on worker health and safety from water system repair and maintenance would be less than  
16 significant.

#### 17 Roads

18 **Contaminated Materials.** Contaminated materials are not typically associated with roads,  
19 although paint used on roads as well as the airfield and runway can include 8-RCRA metals or  
20 be LBP. All suspected LBP or paint with 8-RCRA metals would be tested prior to disturbance  
21 and would be handled or disposed of in compliance with Federal and state environmental laws.  
22 Therefore, impacts related to road maintenance and repair would not be significant.

23 IRP sites 2, 10E, 11, 12, 13, and 17 could potentially be impacted by maintenance and repair of  
24 roads on NALF SCI. Construction workers could encounter contaminated soil at or in the vicinity  
25 of the IRP sites during these activities. If any potentially contaminated soil was discovered  
26 during ground disturbance, the workers would immediately stop work, report the discovery to the  
27 installation, and implement appropriate safety measures. Commencement of field activities  
28 would not continue in this area until the issue was investigated and resolved. Therefore,  
29 implementation of the Proposed Action would be less than significant.

30 **Ordnance.** Impacts from ordnance would be the same as those mentioned under **Electrical**  
31 **System**.

32 **Explosive Safety Quantity Distance Arcs.** Impacts from ESQD arcs would be the same as  
33 those mentioned under **Electrical System**.

34 **Worker Health and Safety.** Impacts on worker health and safety would be similar to, yet slightly  
35 greater than those mentioned under **Electrical System**. Because road repair and maintenance  
36 would require the use of more clearing and grading equipment, impacts on workers or  
37 contractors could be increased. Implementing appropriate BMPs and use of PPE would prevent  
38 any additional impacts on worker health and safety. Impacts could be expected on workers and  
39 contractors from vegetation control; however, impacts on human health and safety from

1 vegetation control are analyzed under **Vegetation Control**. Impacts on worker health and  
2 safety from road repair and maintenance would be less than significant.

### 3 Facilities

4 **Contaminated Materials**. Impacts on human health and safety from facilities maintenance and  
5 repair would be similar to, yet slightly greater than, maintenance and repair of the **Electrical**  
6 **System**. Because facilities that would be more likely to contain ACM, LBP and PCBs would be  
7 demolished, impacts would be slightly greater. Implementation of appropriate BMPs, use of  
8 PPE, and appropriate characterization of contaminated materials would prevent impacts.  
9 Therefore, impacts from contaminated materials due to maintenance, repair and demolition of  
10 facilities would be less than significant.

11 IRP site 17 could be impacted by facilities demolition, maintenance, and repair. Impacts from  
12 IRP sites would be the same as those mentioned under **Roads**.

13 **Unexploded Ordnance and Explosive Safety Quantity Distance Arcs**. Impacts from UXO  
14 and ESQD arcs would be the same as those mentioned under **Electrical System**.

15 **Worker Health and Safety**. Impacts on worker health and safety would be similar to those  
16 mentioned under **Electrical System**, except slightly more due an increased amount of  
17 demolition related to outdated facilities. However, these impacts would be less than significant  
18 by following appropriate BMPs and through utilization of PPE.

### 19 Fences and Gates

20 **Contaminated Materials**. Impacts on human health and safety from contaminated materials  
21 would be the same as those mentioned under **Roads**.

22 **Unexploded Ordnance Explosive Safety Quantity Distance Arcs, and Worker Health and**  
23 **Safety**. Impacts from UXO and ESQD arcs and on worker health and safety would be the same  
24 as those mentioned under **Electrical System**.

### 25 Drainage Management Structures

26 **Contaminated Materials**. There would be no anticipated impacts from contaminated materials  
27 related to maintenance and repair of drainage management structures because ACM, LBP and  
28 PCBs are not associated with drainage management structures. Additionally, impacts could  
29 result from IRP sites that overlap drainage management structures; however, these impacts  
30 would be the same as those mentioned under **Roads**.

31 **Unexploded Ordnance**. Impacts from UXO would be the same as those mentioned under  
32 **Electrical System**.

33 **Explosive Safety Quantity Distance Arcs**. Impacts from ESQD arcs would be the same as  
34 those mentioned under **Electrical System**.

35 **Worker Health and Safety**. Impacts on worker health and safety would be the same as those  
36 mentioned under **Electrical System**.

1 Vegetation Control

2 **Contaminated Materials.** There would be no anticipated impacts from contaminated materials  
3 related to vegetation control.

4 **Unexploded Ordnance.** Impacts from ordnance would be the same as those mentioned under  
5 **Electrical System.**

6 **Explosive Safety Quantity Distance Arcs.** Impacts from ESQD arcs would be the same as  
7 those mentioned under **Electrical System.**

8 **Worker Health and Safety.** Impacts on worker health and safety would be similar to, yet slightly  
9 greater than those described under **Electrical System.** Workers and contractors would be  
10 exposed to an increased amount of herbicide related to vegetation control. Personnel using  
11 herbicides would be required to wear appropriate PPE and would follow all safety precautions  
12 as indicated on the specific herbicide label. Impacts on worker health and safety would be less  
13 than significant.

14 In summary, impacts on safety from maintenance and repair of the electrical system, water  
15 system, roads, facilities, fences and gates, drainage management features, and vegetation  
16 control would be less than significant.

17 **3.3.3.2 NO ACTION ALTERNATIVE**

18 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
19 to occur at current levels and potentially not achieve the required levels of operational readiness  
20 for the NALF SCI mission. Impacts could result from a lack of established corridors around  
21 various assets, which could potentially create a more hazardous environment for future  
22 maintenance and repair of infrastructure. These impacts would be less than significant.

23 **3.4 Geological Resources**

24 **3.4.1 Definition of the Resource**

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

28 **Geology.** Geology is the study of the Earth's composition and provides information on the  
29 structure and configuration of surface and subsurface features. Such information derives from  
30 field analysis based on observations of the surface and borings to identify subsurface  
31 composition.

32 **Topography.** Topography and physiography pertain to the general shape and arrangement of a  
33 land surface, including its height and the position of its natural features and human-made  
34 alterations of landforms.

35 **Soils.** Soils are the unconsolidated materials overlying bedrock or other parent material. Soils  
36 typically are described in terms of their complex type, slope, and physical characteristics.  
37 Differences among soil types in terms of their structure, elasticity, strength, shrink-swell

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

4 **Geologic Hazards.** Geologic hazards are defined as natural geologic events that can endanger  
5 human lives and threaten property. Examples of geologic hazards include earthquakes,  
6 landslides, rock falls, ground subsidence, and avalanches.

### 7 3.4.2 Affected Environment

8 **Geology.** SCI is the southernmost island in the chain of Channel Islands located off the coast of  
9 California, which lie entirely on the Pacific tectonic plate. SCI is a portion of the exposed,  
10 uplifted fault block composed primarily of a stratified sequence of submarine volcanic rock. The  
11 volcanic rock on SCI is over 1,969 feet (600.2 meters) thick and dates back to the Miocene  
12 Epoch (Navy 2013b, Olmsted 1958). The volcanic rocks are overlain and interbedded with local  
13 sequences of marine sediments, including sedimentary rocks containing diatoms, Foraminifera,  
14 and Mollusca. Sedimentary limestones, siltstones, diatomites and shales from the Miocene era  
15 also are interspersed within the layers of volcanic rock. Despite the presence of volcanic rock,  
16 there has been no volcanic activity on SCI for roughly 13 million years (Olmsted 1958, Weigand  
17 and Savage undated).

18 **Topography.** The topography of NALF SCI includes coastal terraces, upland marine terraces,  
19 the central island plateau, escarpment, major canyons, and sand dunes. The coastal and  
20 upland marine terraces dominate the western, northern and southern sides of NALF SCI (Navy  
21 2013b). The plateau that makes up roughly one-third of the upland terrain is moderately rolling,  
22 with the highest point on the island rising to 2,000 feet (609.6 meters) above mean sea level.  
23 The terrain on the island is also characteristic of deep canyons, with most of the canyons on the  
24 island occurring toward the southern portion. Some canyons located on the island are over 500  
25 feet (152.4 meters) deep, dropping sharply into the sea. The steep cliffs to the east are part of  
26 the San Clemente Escarpment, which borders the entire eastern side of NALF SCI. Elevations  
27 along the escarpment vary from sea level to 1,965 feet (598.9 meters) above mean sea level  
28 (Navy 2013b).

29 **Soils.** Soils on SCI are formed through a complex series of geological processes, including  
30 tectonic uplift, rainfall, weathering, eolian deposition and salt-spray deposition. These soils are  
31 typically finely textured and highly friable. They are also well drained, with slow permeability,  
32 and subject to severe shrink-swell characteristics (Navy 2013b). SCI exhibits three general soils  
33 orders, including vertisols, alfisols, and eolian dune deposits.

34 Vertisols are heavy, light-colored soils with high clay contents that are predominately found in  
35 the older, upper marine terraces and plateau in the southern portion of SCI. Vertisol soils  
36 typically swell with rain and develop deep, wide cracks during dry periods. Alfisols are fine, light-  
37 colored soils that contain less clay than vertisols. Alfisols are the dominant soils on SCI's lower,  
38 younger marine terrace (Navy 2013b).

39 In the northern portion of SCI, lower and upper marine terraces are overlain by eolian dune  
40 deposits. These dune deposits are high calcareous, consisting mostly of fragmented and worn  
41 down marine shell. The older upland dune deposits are characteristically well-developed while

1 the dune deposits on the lower, younger terraces exhibit a lesser degree of soil development  
2 (Navy 2008).

3 Soils on NALF SCI are prone to erosion due to a process known as piping in which salt spray  
4 from the ocean causes soils to become more friable. Steep terrain and years of grazing animals  
5 present on the island have left areas with sparse vegetation with numerous drainages that have  
6 eroded areas of the island. SCI is also subject to wind erosion which occurs mostly in the dry  
7 season. The entire island has a slight chance for wind erosion hazard; however, the northern  
8 portion of the island and a small portion of the southern portion have the highest chance of wind  
9 erosion (Navy 2008, Navy 2013b).

10 **Geologic Hazards.** NALF SCI is located entirely on the Pacific Plate, which is known for being  
11 a highly active seismic area along its fringes, and several small faults traverse the island. The  
12 San Clemente Escarpment is bounded to the northeast by the San Clemente Fault, a major  
13 active fault line. The San Clemente Fault is at least 131 miles (211 km) long and exhibits right  
14 lateral and vertical offset faulting.

### 15 **3.4.3 Environmental Consequences**

#### 16 **3.4.3.1 PROPOSED ACTION**

##### 17 **Electrical System**

18 Impacts on geological resources from the establishment of corridors for the NALF SCI electrical  
19 system would be limited to areas where ground disturbance would occur. Temporary impacts  
20 would result from disturbance and compaction of soils from heavy equipment in corridors of up  
21 to 25 feet (7.6 meters) and 50 feet (15.2 meters) wide in areas that are currently undeveloped  
22 around transmission poles and along each side of distribution lines, respectively. Impacts would  
23 also result from clearing vegetation and regrading existing access roads for the electrical  
24 distribution lines. Soil erosion and sedimentation from the establishment of corridors would be  
25 minimized during clearing and grading activities by following appropriate BMPs. Long-term  
26 impacts on geology and soils could be expected from use of heavy equipment and the  
27 necessary repair of the electrical distribution system, particularly in areas outside established  
28 corridors; however, these repairs would be infrequent and would utilize existing and updated  
29 roads and access areas. No significant impacts from the establishment of electrical utility  
30 corridors on geological resources would be expected as a result of the Proposed Action.

##### 31 **Water System**

32 Impacts on geological resources from corridor development and maintenance for the NALF SCI  
33 water system would be similar to those discussed under **Electrical System**. Additional impacts  
34 from water system upgrades could result from underground trenching and boring. Soil removed  
35 during trenching operations would be used again as backfill for trenches to minimize impacts to  
36 soil. Long-term impacts from heavy equipment use for water system maintenance could be  
37 expected; however, maintenance would occur within existing footprints and would not frequently  
38 occur. Therefore, no significant impacts on geology and soils would be expected from the water  
39 system upgrades.

1 **Roads**

2 Impacts on geology and soils from road work and corridor development would be similar to  
3 impacts discussed under **Electrical System**. Impacts could also result from ground disturbance  
4 related to implementing improved water drainage systems and controlling vegetation and debris  
5 along roads, and replacing damaged road surface materials. Impacts from road work would be  
6 limited to the road corridor footprints. Grading activities within the road corridors could lead to  
7 increases in erosion; however, these impacts would be mitigated through the use of appropriate  
8 vegetation management and BMPs. No significant impacts from road maintenance would be  
9 expected to geology and soils.

10 **Facilities**

11 Impacts on geology and soils from the establishment of 100-foot (30.5-meter) corridors around  
12 facilities and grading of access roads to all facilities, where appropriate, would be similar to  
13 impacts from corridor development identified under **Electrical System** and **Water System**.  
14 Additional impacts on geology and soils from maintenance, repair, and demolition of facilities on  
15 NALF SCI could result from ground-disturbing activities and the use of heavy equipment.  
16 Impacts from maintenance and repair of facilities are anticipated to occur within the existing  
17 footprint, and would be less than significant. Activities anticipated to occur outside of the  
18 existing footprint would be analyzed for impact prior to commencement of activities.

19 **Fences and Gates**

20 Impacts on geology and soils from maintenance and repair of fences and gates would be  
21 expected to be temporary from the use of heavy equipment that could be required for trenching  
22 or grading soils. These impacts would be less than significant because work would  
23 predominately be done within existing footprints. Appropriate BMPs would be used to minimize  
24 impacts from erosion in work areas.

25 **Drainage Management Structures**

26 Impacts on geology and soils from the repair or replacement of drainage management  
27 structures would be same as those discussed under **Fences and Gates**. No significant impacts  
28 on geology and soils from repair or replacement of drainage management structures would be  
29 expected.

30 **Vegetation Control**

31 Impacts on geology and soils from vegetation control would be similar to those identified under  
32 **Roads**. Increased erosion could occur from a temporary lack of vegetation in certain areas;  
33 however, through use of appropriate management techniques and BMPs including reseeding,  
34 these impacts would be less than significant.

35 In summary, impacts on geology and soils from maintenance and repair of the electrical system,  
36 water system, roads, facilities, fences and gates, drainage management features, and  
37 vegetation control would be less than significant, because the majority of activities would occur  
38 within existing footprints and appropriate BMPs would be used to control erosion.

1 **3.4.3.2 NO ACTION ALTERNATIVE**

2 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
3 to occur at current levels and potentially not achieve the required levels of operational readiness  
4 for the NALF SCI mission. No significant impacts on geology or soils would be expected under  
5 the No Action Alternative as only minor soil disturbance would be likely to occur during  
6 maintenance efforts. Existing geological and soil conditions would remain the same as  
7 described in **Section 3.4.1**.

8 **3.5 Water Resources**

9 **3.5.1 Definition of the Resource**

10 Water resources are natural and man-made sources of water that are available for use by and  
11 for the benefit of humans and the environment. Hydrology concerns the distribution of water  
12 resources through the processes of evapotranspiration, atmospheric transport, precipitation,  
13 surface runoff and flow, and subsurface flow. Hydrology is affected by climatic factors such as  
14 temperature, wind direction and speed, topography, and soil and geologic properties.

15 **Groundwater.** Groundwater is water that flows or seeps downward and saturates soil or rock,  
16 supplying springs and wells. Groundwater quality and quantity are regulated under several  
17 statutes and regulations, including the Safe Drinking Water Act.

18 **Surface Water.** Surface water resources generally consist of wetlands, lakes, rivers, and  
19 streams. Surface water is important for its contributions to the economic, ecological,  
20 recreational, and human health of a community or locale. Waters of the United States are  
21 defined as (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) non-  
22 navigable tributaries of traditional navigable waters that are relatively permanent where the  
23 tributaries typically flow perennially or have continuous flow at least seasonally (e.g., typically  
24 3 months), and (4) wetlands that directly abut such tributaries. Waters of the United States are  
25 regulated under Section 404 of the Clean Water Act (CWA), as amended, and by the USEPA  
26 and USACE. The CWA requires that California establish a Section 303(d) list to identify  
27 impaired waters and establish total maximum daily loads (TMDLs) for the sources causing the  
28 impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water  
29 body without causing impairment. A water body can be deemed impaired if water quality  
30 analyses conclude that exceedances of water quality standards, established by the CWA, occur.

31 The CWA (33 U.S.C. § 1251 et seq., as amended) establishes Federal limits, through National  
32 Pollutant Discharge Elimination System (NPDES) program, on the amounts of specific  
33 pollutants that can be discharged into surface waters to restore and maintain the chemical,  
34 physical, and biological integrity of the water. The NPDES program regulates the discharge of  
35 point (i.e., end of pipe) and nonpoint sources (i.e., storm water) of water pollution.

36 The California NPDES storm water program requires construction site operators engaged in  
37 clearing, grading, and excavating activities that disturb 1 acre (0.4 hectare) or more to obtain  
38 coverage under an NPDES Construction General Permit for storm water discharges.  
39 Construction or demolition that necessitates a permit also requires preparation of a Notice of  
40 Intent to discharge storm water and a Storm Water Pollution Prevention Plan that is

1 implemented during construction. As part of the 2010 Final Rule for the CWA titled *Effluent*  
2 *Limitations Guidelines and Standards for the Construction and Development Point Source*  
3 *Category*, activities covered by this permit must implement non-numeric erosion and sediment  
4 controls and pollution prevention measures.

5 In addition, Section 438 of the Energy and Independence and Security Act (42 U.S.C. § 17094)  
6 establishes storm water design requirements for Federal development and redevelopment  
7 projects. Under these requirements, Federal facility projects larger than 5,000 square feet (0.11  
8 acre [0.04 hectare]) must “maintain or restore, to the maximum extent technically feasible, the  
9 predevelopment hydrology of the property with regard to the temperature, rate, volume, and  
10 duration of flow.”

11 The California Ocean Plan (Ocean Plan) establishes water quality objectives for California’s  
12 ocean waters and provides the basis for regulation of wastes discharged into the State’s coastal  
13 waters. It applies to point and non-point source discharges. The State Water Resources Control  
14 Board (SWRCB) adopted the Ocean Plan (original version in 1972 and most recent version in  
15 2012), and both the SWRCB and the six coastal Regional Water Quality Control Boards  
16 implement the Ocean Plan. The SWRCB is responsible for reviewing Ocean Plan water quality  
17 standards and for modifying and adopting standards in accordance with Section 303 (c)(1) of  
18 the federal Clean Water Act and section 13170.2(b) of the California Water Code (SWRCB  
19 2012).

20 The Ocean Plan requires that waste be discharged a sufficient distance from Areas of Special  
21 Biological Significance (ASBS) in order to assure maintenance of natural water quality  
22 conditions in these areas. Discharges to an ASBS are prohibited by the Ocean Plan, unless  
23 granted an exception issued by the SWRCB. Thirty-four areas have been designated by the  
24 SWRCB as ASBSs. These areas are classified as a subset of State Water Quality Protection  
25 Areas which are nonterrestrial marine or estuarine areas designated to protect marine species  
26 or biological communities from an undesirable alteration in natural water quality (SWRCB 2012).

27 **Wetlands.** The USACE defines wetlands as “those areas that are inundated or saturated by  
28 surface or groundwater at a frequency and duration sufficient to support, and that under normal  
29 circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil  
30 conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (USACE  
31 1987). Wetlands are currently regulated by the USACE under Section 404 of the CWA as a  
32 subset of all “waters of the United States.” The term “waters of the United States” has a broad  
33 meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic  
34 habitats, including wetlands. Jurisdictional waters of the United States regulated under the CWA  
35 include coastal and inland waters, lakes, rivers, ponds, streams, intermittent streams, and  
36 “other” waters that, if degraded or destroyed, could affect interstate commerce.

37 Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of  
38 Engineers, to issue permits for the discharge of dredge or fill into wetlands and other waters of  
39 the United States. Any discharge into waters of the United States requires a permit from  
40 USACE. Nationwide permits (NWP) are types of general permits issued by USACE on a  
41 nationwide basis for activities having minimal impacts. Nationwide permits are designed to  
42 provide timely authorization for certain activities in waters of the United States while also

1 protecting the Nation's aquatic resources. Activities authorized by NWP's must be similar in  
2 nature, cause only minimal adverse environmental effects when performed separately, and  
3 cause only minimal cumulative adverse effect on the aquatic environment. NWP's can authorize  
4 activities pursuant to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act of  
5 1899.

### 6 3.5.2 Affected Environment

7 **Groundwater.** NALF SCI is within the San Clemente Island Groundwater Basin, which is a part  
8 of San Pedro Channel Islands Groundwater Basin. However, the California Department of  
9 Water Resources has not designated basins for groundwater on the San Pedro Channel  
10 Islands. In addition, during a subsurface investigation of the San Clemente Island Landfill, a  
11 boring was drilled to a depth of 200 feet (61.0 meters) below land surface through the  
12 underlying andesite hard rock. No groundwater was encountered (CRWQCB 2013). Other  
13 drilling efforts have only located brackish groundwater (Navy 2008).

14 **Surface Water.** There are no streams or rivers on NALF SCI that contain constant water flow all  
15 year round. However, water is held through the dry portion of the year in bedrock plunge pools  
16 located in the deeper portions of SCI's major canyons. Constant water flow in streams appears  
17 during the rainy season and eventually run through canyons before reaching the ocean. SCI  
18 experiences dramatic fluctuations in annual rainfall even over relatively short time spans, with  
19 an average of 6.6 inches (16.8 centimeters) falling annually. NALF SCI does not discharge to  
20 any Section 303(d) list impaired waters.

21 NALF SCI holds two NPDES permits, one covering the discharges from the wastewater  
22 treatment plant (NPDES Permit No. CA0110175) and the other covering discharges from  
23 industrial activities (NPDES General Permit No. CAS000001 for Storm Water Discharges  
24 Associated with Industrial Activities).

25 The General Permit requires the development and implementation of a Storm Water Pollution  
26 Prevention Plan (SWPPP) and a Storm Water Monitoring Program (SWMP). NALF SCI has  
27 been granted an Ocean Plan exemption for discharging to an ASBS. This exemption requires  
28 compliance with the Special Protections described in Attachment F of the Permit which specifies  
29 allowable non-storm water discharges, mandates the development of an ASBS compliance  
30 plan, and reporting. Under the exemption, discharges incidental to military training and  
31 research, development, test, and evaluation operations at NALF SCI are allowed (SWRCB  
32 2014).

33 The SCI ASBS has 58.5 miles (94.1 km) of island coastline, includes 49,162 acres (19,895.2  
34 hectares) of marine waters and totally encompasses NALF SCI. The Navy's sewage treatment  
35 plant has an outfall located in an excluded zone within the ASBS, under an exception granted  
36 by the SWRCB (SWRCB 2006).

37 The SWRCB had concerns regarding sedimentation into the ASBS from Navy operations;  
38 however, a study conducted in 2006 suggested that few watersheds on NALF SCI are affected  
39 by Navy operations. In addition, comparison of watersheds not utilized by the Navy  
40 (e.g., eastern shoreline) with watersheds affected by Navy operations suggest that erosion is  
41 generally greater in non-Navy affected watersheds (Merkel and Assoc. 2007).

1 A 2014 survey determined that the Proposed Action Area crossed water features a total 396  
 2 times. One hundred and thirty of these crossings traversed waters that met the definition of  
 3 waters of the United States (HDR 2014). See **Table 3-7** for breakdown of surface waters  
 4 identified by the survey.

5 **Wetlands.** A 2014 wetland survey of the Proposed Action Area identified 37 three-parameter  
 6 wetlands (i.e., hydrology, soil, and wetland plants) of which eight could be determined to be  
 7 jurisdictional waters of the United States (HDR 2014). Jurisdictional wetlands consisted of a  
 8 headwater vernal pool, two vernal depressions, four in-stream wetlands, and one tidal marsh.  
 9 See **Table 3-7** for a breakdown of wetlands identified by the survey.

10 **Table 3-7. Types and Extent of Surface Waters and Wetlands within the Proposed Action Area on**  
 11 **NALF SCI**

Feature Type		Number of Crossings/Features	Length/Area Within Proposed Action Area
Jurisdictional Waters of the United States		132	27,522 linear feet
Non-Jurisdictional linear features		264	141,896 linear feet
Jurisdictional Wetlands	Non-Tidal	7	1,482 square feet
	Tidal	1	54,579 square feet
Non-Jurisdictional Wetlands		29	29,046 square feet

12 **3.5.3 Environmental Consequences**

13 **3.5.3.1 PROPOSED ACTION**

14 **Groundwater.** Impacts from maintenance and repair on NALF SCI would not have significant  
 15 impacts on groundwater resources. Maintenance activities described in **Section 2.1.1** would not  
 16 directly drill into or come into contact with groundwater due to its depth beneath ground level.  
 17 The majority of maintenance activities is mechanical in nature and would not result in any type  
 18 of discharge that could potentially contaminate the groundwater. Any spray applications of  
 19 herbicides for vegetation control are typically absorbed by the vegetation or quickly decompose  
 20 in the soil and would not affect groundwater.

21 **Surface Water.** Short-term impacts on surface water at NALF SCI could result from ground  
 22 disturbance from the use of heavy equipment during repairs of roads, fences, drainage control  
 23 structures, utility infrastructure, and the removal of facilities. If the area of land disturbed is 1  
 24 acre (0.4 hectare) or greater, an NPDES Construction General Permit for storm water  
 25 discharges would be obtained. Because storm water would likely be discharged to an ASBS, an  
 26 exception would also need to be approved by the SWRCB. An SWPPP and an SWMP would be  
 27 developed and implemented. Disturbance and exposure of soils could result in an increase of  
 28 erosion and the sedimentation of receiving water bodies. BMPs would be implemented as  
 29 necessary to minimize erosion and sedimentation resulting from these activities. Depending on  
 30 site conditions and work to be performed, BMPs could include the installation of silt fencing,  
 31 sediment traps, storm drain inlet protection, and check dams. Additional reductions in impacts  
 32 could be achieved by scheduling work to occur during the dry season. Work conducted within  
 33 Waters of the United States would adhere to and be covered by NWP's issued by the USACE.

1 NWP 3, *Maintenance*, NWP 7, *Outfall*  
2 *Structures and Associated Intake Structures*, and NWP 12, *Utility Line Activities*.

3 Long-term impacts on surface water could result from the flushing of the water system. These  
4 activities would only occur on an as-needed basis and would not result in significant impacts  
5 due to the limited volume and duration of water discharged per event. Additionally, if water from  
6 water system flushing is confined to the work area, and measures are taken to prevent the  
7 runoff to escape as surface flow, no impacts on surface water would result.

8 Positive, long-term impacts on surface water could result from the repair and replacement of  
9 drainage management structures eliminating or reducing deficiencies with new or repaired  
10 structures. This would potentially increase the quality and decrease the volume and velocity of  
11 storm water at NALF SCI.

12 The application of herbicides to control vegetation would result in less than significant impacts  
13 on surface water at NALF SCI. Herbicides would be stored and applied in compliance with the  
14 San Diego Area Integrated Pest Management Plan. BMPs to reduce impacts could consist of  
15 applying herbicides directly to the plants, and applying herbicides only during dry and low wind  
16 periods.

17 Any projects that enter the ocean environment would need to be coordinated with SCI's  
18 Environmental/Natural Resources Office. It is not anticipated that minor repair or replacement  
19 activities would have a significant impact on the ocean environment. BMPs are in place to  
20 present spills or other discharges into the Pacific Ocean. Large in-water projects are not  
21 covered under this EA.

22 **Wetlands.** Impacts on wetlands from maintenance and repair would not be expected. The  
23 majority of proposed activities are not within or adjacent to wetlands, or would be conducted in  
24 accordance with and covered by NWPs, to minimize impacts to wetlands. NWPs applicable to  
25 the Proposed Action include NWP 3 Maintenance, NWP 7 Outfall Structures and Associated  
26 Intake Structures, and NWP 12 Utility Line Activities.

27 In summary, impacts on water resources and water quality from maintenance and repair would  
28 be less than significant. Additionally, implementation of the Proposed Action activities would not  
29 be expected to violate the water quality standards of NALF SCI storm water discharge permits.

### 30 3.5.3.2 NO ACTION ALTERNATIVE

31 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
32 to occur at current levels and potentially not achieve the required levels of operational readiness  
33 for the NALF SCI mission. No impacts on water resources would be expected under the No  
34 Action Alternative. Water resource conditions and water quality would remain the same as  
35 discussed in **Section 3.5.2**.

## 1 3.6 Biological Resources

### 2 3.6.1 Definition of the Resource

3 Biological resources include native or naturalized plants and animals and the habitats  
4 (e.g., grasslands, forests, and wetlands) in which they exist. Protected and sensitive biological  
5 resources include listed (threatened or endangered) and proposed species under the ESA as  
6 designated by USFWS, state-listed threatened or endangered species, and migratory birds. In  
7 California, state-listed threatened or endangered species are protected under the California  
8 Endangered Species Act (Fish and Game Code §§2050, et seq.) that is administered by the  
9 California Department of Fish and Wildlife. Migratory birds are protected under the Migratory  
10 Bird Treaty Act (MBTA) of 1918 (16 U.S.C. § 703–712) as amended, and EO 13186.

11 Sensitive habitats include those areas designated by USFWS as Critical Habitat protected by  
12 the ESA and sensitive ecological areas as designated by state or Federal rulings. Sensitive  
13 habitats also include wetlands, plant communities that are unusual or of limited distribution, and  
14 important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer  
15 and winter habitats). Critical Habitat is designated if USFWS determines that is it essential to a  
16 threatened or endangered species' conservation. In consultation for those species with Critical  
17 Habitat, Federal agencies are required to ensure that their activities do not adversely modify or  
18 destroy Critical Habitat to the point that it will no longer aid in the species' recovery.

19 All marine mammals in U.S. waters are protected by the Marine Mammal Protection Act of 1972  
20 (16 U.S.C. § 1361 et seq.), which requires consultation with the National Marine Fisheries  
21 Service if impacts on marine mammals are unavoidable.

### 22 3.6.2 Affected Environment

23 The following biological resources surveys (HDR 2014) were specifically conducted on SCI for  
24 the Proposed Action:

- 25 • Vegetation Mapping
- 26 • Rare Plant and General Botanical Surveys
- 27 • General Wildlife Surveys
- 28 • Avian Surveys.

29 Wetlands and other jurisdictional hydrologic features are discussed in **Section 3.5**, Water  
30 Resources.

#### 31 3.6.2.1 VEGETATION

32 The flora of NALF SCI is relatively low compared to a similar area on the mainland. Despite this,  
33 NALF SCI has a high number of species that are either endemic to SCI or endemic to several of  
34 the Channel Islands. Howe and Zink (2012) reported a total of 46 endemic species from SCI:  
35 16 SCI endemics, 10 species endemic to SCI and Guadalupe Island, and 20 species endemic  
36 to more than one Channel Island.

1 The most recent classification and mapping of vegetation communities on NALF SCI was  
2 developed in 2014 and is shown in **Appendix A** (HDR 2014). Vegetation was mapped and  
3 classified using the National Vegetation Classification System, the system used previously for  
4 vegetation mapping of NALF SCI (Navy 2013b). The descriptions provided below for the  
5 vegetation communities are at the Group Level. For a more detailed description of the  
6 vegetation refer to the BTR included in **Appendix A** (HDR 2014).

7 **California Maritime Chaparral.** California maritime chaparral is characterized by evergreen  
8 and drought-resistant deciduous shrubs such as lemonade berry (*Rhus integrifolia*), California  
9 sagebrush (*Artemisia californica*) and island morning glory (*Calystegia macrostegia* var.  
10 *amplissima*). This group occurs in many of the canyons throughout SCI (Navy 2013b). A total of  
11 1.46 acre (0.6 hectare) of this vegetation type occurs in the Proposed Action Area.

12 **Central and South Coastal California Coastal Sage Scrub.** Coastal sage scrub occurs  
13 primarily on the eastern escarpment of NALF SCI from Nanny Canyon to just south of Knob  
14 Canyon. Coast sage scrub is also the vegetation within some of the larger drainages in the  
15 southwestern portion of NALF SCI within SHOBA particularly along China Canyon, Red Canyon  
16 and Kinkipar Canyon (USN 2013). There are several alliances within the coastal sage scrub  
17 group. A total of 32.54 acres (13.17 hectares) of this vegetation type occurs in the Proposed  
18 Action Area.

19 **California Perennial Grassland.** California perennial grassland occurs on the central plateau  
20 of San Clemente Island and is dominated by the native purple needlegrass (*Stipa pulchra*) with  
21 other native and non-native annuals and perennials such as: San Clemente Island brodiaea  
22 (*Brodiaea kinkiensis*), goldfields (*Lasthenia californica*), filaree (*Erodium* spp.), and bromes  
23 (*Bromus* spp.). Only one alliance of this group, needlegrass alliance, occurs on NALF SCI. A  
24 total of 125.18 acres (50.66 hectares) of this vegetation type occurs in the Proposed Action  
25 Area.

26 **Mediterranean California Naturalized Annual and Perennial Grassland.** These grasslands  
27 on NALF SCI tend to occur at the lower and mid-elevations. Wild oat, ripgut brome, red brome  
28 are the dominant grass species with purple needlegrass locally common coexisting mostly with  
29 the wild oat than the other species. Scattered individuals of coyote brush (*Baccharis pilularis*  
30 subsp. *consanguinea*) and coast prickly pear are also present. Other species observed include  
31 island tarplant (*Deinandra clementina*), California goldfields (*Lasthenia gracilis*), San Clemente  
32 Island brodiaea, fiddleneck, yarrow, and barley (*Hordeum* spp.). Russian thistle (*Salsola tragus*)  
33 and Australian saltbush (*Atriplex semibaccata*) are present in the more disturbed portions of  
34 these grasslands. Non-native grasslands on NALF SCI are highly variable in composition and  
35 can vary annually based on the amount of precipitation. Also the various grasses that dominant  
36 or co-dominate the alliances and associations comprising the non-native grasslands occur in a  
37 landscape mosaic with a species presence, absence, and dominance changing over short  
38 distances. Several alliances of these grasslands occur on NALF SCI and within the Proposed  
39 Action Area. A total of 600.41 acres (242.98 hectares) of this vegetation type occurs in the  
40 Proposed Action Area.

41 **Pacific Dune Mat.** Dune mat vegetation occurs on the active and stabilized sand dunes on  
42 NALF SCI. Silver burr ragweed (*Ambrosia chamissonis*), sand verbena (*Abronia umbellata*), red

1 sand verbena (*A. maritima*), Capetown fig (*Carpobrotus edulis*), crystalline iceplant  
2 (*Mesembryanthemum crystallinum*), slender-leaved iceplant (*M. floribundum*), beach evening  
3 primrose (*Camissoniopsis cheiranthifolia* subsp. *cheiranthifolia*), miniature suncup (*C.*  
4 *micrantha*), San Clemente Island suncup (*C. guadalupensis* subsp. *clementina*), and Trask's  
5 cyrptantha (*Cryptantha traskiae*) are the more common species present in this vegetation.  
6 There are several Pacific dune mat alliances within the Proposed Action Area. A total of 5.5  
7 acres (2.2 hectares) of this vegetation type occurs in the Proposed Action Area.

8 **California Coastal Evergreen Bluff and Dune Scrub.** California coastal evergreen bluff and  
9 dune scrub occurs on the upper plateau of NALF SCI. Coyote brush is the indicator species for  
10 this vegetation type. This vegetation type has been expanding its range on NALF SCI since the  
11 removal of the goats in 1992 (USN 2013). There is only one alliance within this vegetation type  
12 on NALF SCI. A total of 37.08 acres (15.01 hectares) of this vegetation type occurs in the  
13 Proposed Action Area.

14 **Coastal Baja California Norte Maritime Succulent Scrub.** This group of alliances is  
15 characterized by shrub and succulent species such as California boxthorn (*Lycium*  
16 *californicum*), coast prickly pear (*Opuntia littoralis*), lemonade berry, golden spined cereus  
17 (*Bergocactus emoryi*), and coast cholla (*Cylindropuntia prolifera*). These alliances occur on  
18 maritime coastal bluffs and terraces primarily on the western and northern portions of NALF SCI  
19 (USN 2013). A total of 465.81 acres (188.51 hectares) of this vegetation type occurs in the  
20 Proposed Action Area.

21 **Coastal Marsh Group.** This group consists of alkali marshes located behind rock berms at  
22 Whale Point in the northwest corner of NALF SCI, are subjected to tidal influence. Pickleweed  
23 (*Arthrocnemum subterminale*) is the dominant species associated with alkali heath (*Frankenia*  
24 *grandiflora*), woolly sea-blite (*Suaeda taxifolia*) and saltgrass. A total of 0.51 acre (0.21 hectare)  
25 of this vegetation type occurs in the Proposed Action Area.

26 **Coastal Strand and Bluff Group.** These areas are located immediately along the coast and  
27 are sparsely vegetated. These areas include sandy strands where wave action or wind erosion  
28 create an unstable environment for plant establishment or steep rocky bluffs with little or no soil  
29 development. A total of 2.44 acres (0.99 hectare) of this vegetation type occurs in the Proposed  
30 Action Area.

31 **Ruderal Group.** This group consists of disturbed areas in various stages of vegetation  
32 recovery. Most of these areas are dominated by non-native forbs such as Russian thistle,  
33 Australia saltbush, crystalline iceplant, sea fig, Hottentot fig, and non-native grasses such as  
34 wild oats and bromes. Ruderal areas occur adjacent to existing structures, roads and  
35 construction zones but also could be in remote areas that had once been actively used but are  
36 now fallow (e.g., old airfield).

37 In addition to the vegetation community groups there are several other land type uses within the  
38 Proposed Action Area. Developed areas include buildings and roads. Restricted Access Areas  
39 include the Land Mine Area, BLU 97 Hazard Area, and two Impact Areas within SHOBA. The  
40 RAA was not surveyed for biological resources. Lastly, the Soil and Ecology Restoration Group  
41 (SERG) out of San Diego State University has several areas of native planting throughout NALF

1 SCI. A total of 271.00 acres (109.67 hectares) of this vegetation type occurs in the Proposed  
2 Action Area.

3 **Other.** A total of 379.19 acres (153.45 hectares) are roads or developed. A total of 3.26 acres  
4 (1.32 hectares) are SERG revegetation sites. The remaining 126.27 acres (51.10 hectares)  
5 were RAAs or No Access Areas.

### 6 3.6.2.2 WILDLIFE AND HABITAT

7 Characterization of fauna occurring on NALF SCI was based on data presented in the 2013  
8 INRMP (Navy 2013b) and incidental observations during surveys conducted in 2014. San  
9 Clemente Island supports a diverse assemblage of terrestrial invertebrates, terrestrial reptiles,  
10 resident and migratory birds, and mammals.

11 **Birds.** At least 350 bird species have been documented on NALF SCI (Navy 2013b). Many bird  
12 species were observed during vegetation and delineation surveys (HDR 2014). Some observed  
13 bird species are associated with human or urban settings such as buildings, landscaping. Those  
14 species include house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*)  
15 and the brown-headed cowbird (*Molothrus ater*).

16 Grassland species observed included chukar (*Alectoris chukar*), Gambel's quail (*Callipepla*  
17 *gambelii*), northern harrier (*Circus cyaneus*), and western meadowlark (*Sturnella neglecta*).  
18 These species tend to utilize grasslands or areas with sparse shrub vegetation.

19 Other bird species noted on the island include great blue heron (*Ardea herodias*), red-tailed  
20 hawk (*Buteo jamaicensis*), Say's phoebe (*Sayornis saya*), and mourning dove (*Zenaida*  
21 *macroura*) (HDR 2014).

22 **Invertebrates.** There are over 100 terrestrial insects that are endemic to the Channel Islands. In  
23 total, 43 occur on NALF SCI, and 27 are endemic to SCI. These include but are not limited to  
24 San Clemente Island coenonycha beetle (*Coenonycha clemntina*), robber fly (*Efferia dementi*),  
25 mealybug (*Heliococcus demente*), thread-wasted wasp (*Ammophila azteca demente*), rass  
26 miner moth (*Agonopterix toega*), silk-spinning cricket (*Cnemotettix pulvillifer*), harvestman  
27 (*Protolophus cockerelli*), and Gabb's snail (*Micrarionta gabbii*), a complete list is presented in the  
28 2013 INRMP (Navy 2013b).

29 **Mammals.** There are three native terrestrial mammals that occur on NALF SCI, San Clemente  
30 Island deer mouse (*Peromyscus maniculatus clementis*), San Clemente Island fox (*Urocyon*  
31 *litteralis clementae*), and the California myotis (*Myotis californicus*). Historically, several  
32 mammal species were introduced to SCI but currently only the house mouse (*Mus musculus*),  
33 harvest mouse (*Reithrodontomys megalotis*), black rat (*Ratus rattus*), and the feral cat (*Felis*  
34 *domesticus*) still occur on NALF SCI. With the exception of the San Clemente Island fox, little is  
35 known about the current status of terrestrial mammals on NALF SCI (Navy 2013b).

36 **Reptiles.** Two reptiles were observed during the surveys: side-blotched lizard (*Uta*  
37 *stansburiana*) and SCI night lizard (*Xantusia riversiana*) (HDR 2014).

1 **3.6.2.3 SPECIAL STATUS SPECIES**

2 As the lead agency, the Navy has determined that there are six plant species and three wildlife  
 3 species listed as federally threatened or endangered on SCI (see **Table 3-8**).

4 **3.6.2.3.1 Plants**

5 Surveys for special status plants were conducted within the Proposed Action Area in 2014.  
 6 Federally listed species included San Clemente Island bush-mallow, San Clemente Island  
 7 Indian paintbrush, San Clemente Island larkspur, San Clemente Island lotus, San Clemente  
 8 Island woodland star, and Santa Cruz Island rockcress. The estimated number of individuals  
 9 within the Proposed Action Area is presented in **Table 3-8**. **Figure 3-1** shows the locations the  
 10 populations observed within the Proposed Action Area during the 2014 rare plant surveys. In  
 11 addition, historical data from 1996 to 2013 is described in detail in the INRMP.

12 **San Clemente Island Bush-Mallow.** San Clemente Island bush-mallow (*Malacothamnus*  
 13 *clementinus*) is a March to May blooming shrub that occurs on rocky canyon walls (Baldwin et  
 14 al. 2012). This species is a SCI endemic (Baldwin et al. 2012, Howe and Zink 2012) and is  
 15 federally listed as endangered. San Clemente Island bush-mallow occurs on the southern one-  
 16 third of the island on western terrace faces and some canyon bottoms and canyon mouths.

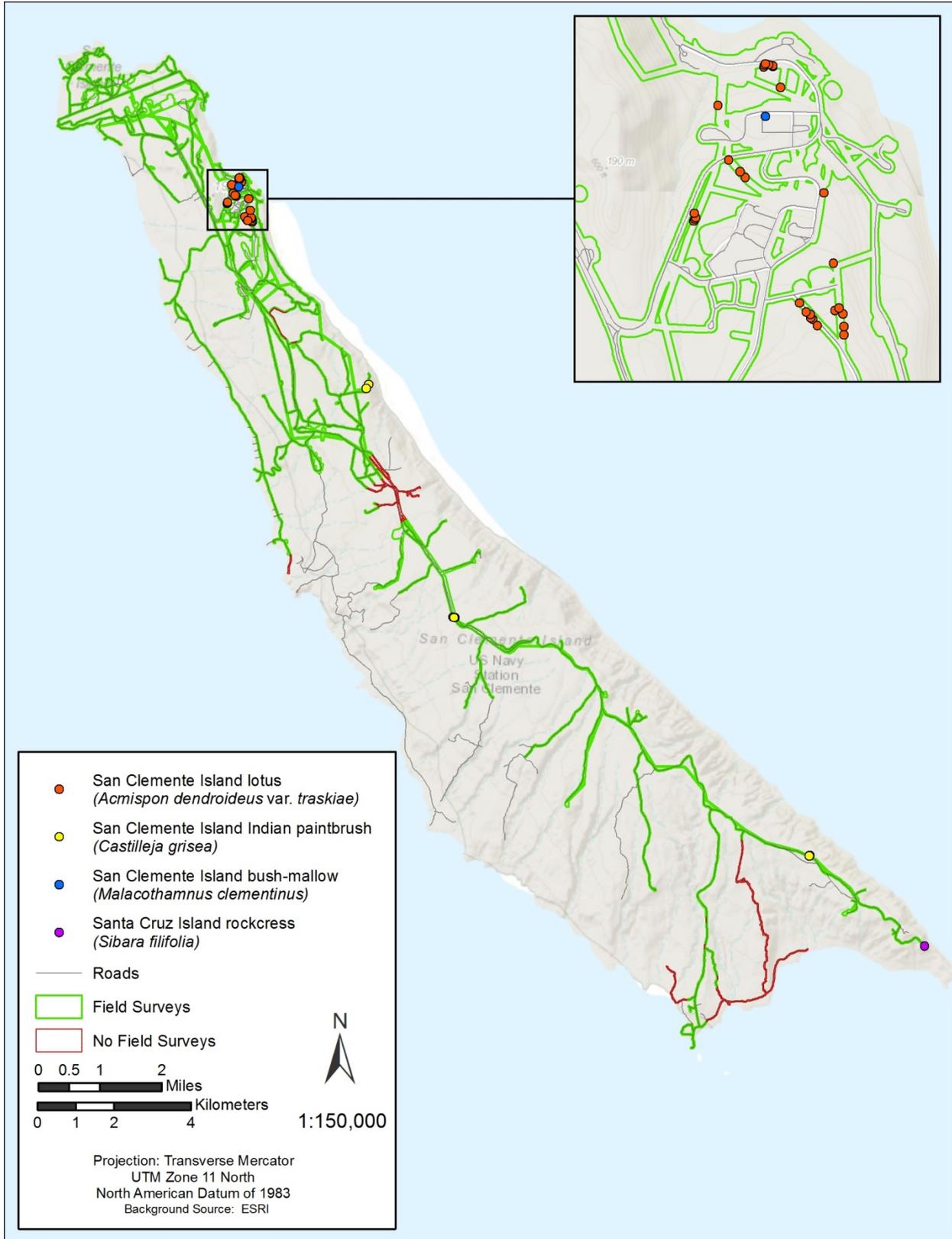
17 Some of the larger populations occur from south of Middle Ranch Canyon to south of Cave  
 18 Canyon (Howe and Zink 2012). Other known localities include Box Canyon, Canchalagua  
 19 Canyon, Cave Canyon, Chukit Canyon, Horse Beach Canyon, Kinkipar Canyon, Lemon Tank  
 20 Canyon, lower and upper China Canyon, Middle Ranch Canyon, Norton Canyon and Waymuck  
 21 Canyon (Navy 2013b). In 2011–2012, SERG mapped 69 populations and 5,562 “clumps” of

22 **Table 3-8. Federally Listed Species on San Clemente Island**

Common Name	Scientific Name	Federal Status	Habitat	Observed During Surveys*	Potential Occurrence in Proposed Action Area
<b>PLANTS</b>					
San Clemente Island lotus	<i>Acmispon dendroideus</i> var. <i>traskiae</i>	E	Eastern escarpment and cooler slopes on the west shore	Yes	Present. 197 individuals observed.
San Clemente Island paintbrush	<i>Castilleja grisea</i>	E	Rocky outcrops	Yes	Present. 120 individuals observed.
San Clemente Island larkspur	<i>Delphinium variegatum</i> subsp. <i>kinkiense</i>	E	Native limestone forest	No	Low
San Clemente Island bush-mallow	<i>Malacothamnus clementinus</i>	E	Rocky canyon walls	No	Low
San Clemente Island winged-rockcress	<i>Sibara filifolia</i>	E	Dry ridges	Yes	Present. 1 individual observed

San Clemente Island woodland star	<i>Lithophragma maximum</i>	E	Steep, moist, north-facing slopes	No	Low
<b>BIRDS</b>					
San Clemente Bell's sparrow	<i>Artemisiospiza belli clementeae</i>	T	Maritime desert scrub (boxthorn phase), sage scrub, and prickly pear scrub. Occasionally found on dunes, grassland, and disturbed habitats.	Yes	High
San Clemente Loggerhead Shrike	<i>Lanius ludovicianus mearnsi</i>	E	Canyon shrub, coastal prickly pear scrub, and grassland/shrubland ecotone.	Yes	High
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	T	Sandy beaches, mudflats, tidal flats, and salt ponds.	No	Low

Key: E = Federal Endangered, T = Federal Threatened



1

2 **Figure 3-1. Federally Listed Plant Species Documented in the Proposed Action Area (2014).**

1 individuals that may not represent genetic individuals given this species' propensity for clonal  
2 growth (Howe and Zink 2012).

3 No natural populations of San Clemente Island bush-mallow were observed within the Proposed  
4 Action Area during the focused rare plant surveys. One individual of this species was observed  
5 within the Proposed Action Area but this individual was planted around the fire department in  
6 Wilson Cove. Natural populations of this species are not expected to occur within the Proposed  
7 Action Area. A historical population is known within China Point Canyon about 200 feet (61.0  
8 meters) from the edge of the Proposed Action Area along China Point Road.

9 **San Clemente Island Indian Paintbrush.** San Clemente Island Indian paintbrush (*Castilleja*  
10 *grisea*) is a February to April blooming subshrub that occurs on coastal bluffs in coastal sage  
11 scrub and maritime cactus scrub communities (Baldwin et al. 2012; Navy 2013b). This species  
12 is a SCI endemic (Baldwin et al. 2012; Howe and Zink 2012). On NALF SCI this species occurs  
13 on the southern two-thirds of the island from Jack Point south on both the east and west sides  
14 of NALF SCI (Navy 2013b). Dense, nearly contiguous patches of San Clemente Island Indian  
15 paintbrush cover the eastern escarpment from approximately Stone Station south to Pyramid  
16 Point, and the majority of west side canyons and west shore terraces also have scattered  
17 populations (Howe and Zink 2012). In 2011–2012, SERG mapped 325 populations totaling  
18 35,283 individuals (Howe and Zink 2012). The current population is 35,000–60,000 (Navy  
19 2013b).

20 Several populations totaling 120 individuals of San Clemente Island Indian paintbrush were  
21 observed in the Proposed Action Area during the 2014 focused rare plant surveys. Two  
22 individuals were observed at the eastern terminus of the transmission line corridor that is  
23 directly north of and parallel to Pacific View South Road. Three individuals were observed at the  
24 terminus of Pacific View South Road. A known historical occurrence of 102 individuals was  
25 observed on either side of the Assault Vehicle Maneuver Road (AVMR) approximately 1,000  
26 feet (304.8 meters) north of the intersection of AVMR and Horton Road. Another known  
27 historical occurrence of approximately 13 individuals was observed in the SHOBA along the  
28 periphery of the Proposed Action Area. This population is approximately 1.25 mile (2.0 km)  
29 south of the intersection of SCI Ridge Road and Adversary Road. This population is at the edge  
30 of the survey corridor and only one individual appears to be within the Proposed Action Area  
31 (Navy 2013b). San Clemente Island Indian paintbrush is federally listed as endangered.

32 **San Clemente Island Larkspur.** San Clemente Island larkspur (*Delphinium variegatum* subsp.  
33 *kinkiense*) is a January to April blooming herbaceous perennial that occurs in coastal grassland  
34 terraces (Baldwin et al. 2012, Navy 2013b). This species is a SCI endemic (Baldwin et al. 2012;  
35 Howe and Zink 2012). On NALF SCI this species occurs across most of the central portion of  
36 the island. In 2011–2012, SERG mapped 36 populations totaling 2,950 individuals (Navy  
37 2013b). San Clemente Island larkspur is federally listed as endangered.

38 San Clemente Island larkspur was not observed within the Proposed Action Area during the  
39 focused rare plant surveys, which were conducted during the traditional blooming period for this  
40 species. The drought conditions in southern California in 2014 potentially could have influenced  
41 the results of the rare plant surveys in 2014. Drought conditions could restrict the growth of this  
42 herbaceous perennial, limiting the ability to detect occurrences of this species. Two historical

1 groups of occurrences are known from close proximity to the Proposed Action Area: north of the  
2 eastern portion of Horton Road and the northern terminus of Pacific View South Road. There  
3 are several occurrences just north of Horton Road, the closest being approximately 100 feet  
4 (30.5 meters) from the northern edge of the Proposed Action Area. Though outside of the  
5 Proposed Action Area, searches for these occurrences were conducted, with the intent of using  
6 them as a reference population. These occurrences were not relocated in 2014. The second  
7 group of occurrences, alongside Pacific View South Road is just outside the Proposed Action  
8 Area. GIS layers provided by the Navy depict Pacific View South Road extending approximately  
9 1,000 feet (304.8 meters) north of its actual terminus. The northernmost 1,000 feet (304.8  
10 meters) of this alignment follows an extremely narrow and steep ridgeline that was inaccessible  
11 to survey. The historical population occurs at the eastern edge of Pacific View South Road's  
12 survey corridor but is at least 800 feet (243.8 meters) north of the actual terminus of this road.  
13 No other populations or occurrences are known from near the Proposed Action Area. Other  
14 locations of this species on NALF SCI are near some roads within the Proposed Action Area  
15 (e.g., Bolder Road [600 feet (182.9 meters) north], Skip Jack Road [400 feet (121.9 meters)  
16 west], West Shore Road [1,600 feet (487.7 meters) to the east] and Station Stone Road [800  
17 feet (243.8 meters) north]), (Navy 2013b). With the possible exception of the occurrence at the  
18 edge of the Pacific View South Road corridor that could not be relocated in 2014, this species is  
19 not expected to occur within the Proposed Action Area.

20 **San Clemente Island Lotus.** San Clemente Island lotus (*Acmispon dendroideus* var. *traskiae*)  
21 is a February to August blooming shrub that occurs on coastal bluffs, inland canyons, and open  
22 sites in grassy areas, and at the ecotone between grassland and maritime sage scrub (Baldwin  
23 et al. 2012; Navy 2013b). This species is a SCI endemic (Baldwin et al. 2012; Howe and Zink  
24 2012) and is federally listed as endangered. On NALF SCI, this species occurs along the entire  
25 length of the island from Wilson Cove to Pyramid Cove. Potential habitat includes most of the  
26 eastern escarpment and the cooler slopes on the western shore (Navy 2013b). In 2011-2012,  
27 SERG mapped 104 populations totaling 36,142 individuals (Howe and Zink 2012).

28 Three occurrences of San Clemente Island lotus totaling approximately 483 individuals were  
29 observed within the Proposed Action Area during the 2014 focused rare plant surveys. These  
30 sightings occurred from Wilson Cove south to the hillsides immediately south of the Natural  
31 Resources Office between that facility and the water storage tank site. All of these occurrences  
32 are known historical occurrences. Approximately 197 individuals were observed adjacent and  
33 south of the Natural Resources Office (NRO) Complex. These individuals are part of a larger  
34 population with additional individuals occurring adjacent to, but outside of, the Proposed Action  
35 Area. Approximately 162 individuals were observed in the native habitat adjacent to the  
36 Commons Complex between Wilson Cove North Road and Wilson Cove South Road. Another  
37 124 individuals were observed on the hillside north of the Salty Crab, Infirmary, and Fire Station.  
38 Several other populations or occurrences of this species are known from elsewhere on NALF  
39 SCI; however, none are close to the Proposed Action Area.

40 **San Clemente Island Woodland Star.** San Clemente Island woodland star (*Lithophragma*  
41 *maximum*) is a March to May blooming herbaceous perennial that occurs on steep, moist north  
42 facing slopes (Baldwin et al. 2012). Howe and Zink (2012) report that this species has  
43 historically only been found in the bottom of eight canyons along a 3.1-mile (5-km) stretch of the

1 eastern escarpment. This species is a SCI endemic (Baldwin et al. 2012, Howe and Zink 2012)  
 2 and is federally listed as endangered. No populations of San Clemente Island woodland star  
 3 were observed within the Proposed Action Area in 2014. There are no known historical  
 4 populations in close proximity to the Proposed Action Area. The closest known occurrence is  
 5 from the eastern escarpment over 1,600 feet (487.7 meters) from the facilities at the terminus of  
 6 Vista Road. This species is not expected to occur within the Proposed Action Area.

7 **Santa Cruz Island Winged-Rockcress.** Santa Cruz Island winged-rockcress (*Sibara filifolia*) is  
 8 an April blooming annual species that occurs on dry ridges (Baldwin et al. 2012). This species is  
 9 a southern Channel Island endemic (Baldwin et al. 2012, Howe and Zink 2012) and is federally  
 10 listed as endangered. Santa Cruz Island winged-rockcress occurs at the southeastern tip of  
 11 NALF SCI on volcanic scree covered slopes of Pyramid Point (Navy 2013b; Howe and Zink  
 12 2012). In 2011–2012, SERG mapped 6 occurrences totaling 31 individuals (Howe and Zink  
 13 2012).

14 Only one individual of Santa Cruz Island winged-rockcress was observed during 2014 surveys  
 15 of the Proposed Action Area, at the southern terminus of SCI Ridge Road. This individual was  
 16 part of a larger previously recorded population (Howe and Zink 2012; Emily Howe pers comm  
 17 2014); however, the size of the population in 2014 appears to have been adversely affected by  
 18 drought conditions. As noted by Howe and Zink (2012), abundance varies depending on amount  
 19 and timing of precipitation. It is anticipated that this population/occurrence would cover a slightly  
 20 larger area and contain more individuals within the Proposed Action Area in a wetter year. No  
 21 other historical occurrences of this species have been documented within or adjacent to the  
 22 Proposed Action Area.

23 **3.6.2.3.2 Birds**

24 There are three federally listed avian species known to occur or to have suitable habitat within  
 25 or near the Proposed Action Area (see **Table 3-9**); San Clemente loggerhead shrike, San  
 26 Clemente Bell's sparrow (*Artemisospiza belli clementeae*), and Western snowy plover  
 27 (*Charadrius alexandrinus nivosus*). Historical data for these species are described in detail in  
 28 the INRMP (Navy 2013b). **Table 3-9** lists acreages of vegetation communities utilized by the  
 29 three federally listed bird species on NALF SCI (HDR 2014).

30 **Table 3-9. Acreages of Vegetation Groups Utilized by Federally Listed Avian Species**  
 31

Federally Listed Wildlife Species	Estimated Acres of Nesting Habitat on NALF SCI
San Clemente Loggerhead Shrike ( <i>Lanius ludovicianus mearnsi</i> )	465.81 acres Coastal Baja California norte maritime succulent scrub group 1.46 acres California maritime chaparral group
San Clemente Bell's sparrow ( <i>Artemisospiza belli clementeae</i> )	465.81 acres California maritime succulent scrub group 32.54 acres Coastal sage scrub group
Western Snowy Plover ( <i>Charadrius alexandrinus nivosus</i> )	None

1 **San Clemente Loggerhead Shrike.** The San Clemente loggerhead shrike (*Lanius ludovicianus*  
2 *mearnsi*) is a small, predatory passerine that is a federally endangered subspecies endemic to  
3 SCI. It has a curved beak or maxillary “tooth” at the end of its bill which aids in prey acquisition  
4 and evisceration. It feeds on a variety of prey including insects, lizards, rodents and small birds  
5 (USFWS 2009a). Habitat alteration and invasive species have been the main reasons for the  
6 population decline of the loggerhead shrike. Beginning in 1862, cattle and goat grazing  
7 drastically changed the ecosystem. Grazing animals were extirpated in the early 1990s leaving  
8 predation by feral cats and black rats as the greatest threats to native avian species such as the  
9 loggerhead shrike (USFWS 2009a). Its population fell to a low of 14 individuals in 1998 and has  
10 increased since then due in part to recovery and captive breeding efforts on the island.

11 The captive breeding, release, and recovery program continues to augment the wild population.  
12 The San Clemente loggerhead shrike is listed as endangered by the USFWS.

13 Over the past 20 years the population estimate has ranged from a low of four breeding pairs in  
14 1991 to a high of 82 in 2009 (Navy 2013b). In 2013, the minimum population estimate, including  
15 only adults observed in March, was 133 individuals. The potential breeding population was 147  
16 adults; the effective breeding population was 137; and the maximum population estimate was  
17 279 (NBC 2014). Above average rainfall prior to some breeding seasons, supplemental feeding,  
18 a captive propagation and reintroduction program, and an ongoing predator control program  
19 have contributed to the increase in the breeding population (Navy 2013b).

20 With the exception of a handful of nest locations, a majority of the nests occur in the canyons on  
21 the east and west side of the island, approximately from the southern boundary of the BLU 97  
22 Hazard Area south to China Canyon (Navy 2013b). There were 99 nest sites observed in 2013,  
23 most of which were constructed (in decreasing order of frequency) in Catalina cherry (*Prunus*  
24 *ilicifolia* subsp. *lyonii*), lemonade berry, and sagebrush (Stahl et al. 2013).

25 Nest success of the San Clemente loggerhead shrike appears to be lower than that of mainland  
26 shrikes. San Clemente loggerhead shrikes in 2013 had a nest success rate of 47 percent which  
27 is close to the average for NALF SCI since 1998 at 48 percent. Mainland shrikes have an  
28 average nest success rate of 65 percent. Lower success rates could be due in part to increased  
29 nest predation. Black rats and island foxes are the two most common predators of San  
30 Clemente loggerhead shrike nests (NBC 2014).

31 The Navy maintains and supports multiple cooperative efforts and groups to aid in habitat  
32 restoration, manage human impacts, conduct non-native predator control and support a captive  
33 breeding and release program. These cooperative agreements and programs help to increase  
34 native habitat and native species populations while supporting mission goals such as special  
35 operations training, live bombing and missile testing (USFWS 2009a). These efforts will  
36 continue to improve chances of survival for the shrike and other listed species on the island.

37 San Clemente loggerhead shrikes were observed incidentally during site visits in 2014 but not  
38 during timed surveys. **Table 3-9** lists acreages of suitable forage habitat for all federally-listed  
39 wildlife. Habitat suitable for this species is limited due to the scarcity of shrubs and trees utilized  
40 for nesting. Nesting habitat exists mainly in steep canyons that were not frequented by the  
41 grazing mammals that decimated habitat throughout the rest of the island (Navy 2013b).

1 Although shrikes forage and spend time in multiple habitat types there is little to no nesting  
2 habitat suitable for shrikes within the Proposed Action Area. However, habitat utilized by shrikes  
3 during foraging and other activities does exist within the Proposed Action Area.

4 **San Clemente Bell's Sparrow.** The San Clemente Bell's sparrow (*Amphispiza clementeae*) is  
5 a small, non-migratory passerine endemic to SCI. It prefers the maritime desert scrub  
6 community, where California boxthorn is common. The population dropped to a low of 38  
7 individuals in 1984. During the USFWS's 5-year review conducted in 2008, the population was  
8 estimated at 539 adults. Pairs breed and raise chicks solely in the wild, there is no breeding  
9 program; however, the population is closely monitored by the Institute for Wildlife Studies  
10 (USFWS 2009b).

11 The species is a federally threatened species due to its limited distribution on SCI and habitat  
12 degradation due to overgrazing by pigs and goats. More recent estimates of population size are  
13 from 3,241 to 5,824 individuals (IWS 2013). This species breeds in maritime succulent scrub  
14 and coastal sage scrub habitats. Highest nest densities occur in areas of high boxthorn cover  
15 and low cover of bare ground (Navy 2013b). Much of this habitat is found on the island's north-  
16 west facing marine terraces at low elevations. The highest densities of breeding Bell's sparrows  
17 are found at lower elevations along the west shore between the sand dunes and Eel Point  
18 (Sullivan and Kershner 2005). In recent years, reproductive success has increased primarily  
19 due to longer breeding seasons in years following winters of high rainfall (Navy 2013b).

20 San Clemente Bell's sparrows appear to have a relatively high juvenile mortality rate. The cause  
21 of this rate is currently being studied, but no definitive causes have been determined. The  
22 fluctuation in the population of the Bell's sparrow could be related to fluctuations in annual  
23 rainfall. Military activities on the island could impact Bell's sparrow habitat; however, pairs  
24 continue to successfully inhabit and reproduce in habitat adjacent to military activities (USFWS  
25 2009b).

26 This species was observed during point count surveys in 2014. It breeds in maritime succulent  
27 scrub and maritime sage scrub habitats (**Table 3-9**). Highest nest densities occur in areas of  
28 high boxthorn cover and low cover of bare ground (Navy 2013b). Much of this habitat is found  
29 on the island's northwest facing marine terraces at low elevations. The highest densities of  
30 breeding Bell's sparrows are found at lower elevations along the western shore between the  
31 sand dunes and Eel Point (Sullivan and Kershner 2005). According to vegetation surveys (HDR  
32 2014), there are approximately 498.35 acres (201.68 hectares) of usable habitat within the  
33 Proposed Action Area.

34 **Western Snowy Plover.** The western snowy plover (*Charadrius alexandrinus nivosus*) is a  
35 small shorebird that breeds along the western coast of North America as well as the interior  
36 parts of many western states including: Oregon, California, Washington and Nevada. The  
37 Pacific population breeds and winters along the Pacific coast, and while it may interbreed on  
38 rare occasions, it is genetically isolated from the rest of the western snowy plover populations.  
39 The population of the species within the United States in 2008 was reported as 1,812  
40 individuals. The Pacific population of the western snowy plover was listed as threatened by the  
41 USFWS in 1993 (Navy 2013b).

1 Typical plover nesting habitat on NALF SCI is lacking. Plovers generally prefer to nest on the  
2 ground on sand spits, dune-backed beaches, wide beaches and open areas near river mouths.  
3 These areas are limited or non-existent on NALF SCI. However, there have been several  
4 recorded incidents of breeding plovers on NALF SCI. It is estimated that western snowy plover  
5 breeding on NALF SCI will remain low due to the presence of native and non-native predators  
6 (e.g., kit fox, burrowing owls, feral cats, and rats) as well as temporary human activities near  
7 beaches in training areas (Navy 2013b).

8 Snowy plovers are more common on NALF SCI during winter on beaches. Access to large  
9 portions of potential habitat is restricted because of unexploded ordinance and training  
10 activities, and therefore there is limited information on abundance of plovers in those areas. As  
11 many as 28 plovers were detected in Pyramid Cove during October 2003, which is one of six  
12 beaches that might be visited by plovers. More recently, 24 plovers were detected on West  
13 Cove, BUD/S Beach, and Graduation Beach during winter months in 2010 (Navy 2013b).

14 The Navy currently supports western snowy plover management activities on NALF SCI. An  
15 annual report is submitted listing any incidental take and habitat usage. Potential habitat near  
16 West Cove is enhanced through native vegetation improvement as well as keeping the area  
17 generally free of man-made materials. In addition, the continued management of non-native  
18 predators, mainly feral cats, improves the probability of plover nesting activity on the island  
19 (Navy 2013b).

20 The western snowy plover has rarely been observed nesting on NALF SCI. Much more common  
21 is overwintering on the dunes and beach areas of NALF SCI. Plovers have been noted in  
22 several areas of the island, all on either the extreme north or extreme south ends of the island.  
23 These areas constitute the only suitable habitat for plovers on NALF SCI.

#### 24 **3.6.2.3.3 Non-Federally Listed Special Status Plant Species**

25 Sensitive plants are those that are listed as endangered, threatened or rare under the state of  
26 California's ESA, are listed on the California Native Plant Society's (CNPS) Rare Plant  
27 Program's *Inventory of Rare and Endangered Plants* and/or are considered sensitive by the  
28 Navy.

29 There are 53 non-federally listed sensitive plant species on NALF SCI that were observed within  
30 or could potentially occur within the Proposed Action Area, 38 of which were observed within the  
31 Proposed Action Area during recent rare plant surveys (Appendix A HDR 2014). Of these 38  
32 species observed only 23 species were target species (requiring mapping). Incidental  
33 observations were made for the other 15 species. Appendix E of the BTR (included as  
34 **Appendix A** of this EA) lists these species, their presence/absence in the Proposed Action  
35 Area, and their potential for occurrence in the Proposed Action Area (if not observed during the  
36 surveys).

#### 37 **3.6.2.3.4 Non-Federally Listed Special Status Wildlife Species**

38 Sensitive wildlife species include those that are listed as endangered, threatened or rare under  
39 the state of California's ESA, California Species of Special Concern, and California Fully  
40 Protected Species. There are four species of wildlife that have been observed on NALF SCI that  
41 are protected by the State of California including: the Island night lizard (*Xantusia riversiana*),

1 Scripps's murrelet (*Synthliboramphus scrippsi*), willow flycatcher (*Empidonax traillii*), bank  
2 swallow (*Riparia riparia*), and San Clemente Island fox (*Urocyon littoralis clementeae*).  
3 Additionally, there are many special status species that could be affected by the Proposed  
4 Action, including California Species of Special Concern and birds listed on USFWS birds of  
5 conservation concern. For a full list of protected or sensitive wildlife, see Appendix E of the BTR,  
6 which is provided in **Appendix A** of this EA (HDR 2014).

7 State-threatened Island night lizards were observed during surveys. On March 31, 2014, the  
8 USFWS announced the removal of the island night lizard from the protection of the ESA. On  
9 April 1, 2014, the announcement was posted to the Federal registry and became effective May  
10 1, 2014 (79 Federal Register 18190). State-threatened San Clemente Island foxes were also  
11 observed in the Proposed Action Area. The San Clemente Island fox has been proposed for  
12 Federal listing in the past.

13 There are 35 non-federally listed special status wildlife species (1 lizard, 32 birds and 2  
14 mammals) that are known from or could potentially occur within the Proposed Action Area.  
15 Appendix E of the BTR (included as **Appendix A** of this EA) lists these species, their potential  
16 for occurrence in the Proposed Action Area (if not observed during the surveys).

17 Many Federal and state species of concern are not included in the analysis of this EA because  
18 their habitat is not anticipated to be disturbed by the proposed project. These species include  
19 marine mammals, marine invertebrates, and sea birds.

### 20 **3.6.3 Environmental Consequences**

21 Under the ESA Section 7(a)(2), each Federal agency is required to ensure that any action  
22 authorized, funded, or carried out by such agency is not likely to jeopardize the continued  
23 existence of any endangered or threatened species, or adversely modify or destroy designated  
24 Critical Habitat. Under the ESA, "jeopardy" occurs when an action is reasonably expected,  
25 directly or indirectly, to diminish a species' numbers, reproduction, or distribution so that the  
26 likelihood of survival and recovery in the wild is appreciably reduced. Federal agency action  
27 proponents are responsible for making one of the following effects determinations (16 U.S.C.  
28 § 1531–1543):

- 29 • "No Effect" is the appropriate determination when a proposed action would have no  
30 effect on listed species or designated Critical Habitat. For this determination, the effects  
31 of a proposed action should be temporally or spatially separated from the listed species.  
32 This determination is made by the action agency and does not require further  
33 consultation.
- 34 • "May Affect, but Not Likely to Adversely Affect" is the appropriate determination when  
35 the effects of the action on listed species or designated Critical Habitat would be  
36 discountable, insignificant, or wholly beneficial. In order to receive concurrence with this  
37 determination, the action agency must initiate informal Section 7 consultation.
- 38 • "Likely to Adversely Affect" is the appropriate determination if any adverse effects on  
39 listed species or designated Critical Habitat could occur as a direct or indirect result of a  
40 proposed action or its interrelated or interdependent actions, and the effect is not

1 discountable, insignificant, or beneficial. Initiation of formal Section 7 consultation would  
2 be required and the USFWS or National Marine Fisheries Service would be responsible  
3 for completing a biological opinion on the action and could issue an incidental take  
4 statement.

### 5 3.6.3.1 PROPOSED ACTION

6 In 2013, the Navy completed an INRMP for NALF SCI (Navy 2013b). The INRMP provides  
7 NALF SCI with an implementable framework for managing natural resources on the land and  
8 water it owns or controls. Required by the Sikes Act (as amended), an INRMP is the primary  
9 means by which natural resources compliance and stewardship priorities are set and funding  
10 requirements are determined for Department of Defense installations. The INRMP provides  
11 goals and objectives for the use and conservation of natural resources on NALF SCI that  
12 integrate regional ecosystem, military, social (i.e., community), and economic concerns. It  
13 establishes planning and management strategies; identifies natural resources constraints and  
14 opportunities; supports the resolution of land use conflicts; provides baseline descriptions of  
15 natural resources necessary for the development of conservation strategies and environmental  
16 assessment; serves as the principal information source for the preparation of future  
17 environmental documents for proposed NALF SCI actions; and provides guidance for annual  
18 natural resources management reviews, internal compliance audits, and annual budget  
19 submittals (Navy 2013b).

20 The Navy is committed to avoiding or minimizing project-related environmental effects to the  
21 greatest extent possible. As part of this commitment, conservation measures have been  
22 developed in the INRMP to ensure that potential adverse impacts are avoided (if possible) or  
23 minimized to acceptable levels. Conservation measures applicable to the Proposed Action are  
24 described in the following paragraphs.

25 General Conservation Measures (GCM-M) are as follows:

- 26 • **GCM-M-1.** Before project initiation, the project footprint, including temporary features  
27 such as staging areas and lay-down areas, will be clearly marked with flagging, fencing,  
28 or signposts. Federally listed plant species known occurrences and listed bird species  
29 breeding habitat within the project footprint will also be marked and avoided when  
30 practicable.
- 31 • **GCM-M-2.** All project-related activities will occur within the marked project footprint. All  
32 construction equipment will remain on existing roads within the project footprint. Project  
33 staging and lay-down areas will be designated within the project footprint, or on existing  
34 roads and parking lots.
- 35 • **GCM-M-3.** The Navy will develop and implement an employee environmental awareness  
36 program to ensure that the contractor(s) and all maintenance personnel are fully  
37 informed of the biological resources associated with the project. The program will be  
38 approved by the NBC NRO and will be a requirement for all maintenance personnel. The  
39 program will focus on: (a) the purpose for resource protection and a description of the  
40 federally listed species, and their habitats; (b) contractor identification of sensitive  
41 resource areas in the field (i.e., federally listed species areas delineated on maps and by

1 flags or fencing); (c) project conservation measures, including speed limits, measures to  
2 prevent the introduction and spread of invasive weeds, erosion control measures, and  
3 trash control measures; (d) protocol to resolve issues that may arise at any time during  
4 the construction process; and (e) ramifications of noncompliance.

- 5 • **GCM-M-4.** An erosion control plan will be prepared and implemented prior to project  
6 initiation to minimize potential effects of project-related pollution and  
7 erosion/sedimentation. The plan will include BMPs such as silt fences, silt basins, gravel  
8 bags, restrictions on grading during the rainy season, and other measures to control  
9 erosion and prevent the release of contaminants into the soil that could be harmful to  
10 federally listed species.
- 11 • **GCM-M-5.** Impacts from fugitive dust will be avoided and minimized through watering  
12 and other appropriate measures.
- 13 • **GCM-M-6.** Vegetation clearing, grading, and blasting activities in or adjacent to federally  
14 listed avian species breeding habitat will occur between August 1 to December 1 to  
15 avoid the nesting season.
- 16 • **GCM-M-7.** Maintenance vehicles will not exceed 15 miles per hour on the construction  
17 site.
- 18 • **GCM-M-8.** To control the spread of non-native plants, all equipment and/or vehicles will  
19 be cleaned and power-washed before entering SCI, and the project area and will be  
20 cleaned at a vehicle and boot washing station in the staging area. All project personnel  
21 will dry or pressure wash their boots before leaving the project area. Vehicle cabs will  
22 also be swept out during the cleaning process to remove plants or seeds. Any vehicle or  
23 construction equipment that has come into contact with vegetation or disturbed soil will  
24 be pressure washed before leaving the project area at any time. Pressure washing will  
25 focus on removal of plant materials and seeds, or mud containing seeds from the  
26 undercarriage of the vehicle or construction equipment. Best management practices will  
27 be established to capture wash runoff.
- 28 • **GCM-M-9.** All food-related trash will be placed in sealed bins or removed from the site  
29 daily.
- 30 • **GCM-M-10.** All equipment fueling will occur in designated areas with appropriate  
31 containment/BMPs.
- 32 • **GCM-M-11.** Maintenance and demolition debris will be properly disposed of and will not  
33 be discarded on site.
- 34 • **GCM-M-12.** Holes or trenches created during maintenance will be backfilled or covered  
35 at the end of each workday when practicable.

36 San Clemente Loggerhead Shrike conservation measures are as follows:

- 37 • Maintenance and repair will occur between August 1 and December 1, if practicable. If  
38 activities need to occur during the shrike breeding season (January 1 through July 31)

1 the NALF SCI Wildlife Biologist will be contacted prior to initiation of any activities. These  
2 activities will not occur within 300 feet (91.4 meters) of an active shrike nest site.

- 3 • Vegetation control in suitable habitat of San Clemente loggerhead shrike will be limited  
4 to the minimum necessary to maintain drivable access roads and to maintain the  
5 functionality of other infrastructure. This limited vegetation control will be conducted  
6 outside of the nesting season (August 1 through January 1).
- 7 • The Navy will continue the currently successful program of habitat restoration, predator  
8 management, monitoring, captive breeding, and re-introduction to benefit the San  
9 Clemente loggerhead shrike until such time that recovery objectives are identified and  
10 achieved.

11 San Clemente Bell's Sparrow conservation measures are as follows:

- 12 • Maintenance and repair within occupied Bell's sparrow habitat will occur after July 15  
13 and before December 15.
- 14 • Vegetation control in suitable habitat of Bell's sparrow will be limited to the minimum  
15 necessary to maintain drivable access roads and to maintain the functionality of other  
16 infrastructure. This limited vegetation control will be conducted after July 15 and before  
17 December 15.
- 18 • The Navy will continue surveys and population analysis for the Bell's sparrow and  
19 develop additional surveys to assess Bell's sparrow juvenile survivorship and habitat  
20 use. Surveys will be developed and scheduled such that access to training areas is not  
21 restricted during training.
- 22 • The Navy will manage the Bell's sparrow population for long-term persistence in  
23 accordance with recommendations in the Bell's sparrow management plan to the extent  
24 feasible and in a manner that is compatible with military training requirements.

25 Western Snowy Plover conservation measures are as follows:

- 26 • All maintenance and repair within suitable plover nesting habitat (i.e., beach habitat)  
27 would be avoided during nesting season (March 1 through September 30). If these  
28 activities cannot be avoided during the nesting season, the NALF SCI Wildlife Biologist  
29 will be contacted prior to initiation of any activities.
- 30 • The Navy will continue annual breeding and non-breeding season surveys for the plover  
31 at West Cove and Northwest Harbor.
- 32 • The Navy will explore the feasibility of using remote sensing technology to monitor  
33 western snowy plover use of Pyramid Beach and China Beach.

34 Federally Listed Plant Avoidance and Minimization Measures (FLP-M)

- 35 • **FLP-M-1.** Continue to protect the SCI Indian paintbrush through fire management  
36 planning, non-native plant management/control, restoration activities, and erosion  
37 control.

- 1 • **FLP-M-2.** Foster robust, geographically diverse, and redundant populations to maintain  
2 and increase the population and protect genetic diversity.
- 3 • **FLP-M-5.** Monitor known populations of the Santa Cruz Island rockcress.

#### 4 All Maintenance and Repair

5 Impacts under the Proposed Action on biological resources would result from the combined  
6 effect of ground and habitat disturbance due to vehicle and construction equipment noise and  
7 physical habitat removal or alteration. For this reason, the analysis of impacts in the following  
8 sections are not subdivided by elements of the Proposed Action, but rather are summarized by  
9 biological resource category. Analysis of impacts by each particular element under the  
10 Proposed Action would not allow for a collective analysis of impacts on biological resources  
11 across NALF SCI.

#### 12 3.6.3.1.1 Vegetation

13 Based on recent mapping of vegetation communities within the Proposed Action Area (HDR  
14 2014), and the extent of these communities on NALF SCI (Navy 2014), most communities that  
15 would be cleared for the Proposed Action are relatively common (see **Table 3-10**). More than 25  
16 percent of the Proposed Action Area consists of ruderal and developed (e.g. roads) areas.  
17 Vegetation within these communities is highly disturbed, modified, landscaped or mowed  
18 regularly.

19 The establishment of corridors and vegetation control activities would be expected to result in  
20 short- and long-term impacts on vegetation on NALF SCI. Long-term impacts on vegetation  
21 would be expected from the permanent removal of vegetation. Vegetation clearing would result  
22 in conversion or degradation of habitat. In addition to the direct disturbance of vegetation  
23 associated with the vegetation clearing, the Proposed Action could result in habitat disturbance  
24 resulting in the establishment of different plant communities (including invasive species) in the  
25 cleared area.

26 Additional impacts on vegetation, such as crushing, might occur when vehicles and equipment  
27 access, park within, and maneuver around areas requiring maintenance or repair. All  
28 maintenance is expected to occur within the existing footprint; however, equipment would  
29 occasionally need to be driven outside of the existing footprint. These disturbances would be  
30 infrequent and would not occur outside of the Proposed Action Area.

31 Short-term impacts on vegetation would be expected from temporary disturbances during  
32 construction and demolition activities (e.g., trampling and removal). This vegetation would be  
33 expected to regenerate after demolition activities have ceased if no new development occurs at  
34 the demolition sites. The majority of demolition, including removal of existing facilities,  
35 associated equipment, parking lots, and fencing, and relocation would occur in developed  
36 areas, although some work could occur in remote areas. Activities could require use of heavy  
37 equipment including excavators, bulldozers, and dump trucks and might involve ground  
38 disturbance. During and immediately following construction and demolition activities that result  
39 in ground disturbance, soils would be exposed and vegetation would be sparse in some areas,  
40 thus allowing opportunities for noxious weeds to become established.

- 1 Degradation of plant communities would also occur if petroleum products or other hazardous  
 2 materials are accidently released during operation or storage of maintenance vehicles and other  
 3 equipment. All regulatory requirements for handling and storage of fuels, oils, and other  
 4 hazardous materials (such as the development of spill prevention plans) would be implemented.
- 5 Near- and in-water maintenance, such as bridge and road maintenance, and repair of damaged  
 6 rip-rap, culverts, and other drainage structures and crossings, could result in direct and indirect  
 7 impacts on aquatic plants and their habitat from increases in erosion, sedimentation, and  
 8 turbidity. Impacts would include direct smothering of aquatic plants, degradation of habitat, and  
 9 a decrease in sunlight. In addition, hazardous materials could be inadvertently released into

10 **Table 3-10. Vegetation Associations and Acreages within the Proposed Action Area and on SCI**

Vegetation Type	Proposed Action Area (acres)*	NALF SCI (acres)**
<b>Group: California Maritime Chaparral</b>		1,232.4
<i>Lemonade berry alliance</i>		1,232.4
Lemonade berry-California sagebrush association	0.49	912.7
Lemonade berry-Island morning glory/Wild oat association	0.97	5.8
<b>Alliance Total</b>	<b>1.46</b>	
<b>Group: Central and South Coastal California Coastal Sage Scrub</b>		4,123.0
<i>California Sagebrush Alliance</i>		3,920.7
California sagebrush-Island morning glory association	0.26	2,933.1
California sagebrush-Coast cholla association	6.11	654.0
California sagebrush-Coast prickly pear association	1.35	108.4
California sagebrush-Coast cholla-Silver bird's foot trefoil-association	0.93	54.2
<b>Alliance Total</b>	<b>8.65</b>	
<i>Island Morning Glory Alliance</i>		189.9
Island morning glory association	11.30	88.0
Island morning glory/Needlegrass association	9.06	102.9
<b>Alliance Total</b>	<b>20.36</b>	
<i>San Clemente Island Tarplant Alliance</i>		12.4
San Clemente Island tarplant/Silver bird's foot trefoil association	3.53	12.4
<b>Group: California Perennial Grassland</b>		2,213.5
<i>Needlegrass Alliance</i>		2,213.5
Needlegrass-Wild oat association	109.33	2,011.7
Needlegrass association	15.85	201.8
<b>Alliance Total</b>	<b>125.18</b>	
<b>Group: Mediterranean California Naturalized Annual and Perennial Grassland</b>		3,849.6
<i>Wild oat Alliance</i>		2,533.7
Wild oat association	98.69	2,110.6
Wild oat-Brome grass association	313.96	423.1
<b>Alliance Total</b>	<b>412.65</b>	
<i>Ripgut brome Alliance</i>		1,023.7
Ripgut brome-Wild oat association	120.05	963.1
Ripgut brome-Red brome association	42.67	44.0
Ripgut brome-Soft chess association	8.54	16.7
<b>Alliance Total</b>	<b>171.26</b>	
<i>Bromus madritensis Alliance</i>		292.3
Red brome-Wild oat association	16.50	292.3
<b>Group: Pacific Dune Mat</b>		389.7

<b>Vegetation Type</b>	<b>Proposed Action Area (acres)*</b>	<b>NALF SCI (acres)**</b>
<i>Silver Burr ragweed Alliance</i>		339.3
Silver burr ragweed-San Miguel Island milkvetch association	0.56	259.3
<i>Red Sand Verbena Alliance</i>		33.1
Red sand verbena-Milkvetch association	4.67	33.1
<i>Saltgrass Alliance (not mapped to association)</i>	0.27	
<b>Group: California Coastal Evergreen Bluff &amp; Dune Scrub</b>		<b>1,134.8</b>
<i>Coyote Brush Alliance</i>		1,134.8
Coyote brush/Needlegrass association	25.16	1,066.1
Coyote brush-Island morning glory/Brome grass association	11.92	62.8
<b>Alliance Total</b>	<b>37.08</b>	
<b>Group: Coastal Baja California Norte Maritime Succulent Scrub</b>		<b>21,441.4</b>
<i>California Boxthorn Alliance</i>		6,458.8
California boxthorn-Coast prickly pear-Golden spined cereus association	153.83	5,324.4
California boxthorn-Wild oat association	25.57	986.6
California boxthorn-Coast prickly pear association	58.46	135.5
California boxthorn-Coast cholla-Coast prickly pear association	13.18	22.8
California boxthorn-Golden spined cereus/Green dudleya association	1.01	8.4
<b>Alliance Total</b>	<b>252.05</b>	
<i>Coast Prickly Pear Alliance</i>		9,441.8
Coast prickly pear-Island morning glory association	56.30	4,952.5
Coast prickly pear/Wild oat association	42.27	1,994.0
Coast prickly pear/Needlegrass association	18.90	519.5
Coast prickly pear-California sagebrush association	1.98	332.1
Coast prickly pear association	10.38	72.5
Coast prickly pear-Island morning glory-Silver bird's foot trefoil association	0.89	31.4
Coast prickly pear-Golden spined cereus association	1.14	30.3
<b>Alliance Total</b>	<b>131.86</b>	
<i>Coast Cholla Alliance</i>		5,340.9
Coast cholla/Wild oat association	17.33	2,565.4
Coast cholla-Coast prickly pear association	53.58	2,036.7
Coast cholla-Island morning glory association	10.99	707.5
<b>Alliance Total</b>	<b>81.9</b>	
<b>Other Cover Types</b>		
<i>Coastal marshes</i>	0.51	
<i>Coastal strands and bluffs (sparsely vegetated)</i>	2.44	
<i>Ruderal</i>	271.00	
<i>Roads and developed areas</i>	379.19	
<i>SERG Revegetation Sites</i>	3.26	
<i>RAAs (not surveyed)</i>	112.45	
<i>No Access (SPAWAR NOTS Pier)</i>	13.82	
<b>Total Proposed Action Area Acreage</b>	<b>2050.66</b>	

\*Totals from HDR (2014)

\*\*Totals from Navy (2013b)

- 1 aquatic habitat during maintenance and repair. These actions would temporarily degrade
- 2 aquatic habitat and directly and indirectly affect aquatic plant species. However, maintenance
- 3 and repair of roads and of damaged rip-rap, culverts, and other drainage structures and
- 4 crossings would reduce erosion, improve stream flow, and result in beneficial impacts on
- 5 aquatic habitat and species. Road and trail maintenance would also allow for the natural flow of

1 surface water during precipitation events, which would help to restore the natural character of  
2 the wilderness in these areas. A long-term, beneficial impact would occur from the periodic,  
3 scheduled inspections and maintenance of crossings and structures.

4 Adverse impacts on vegetation would be minimized through the use of the following  
5 conservation measures GCM-M-1, GCM-M-5, GCM-M-6, GCM-M-8, FMP-M-1, FMP-M-2, and  
6 FMP-M-5, which are described in detail in **Section 3.6.3.1**. Therefore, impacts on vegetation  
7 would be less than significant.

#### 8 **3.6.3.1.2 Wildlife and Habitat**

9 Short- and long-term impacts on wildlife would occur from the Proposed Action. All maintenance  
10 and repair would occur within or adjacent to the existing footprints of tactical infrastructure. As  
11 such, maintenance and repair would result in temporary, minor degradation of wildlife habitat  
12 and a small amount of permanent habitat loss.

13 Construction would require clearing of vegetation from existing utilities, roads, and assets,  
14 thereby permanently reducing the amount of wildlife habitat in the Proposed Action Area.  
15 Vegetation removal for corridor establishment would likely cause larger mammals, reptiles, and  
16 birds, including breeding migratory birds, to relocate temporarily. Individuals of smaller, less-  
17 mobile species could inadvertently be directly impacted by maintenance and repair.

18 Vegetation control would occur within existing footprints where vegetation is currently being  
19 maintained. As such, impacts from vegetation control would be temporary. Vegetation control  
20 could result in conversion or degradation of habitat. In addition to the direct disturbance of  
21 habitat, vegetation removal could result in the establishment of invasive species.

22 Some wildlife might be killed or injured during ground-disturbing activities or during  
23 transportation of equipment and personnel. Most ground-disturbing activities would occur within  
24 and adjacent to previously disturbed sites; therefore, the number of animals killed or injured  
25 during the Proposed Action would be less than what would occur when areas are disturbed.  
26 However, burrowing animals, such as rodents and reptiles, could be impacted.

27 Localized degradation of habitat would occur if petroleum products or other hazardous materials  
28 are accidentally released during operation or storage of maintenance vehicles and other  
29 equipment. All regulatory requirements for handling and storage of fuels, oils, and other  
30 hazardous materials (such as the development of spill prevention plans) would be implemented.  
31 Thus, habitat degradation resulting from accidental releases of hazardous materials would be  
32 negligible.

33 Short-term impacts on wildlife are expected due to temporary disturbances due to noise  
34 generated from use of heavy equipment associated with the Proposed Action. Loud noise  
35 events could cause wildlife to engage in escape or avoidance behaviors. The area of  
36 disturbance would be relatively small and most wildlife species in the vicinity would be expected  
37 to quickly recover after the noise and disturbances have ceased.

38 Long-term impacts on wildlife would be expected from the permanent loss of wildlife habitat  
39 from proposed construction projects. The anticipated footprint of lost habitat is approximately 44  
40 acres (17.8 hectares); however, the vast majority of this habitat is either landscaped or in mixed

1 grasses that are mowed regularly to maintain a height of 7 to 14 inches (17.8 to 35.6  
2 centimeters). In addition, most of the maintenance and repair would be within the Wilson Cove  
3 area or within close proximity to the runway and as such would not be expected to be high-value  
4 habitat; therefore, the loss of habitat from the Proposed Action would be expected to be minor.

5 The potential impacts of the Proposed Action on migratory birds would include temporary and  
6 permanent loss of habitat associated with the removal of existing vegetation. These birds would  
7 be protected under the MBTA (16 U.S.C. 703–712) as amended, and EO 13186,  
8 Responsibilities of Federal Agencies to Protect Migratory Birds. The MBTA and EO 13186  
9 require Federal agencies to minimize or avoid impacts on migratory birds listed in 50 CFR  
10 10.13. Conservation measures, which are discussed in the Biological Assessment, are  
11 recommended for reduction or avoidance of impacts on potential cavity nesters or other nesting  
12 species within the shelterbelts if these trees are removed under the Proposed Action.

### 13 **3.6.3.1.3 Protected Species**

#### 14 *3.6.3.1.3.1 Federally-Listed Plants*

15 **San Clemente Island Bush-Mallow.** Only one individual of this species was observed within  
16 the Proposed Action Area (see **Table 3-11**). This individual was planted at one of the fire  
17 fighters' facilities (adjacent to and south of the Fire Station) at Wilson Cove and does not  
18 represent a natural occurrence. This individual occurs in a small front yard of the facility so it  
19 could potentially be affected by multiple activities of the Proposed Action (e.g., facility repair,  
20 maintenance or demolition; water line repair; and road repair or maintenance) because roads,  
21 buildings, and water lines are within a few feet. To ensure that this individual would not be  
22 damaged by workers or equipment, the location of the plant would be clearly marked prior to  
23 maintenance and repair (GCM-M-1); all project-related activities would be limited to the project  
24 footprint (GCM-M-2); and an employee environmental awareness program would be developed  
25 and implemented (GCM-M-3). To minimize indirect impacts from construction-generated fugitive  
26 dust, watering and other appropriate measures would be implemented (GCM-M-5) and  
27 maintenance vehicles would not exceed 15 miles (24.1 km) per hour on the construction site  
28 (GCM-M-7).

29 The historical population of this species in China Point Canyon is located approximately 200  
30 feet (61.0 meters) from China Point Road at the base of a steep hill. Erosion control measures  
31 (GCM-M-4) would be implemented to avoid deposition of soil, rock, and road base material from  
32 inadvertently sliding from the road onto that population, and to ensure there would be no  
33 increase in storm water runoff into the canyon. In addition, conservation measures GCM-M-5  
34 and GCM-M-7 would be implemented to avoid or reduce temporary emissions of fugitive dust  
35 during maintenance and repair. By implementing these measures, the population near China  
36 Point Road would not be affected by road maintenance and repair.

37 **San Clemente Island Indian Paintbrush.** Several populations of this species were observed in  
38 the Proposed Action Area (see **Table 3-11**). A known historical occurrence of 102 individuals  
39 was observed on either side of the AVMR approximately 1,000 feet (304.8 meters) north of the  
40 intersection of AVMR and Horton Road. Direct, permanent impacts on this species could result  
41 from loss of individuals due to the maintenance of the AMVR and SCI Ridge Road and the  
42 drainage structures along these roads, as approximately 10 of the 102 individuals are within 2 to

1 5 feet (0.6 to 1.5 meters) of the edge of these roads. Direct, temporary impacts could occur if  
 2 individuals are damaged during maintenance from trampling by workers or equipment. To  
 3 ensure that individuals would not be damaged by workers or equipment, conservation measures  
 4 GCM-M-1, GCM-M-2, and GCM-M-3 would be implemented. Indirect impacts could arise from  
 5 construction equipment-generated fugitive dust, though the close proximity of this population to  
 6 AMVR probably means that these individuals are probably already periodically exposed to  
 7 fugitive dust from vehicular traffic on the AVMR. To minimize indirect impacts from construction-  
 8 generated fugitive dust, conservation measures GCM-M-5 and GCM-M-7 would be

9 **Table 3-11. Number of Federally Listed Plants Known to Occur and Amount of Habitat (acres) for**  
 10 **Federally Listed Birds within the Proposed Action Area**

Federally Listed Species Habitat/Plant Species	Impacts				
	Vegetation Control and Repair along Roads (2 to 5 feet on either side of the road)	25 feet around each electrical pole	50 feet adjacent to all buildings	Electrical System Impacts (50 feet on either side of Transmission Line)	Water System Impacts (50 feet on either side of water line)
San Clemente Island bush-mallow ( <i>Malacothamnus clementinus</i> ) <sup>2</sup>	0	0	1	0	1
San Clemente Island Indian paintbrush ( <i>Castilleja grisea</i> ) <sup>1,3</sup>	13	2	0	3	0
San Clemente Island larkspur ( <i>Delphinium variegatum</i> subsp. <i>kinkiense</i> )	0	0	0	0	0
San Clemente Island lotus ( <i>Acmispon dendroideus</i> var. <i>traskiae</i> ) <sup>1</sup>	12	38	0	101	218
San Clemente Island woodland star ( <i>Lithophragma maximum</i> )	0	0	0	0	0
Santa Cruz Island rockcress ( <i>Sibara filifolia</i> )	0	0	0	0	0
San Clemente Loggerhead Shrike ( <i>Lanius ludovicianus mearnsi</i> )	465.81 acres Maritime succulent scrub 1.46 acres Maritime chaparral				
San Clemente Bell's sparrow ( <i>Artemisiospiza belli clementeae</i> )	465.81 acres Maritime succulent scrub 32.54 acres Coastal sage scrub				
Western Snowy Plover ( <i>Charadrius alexandrinus nivosus</i> )	None				

<sup>1</sup>The locations of individual plants and groups of plants were recorded as single points. Because the location of each individual was not always mapped, an exact estimate of individuals within the above stated distances from specific facilities cannot be provided. As such, a conservative approach has been taken and assumes that the number of the individuals impacted at a location is proportional to the amount of the corridor impacted (e.g., if only 5 feet of a 50-foot corridor is impacted, i.e., 10 percent of the area impacted, then only 10 percent of the individuals at that point will be impacted).

<sup>2</sup> A single San Clemente Island bush-mallow was located in a corridor of a water line that is within 50 feet of a building.

<sup>3</sup> Indian paintbrush were found in a shared road/transmission line corridor; thus, a total of 16 individuals of this species were found.

1 implemented. Maintenance of drainage structures could also adversely affect this population if  
2 increased surface storm runoff affects downstream individuals, as this population is in a swale  
3 feature. To minimize impacts from project-related pollution and erosion/sedimentation, an  
4 erosion control plan would be prepared and implemented (GCM-M-4).

5 A second occurrence of approximately 13 individuals was observed in SHOBA along the  
6 periphery of the Proposed Action Area (with one of these individuals within the Proposed Action  
7 Area) of the transmission line that parallels SCI Ridge Road. Direct permanent impacts to this  
8 population could occur from the maintenance and repair of the transmission line if individuals  
9 are lost. To ensure that individuals would not be damaged by workers or equipment, the  
10 conservation measures GCM-M-1, GCM-M-2, and GCM-M-3 would be implemented. Indirect  
11 impacts could arise from construction equipment-generated fugitive dust. To minimize indirect  
12 impacts from construction-generated fugitive dust, conservation measures GCM-M-5 and GCM-  
13 M-7 would be implemented.

14 A third occurrence of five individuals was observed at the eastern terminus of Pacific View  
15 South Road and the transmission line north of and parallel to this road. Two individuals are  
16 along the transmission line within 25 feet (7.6 meters) of a pole, so these individuals could be  
17 impacted by vegetation clearing around that pole and maintenance and repair along this line.  
18 Two individuals are along the "alignment" of Pacific View Road but are well beyond the limits of  
19 this road, and thus would not be affected. Direct permanent impacts to the individuals along the  
20 transmission line could occur from the maintenance and repair of the transmission line if  
21 individuals are lost. Direct temporary impacts could occur if individuals are damaged during  
22 these activities from trampling by workers or equipment. To ensure that individuals would not be  
23 damaged by workers or equipment, conservation measures (GCM-M-1, GCM-M-2, and GCM-  
24 M-3 would be implemented. Indirect impacts could arise from construction equipment-generated  
25 fugitive dust. To minimize indirect impacts from construction-generated fugitive dust,  
26 conservation measures GCM-M-5 and GCM-M-7 would be implemented.

27 Several other populations of this species are known to occur adjacent to the Proposed Action  
28 Area. Only one of these occurrences (alongside Marine Terrace Road) is in close proximity to  
29 the Proposed Action Area. The population at Marine Terrace Road is outside of the Proposed  
30 Action Area so direct impacts are not anticipated. However, indirect impacts from construction  
31 equipment-generated fugitive dust due to road maintenance could occur. To minimize indirect  
32 impacts from construction-generated fugitive dust, conservation measures GCM-M-5 and GCM-  
33 M-7 would be implemented. No other populations of this species are anticipated to be directly or  
34 indirectly impacted by the Proposed Action.

1 All of the aforementioned populations of this species (especially the occurrence in SHOBA) are  
2 in relatively undeveloped areas and are all likely to be in areas that at some time might be  
3 subjected to fire management activities under the Fire Management Plan. Such activities could  
4 cause temporary and direct impacts to this species from creation of firelines, fuel breaks and  
5 application of fire suppression materials (e.g., Phos-Chek). To avoid and minimize the impacts  
6 from the creation of firelines and fuel breaks, and application of fire suppression materials  
7 (e.g., Phos-Chek), the Navy would evaluate firelines and bladed areas disturbed by fire  
8 suppression activity and rehabilitate these areas as practicable and appropriate (FMP-M-1);  
9 determine whether seeding is appropriated for post fire erosion control (FMP-M-2); minimize  
10 impacts to listed species and occupied habitat associated with Phos-Chek by considering  
11 locations of federally listed species in advance of fuel break installation (FMP-M-4); monitor soil  
12 and vegetation responses to retardants and herbicide (FMP-M-5); and consider the locations of  
13 federally listed plants in advance of prescribed fire applications so that impacts can be avoided  
14 by location or timing where possible (FMP-M-7).

15 **San Clemente Island Larkspur.** This species was not observed within the Proposed Action  
16 Area during 2014 surveys. Two historical occurrences are known from close proximity to the  
17 Proposed Action Area: north of the eastern portion of Horton Road and the northern terminus of  
18 Pacific View South Road. As mentioned in **Section 3.6.2.3.1**, this latter occurrence is outside  
19 the Proposed Action Area, and Pacific View South Road does not extend down the east  
20 escarpment near the population. Because there are no roads near the historical population,  
21 road maintenance would not be required at this location, and this species would not be affected  
22 by the Proposed Action.

23 **San Clemente Island lotus.** A large population of approximately 483 individuals of this species  
24 was observed within Wilson Cove, from Wilson Cove North Road near the gas station to south  
25 of the NRO complex (see **Table 3-11**). The high number and density of facilities within Wilson  
26 Cove and the population size, extent, and interspersion of this population between and adjacent  
27 to these facilities makes the San Clemente Island lotus particularly susceptible to impacts from  
28 maintenance and repair. Individuals of this species are within water line corridors (approximately  
29 218 individuals), transmission line corridors (approximately 101 individuals, of which 38 are  
30 within 25 feet [7.6 meters] of pole locations), and adjacent to roads and road ditches  
31 (approximately 12 individuals within 2 to 5 feet [0.6 to 1.5 meters] of roads). No individuals are  
32 known to be within 50 feet (15.2 meters) of buildings and other structures. Direct permanent  
33 impacts could occur from repair or maintenance of these facilities. To ensure that individuals  
34 would not be damaged by workers or equipment, conservation measures GCM-M-1, GCM-M-2,  
35 and GCM-M-3 would be implemented.

36 Direct permanent impacts could result from vegetation clearing around facilities. Direct  
37 temporary impacts could occur if any individuals were damaged during maintenance, primarily  
38 from trampling by either workers or equipment, or from inadvertent damage from vegetation  
39 clearing. Indirect impacts on this species could occur from construction equipment-generated  
40 fugitive dust, hydrologic changes due to road ditch and culvert repair and maintenance, and  
41 damage from herbicide drift. To minimize indirect impacts from construction-generated fugitive  
42 dust conservation measures GCM-M-5 and GCM-M-7 would be implemented. To minimize

1 impacts from project-related pollution and erosion/sedimentation, an erosion control plan would  
2 be prepared and implemented (GCM-M-4).

3 The majority of this species' range within the Proposed Action Area is in Wilson Cove in close  
4 proximity to buildings and structures. As such, most of the individuals are not likely to be  
5 affected by the SCI Wildland Fire Management Plan (Navy 2009). However, some activities  
6 under this plan may be implemented in this area and could adversely affect this species during  
7 creation of firelines, fuel breaks, and application of fire suppression materials (e.g., Phos-Chek).  
8 To avoid and minimize the impacts from the creation of firelines and fuel breaks, and application  
9 of fire suppression materials (e.g., Phos-Chek), the Navy would implement the following  
10 measures: FMP-M-1, FMP-M-2, FMP-M-4, FMP-M-5, and FMP-M-7.

11 **San Clemente Island woodland star.** This species was not observed within the Proposed  
12 Action Area during the 2014 surveys. There are no known populations adjacent to the Proposed  
13 Action Area and, as such, no direct or indirect impacts on this species would occur.

14 **Santa Cruz Island rockcress.** One individual of this species was observed within the Proposed  
15 Action Area during the 2014 plant surveys at the southern terminus of SCI Ridge Road (see  
16 **Table 3-11**). This is a known historical population. Because of the drought only one individual  
17 was observed in 2014, but the population is historically small. The population is at the edge of  
18 the Proposed Action Area where maintenance of SCI Ridge Road is the only action anticipated  
19 to occur. This part of SCI Ridge Road is gravel and at its terminus is a turn-around. The  
20 population occurs at the periphery of the corridor a few feet from the shoulder of the turn-  
21 around. Direct permanent impacts to this individual from road maintenance are not anticipated,  
22 as this individual is beyond the proposed limits of disturbance (i.e., 2 to 5 feet [0.6 to 1.5  
23 meters]). To ensure that individuals would not be damaged by workers or equipment,  
24 conservation measures GCM-M-1, GCM-M-2, and GCM-M-3 would be implemented.

25 Indirect impacts on this individual plant are unlikely to occur from construction-generated fugitive  
26 dust or from changes in hydrology that could occur with increasing surface storm runoff through  
27 further compaction of the road or increasing impervious surfaces through paving. To minimize  
28 indirect impacts from construction-generated fugitive dust, measures GCM-M-5 and GCM-M-7  
29 would be implemented. To minimize impacts from project-related pollution and  
30 erosion/sedimentation, an erosion control plan would be prepared and implemented  
31 (GCM-M-4).

32 Because this species occurs in SHOBA, there is a potential for impacts due to the SCI Wildland  
33 Fire Management Plan (Navy 2009). Implementation of this plan could result in adverse effects  
34 (on the single plant at southern terminus of SCI Ridge Road) during creation of firelines and fuel  
35 breaks, and application of fire suppression materials (e.g., Phos-Chek). To avoid and minimize  
36 the impacts from the creation of firelines and fuel breaks, and application of fire suppression  
37 materials (e.g., Phos-Chek), the Navy would implement the following measures: FMP-M-1,  
38 FMP-M-2, FMP-M-4, FMP-M-5, FMP-M-7.

39 **3.6.3.1.3.2 Non-Federally Listed Special Status Plant Species**

40 Direct and indirect impacts, both permanent and temporary, to the non-federally listed sensitive  
41 plant species would be identical to those described above for the federally listed species.

1 Maintenance and repair under the Proposed Action could have adverse impacts on special  
2 status species due to ground and habitat disturbance, and long-term habitat or vegetation  
3 removal (see Appendix E of the BTR [included as **Appendix A** of this EA]). However, in  
4 accordance with the SCI INRMP and DOD Instruction 47515.03 conservation and management  
5 efforts of state-listed special status species is only required when such action is practicable and  
6 does not conflict with legal authority, military mission, or operational capabilities. Maintenance  
7 and repair under the Proposed Action are essential for achieving the military mission and  
8 operation capabilities of SCI, as described in the **Section 1.3**, Purpose and Need. In addition,  
9 conservation measures for the federally listed species listed in **Section 3.6.3.1** would be  
10 implemented with the Proposed Action, thereby avoiding or minimizing impacts. Therefore,  
11 impacts on special status plant species would not be significant.

12 **3.6.3.1.3.3 Birds**

13 **San Clemente Loggerhead Shrike.** There are approximately 465.81 acres (188.51 hectares)  
14 of Coastal Baja California norte maritime succulent scrubgroup and 1.46 acres (0.59 hectares)  
15 of California maritime chaparral group within the Proposed Action Area. This represents a total  
16 of 467.27 acres (189.10 hectares) of habitat utilized by loggerhead shrikes that could be  
17 affected by the Proposed Action.

18 Direct temporary impacts on this species could occur if a shrike nest was disturbed during  
19 maintenance and repair. A nest could be destroyed during vegetation removal by equipment or  
20 be abandoned by the adults if the activity was too close to the nest. This could cause a loss of  
21 the eggs or young.

22 Indirect impacts on shrikes could occur if fugitive dust from maintenance and repair were to  
23 disturb the eggs or young causing them to fledge too early or causing the adults to abandon the  
24 nest.

25 As part of the conservation measures for the San Clemente loggerhead shrike, all maintenance  
26 would occur outside of the breeding season for this species (January 1 through July 31). In  
27 cases of emergency maintenance, such as downed power lines or broken water mains, crews  
28 might need to access the Proposed Action Area without notice. Any non-emergency  
29 maintenance that occurs during the breeding season would be preceded by a notification to the  
30 facility biologist to ensure avoidance of any known shrike nests in the area. All maintenance and  
31 repair in the vicinity of a potentially active nest would be avoided.

32 The USFWS San Clemente loggerhead shrike 5-year review identified habitat loss as the main  
33 reason for the decline of the population, while introduced grazing mammals were identified the  
34 primary reason for habitat loss in the initial recovery plan in 1984 (USFWS 2009a). Having  
35 extirpated all introduced grazing mammals in the early 1990s, nesting habitat, including  
36 maritime chaparral and succulent scrub, and the abundance of shrikes have begun to increase  
37 slowly. It is important for the recovery of the species that the slow increase in suitable habitat is  
38 not hampered by human activity.

39 All proposed maintenance and repair could result in temporary loss of habitat in the form of  
40 crushed, low-lying vegetation or displacement of individuals. The slow return of native  
41 vegetation supportive of nesting activities would not likely be affected by the proposed actions.

1 Maintenance and repair would only rarely go outside of the current established corridors. When  
2 this does occur, care would be taken to avoid crushing or removing shrubs or trees.  
3 Furthermore, most habitats suitable for nesting shrikes are located within steep canyons that  
4 would not likely need to be accessed by maintenance and repair crews.

5 Direct impacts could occur in the form of vegetation removal surrounding structures during  
6 vegetation control and wildfire asset protection. Although vegetation removal around existing  
7 structures would result in loss of potential forage habitat for shrikes, it is not likely that low-lying  
8 vegetation within 50 feet (15.2 meters) of buildings and structures is highly valuable habitat.

9 Maintenance and repair of roads, fences, and drainage structures could directly impact habitat  
10 suitable for San Clemente loggerhead shrikes. Work associated with maintenance and repair  
11 would remain within established footprints and only rarely would equipment need to exit these  
12 existing footprints. Further, the habitat immediately surrounding roads, fences, and drainage  
13 structures likely contains only marginal forage habitat for shrikes and no suitable nesting habitat.

14 Indirect impacts on shrikes could occur if maintenance and repair were to cause fugitive dust  
15 sufficient to kill vegetation and, thus, change potential foraging habitat. Further direct impacts  
16 could occur if invasive vegetation introduced by maintenance and repair caused competition  
17 with native vegetation and changed vegetation community make-up. Indirect impacts through  
18 these means could be avoided through implementation of conservation measures presented in  
19 **Section 3.6.3.1** such as fugitive dust watering, erosion control, and a reduced speed limit.

20 Direct or indirect impacts from maintenance and repair would not likely cause any measurable  
21 increase in native or non-native predator populations, or cause shrike nests to become more  
22 vulnerable to predation. Thus, maintenance and repair would have no impact on the predation  
23 of shrike nests.

24 Maintenance and repair could cause temporary direct impacts on non-nesting San Clemente  
25 loggerhead shrikes by causing them to modify their behavior, and avoid areas where those  
26 activities are occurring. Maintenance and repair would be temporary and birds would likely  
27 return after crews have left the work areas. In addition, because maintenance would be  
28 restricted to within and adjacent to existing disturbances, surrounding suitable habitat would  
29 remain available to birds that are temporarily displaced. Any loss of foraging opportunities or  
30 other uses of that habitat would be temporary and less than significant.

31 Permanent indirect impacts could occur if vegetation clearance of transmission line access  
32 roads causes an increased secondary use of otherwise unvisited areas. This increase of  
33 previously unused areas by humans could cause shrikes to abandon otherwise usable habitat  
34 near the corridor. However, this impact is unlikely because base personnel are prohibited from  
35 traveling off of established roads.

36 ***San Clemente Bell's sparrow.*** There are approximately 465.81 acres (188.51 hectares) of  
37 Coastal Baja California norte maritime succulent scrub group and 32.54 acres (13.17 hectares)  
38 of Coastal sage scrub group within the Proposed Action Area. This constitutes a total of 498.35  
39 acres (201.68 hectares) of habitat utilized by San Clemente Bell's sparrows that could be  
40 affected by the Proposed Action.

1 Direct temporary impacts could occur to this species if a San Clemente Bell's sparrow nest was  
2 disturbed during maintenance and repair. A nest could be destroyed during vegetation removal  
3 by equipment or be abandoned by the adults if the activity was too close to the nest. This could  
4 cause a loss of the eggs or young.

5 Indirect impacts on Bell's sparrow could occur if fugitive dust from maintenance and repair were  
6 to disturb the eggs or young causing them to fledge too early or causing the adults to abandon  
7 the nest.

8 As part of the conservation measures for the Bell's sparrow, all maintenance would occur  
9 outside of the breeding season for this species (December 15 through July 15). In cases of  
10 emergency maintenance, such as downed power lines or broken water mains, crews might  
11 need to access the Proposed Action Area without notice. Any non-emergency maintenance that  
12 occurred during the breeding season would be preceded by a notification to the facility biologist  
13 to ensure avoidance of any known Bell's sparrow nests in the area. Maintenance and repair in  
14 the vicinity of a potentially active nest would be avoided.

15 The USFWS Recovery Plan for the Endangered and Threatened Species of the California  
16 Channel Islands (USFWS 1984) lists habitat loss as a reason for the small population size of the  
17 San Clemente Bell's sparrow. Since the removal of introduced grazers, habitat degradation has  
18 ceased; however, alterations to habitat suitable to the Bell's sparrow still impact populations.  
19 Suitable habitat is slow to return to a more natural state and alterations to the entire island  
20 ecosystem make recovery a slow process.

21 Currently, there are 498.35 acres (201.68 hectares) of suitable habitat, consisting of maritime  
22 succulent scrub and coastal sage scrub, within the proposed corridor.

23 Vegetation around existing buildings would be removed during vegetation control and wildfire  
24 asset protection, causing a potential permanent direct impact. However, the low-lying vegetation  
25 that generally occurs within 50 feet (15.2 meters) of buildings and structures is not foraging or  
26 nesting habitat for San Clemente Bells' sparrows, thus habitat for this species would likely not  
27 be directly impacted by these activities.

28 Maintenance and repair of roads, fences, and drainage structures could directly impact habitat  
29 suitable for the San Clemente Bell's sparrow. Maintenance and repair would remain within the  
30 established footprint and only rarely would equipment need to exit the existing footprint. Further,  
31 the habitat immediately surrounding roads, fences, and drainage structures likely contains only  
32 marginal forage habitat and no suitable nesting habitat.

33 Bell's sparrows have continually inhabited and reproduced in areas of high activity on the island.  
34 The Special Warfare and training area is a frequently used facility with abundant activity. Bell's  
35 sparrows continue to occupy and breed in habitat directly adjacent to this facility (USFWS  
36 2009b). This suggests this species is not adversely affected by moderate human activity.

37 Indirect impacts on Bell's sparrows could occur if maintenance and repair were to cause fugitive  
38 dust sufficient to kill vegetation and, thus, change potential foraging habitat. Further direct  
39 impacts could occur if invasive vegetation introduced by construction activities caused  
40 competition with native vegetation and changed vegetation community make-up. Indirect

1 impacts through these means could be avoided through implementation of conservation  
2 measures presented in **Section 3.6.23.1** such as fugitive dust watering, erosion control, and  
3 reduced speed limit.

4 Maintenance and repair could indirectly impact Bell's sparrows via temporary displacement of  
5 individuals. Those individuals would likely return to the area shortly after crews have finished.  
6 Further, habitat surrounding infrastructure such as roads or transmission lines is usually not  
7 high quality habitat.

8 **Western Snowy Plover.** There is no habitat utilized by western snowy plovers within the  
9 Proposed Action Area. Direct temporary impacts on this species could occur if a western snowy  
10 plover nest was disturbed during maintenance and repair. A nest could be destroyed during  
11 vegetation removal by equipment or be abandoned by the adults if the activity was too close to  
12 the nest. This could cause a loss of the eggs or young. Indirect impacts on plovers could occur if  
13 fugitive dust from maintenance and repair were to disturb the eggs or young causing them to  
14 fledge too early or causing the adults to abandon the nest. Nesting of plovers on SCI is  
15 extremely rare (Navy 2013b) and no impacts are anticipated.

16 Indirect impacts on habitat could occur if maintenance and repair were to cause fugitive dust  
17 sufficient to kill vegetation and, thus, change potential foraging habitat. Further direct impacts  
18 could occur if invasive vegetation introduced by construction caused competition with native  
19 vegetation and changed vegetation community make-up. Indirect impacts through these means  
20 could be avoided through implementation of conservation measures presented in **Section**  
21 **3.6.3.1** such as fugitive dust watering, erosion control, and reduced speed limit.

22 Maintenance and repair could indirectly impact the western snowy plover via temporary  
23 displacement of individuals. Those individuals would likely return to the area shortly after crews  
24 have finished. Additionally, there is no suitable plover habitat within the Proposed Action Area  
25 and temporary displacement of plovers is not likely to be caused by maintenance and repair.

26 **3.6.3.1.3.4 Non-federally Listed Wildlife Species.**

27 There is the potential for maintenance and repairs under the Proposed Action to have adverse  
28 impacts on special status wildlife species due to ground and habitat disturbance, and long-term  
29 habitat or vegetation removal (see Appendix E of the BTR [included as **Appendix A** of this EA]  
30 for the list of species [HDR 2014]). However, in accordance with the NALF SCI INRMP, and  
31 DOD Instruction 4715.03 *Natural Resources Conservation Program*, conservation and  
32 management efforts of state-listed special status species is only required when such action is  
33 practicable and does not conflict with legal authority, military mission, or operational capabilities.  
34 Maintenance and repair under the Proposed Action are essential for achieving the military  
35 mission and operational capabilities of NALF SCI, as described in the **Section 1.3**, Purpose and  
36 Need. Therefore, impacts on special status species would be less than significant.

37 In summary, impacts on biological resources under the Proposed Action would not be  
38 significant, based on adherence to the conservation measures in **Section 3.6.3.1**, the NALF SCI  
39 INRMP, and consultation with the USFWS for species protected by the ESA, as applicable.  
40 Materials related to Section 7 consultation are provided in **Appendix A**.

1 **3.6.3.2 NO ACTION ALTERNATIVE**

2 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
3 to occur at current levels and potentially not achieve the required levels of operational readiness  
4 for the NALF SCI mission. Individual maintenance actions with the potential for impacting listed  
5 species would require individual consultations with the USFWS and could significantly delay  
6 necessary maintenance requirements. For those maintenance actions not impacting listed  
7 species, the existing conditions would remain the same as discussed in **Section 3.2.2**.

8 **3.7 Infrastructure, Utilities, and Transportation**

9 **3.7.1 Definition of the Resource**

10 Infrastructure consists of the systems and physical structures that enable a population in a  
11 specified area to function. Infrastructure is wholly man-made, with a high correlation between  
12 the type and extent of infrastructure and the degree to which an area is characterized as “urban”  
13 or developed. The availability of infrastructure and its capacity to support growth are generally  
14 regarded as essential to the economic growth of an area. The infrastructure components to be  
15 discussed in this section include utilities, solid waste management, and transportation.

16 Utilities include electrical supply, water supply, sanitary sewer and wastewater, natural gas  
17 supply, storm water drainage, and liquid fuel supply. Solid waste management primarily relates  
18 to the availability of landfills to support a population’s residential, commercial, and industrial  
19 needs. Transportation includes major and minor roads that support the installation, security  
20 gates, and parking areas.

21 **3.7.2 Affected Environment**

22 The Proposed Action consists of upgrades and maintenance to major utility systems at NALF  
23 SCI. Existing utilities found in the area of the Proposed Action are described below.

24 **Electrical Supply.** The power plant at Wilson Cove on NALF SCI is comprised of two 500  
25 kilowatt (kW), one 1,200 kW, and one 750 kW diesel generators with a total capacity of 2,950  
26 kW per hour. The plant is operated and maintained 24 hours per day, seven days per week. A  
27 wind farm augments the existing power system, providing approximately 20 percent of the  
28 island's power, or 150 kW per month during ideal wind conditions. The monthly load is about  
29 one megawatt (Navy 2013b). The NALF SCI power distribution system consists of  
30 approximately 925 poles, spanning a distance of 45 miles (72 km). There are multiple  
31 emergency generators at NALF SCI.

32 **Water Supply.** Potable water on NALF SCI is purchased from the City of San Diego and  
33 Sweetwater Authority. Approximately 245,200 gallons (931,700 liters [L]) of potable water is  
34 brought in weekly by barge from Naval Base San Diego. The capacity of the system is 2.3  
35 million gallons (8.7 million L). NALF SCI has approximately 7 miles (11.2 km) of aboveground  
36 and underground water lines and a 1-million-gallon (3,785,411 L) storage tank. The tank is in  
37 poor condition (Navy 2013b).

38 **Sanitary Sewer and Wastewater.** The wastewater treatment plant (WWTP) on NALF SCI  
39 produces recycled water suitable for non-potable beneficial uses such as soil compaction,

1 mixing concrete, backfill consolidation around non-potable piping, dust control on roads and  
2 streets, and flushing sanitary sewers (CRWQCBLAR 2004). The WWTP is located  
3 approximately 1,500 feet (457.2 meters) east of Wilson Cove. The WWTP consists of a  
4 package-type secondary treatment system, built in 1979, and a recently completed package-  
5 type tertiary treatment system. The secondary system may only be operated in emergency  
6 situations or when the tertiary system must be shut down for maintenance. The WWTP receives  
7 sewage from a separated sanitary sewer serving a population of approximately 500 people,  
8 except in cases when extra personnel are present due to training on the island. In those  
9 instances, wastewater from portable toilets may be delivered directly to the headworks of the  
10 treatment system. Only residential wastes are discharged to the sanitary sewer. All industrial  
11 drains have been capped with concrete. Solids from the treatment system are either dried in  
12 drying beds or bagged for dewatering over plastic pallets. The dried solids are transported to  
13 and disposed of at the NALF SCI landfill (CRWQCBLAR 2004).

14 The WWTP discharges a maximum permitted monthly average of 0.025 million gallons (0.095  
15 million L) per day of treated wastewater to the Pacific Ocean through Discharge Point 002,  
16 which is located within an exclusion zone of the ASBS. See **Section 3.5**, Water Resources, for  
17 a discussion of the SCI ASBS. Discharge Point 001 has been decommissioned (CRWQCBLAR  
18 2004).

19 **Liquid Fuel Supply.** Petroleum products are delivered to NALF SCI by a regularly-scheduled  
20 barge and unloaded at Wilson Cove. Fuel for the power plant (diesel), vehicles (diesel and  
21 gasoline), and aircraft (jet fuel [JP-5]) are stored on the island. Barges dispense fuel by pumping  
22 fuel directly into aboveground storage tanks (Navy 2013b).

23 **Storm Water Drainage.** NALF SCI does not have extensive storm water infrastructure outside  
24 of the industrial areas. Storm water in the industrial areas is collected and discharged at 35  
25 outfalls around the island.

26 **Solid Waste Management.** The existing NALF SCI landfill is approximately 20 acres (8  
27 hectares), of which 15 acres (6 hectares) are designated to receive municipal solid waste.  
28 Closure of the landfill is anticipated in 2032 based on an average rate of disposal of 991 tons  
29 per year. It is currently augmented by shipping trash to the mainland via a weekly barge.  
30 Approximately 127 tons of recycled materials are also shipped to the mainland annually  
31 (CRWQCB 2010).

32 **Transportation.** NALF SCI is serviced by a network of roads, mostly unpaved, connecting the  
33 north end of the island with the south. Ridge Road is paved and is the main transportation route  
34 through the island. The majority of secondary roads are unpaved and not maintained.  
35 Approximately 350 vehicles are present on the island, and all are either government or  
36 contractor-owned (Navy 2013b). Traffic conflicts occur only when exercises or hazardous  
37 activities restrict road travel. Wilson Cove and the area around the airfield consist of the most  
38 utilized roads; however, traffic in this area is minimal.

### 1 3.7.3 Environmental Consequences

2 Impacts on infrastructure, utilities, and transportation are evaluated for their potential to disrupt  
3 or improve existing levels of service and create additional requirements for energy (e.g., electric,  
4 central heating, natural gas, and liquid fuels), water, sanitary sewer/wastewater service, storm  
5 water drainage, solid waste management, and the transportation network. In general impacts  
6 could arise from needs created by either direct or indirect workforce and population changes  
7 related to installation activities.

#### 8 3.7.3.1 PROPOSED ACTION

##### 9 All Maintenance and Repair

10 **Liquid Fuels Supply.** Impacts on liquid fuel supply would be less than significant under the  
11 Proposed Action. Maintenance and repair would require the use of liquid fuel powered vehicles  
12 and equipment (e.g., excavators, cranes, and mowers). However, fuel required for these  
13 vehicles and equipment would be delivered to NALF SCI to ensure that liquid fuel-dependent  
14 operations on NALF SCI are not impacted.

15 **Water Supply.** Recycled water from the WWTP would likely be used for maintenance and  
16 repair such as soil compaction, mixing concrete, backfill consolidation around non-potable  
17 piping, and dust control on roads. Therefore, no significant impacts on water supply would be  
18 expected.

19 **Sanitary Sewer and Wastewater Systems.** No impacts on sanitary sewer and wastewater  
20 systems would be expected under the Proposed Action. Maintenance and repair would not  
21 require use of NALF SCI's wastewater system.

22 **Solid Waste Management.** Impacts on solid waste management would be less than significant  
23 under the Proposed Action. Solid wastes generated from maintenance and construction  
24 activities would consist primarily of materials such as asphalt, concrete, metals (e.g., conduit,  
25 piping, and wiring), lumber, soil, and vegetation debris. The NALF SCI landfill is permitted to  
26 accept demolition and construction debris and has sufficient capacity. Demolition and  
27 construction debris would be recycled to the greatest extent possible, thereby diverting it from  
28 landfills. Recyclable materials would be taken by barge to recycling facilities on the mainland.  
29 Excavated soils would be reused on the island to the greatest extent possible for grading and  
30 contouring.

31 **Transportation.** Impacts on transportation would be less than significant under the Proposed  
32 Action. Impacts would be largely constrained to the individual work sites. Temporary closure of  
33 roads adjacent to the proposed work sites could occur during maintenance and repair.  
34 Equipment and materials would be delivered to NALF SCI by barge. Demolition and  
35 construction activities associated with the Proposed Action would require delivery of materials to  
36 and removal of debris from the work site. Construction equipment would be driven or trailered to  
37 the work sites, depending on distance and location of the project.

##### 38 Electrical System

39 **Electrical Supply.** Short-term planned interruptions to the electrical supply might be  
40 experienced during maintenance and repair of the electrical system. Long-term beneficial

1 impacts on the electrical system would be expected from the electrical system maintenance and  
2 repair included in the Proposed Action. These beneficial impacts would include increased  
3 system reliability due to the replacement of defective or obsolete equipment and ease of  
4 identifying maintenance issues, which would allow for more prompt repairs. No significant  
5 impacts on electrical supply under the Proposed Action would be expected.

## 6 Water System

7 **Water Supply.** Short-term planned interruptions to the water supply might be experienced  
8 during maintenance and repair of the water system. Long-term beneficial impacts on the water  
9 system would be expected from the water system maintenance and repair included in the  
10 Proposed Action. These beneficial impacts would include increased system reliability due to the  
11 replacement of defective or obsolete equipment and ease of identifying maintenance issues,  
12 which would allow for more prompt repairs. No significant impacts on water supply under the  
13 Proposed Action would be expected.

14 **Storm Water Drainage.** Beneficial impacts on storm water drainage would occur under the  
15 Proposed Action from the repair and construction of storm water infrastructure on NALF SCI.  
16 See **Section 3.5**, Water Resources (Surface Water), for more information on impacts on storm  
17 water.

## 18 Roads

19 Long-term beneficial impacts on transportation would be expected due to the physical  
20 improvements made to the roads under the Proposed Action.

21 In summary, maintenance and repair under the Proposed Action would not result in significant  
22 impacts on infrastructure, utilities, and transportation. Temporary interruptions to utility service  
23 and road closures could occur in the vicinity of work sites during work. Beneficial impacts from  
24 maintenance and repair would result due to increased reliability of infrastructure, utilities, and  
25 transportation.

### 26 3.7.3.2 NO ACTION ALTERNATIVE

27 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
28 to occur at current levels and potentially not achieve the required levels of operational readiness  
29 for the NALF SCI mission. Current utilities and infrastructure conditions would remain as  
30 described in **Section 3.7.2**, but could continue to deteriorate if access remains limited and  
31 maintenance was not completed on an as needed basis. Maintenance issues obscured by  
32 vegetation may not be discovered and repaired in a timely manner leading to interruptions in  
33 service or decreases in efficacy.

## 34 3.8 Hazardous Materials and Wastes

### 35 3.8.1 Definition of the Resource

36 Hazardous materials are defined by 49 CFR § 171.8 as “hazardous substances, hazardous  
37 wastes, marine pollutants, elevated temperature materials, materials designated as hazardous  
38 in the Hazardous Materials Table (49 CFR § 172.101), and materials that meet the defining  
39 criteria for hazard classes and divisions” in 49 CFR § 173. Transportation of hazardous

1 materials is regulated by the U.S. Department of Transportation regulations within 49 CFR §  
2 105–180.

3 Hazardous wastes are defined by the RCRA at 42 U.S.C. § 6903(5), as amended by the  
4 Hazardous and Solid Waste Amendments, as: “a solid waste, or combination of solid wastes,  
5 which because of its quantity, concentration, or physical, chemical, or infectious characteristics  
6 may (A) cause, or significantly contribute to an increase in mortality or an increase in serious  
7 irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential  
8 hazard to human health or the environment when improperly treated, stored, transported, or  
9 disposed of, or otherwise managed.”

10 Certain types of hazardous wastes are subject to special management provisions intended to  
11 ease the management burden and facilitate the recycling of such materials. These are called  
12 universal wastes and their associated regulatory requirements are specified in 40 CFR § 273.  
13 Four types of waste are currently covered under the universal wastes regulations: hazardous  
14 waste batteries, hazardous waste pesticides that are either recalled or collected in waste  
15 pesticide collection programs, hazardous waste thermostats, and hazardous waste fluorescent  
16 lamps.

17 The DOD established Defense Environmental Restoration Program (DERP) to facilitate  
18 thorough investigation and cleanup of contaminated sites on military installations (active  
19 installations, installations subject to Base Realignment and Closure, and formerly used defense  
20 sites). The Installation Restoration Program (IRP) and the Military Munitions Response Program  
21 are components of the DERP. The Installation Restoration Program requires each DOD  
22 installation to identify, investigate, and clean up hazardous waste disposal or release sites. The  
23 Military Munitions Response Program addresses nonoperational rangelands that are suspected  
24 or known to contain unexploded ordnance, discarded military munitions, or munitions  
25 constituent contamination. The Environmental Restoration Program is the Navy’s initiative to  
26 address DERP.

27 The 8-RCRA metals are commonly found on Navy installations and include arsenic, barium,  
28 cadmium, chromium, lead, mercury, selenium, and silver.

29 Asbestos is the generic term used to describe a group of naturally occurring silicate minerals  
30 that have the ability to separate into small, fine fibers. Asbestos exists in a variety of forms and  
31 can be found in a variety of materials (e.g., floor tiles, floor tile mastic, roofing materials, joint  
32 compound, wallboard, thermal system insulation, electrical wiring insulation, electrical panel  
33 partitions, cement pipes, and boiler gaskets). Asbestos is regulated by USEPA. In 1989, USEPA  
34 issued a final rule under Section 6 of the Toxic Substances Control Act banning most ACMs. In  
35 1991, this rule was vacated and remanded by the Fifth Circuit Court of Appeals. As a result,  
36 most of the original ban on the majority of the ACMs covered in the 1989 final rule was  
37 overturned; however, specific ACMs remain banned and the final rule continues to ban the use  
38 of asbestos in products that have not historically contained asbestos, otherwise referred to as  
39 “new uses” of asbestos. ACMs at Navy facilities are managed in accordance with OPNAVINST  
40 5100.23G, *Navy Safety and Occupational and Health Program Manual*.

1 Lead is a heavy, ductile metal commonly found simply as metallic lead or in association with  
2 organic compounds, oxides, and salts. Many building surfaces and industrial structures  
3 (e.g., electric transmission towers, substations, water towers, storage tanks, and bridges) were  
4 painted with LBP prior to the U.S. government ban on the use of most LBP in 1978. Federal  
5 agencies are required to comply with applicable Federal, state, and local laws relating to LBP  
6 activities and hazards.

7 PCBs are man-made chemicals that persist in the environment and were widely used in  
8 construction materials and electrical products prior to 1979. Congress banned the manufacture  
9 and use of PCBs in 1976, and PCBs were phased out in 1978, except in certain limited uses.  
10 PCBs can be present in building products such as light ballasts; transformers; and caulk used in  
11 windows, door frames, masonry columns, and other masonry building materials.

12 Radon is a naturally occurring radioactive gas found in soils and rocks. It is odorless and  
13 colorless and increases the risk of developing lung cancer. The USEPA has established a  
14 guidance radon level of 4 picoCuries per liter (pCi/L) in indoor air for residences. Radon gas  
15 accumulations greater than 4 pCi/L are considered to represent a health risk to occupants.

### 16 3.8.2 Affected Environment

17 **Hazardous Materials and Wastes.** Various hazardous materials (e.g., gasoline, diesel fuel,  
18 aviation fuel, engine oil, various lubricants, painting materials, and ethylene glycol) are used to  
19 support building, aircraft, target, and vehicle operations and maintenance at NALF SCI. JP-5  
20 and unleaded gasoline account for the greatest volume of hazardous materials stored on the  
21 island. The storage of hazardous materials on NALF SCI is regulated by the Los Angeles City  
22 Fire Department under the Hazardous Waste and Hazardous Materials Management  
23 Regulatory Program. There are several 90-day RCRA waste accumulation areas on NALF SCI  
24 that host hazardous wastes prior to their shipment to Naval Air Station North Island, where  
25 hazardous wastes can then be transported to a treatment, storage or disposal facility. The most  
26 common forms of hazardous waste generated on NALF SCI include paint, waste oil, fuel,  
27 batteries and grease. The NALF SCI Oil and Hazardous Substance Integrated Contingency  
28 Plan addresses petroleum storage, spill prevention, and response protocols. NALF SCI has a  
29 Facility Response Plan and an Emergency Response Action Plan that detail what to do in the  
30 event of a spill or related event. Additionally, NALF SCI operates under NBC's Emergency  
31 Action Plan and the Spill Prevention, Control and Countermeasures (SPCC) Plan (Navy 2008,  
32 Navy 2013b).

33 **Defense Environmental Restoration Program.** There are currently 17 IRP sites on NALF SCI.  
34 Of these sites, 10 have been closed. Of the active sites, the following six sites occur within the  
35 areas proposed for maintenance and repair:

- 36 • **IRP Site 2:** Photography lab drainage
- 37 • **IRP Site 10E:** Former airfield area
- 38 • **IRP Site 11:** Former disposal area west of Wilson Cove
- 39 • **IRP Site 12:** North Tank Dam disposal area
- 40 • **IRP Site 13:** Small disposal area west of Lemon Tank Canyon
- 41 • **IRP Site 17:** Diesel fuel spill near power plant and power plant (Navy 2013b).

1 **Asbestos-Containing Materials, 8-RCRA Metals, Lead-Based Paint, and Polychlorinated**  
2 **Biphenyls.** ACMs, LBP, and 8-RCRA metals can be present in any age building, but ACMs are  
3 most likely to be found in buildings constructed prior to 1989, while LBP and 8-RCRA metals are  
4 most likely to be present in buildings constructed prior to the 1978 ban. Asbestos can be found  
5 in asbestos-cement potable water pipes. PCBs can be present in products and equipment  
6 produced before the 1979 ban. Because the Navy has operated at NALF SCI for several  
7 decades, it is assumed that some of the building materials and equipment could contain  
8 asbestos or PCBs, and some of the buildings and infrastructure (e.g., storage tanks) could be  
9 coated with LBP or contain 8-RCRA metals.

10 **Pesticides.** OPNAVINST 6250.4C *Navy Pest Management Programs* provides the Navy's  
11 policies and procedures for implementing pest management programs and applies to all Navy  
12 commands, both afloat and ashore. In accordance with DOD policy on pest management,  
13 integrated pest management principles should be used to help minimize the use of pesticides.  
14 The objective of integrated pest management is to use ecologically, economically, and socially  
15 sound strategies to control or keep pests at tolerable levels. The San Diego Area Integrated  
16 Pest Management Plan covers NALF SCI (Navy 2013b).

17 **Radon.** Los Angeles County, which includes SCI, is designated by the USEPA to be Radon  
18 Zone 2, which has a predicted average indoor radon screening level between 2 and 4 pCi/L  
19 (USEPA 2014b). Because USEPA has established that radon gas accumulations below 4 pCi/L  
20 do not represent a health hazard, radon is removed from further analysis.

### 21 3.8.3 Environmental Consequences

#### 22 3.8.3.1 PROPOSED ACTION

##### 23 Electrical System

24 **Hazardous Materials and Wastes.** The proposed maintenance and repair of the electrical  
25 system would increase the quantity of hazardous materials stored and used and hazardous  
26 wastes generated on NALF SCI; however, these increases would be less than significant.  
27 Contractors would be responsible for the management of hazardous materials and hazardous  
28 wastes during maintenance, repair, and upgrades, including following the Hazardous Waste and  
29 Hazardous Materials Management Regulatory Program regulated by Los Angeles County and  
30 applicable NALF SCI hazardous materials and wastes procedures. These products would also  
31 be handled in accordance with Federal, state, and local regulations. No significant impacts from  
32 hazardous materials and waste would be expected.

33 **Defense Environmental Restoration Program.** Proposed maintenance and repair of electrical  
34 systems on NALF SCI would overlap with an existing IRP site. IRP site 17 would be the most  
35 likely IRP site to be affected due to their location along the electrical system on NALF SCI.  
36 Environmental contamination could be disturbed at the IRP site if earth moving or ground  
37 disturbance are necessary. If any potentially contaminated soil was discovered during ground  
38 moving activities, the contractor or installation personnel would immediately stop work, report  
39 the discovery to the installation, and implement appropriate safety measures. Commencement  
40 of field activities would not continue in this area until the issue was investigated and resolved.  
41 Installation and contractor personnel working in the areas of known IRP sites would be expected

1 to follow all DOD and NALF SCI IRP site protocols. No significant impacts from IRP sites would  
2 be expected.

3 ***Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.*** There  
4 could be impacts, although not significant, from ACMs, LBP, 8-RCRA metals, and PCBs  
5 associated with repair and replacement of electrical components and infrastructure, depending  
6 on the age of the equipment. Characterization and surveys of ACMs, LBP, 8-RCRA metals and  
7 PCBs would be done prior to work being completed on materials suspected of containing these  
8 materials. All ACMs, LBP, 8-RCRA metals and PCBs identified during characterization would be  
9 removed and disposed of according to local and state regulations.

#### 10 Water System

11 ***Hazardous Materials and Wastes.*** Impacts from hazardous materials and wastes would be  
12 similar to, but slightly greater than those mentioned under **Electrical System**. Because there  
13 could be more ground disturbance for water system maintenance and repairs, more fuel for  
14 heavy earthmoving equipment could be necessary; however, this increase in fuel would be  
15 negligible. Impacts from hazardous materials and wastes from water system maintenance and  
16 repair would be less than significant.

17 ***Defense Environmental Restoration Program.*** Due to their proximity to the water system on  
18 NALF SCI, IRP sites 4, 11, and 17 could be impacted by the Proposed Action. Impacts and  
19 BMPs would be the same as mentioned under **Electrical System**. The sites would be avoided if  
20 at all possible.

21 ***Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.***  
22 Impacts related to ACMs, and LBP would be similar to, but less than those mentioned under  
23 **Electrical System**. PCBs and 8-RCRA metals would not be expected to be found in the water  
24 system infrastructure.

#### 25 Roads

26 ***Hazardous Materials and Wastes.*** Impacts from hazardous materials and wastes due to road  
27 maintenance and repair would be similar to those mentioned under **Electrical System**.

28 ***Defense Environmental Restoration Program.*** IRP sites 2, 10E, 11, 12, 13, and 17 could  
29 potentially be impacted by maintenance and repair of roads on NALF SCI. Impacts on IRP sites  
30 would be less than significant because no new roads would be constructed and no significant  
31 ground disturbance would be expected. Road maintenance and repair would consist of mostly  
32 grading and replacing lost material; therefore, no significant impacts would be expected.

33 ***Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.*** No  
34 impacts from ACMs, LBP, 8-RCRA metals and PCBs would be expected from maintenance and  
35 repair of roads.

#### 36 Facilities

37 ***Hazardous Materials and Wastes.*** Impacts from hazardous materials and wastes would be  
38 similar to those mentioned for **Electrical System**. Contractors would be responsible for the  
39 management of hazardous materials and hazardous wastes during maintenance, repair, and

1 upgrades, including following the Hazardous Waste and Hazardous Materials Management  
2 Regulatory Program regulated by Los Angeles County and applicable NALF SCI hazardous  
3 materials and wastes procedures. These products would also be handled in accordance with  
4 Federal, state, and local regulations. No significant impacts from hazardous materials and waste  
5 would be expected. No significant impacts would be expected from hazardous materials and  
6 wastes.

7 **Defense Environmental Restoration Program.** IRP sites 4 and 17 could be impacted by  
8 facility demolition, maintenance, and repair, but should be avoided. Impacts on IRP sites would  
9 be similar to those mentioned under **Electrical System**. Facility demolition, maintenance, and  
10 repair would occur within existing footprints of buildings and could extend into areas identified  
11 as IRP sites. Work in and around IRP sites would be avoided.

12 **Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.**

13 Impacts related to ACMs could be expected if any buildings proposed for demolition,  
14 maintenance, or repair were constructed prior to 1989. Impacts associated with 8- RCRA  
15 metals, LBP and PCBs could also be expected from buildings constructed prior to 1978 and  
16 1979, respectively. Buildings proposed for demolition, maintenance, or repair would be  
17 surveyed by certified contractors for ACMs, LBP, 8-RCRA metals and PCBs prior to  
18 commencing demolition, maintenance, and repair. All friable ACMs that could be impacted by  
19 the Proposed Action would be removed prior to work activities. The construction and demolition  
20 debris that might contain LBP would be analyzed for hazardous characteristics (i.e., lead) by  
21 Toxicity Characteristic Leaching Procedure prior to disposal to determine whether it is a  
22 hazardous waste. Materials containing PCBs would be disposed of at an approved hazardous  
23 waste disposal facility. No significant impacts would be expected from ACMs, LBP, 8-RCRA  
24 metals and PCBs.

25 Fences and Gates

26 **Hazardous Materials and Wastes.** Impacts from hazardous materials and wastes would be  
27 similar to those mentioned under **Electrical System**. No significant impacts from hazardous  
28 materials and wastes would be expected.

29 **Defense Environmental Restoration Program.** No impacts on IRP sites would be expected  
30 because no IRP sites would be associated with fence and gate maintenance and repair.

31 **Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.** No  
32 impacts from ACMs, LBP, and PCBs would be expected because the fences and gates at NALF  
33 SCI are unlikely to contain these materials. Impacts from 8-RCRA metals would be similar to  
34 those mentioned under **Electrical System**.

35 Drainage Management Structures

36 **Hazardous Materials and Wastes.** Impacts from hazardous materials and wastes would be  
37 similar to those mentioned under **Electrical System**.

38 **Defense Environmental Restoration Program.** No impacts on IRP sites would be expected  
39 because no IRP sites would be associated with drainage management structure maintenance  
40 and repair.

1 **Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.** No  
2 impacts would be expected because the drainage management structures at NALF SCI are  
3 unlikely to contain ACMs, LBP, 8-RCRA metals or PCBs.

#### 4 **Vegetation Control**

5 **Hazardous Materials and Wastes.** Impacts would result from the use of herbicides to control  
6 invasive plant growth in areas of disturbed and exposed soil. Personnel using the herbicides  
7 would be required to wear PPE and follow appropriate safety precautions as indicated on the  
8 specific herbicide label. Additional impacts could also result from additional fuel necessary for  
9 lawnmowers, leaf blowers, and weed whackers. There would be an increased chance of small  
10 spills of oil and fuel from the use of mechanical vegetation control; however, appropriate BMPs  
11 found in the NBC SPCC plan would be implemented to prevent spills from the storage  
12 containers. The additional fuel for vegetation control equipment would be stored in existing  
13 storage facilities in accordance with the NBC SPCC. Impacts from vegetation control would be  
14 less than significant.

15 **Defense Environmental Restoration Program.** No impacts on IRP sites would be expected  
16 because the proposed vegetation control activities would not penetrate the surface of the soil.

17 **Asbestos-Containing Materials, Lead-Based Paint, and Polychlorinated Biphenyls.** No  
18 impacts would be expected because the proposed vegetation control activities would not involve  
19 any ACMs, LBP, 8-RCRA metal or PCBs.

20 In summary, less than significant impacts from hazardous materials and wastes would be  
21 expected under the Proposed Action. All hazardous materials would be handled in accordance  
22 with applicable regulations and identification/site characterization of hazardous materials would  
23 be conducted prior to maintenance and repair. If any potential hazardous materials were  
24 identified during implementation of the Proposed Action, the contractor or installation personnel  
25 would immediately stop work, report the discovery to the installation, and implement appropriate  
26 safety measures.

#### 27 **3.8.3.2 NO ACTION ALTERNATIVE**

28 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
29 to occur at current levels and potentially not achieve the required levels of operational readiness  
30 for the NALF SCI mission. No impacts under the No Action Alternative on hazardous materials  
31 and wastes would be expected. Existing conditions would remain the same as discussed in  
32 **Section 3.8.2.**

## 33 **3.9 Cultural Resources**

### 34 **3.9.1 Definition of the Resource**

35 Cultural resources is an umbrella term for many heritage-related resources including prehistoric  
36 and historic sites, buildings, structures, districts, or any other physical evidence of human  
37 activity considered important to a culture, a subculture, or a community for scientific, traditional,  
38 religious, or any other reason. Typically, cultural resources are subdivided into archaeological  
39 resources (prehistoric or historic sites where human activity has left physical evidence to that

1 activity but no structures remain standing); architectural resources (buildings or other structures  
2 or groups of structures, or designed landscapes that are of historic or aesthetic significance); or  
3 Traditional Cultural Properties (TCPs) (resources of traditional, religious, or cultural significance  
4 to Native American tribes).

5 Archaeological resources are comprised of both prehistoric and historic deposits and include  
6 areas where human activity has measurably altered the earth or deposits of physical remains  
7 are found (e.g., projectile points and bottles). The majority of the cultural resources on NALF  
8 SCI is considered archaeological resources and date to both the prehistoric and historic eras.

9 Architectural resources include standing buildings, bridges, dams, or other structures of historic  
10 significance. Generally, architectural resources must be more than 50 years old to be  
11 considered eligible for listing on the National Register of Historic Places (NRHP). More recent  
12 structures, such as Cold War-era resources, might be considered eligible if they are of  
13 exceptional importance or if they have the potential to gain significance in the future.

14 Traditional cultural properties are resources of traditional, religious, or cultural significance to  
15 Native American tribes and can include archaeological resources, structures, neighborhoods,  
16 prominent topographic features, habitat, plants, animals, and minerals that Native Americans or  
17 other groups consider essential for the preservation of traditional culture.

18 Historic properties are any prehistoric or historic district, site, building, structure, object, or TCP  
19 included in or eligible for inclusion in the NRHP [36 CFR § 800.16(1)]. Project-related activities  
20 with the potential to affect historic properties are considered Federal undertakings, subject to  
21 compliance with Section 106 of the NHPA of 1966, as amended, and its implementing  
22 regulations found at 36 CFR 800. Section 106 requires Federal agencies to take into account  
23 the effects of their undertakings on historic properties.

24 **3.9.1.1 EXISTING HISTORIC PRESERVATION MANAGEMENT PRACTICES FOR COMPLIANCE**  
25 **WITH NHPA SECTION 106**

26 OPNAV Manual M-5090.1 CH 13-3.4 and DoD Instruction 4715.3 require the Navy to develop  
27 an Integrated Cultural Resources Management Plan (ICRMP) as an internal compliance and  
28 management tool that integrates the cultural resources program with ongoing mission activities  
29 on NALF SCI in the SOCAL Range Complex. The NALF SCI ICRMP provides guidance to NBC  
30 Public Works Office (PWO) and Installation Environmental Program personnel regarding the  
31 implementation of the NALF SCI Programmatic Agreement (PA), and background information  
32 on cultural resources on NALF SCI.

33 The ICRMP informs the Commanding Officer of NBC (CONBC) on the proper procedures to  
34 manage cultural resources in light of the activities that will be carried out at the installation. The  
35 ICRMP for NALF SCI resides with the offices of CONBC, Commander Navy Region Southwest,  
36 NBC PWO, Naval Facilities Engineering Command, Southwest (NAVFACSW), Southern  
37 California Offshore Range, and Naval Special Warfare. As defined under 36 CFR § 800.2(a),  
38 CONBC is the agency official responsible for ensuring that undertakings occurring on  
39 installations under jurisdiction of NBC including NALF SCI, that may affect cultural resources will  
40 comply with all applicable federal requirements and regulations. The NBC PWO and Installation  
41 Environmental Program, with direct support from the NALF SCI CRPM at the NAVFACSW

1 Cultural Resources Program, provides the professionally qualified cultural resources staff  
2 expertise required under the PA to support CONBC in meeting these historic preservation and  
3 stewardship responsibilities.

4 The ICRMP also includes a summary of the outstanding-quality cultural resources on NALF  
5 SCI. Over 7,600 prehistoric sites may exist on NALF SCI, with many of these determined, or  
6 assumed, eligible for the NRHP. Archaeological discoveries at these sites over the past 30  
7 years have helped to revolutionize the scientific understanding of the prehistory of Southern  
8 California and have contributed to new continent-wide appreciation of the importance of coastal  
9 and maritime environments to prehistoric peoples.

10 Application of the relevant authorities provided under the NALF SCI PA and the protocols and  
11 standard operating procedures contained in the NALF SCI ICRMP, to the classes of  
12 maintenance, repair and construction undertakings addressed under this EA are described in  
13 **Section 3.9.2 and 3.9.3.**

#### 14 **3.9.2 Affected Environment**

15 Cultural resources concerns for the maintenance and repair to infrastructure at NALF SCI  
16 include effects on historic and prehistoric archaeological resources. No built environment  
17 historic resources and no TCPs have been identified in the project corridors defined below.

18 Corridors have been established along existing utilities and roads to support ongoing and future  
19 maintenance, upgrades, and vegetation management. These corridors are the areas of potential  
20 effect (APE) in which any cultural resources intersecting with these corridors must be  
21 considered for potential affects from maintenance, upgrades, and vegetation management  
22 proposed in this EA. The determination of the APE for cultural resources is stipulated under  
23 Stipulation III. B of the NALF SCI PA (Navy 2008), which states:

- 24 1. Consistent with 36 CFR § 800.16(d), the CRPM shall define an APE as the geographical  
25 area or areas within which an undertaking may directly or indirectly cause alterations in  
26 the character or use of historic properties. CONBC will not consult further with the  
27 California State Historic Preservation Office or other parties to this PA in determining the  
28 APEs for undertakings, except where provided for under Stipulation III.B.3, below.  
29 Definitions of APE will be influenced by the scale and nature of the undertaking and may  
30 be different for different kinds of effects caused by an undertaking. The extent of an APE  
31 is further defined by the following provisions:
- 32 i) For undertakings where an APE occurs more than 82.0 feet (25 meters) from the  
33 established boundaries of historic properties, these are considered to lie outside the  
34 APE.
  - 35 ii) For undertakings where an APE occurs within 82.0 feet (25 meters) of an established  
36 boundary of an historic property, the APE will be considered and defined to include  
37 the whole of the historic property.
  - 38 iii) For undertakings involving ground disturbing activities, the APE will be defined to  
39 include all areas of surface and subsurface disturbance, any associated lay down or  
40 staging areas, and an 82.0-foot (25-meter) buffer surrounding each area of ground

1 disturbance and associated activities. If any part of an archaeological site falls within  
 2 the defined APE, the entire extent of the archaeological site will be included in the  
 3 APE.

4 Consistent with the stipulations prescribed in the PA, the APE for cultural considerations in this  
 5 EA is shown in **Table 3-12**:

6 **Table 3-12. Size of APE.**

<b>Asset</b>	<b>APE Size</b>	<b>APE Extent</b>
Roads	164 feet (50 meters)	82 feet (25 meters) on either side of road
Transmission Lines	164 feet (50 meters)	82 feet (25 meters) on either side of line
Water Lines	164 feet (50 meters)	82 feet (25 meters) on either side of line
Structures	164 feet (50 meters)	164 feet (50 meters) from the structure in all directions

7 Considering the APE size that encompasses the assets listed in **Table 3-12**, the APE for this EA  
 8 totals 3135.3 acres (1,268.8 hectares).

9 The extended history of archaeological research on SCI has resulted in the discovery of over  
 10 4,250 cultural sites and a wealth of knowledge about the prehistory and history not only of the  
 11 island, but also of the surrounding region. From exploration and artifact collection starting in the  
 12 late 1800s to a sustained cultural resource management program today, the cultural data  
 13 collected from SCI has been integral to our understanding of regional maritime adaptations and  
 14 in developing an understanding the cultural prehistory and history of the island. Below is a brief  
 15 overview of the island prehistory and history. For more detailed information, Raab and Yatsko  
 16 (2001) provide an in depth synthesis of island research though time as well as a detailed island  
 17 cultural chronology.

18 **Prehistory.** The earliest identified occupation on SCI is at CA-SCLI-43, the Eel Point site.  
 19 Samples collected from the basal stratum of excavation unit 29N15E dated to approximately  
 20 8940 radiocarbon years before present (RYBP) (Raab et al. 2009. The Early Holocene (10,500  
 21 to 7000 RYBP) cultural component at Eel Point “reflects a substantial degree of residential  
 22 permanence”, with abundant tools, food remains, hearths, and a possible structure present at  
 23 the site (Raab et al. 2009). This type of Early Holocene occupation is consistent with occupation  
 24 chronologies found elsewhere in southern California, particularly on the Northern Channel  
 25 Islands of San Miguel, Santa Rosa, and Santa Cruz.

26 The heavy reliance on a maritime economy during the Early Holocene continues and intensifies  
 27 during the Middle Holocene (7000 to 3500 RYPB) on the islands. Population levels on all the  
 28 California Islands increased substantially by 7500 RYBP (Kennett 2005) and on SCI evidence  
 29 for increased sedentism is apparent with pithouses and extensive midden deposits appearing as  
 30 early as 5200 RYBP (Raab and Yatsko 2001). The Nursery site (CA-SCLI-1215) contains three  
 31 house pits that have been dated to 4820-3750 RYBP. These structures were likely built in  
 32 saucer-shaped pits, with doomed roof structures made of whale bone (Raab et al. 2009). House  
 33 pits dating to roughly the same time period were identified at the Eel Point site (Raab and  
 34 Yatsko 2001) and further support the conclusion that sedentism emerged on SCI during the

1 Middle Holocene (Salls et. al 1993). Along with this sedentism, an increased reliance on fishing  
2 and sea mammal hunting emerged during the Middle Holocene (Raab 1997). Raab and Yatsko  
3 (2001) posit that this may be the result of declining foraging efficiency due to population  
4 increase resulting from increased sedentism.

5 The abundant fisheries located around SCI would have provided a food source capable of  
6 sustaining subsistence intensification. Opportunistic capture of high return marine mammals  
7 could have also supplemented abundant fish captures. Interestingly, at the time when an  
8 increased subsistence economy was occurring, there is no concurrent technological elaboration.  
9 Technological elaboration is not apparent on SCI until the close of the Middle Holocene (Raab  
10 1997). The circular shell fishhook did not appear until 3300 RYBP, and there is no evidence for  
11 harpoons and other specialized gear.

12 The Late Holocene (3500 RYBP-A.D. 1769) on SCI was a time of general population expansion,  
13 with the exception of a decline in population during the Medieval Climactic Anomaly (MCA) (AD  
14 800-1350) (Raab et al. 2002). Although periodic climatic stress was pervasive during the Late  
15 Holocene, the MCA was a period of warmer temperatures and associated droughts that  
16 researcher have associated with settlement disruptions and subsistence variations, among  
17 other cultural changes (Raab and Larson 1997; Jones et al. 1999; Jones and Kennett 1999). On  
18 SCI, Yatsko (2000) found that settlement shifted during the MCA from upland areas where there  
19 was little water to major water holding canyons (Raab et al. 2002). Where other California  
20 islands populations showed increased violence and declining health during this time period, SCI  
21 seemed to lack significant interpersonal violence (Kerr and Hawley 2002) and skeletal studies  
22 show better health during Late Holocene than during the Middle Holocene on the island  
23 (Kennett and Kennett 2000). The Late Holocene in general was also a time of technological  
24 advancement with the introduction of the bow and arrow around AD 500-800 and increased  
25 cultural complexity and cultural interaction with more extensive trade networks, craft  
26 specialization, emergence of mid-range societal structure, and development of more extensive  
27 permanent villages.

28 ***Ethnohistory and History.*** While the neighboring island to SCI, Santa Catalina, is more  
29 frequently mentioned in European accounts from the 16th and 17th centuries, the first mention  
30 of contact with the peoples on SCI is found in the 1543 summary of Cabrillo's voyage of  
31 exploration along the western coast of North America (Johnson 1988). Originally named La  
32 Victoria after one of the ships in his fleet, Cabrillo did not stay on SCI, but rather wintered on  
33 Santa Catalina Island. Accounts of European voyages over the next 200 years provide  
34 descriptions of the Catalineño culture on Santa Catalina Island, which may have resembled that  
35 of the inhabitants of SCI, but the first ethnohistoric description of the inhabitants of SCI is from  
36 Fr. Juan Vizcaíño in 1769. His ship, the San Antonio, anchored in Pyramid Cove and Vizcaíño  
37 recounts that the islanders travelled out to the ship by plank canoe in order to trade with the  
38 Spanish. Along with accounts of the visiting plank canoes, Vizcaino noted the material cultural  
39 he observed on the islanders, including otter-skin robes, rock crystals, and fishhooks made of  
40 twisted cactus spines (Johnson 1988).

41 The historical period dates to the establishment of the first Spanish Mission on the mainland in  
42 San Diego in 1769. It was during this time that Juan Perez, captain of a Spanish Manila galleon,

1 explored SCI (Bruce 1994). It was shortly after this time that population decline occurred on the  
2 island. Introduction of European diseases likely started the population decline and may have  
3 resulted in migration of remaining islanders to either Santa Catalina or the mainland of  
4 California (Johnson 1988). After Perez's initial exploration of the island, it was used only  
5 sporadically during the Spanish (AD 1769-1822) and Mexican (AD 1822-1848) occupations of  
6 California. During the Spanish Period, SCI was used primarily for otter hunting and smuggling  
7 and in the early 1850s, Chinese laborers arrived on the island to exploit the abalone, a delicacy  
8 in China at the time. Throughout the 19th and 20th centuries, the island was also used by sheep  
9 ranching enterprises under grazing leases from the island's administrative federal agency, the  
10 Department of Commerce (Bruce 1994). In the early 20th century, development began on the  
11 island to accommodate the San Clemente Wool Company and included at least 10 water tanks  
12 and small reservoirs as well as living facilities for the workers and fences, pens, and troughs for  
13 the sheep (Apple and Wahoff 2012).

14 The military history of the island begins as early as 1933 when the San Clemente Wool  
15 Company granted the U.S. Navy a permit to establish, maintain, and use an emergency landing  
16 field on SCI (Sturgeon 2002). In November 1934, however, a Presidential executive order  
17 passed Federal jurisdiction of SCI from the Secretary of Commerce to the control of the  
18 Secretary of the Navy. With this administrative change, the U.S. Navy began a more intensive  
19 development to transform the island into a training facility for both air and ground forces. The  
20 main area for development was the northeastern end of the island, in Wilson Cove. Beginning in  
21 1936 and continuing to the start of World War II, development of the base continued steadily  
22 and included construction of a steel pier at Wilson Cove, a road system, fresh water storage  
23 tanks, barracks, a mess hall, administrative and support facilities, the Gunnery School, and an  
24 airfield. During World War II, the island was used as a training facility and by the 1960s the SCI  
25 airstrip and support facilities were completed and the original World War II airstrip was  
26 deactivated (Apple and Wahoff 2012, Sturgeon 2002). Most recently, NALF SCI has been used  
27 to test naval weapons and instrumentation and has "experienced significant development of  
28 naval training ranges (Apple and Wahoff 2012:18).

29 **Cultural Resources.** This section provides information on the known cultural resources on the  
30 island. Detailed information on cultural resources site types will not be provided as specific site  
31 type information is not relevant to this EA.

32 Archaeological Sites. Over 51 percent of NALF SCI has been covered by intensive pedestrian  
33 survey and more than 4,250 sites have been identified (Navy 2008; Yatsko, personal  
34 communication; see also Andrews 2010a, 2010b; Apple and Allen 1996; Apple et al. 1997;  
35 Axford 1975, 1976, 1977, 1978, 1984, 1987; Berryman and Berryman 1988; Byrd and Andrews  
36 2001; Byrd and O'Neill 2001; Byrd and Hale 2003; Gross et al. 1996; TMI Environmental  
37 Services 1992). Based on a large scale probabilistic survey, over 7,600 sites are likely present  
38 on the island (Yatsko and Raab 1997). The majority of these sites are prehistoric; however,  
39 historic-age deposits are present and include remains from the abalone fishing camps that were  
40 present on the island during the mid-late 1800s (Berryman 1995) as well as material from the  
41 ranching era (Hatheway and Greenwood 1981). Archaeological sites are located in all areas of  
42 the island, but the greatest density of known sites is found on the western coastal terraces  
43 (Navy 2008). Many of the island sites are small to medium sized middens composed of

1 subsistence remains and material used in food processing. A high percentage of sites have  
2 ground stone present, indicating plant food processing, and shellfish remains are abundant.  
3 While only 277 sites have been or are in the process of being evaluated for eligibility for the  
4 NRHP (Apple and Wahoff 2012; Yatsko, personal communication), a high percentage (85  
5 percent) of those sites tested is considered eligible. Although the island has been used  
6 extensively during the last 80 years for weapons testing and military training exercises, the  
7 majority of the island has not been developed, leaving many of the archaeological sites free  
8 from the direct effects of military development.

9 Architectural Resources. Most of the historic-age building and structures on NALF SCI date to  
10 World War II and the Cold War, with a few structures dating to the ranching operations that  
11 predated military use of the island. The majority of the historic-age buildings and structures have  
12 been recorded on California Department of Parks and Recreation forms and have been found to  
13 be ineligible for the NRHP (Apple and Wahoff 2012; Navy 2008; Apple and Allen 1996; JRP  
14 1997, 2000; Manley and Van Wormer 1998). The Pier Historic District is the only historic  
15 property that has been identified on the island; however, Historic American Building  
16 Survey/Historic American Engineering Record documentation resolving an Adverse Effect under  
17 Section 106 procedurally removed the NRHP-eligibility of this property (Navy 2008).

18 Traditional Cultural Properties. To date, no TCPs have been identified on the NALF SCI  
19 landscape. There is no federally recognized tribe affiliated with SCI, but the Gabrieleño Indians  
20 have expressed concern about the island cultural resources (Navy 2008). As covered in the PA,  
21 these non-federally recognized groups include the Gabrielino/Tongva Nation,  
22 Gabrieleno/Tongva Band of Mission Indians of San Gabriel, Coastal Gabrieleno Diegueno Band  
23 of Mission Indians, Fernandeno/Tataviam Band of Mission Indians, the Island Gabrieleno  
24 Group, and the Spirit of the Sage Council.

### 25 **3.9.3 Environmental Consequences**

26 Potential impacts on historic resources are categorized by criteria established by Section 106 of  
27 the NHPA and its implementing regulations (36 CFR § 800). These include “No Historic  
28 Properties Affected,” “No Adverse Effect,” or “Adverse Effect,” which are defined as follows:

29 “No Historic Properties Affected” is defined as no historic properties present or there are historic  
30 properties present but the undertaking would have no effect upon them as defined in 36 CFR §  
31 800.16(i).

32 “No Adverse Effect” is defined as “when the undertaking’s effects do not meet the criteria of  
33 36 CFR § 800.5(a)(1) ‘Adverse Effect’ or the undertaking is modified or conditions are imposed  
34 to avoid adverse effects.” A proposed action results in a ‘No Adverse Effect’ determination when  
35 the impacts on a historic property are minimal but do not completely alter the historic  
36 characteristics that qualify it for eligibility in the NRHP.

37 “Adverse Effect” is defined as when the undertaking could alter, directly or indirectly, any of the  
38 characteristics of a historic property that qualify the property for inclusion in the National  
39 Register in a manner that would diminish the integrity of the property’s location, design, setting,  
40 materials, workmanship, feeling, or association. Consideration shall be given to all qualifying  
41 characteristics of a historic property, including those that could have been identified subsequent

1 to the original evaluation of the property's eligibility for the National Register  
2 (36 CFR § 800.5(a)).

3 The approach to analysis presented here does not focus on specific sites identified in the APE  
4 to prescribe mitigation measures. It provides sensitive areas of the APE and further guidance on  
5 the process for determining actions that are permissible within sensitive areas and actions that  
6 require consultation with NALF SCI CRPM. Direct and indirect impacts on cultural resources,  
7 and any mitigation measures that may be required, will be determined on a case by case basis,  
8 within consultation with the NALF SCI CRPM. This EA provides guidelines for determining  
9 which actions are exempt from further consideration by nature of them being outside of a zone  
10 that is considered sensitive for cultural material, or is exempt per the NALF SCI PA as an action  
11 previously determined to have No Adverse Effect. NALF SCI has developed an ICRMP that  
12 outlines procedures to avoid disturbing archaeological sites and to assess potential impacts to  
13 cultural deposits. Although not covered under the scope of this EA, the ICRMP will provide  
14 mitigation guidelines should the proposed action reviewed by the NALF SCI CRPM at  
15 NAVFACSW be determined to have the potential to impact an historic property.

16 NAVFACSW provided ArcGIS shape files of the assets to be considered in this EA. The  
17 archaeology division charged with stewardship for NALF SCI provided any available GIS data  
18 that had been collected in the field through current site signage and site recordation projects  
19 (Andrews 2014; Gusick 2013). This field data included both site boundary shape files as well as  
20 Universal Transverse Mercator coordinates of site datums. The remainder of the data were  
21 provided as non-digitized Universal Transverse Mercators of site datums or as locations plotted  
22 on a paper map. These data were digitized. All data were analyzed in an ArcGIS environment.  
23 The site boundaries were determined using three methods:

- 24 • GIS shape file provided that delineated exact site boundaries collected in the field;
- 25 • Universal Transverse Mercator coordinates were obtained for the site datum and plotted  
26 in ArcGIS as a point. Site records were then consulted for site size. Site size included an  
27 east/west and a north/south measurement. A buffer was then added to the datum point  
28 based on the larger of the two measurements, represented as a circle around the datum  
29 point. If there was more than a 65.6-foot (20-meter) difference in the east/west and  
30 north/south measurements, the buffer was altered accordingly and represented as an  
31 elliptical shape, or;
- 32 • Universal Transverse Mercator coordinates were obtained for the site datum and plotted  
33 in ArcGIS as a point. No site size was available for the site so a default site size of 196.9  
34 feet (60 meters) diameter was used to represent the site boundary.

35 Any known archaeological site that came into contact with the APE boundary was included in  
36 the analysis and is accounted for on the cultural resource sensitivity map and given to the base  
37 archaeologists. The total number of cultural resources that intersected the APE is 627. A list of  
38 cultural resources included in this EA can be found in **Appendix C**.

39 Per the PA, any site within 82.0 feet (25 meters) of the APE for an undertaking must be  
40 considered for impacts. For creation of the EA sensitivity map, an additional 82.0-foot  
41 (25-meter) buffer was placed on the site boundaries to account for this 82.0 feet (25 meters)

1 along the course of the linear assets. The original 82.0-foot (25-meter) buffer along the linear  
2 assets already accounted for any cultural resources located on either side of the asset. Creation  
3 of the sensitivity map for this EA included delineating sections of the APE that are within  
4 25 meters (82.0 feet) of a cultural resource based on the ascribed buffers. Of the 3,135.3-acre  
5 (1,268.8-hectare) APE, 431.2 acres (174.5 hectares) or 13.75 percent of the APE is considered  
6 sensitive for cultural resources. Most work within these sensitive areas will need to be reviewed  
7 by archaeologists with NALF SCI before work can proceed; however, see **Section 3.9.2** for  
8 exceptions. The process for consultation with NALF SCI CRPM and the types of work covered  
9 under this EA is described in **Section 3.9.2**.

### 10 3.9.3.1 PROPOSED ACTION

#### 11 All Maintenance and Repair

12 **Vehicle Travel.** Section V.A.(1) of the PA addresses vehicular travel on the island and  
13 prescribes that all vehicles are required to stay on established roads or within an established  
14 Assault Vehicle Maneuver Corridor (AVMC) (which encompasses the Assault Vehicle Maneuver  
15 Areas and Assault Vehicle Maneuver Road). Any impacts to sites from travel limited to the  
16 AVMC would be less than significant. Protocols for management of the sites adjacent to the  
17 established routes is also prescribed in the PA and establishes that they are to be marked for  
18 avoidance. Stipulation V.C.(1-2) prescribes protective signage for archaeological sites and  
19 states:

- 20 1. CONBC has determined that routine training and range sustainability activities would not  
21 adversely affect historic properties, but that inadvertent site disturbances from vehicles  
22 and other ground disturbing activities are more likely to occur along road corridors and in  
23 other high use areas.
- 24 2. In order to avoid potential adverse effects from vehicles and other ground disturbing  
25 activities, CONBC shall continue to implement the site protection strategy as described  
26 in the SCI CRMP's Standards for Protective Signing of Archaeological Sites on SCI.

27 The vehicular travel stipulation was established in the PA to allow for unrestricted travel along  
28 the AVMC. Under this PA, vehicular travel occurring within the established APE and on the  
29 AVMC is permitted and no consultation is necessary, even if that travel occurs within an  
30 archaeologically sensitive area on the AVMC. Vehicular travel within the established APE and  
31 within the archaeologically sensitive areas outside of the AVMC would require consultation with  
32 the NALF SCI CRPM.

33 **Pedestrian Travel.** Pedestrian travel on the landscape of NALF SCI has been previously  
34 determined to have No Adverse Effect on archaeological properties. Section D.4.(i) of the PA  
35 stipulates that the typically dispersed character of pedestrian troop movements and resources  
36 management activities (surveys, species monitoring, etc.) across the general operational  
37 training landscape on NALF SCI are considered to have No Adverse Effect on archaeological  
38 properties transited by this use.

39 While pedestrian use of the landscape is determined to have No Adverse Effect, the PA does  
40 provide a possible exception. Section D.4.(ii) stipulates an exception for Infantry Operational  
41 Areas. However, the Proposed Action does not include pedestrian troop activities; therefore,

1 pedestrian travel associated with maintenance covered under this PA, both inside of and  
2 outside of the archaeologically sensitive areas within the APE, are assumed to meet the No  
3 Adverse Effect stipulation in Section D.4.(i) of the PA. No consultation with the NALF SCI CRPM  
4 is required for pedestrian travel within the APE.

5 **Ground-Disturbing Maintenance Actions.** Ground-disturbing actions associated with  
6 maintenance and repair have no cultural resource restrictions if actions occur within the APE  
7 and outside of the archaeologically sensitive zones. If ground-disturbing actions are within the  
8 APE and within an archaeologically sensitive zone, NALF SCI archaeologists must be consulted  
9 before action can proceed. The NALF SCI CRPM would determine if the ground-disturbing  
10 action has the potential to impact an archaeological property or if there will be no adverse effect  
11 on an archaeological property within the designated archaeologically sensitive zone. As stated  
12 in Stipulation V.A. of the PA:

13 A. Avoidance Measures. CONBC will ensure that the authorization of ground-disturbing  
14 activities implements, as necessary and appropriate, measures to protect archaeological  
15 resources from inadvertent effects. The following measures are currently and will remain  
16 in place at SCI for avoidance of adverse effect to historic archaeological properties.

17 **Laydown Yards.** Laydown yards are considered areas where any equipment, fencing, staking,  
18 or material associated with maintenance are placed within the APE. As installation of fencing or  
19 movement of heavy equipment or materials can cause ground disturbance, laydown yards must  
20 be placed within the APE, but outside of the archaeologically sensitive areas. If a laydown yard  
21 cannot be moved to accommodate avoidance of the archaeologically sensitive areas,  
22 consultation with the NALF SCI CRPM is required.

23 In summary, maintenance and repair would not result in significant impacts on cultural  
24 resources on NALF SCI, based on adherence to all stipulations in the NALF SCI PA, and  
25 consultation with the NALF SCI CRPM, as necessary.

#### 26 3.9.3.2 NO ACTION ALTERNATIVE

27 Under the No Action Alternative, the Navy maintenance and repair on NALF SCI would continue  
28 to occur at current levels and potentially not achieve the required levels of operational readiness  
29 for the NALF SCI mission. Similar to the Proposed Action, significant impacts on cultural  
30 resources would not be expected under the No Action Alternative, based on adherence to all  
31 stipulations in the NALF SCI PA and consultation with the NALF SCI CRPM, as necessary.  
32 Existing cultural resources conditions would remain the same as discussed in **Section 3.9.2.**

## 1 4. Cumulative and Other Impacts

### 2 4.1 Cumulative Effects

3 CEQ regulations for implementing NEPA require that the cumulative impacts of a proposed  
4 action be assessed (40 CFR §§ 1500–1508). A cumulative effect is defined as the following  
5 (40 CFR § 1508.7):

6 *The impact on the environment which results from the incremental impact of the*  
7 *action when added to other past, present, and reasonably foreseeable future*  
8 *actions regardless of what agency (Federal or non-Federal) or person*  
9 *undertakes such other actions. Cumulative impacts can result from individually*  
10 *minor but collectively significant actions taking place over a period of time.*

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

15 CEQ's guidance for considering cumulative effects states that NEPA documents "should  
16 compare the cumulative effects of multiple actions with appropriate national, regional, state, or  
17 community goals to determine whether the total effect is significant." The first step in assessing  
18 cumulative effects involves identifying and defining the scope of other actions and their  
19 interrelationship with a proposed action or alternatives. The scope must consider other projects  
20 that coincide with the location and timeline of a proposed action and other actions.

21 For the purposes of this analysis, the temporal span of consideration is the construction period  
22 (i.e., fiscal year [FY] 2015 and FY 2016). The spatial area of consideration for potential  
23 cumulative effects varies by resource area. For some resources such as geological resources,  
24 this might only include the project boundaries, while other resources such as water resources  
25 might include a hydrologic unit or watershed. This cumulative effects analysis focuses on  
26 reasonably foreseeable future projects taking place on NALF SCI. Therefore, unless otherwise  
27 stated, the geographic extent for cumulative effects is SCI.

#### 28 4.1.1 Projects Considered for Potential Cumulative Effects

29 **Table 4-1** provides a summary of the projects considered for potential cumulative effects on  
30 NALF SCI.

#### 31 4.1.2 Cumulative Effects on Resource Areas under the Proposed Action

##### 32 4.1.2.1 NOISE

33 The geographic region of analysis for impacts on the ambient noise environment includes the  
34 immediate vicinity of the proposed maintenance and repair areas. Existing noise sources at  
35 NALF SCI include aircraft operations in the northern portion of the island, generator noise from  
36 the power plant in the Wilson Cove area, military training activities in the southern portion of the  
37 island, and vehicle traffic and equipment use on roads throughout the island. The Proposed

1 **Table 4-1. Related and Cumulative Projects**

Project Title	Project Description
Slurry Seal Ridge Road	Slurry seal 13.6 miles (21.9 km) of Ridge Road from the perimeter road to the SHOBA gate.
Replace Building 60305	Demolish Building 60305, and replace it with a new one-story pre-engineered building within the same foundation. Include a 4-foot- (1.2-meter-) wide sidewalk around the exterior. Repair/upgrade the existing septic tank and associated leach field (if necessary) and connect them to existing utilities. Conduct minor repairs to the current electrical system. A new transformer might be required.
Replace Rods and Interconnecting Wire at Cable Termination Shelter	Replace grounding rods and interconnecting wire at the CTS. This would require digging two trenches (10 feet (3 meters) long x 1 foot (0.3 meter) wide x 3 feet (0.9 meter) deep) on either side of the high frequency antenna foundation to install ground rods, and a 1-foot (0.- meter) -wide x 30-inches (0.7-meter) deep circular trench with a 10-foot (3 meter) diameter around the center foundation. The system would be buried flush at ground level.
Install 750,000-Gallon (2,839,058.8-L) Potable Water Tank	Install a concrete 750,000-gallon (2,839,058.8-L) potable water tank adjacent to the existing 1-million-gallon (3,785,411-L) water tank that would be demolished. Trenching would be required to reconnect all piping to the existing tank filling line, recirculation pumps, and redundancy tank. A temporary 80,000-gallon (302,832.9-liter) tank would be necessary during construction.
Install Power Poles to Observation Post 3 (OP-3)	Install a power pole alignment (including poles, guys, and anchors) along 2.5 miles (4.0 km) of Observation Post 3 Road. Poles would be approximately 10 to 150 feet (3.0 to 45.7 meters) off the road, and set approximately 150 to 200 feet (45.7 to 61.0 meters) apart, resulting in no more than 90 total poles.
Upgrade existing softball field	Remove bleachers and chain link fencing at the existing softball field. Install synthetic turf material (if necessary); running track with workout stations; and new chain link fencing (including backstop), bleachers, scorer's booth, and rest rooms.
Install Fence Around CTS	Install a security fence around the CTS. This includes 760 linear feet (231.6 meters) of fence, two 20-foot (6.1-meter) automatic vehicle gates, and four 4-foot (1.2-meter) man gates.
Renovate/Upgrade Building 60194	Renovate and repair Building 60194. This includes reroofing, replacing lumber, sanding/scraping/washing the existing façade, priming/painting, replacing window and door units, replacing gutter systems, and replacing interior components (i.e., flooring, bathroom, and kitchen) and miscellaneous electrical components.
Construct Flags and Gates at SWAT-4 and TAR-10	Construct two gates with flag poles and two limit markers along West Shore Road to prevent access during live firing events. The gates would be at the north end of West Shore Road and at the south end of West Shore Road. The two limit markers would be between the north and south gates.
Construct Flags and Gates at VC-3 (Old Airfield)	Construct three gates and flag poles at VC-3 at the start of North Point Road near the landfill, and the AVMR on the west and south sides of VC-3. Temporarily place three road barriers in the VC-3 parking lot to prevent access to the runway during operations.

Project Title	Project Description
Conduct Repairs to Magazine Site	Conduct repairs at the VC-3 magazine site (Buildings 60320, 60321, 60322, 60323, 60324, and 60325). Repairs include the following: remove old gravel; inspect grounding and vents and repair as necessary; ensure vents and lightning protection do not get covered and are in adequate condition; install stand pipes for ground testing; regrade, recompact, and apply a new base; and re-cover magazines with the appropriate depth of gravel.
Install Four Big Top Tents	Install big top tents at two locations to increase the storage area for small water craft at VC-3. One location is an existing fenced concrete area where a power pole and associated equipment (e.g., transformer and guy wires) would be installed outside of the fenced area to provide electrical utilities. The second location is an existing fenced area in the Southern California Offshore Range Boathouse Complex adjacent to Building 60308. Site preparation at this location would require excavation, grading, and compaction with road base and gravel.
Demolish Non Direction Beacon (NDB)	Demolish Building 60014 (Homer building), an NDB between the runway and taxiway, that is no longer in use.

Key:

CTS = Cable Termination Shelter

NDB = Non Direction Beacon

OP-3 = Observation Post 3

1 Action would generate temporary, intermittent noise from construction equipment in the  
2 immediate vicinity of the proposed activity for its duration. All projects identified in **Table 4-1**  
3 have a construction or demolition component and would likely generate localized, short-term,  
4 intermittent noise effects during equipment operations. Cumulative noise sources in the vicinity  
5 of the proposed maintenance and repair could include construction and demolition associated  
6 with projects identified in **Table 4-1**, and vehicle noise. If proposed maintenance and repair  
7 occur in the same location and at the same time as other projects on NALF SCI, there could be  
8 a cumulative increase in noise. However, construction and demolition would typically not occur  
9 at the same time or location, or be particularly loud. Additionally, all construction and demolition  
10 would occur during regular work hours and would follow all applicable OSHA and DOD hearing  
11 protection regulations to protect hearing of workers and others in the vicinity. Therefore, when  
12 added to the effects from other projects on NALF SCI, the Proposed Action would not result in  
13 significant cumulative effects on the ambient noise environment.

14 **4.1.2.2 AIR QUALITY**

15 For Federal standards, SCI is within the South Coast Air Basin, which is in nonattainment for  
16 PM<sub>2.5</sub> and O<sub>3</sub> standards, and considered a serious maintenance area for CO and PM<sub>10</sub>  
17 standards and a maintenance area for NO<sub>2</sub> standards. SCI is in nonattainment for California  
18 state O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> standards. The area is classified as attainment for all other Federal  
19 and California criteria pollutant standards (see **Section 3.2.2**).

20 Proposed maintenance and repair on NALF SCI would generate air emissions at levels below  
21 significance thresholds. The requirements of the General Conformity Rule do not apply because  
22 the Proposed Action entails routine maintenance and repair and routine operation of facilities,  
23 mobile assets, and equipment. It is anticipated that no air permitting implications would occur  
24 from the Proposed Action; however, replacement of emitters should be coordinated with the

1 regulatory agencies. Emissions from construction, demolition, and repair associated with all  
2 cumulative projects identified in **Table 4-1** would contribute to the ambient pollutant impacts.  
3 Cumulative effects could result if these activities occur at the same time as the Proposed Action.  
4 These activities could collectively increase emissions of criteria air pollutants in the area  
5 temporarily, but variations in the timing of the related projects, and the relatively short duration  
6 of effects, would distribute impacts over space and time. Therefore, air quality impacts from the  
7 negligible amounts of emissions from the Proposed Action, in combination with emissions from  
8 cumulative projects, would not be substantial enough to contribute to an exceedance of an  
9 ambient air quality standard. Implementation of standard fugitive dust and construction  
10 equipment emission-control measures and conservation measures would ensure that air  
11 emissions produce less than significant impacts. Therefore, when added to the effects from  
12 other cumulative projects, the Proposed Action would not result in significant cumulative effects  
13 on air quality.

14 The potential effects of proposed GHG emissions are by nature global and cumulative impacts,  
15 as individual sources of GHG emissions are not large enough to have an appreciable effect on  
16 climate change. Therefore, an appreciable impact on global climate change would only occur  
17 when proposed GHG emissions combine with GHG emissions from other man-made activities  
18 on a global scale. The Proposed Action would contribute directly to emissions of GHGs from the  
19 combustion of fossil fuels during maintenance and repair. It is likely that all projects identified in  
20 **Table 4-1** would result in GHG emissions primarily due to combustion of fossil fuels from  
21 equipment and vehicle use. However, the anticipated GHG emissions from the Proposed Action  
22 and the cumulative projects would represent a negligible contribution towards California's GHG  
23 inventory and an extremely negligible contribution toward the national GHG inventory.  
24 Additionally, the cumulative projects would vary in timing. So impacts would be distributed over  
25 time. Therefore, when cumulatively considering GHG emissions from the Proposed Action and  
26 other related projects on NALF SCI, the Proposed Action would not result in significant  
27 cumulative effects on air quality.

#### 28 4.1.2.3 HUMAN HEALTH AND SAFETY

29 For the purposes of human health and safety, the geographic scope for the assessment of  
30 cumulative impacts is defined as the immediate vicinity of the proposed maintenance and repair  
31 and adjacent areas. The Proposed Action would possibly overlap with areas of contaminated  
32 materials, UXO, and ESQD arcs; and workers would be exposed to increased demolition- and  
33 construction-related hazards. All proposed maintenance and repair would be coordinated with  
34 NALF SCI to ensure compliance with appropriate Federal, state, Navy, and NALF SCI  
35 regulations, safety procedures, and standards. The Navy would ensure that construction  
36 contractors are aware of all safety and hazardous materials and waste-handling procedures.  
37 Cumulative projects with potential impacts on human health and safety associated with  
38 contaminated materials include replacement of Building 60305, renovation/upgrade of Building  
39 60194, and conducting repairs to the magazine site, and those associated with ESQD arcs  
40 could include replacement of Building 60305, conducting repairs to the magazine site, and  
41 installation of four big top tents. Installation of power poles to OP-3 could result in impacts  
42 associated with UXO from work within SHOBA. All cumulative projects identified in **Table 4-1**  
43 have the potential to increase general construction hazards; however, there would be no

1 cumulative impacts on worker health and safety as all projects would comply with appropriate  
2 OSHA and Navy safety procedures. Cumulative projects at NALF SCI would also comply with  
3 established safety procedures and hazardous materials and waste management procedures.  
4 Therefore, the Proposed Action would not result in significant cumulative effects on human  
5 health and safety when added to the effects from cumulative projects.

#### 6 4.1.2.4 GEOLOGICAL RESOURCES

7 For the purposes of geological resources, the geographic scope for the assessment of  
8 cumulative impacts is generally limited to areas where ground-disturbing activities would occur.  
9 The Proposed Action would result in temporary impacts on geological resources from  
10 disturbance and compaction of soils from heavy equipment in undeveloped areas, trenching and  
11 boring, grading, vegetation control, and other ground-disturbing activities. Many of these  
12 proposed activities would be infrequent and occur in existing footprints or previously disturbed  
13 areas. Erosion and sedimentation would be minimized by implementation of appropriate BMPs.  
14 Cumulative projects with potential to impact geological resources include replacement of  
15 Building 60305, replacement of rods and interconnecting wire at the CTS, installation of a  
16 750,000-gallon (2,839,058.8-L) potable water tank, installation of power poles to OP-3,  
17 conducting repairs to the magazine site, and installation of four big top tents (see **Table 4-1**).  
18 Similar to the Proposed Action, these projects would include ground-disturbing activities that  
19 could result in erosion and sedimentation. Generally, adverse effects can be avoided or  
20 minimized if proper construction techniques, erosion-control measures, and structural  
21 engineering design are incorporated into project development. Considered cumulatively with the  
22 Proposed Action, other NALF SCI projects occurring in the same vicinity as the proposed  
23 maintenance and repair could result in increased potential for sedimentation and erosion during  
24 ground-disturbing work, but implementation of erosion- and sediment-control BMPs would be  
25 expected to limit potentially adverse cumulative effects. When added to the effects from other  
26 projects in the cumulative effects region, the Proposed Action would not result in significant  
27 cumulative effects on geological resources.

#### 28 4.1.2.5 WATER RESOURCES

29 The Proposed Action would not be expected to result in impacts on groundwater or wetlands;  
30 however, short- and long-term less than significant impacts on surface water could occur due to  
31 ground disturbance from proposed maintenance and repair. These ground-disturbing activities  
32 could increase erosion and the sedimentation of receiving water bodies. If 1 acre (0.4 hectare)  
33 or more is disturbed, an NPDES Construction General Permit for storm water discharge would  
34 be obtained and, if necessary, an exception to discharge to an ASBS must be approved by the  
35 SWRCB. An SWPPP and an SWMP would be developed and BMPs would be implemented to  
36 control erosion and sedimentation, and minimize runoff from construction sites. The Proposed  
37 Action would not likely violate the water quality standards of its storm water discharge permits.  
38 Cumulatively, implementation of all other relevant projects on NALF SCI identified in **Table 4-1**,  
39 especially those with heavy ground-disturbing activities, could result in increased erosion and  
40 sedimentation of receiving water bodies, including the SCI ASBS. Although these other relevant  
41 projects could have similar effects on surface water, these projects would also be required to  
42 comply with applicable Federal regulations and requirements, and would have to implement  
43 similar types of protection measures. This would minimize long-term impacts from the Proposed

1 Action and other projects on NALF SCI. In addition, adherence to the NPDES Construction  
2 General Permit, including use of BMPs, would minimize the potential for construction-related  
3 cumulative effects on surface water quality. Therefore, the cumulative impacts identified for  
4 water quality from the Proposed Action, in conjunction with other relevant projects on NALF SCI,  
5 would be less than significant.

#### 6 4.1.2.6 BIOLOGICAL RESOURCES

7 The geographic scope for the assessment of cumulative impacts on biological resources is SCI,  
8 but the presence of suitable habitat and known occurrences of specific resources are also  
9 considered. The Proposed Action would occur within or adjacent to the existing footprints of  
10 infrastructure, as such vegetation communities in the Proposed Action Area are relatively  
11 common and more than 25 percent are highly disturbed, modified, or landscaped. The  
12 Proposed Action could result in adverse effects on vegetation, and wildlife and habitat due to  
13 temporary disturbances to vegetation (e.g., crushing, trampling, and removal), permanent  
14 vegetation/habitat removal and clearing, conversion or degradation of habitat, temporary  
15 relocation of wildlife due to dust and noise, and possibly the injury or killing of wildlife. Ground-  
16 disturbing activities on NALF SCI would adhere to various conservation measures designed to  
17 minimize potential effects on vulnerable species and their habitats. SCI supports six plant  
18 species and three wildlife species listed as federally threatened or endangered. Three of these  
19 plant species and two of the wildlife (bird) species were observed in the Proposed Action Area  
20 during surveys; the other species have a low potential to occur in the Proposed Action Area.  
21 Direct and indirect adverse effects on these species could occur, but conservation measures  
22 (e.g., flagging of plant species for avoidance, dust and erosion control, and avoidance of the  
23 breeding season of the bird species, and habitat restoration or enhancement measures) would  
24 be implemented to avoid or minimize impacts.

25 All projects identified in **Table 4-1** have the potential for direct and indirect impacts on biological  
26 resources. However, the slurry seal of Ridge Road, installation of power poles to OP-3, and  
27 construction of flags and gates at SWAT-4 and TAR-10 and VC-3 are more likely to result in  
28 adverse impacts similar to those from the Proposed Action because the other projects are in  
29 developed areas.

30 As discussed in **Section 3.6.3**, the Proposed Action would not result in significant impacts on  
31 biological resources. Implementation of conservation measures, as discussed in **Section 3.6.3**,  
32 would ensure maintenance and repair contribute minimally to adverse effects on biological  
33 resources. Similarly, the spatial and temporal extents of impacts on biological resources from  
34 other cumulative projects are expected to be limited due to implementation of conservation  
35 measures and any other permit conditions. As a result, the Proposed Action, combined with  
36 other cumulative projects, would not result in significant cumulative impacts on biological  
37 resources.

#### 38 4.1.2.7 INFRASTRUCTURE, UTILITIES, AND TRANSPORTATION

39 The geographic region of analysis for impacts on utilities and infrastructure includes the areas of  
40 proposed maintenance and repair and the surrounding areas that share the same utilities. The  
41 Proposed Action would not result in a net change in utility usage, or increase demand for utility  
42 services except for liquid fuel supply (from use of fuel for equipment and vehicles), and solid

1 waste management (due to generation of solid wastes during proposed activities). Fuel required  
2 for proposed activities would be delivered to NALF SCI to ensure that no NALF SCI operations  
3 requiring fuel are impacted. The NALF SCI landfill is permitted to accept construction and  
4 demolition debris and has sufficient capacity, and excavated soils would be reused on NALF  
5 SCI. The Proposed Action would result in beneficial impacts on utilities, infrastructure, and  
6 roads due to the nature of action that would maintain and repair these systems, thereby  
7 increasing system reliability. No impacts on the sanitary sewer and wastewater system would  
8 occur. All projects identified in **Table 4-1** could also increase demand for liquid fuel and solid  
9 waste management. In combination with the demands from the Proposed Action, these other  
10 relevant projects would be accommodated by existing liquid fuel supplies provided by barge and  
11 by the remaining capacity of the NALF SCI landfill. Additionally, replacement of Building 60305  
12 and installation of power poles to OP-3, replacement of rods and interconnecting wires at CTS,  
13 and installation of a 750,000-gallon potable water tank would cumulatively improve the reliability  
14 of the sanitary sewer and wastewater system, electrical supply, and potable water supply,  
15 respectively. The cumulative utility and infrastructure impacts from the Proposed Action, in  
16 conjunction with other relevant projects on NALF SCI, would be less than significant.

17 For the purposes of transportation analysis, the geographic scope for the assessment of  
18 cumulative impacts includes the roads in the vicinity of proposed maintenance and repair. There  
19 are a minimal number of vehicles on NALF SCI, and traffic conflicts only occur when exercises  
20 and other hazardous activities restrict access to roads. Negligible impacts on transportation  
21 would be expected under the Proposed Action due to temporary road closures in the immediate  
22 vicinity of proposed activities, and additional traffic due to delivery of equipment and supplies to  
23 the work sites and removal of debris from the sites. All other relevant projects on NALF SCI  
24 identified in **Table 4-1** would be expected to result in minimal, temporary road closures and  
25 additional traffic. Because existing traffic on NALF SCI is light, the Proposed Action would not  
26 likely result in cumulative impacts on transportation unless proposed maintenance and repair  
27 occur in the same area as other relevant projects. Beneficial cumulative impacts on  
28 transportation would result when considering impacts of the Proposed Action with those from  
29 slurry sealing Ridge Road as both actions would make physical improvements to the NALF SCI  
30 road network. However, the Proposed Action, combined with other cumulative projects, would  
31 not result in significant cumulative impacts on transportation.

#### 32 4.1.2.8 HAZARDOUS MATERIALS AND WASTES

33 For the purposes of hazardous materials and wastes, the geographic scope for the assessment  
34 of cumulative impacts is defined as the immediate vicinity of the proposed maintenance and  
35 repair and adjacent areas. The Proposed Action could result in less than significant impacts  
36 from additional amounts of hazardous materials and waste; ACM, LBP, and PCBs associated  
37 with proposed maintenance and repair; exposure to radon during demolition, maintenance, or  
38 repair of facilities with basements or below ground; and overlap with IRP sites 2, 10E, 11, 12,  
39 13, and 17. All cumulative projects identified in **Table 4-1** would likely require the use of small  
40 quantities of hazardous materials and generate small quantities of hazardous wastes.  
41 Replacement of Building 60305, renovation/upgrade of Building 61094, and conducting repairs  
42 to the magazine site could result in exposure to radon, while these same projects as well as  
43 demolition of the NDB (Building 60014) could result in impacts from ACM, LBP, and PCBs.  
44 Replacement of Building 60305 could overlap with IRP site 10E. Hazardous materials and

1 wastes, and any ACMs, LBP, and PCBs removed during demolition would be handled in  
2 accordance with Federal, state, and local regulations and would not be expected to increase the  
3 risks of exposure to workers. The removal of ACMs, LBP, and PCBs during demolition activities  
4 would cumulatively reduce potential exposure to these materials at the work place in the future.  
5 Prior to work in or near an IRP site, sampling would be performed to determine if contamination  
6 exists and appropriate procedures would be followed. For the reasons above, potential  
7 cumulative effects from hazardous materials and wastes would be less than significant.

#### 8 **4.1.2.9 CULTURAL RESOURCES**

9 For the purposes of cultural resources, the geographic scope for the assessment of cumulative  
10 impacts includes areas where ground-disturbing activities and vehicular travel could occur,  
11 which corresponds with the Proposed Action APE (i.e., corridors along existing utilities and  
12 roads). Cultural resource concerns associated with the Proposed Action include those  
13 associated with historic and prehistoric archaeological resources of which 627 intersect with the  
14 APE. Approximately 14 percent of the APE is considered sensitive for cultural resources  
15 (i.e., within 82.0 feet [25 meters] of a cultural resource). No built environment historic resources  
16 and no TCPs have been identified in the APE. Based on the PA, proposed maintenance and  
17 repair that are inside the APE and outside of archaeologically sensitive areas (or, for vehicular  
18 travel, inside of archaeologically sensitive areas if on the AVMC) are permitted with no  
19 consultation. These activities would have No Adverse Effect. NALF SCI archaeologists must be  
20 consulted prior to all proposed ground-disturbing activities, vehicular travel, and siting of  
21 laydown yards that would be inside archaeologically sensitive areas to determine if the action  
22 has the potential to impact an archaeological property or if there would be No Adverse Effect.  
23 The Proposed Action would abide by various stipulations and avoidance measures would be  
24 implemented as identified in the PA to prevent and avoid adverse effects on cultural resources.  
25 It is likely that all cumulative projects identified in **Table 4-1** would be within the Proposed Action  
26 APE. Similar to the Proposed Action, if any of these related projects occur within an  
27 archaeologically sensitive area, they have the potential to result in impacts on cultural  
28 resources. Therefore, NALF SCI archaeologists would be consulted. Proposed maintenance  
29 and repair that would occur in archaeologically sensitive areas on NALF SCI combined with  
30 those of related projects that would occur in sensitive areas could result in cumulative impacts  
31 on cultural resources. It is unlikely that there would be significant cumulative effects because all  
32 actions would comply with the PA, NALF SCI ICRMP, and guidance provided by NALF SCI  
33 archaeologists.

#### 34 **4.1.3 Cumulative Effects on Resource Areas under the No Action Alternative**

35 The No Action Alternative would result in a continuation of the existing conditions. Under the No  
36 Action Alternative, no effects on noise, air quality, safety, geological resources, water resources,  
37 biological resources, hazardous materials and wastes, or cultural resources were identified.  
38 There could be long-term, adverse effects on utilities, infrastructure, and transportation because  
39 the condition of the utilities, infrastructure, and roads would continue to deteriorate. Although the  
40 Navy would continue to conduct necessary maintenance and repair, access to fences and  
41 gates, roads and crossovers, drainage structures, utility infrastructure, and existing and  
42 temporary facilities would be limited. This diminished access could obscure maintenance issues  
43 and prevent timely repair leading to interruptions in service or decreases in efficiency.

- 1 Considered cumulatively, necessary maintenance and repair could occur at the same time and
- 2 in the same area as the cumulative projects resulting in extended interruptions.

## 1 5. Other NEPA Considerations

2 Activities associated with the Proposed Action at NALF SCI would comply with applicable  
3 Federal, state, and local requirements with respect to the human environment. **Section 5.1**  
4 discusses the consistency of the Proposed Action with other Federal, state, and local land use  
5 plans, policies, and objectives. **Section 5.2** discusses the irreversible and irretrievable  
6 commitments of resources. **Section 5.3** discusses the relationship between short-term use of  
7 the environment and long-term productivity.

### 8 5.1 Consistency with Other Federal, State, and Local Land Use 9 Plans, Policies, and Controls

10 The Navy adheres to all relevant laws and requirements applicable to its operations,  
11 maintenance, and new construction activities. Though not comprehensive, **Table 5-1** provides a  
12 list, organized by environmental resource, of Federal and state environmental statutes,  
13 regulations and EOs relevant to environmental analysis of the Proposed Action.

14 No potential conflicts are anticipated between the Proposed Action and any of the applicable  
15 Navy master plans, policies, or controls that address and guide uses at NALF SCI. The  
16 Proposed Action would occur on Federal property and would not affect off-island resources.

#### 17 5.1.1 Federal Acts, Executive Orders, Policies, and Plans

##### 18 5.1.1.1 CLEAN AIR ACT AND GENERAL CONFORMITY RULE

19 The CAA of 1970 and subsequent amendments specify requirements for control of the nation's  
20 air quality. Federal and state ambient air standards have been established for each criteria  
21 pollutant. The 1990 amendments to the CAA require Federal facility compliance with all  
22 requirements for air pollution control to a similar extent as nongovernmental entities must  
23 comply. However, the requirements of the General Conformity Rule do not apply to Federal  
24 actions that include routine maintenance and repair and routine operation of facilities, mobile  
25 assets, and equipment. Therefore, the requirements of the General Conformity Rule are not  
26 applicable to the Proposed Action, which exclusively entails routine maintenance and repair. A  
27 Record of Non-Applicability is included in **Appendix B**.

##### 28 5.1.1.2 NATIONAL HISTORIC PRESERVATION ACT

29 The NHPA was passed in 1966 to provide for the protection, enhancement, and preservation of  
30 those properties that possess significant architectural, archaeological, historical, or cultural  
31 characteristics. Section 106 of the NHPA requires the head of any Federal agency having direct  
32 or indirect jurisdiction over a proposed Federal or federally financed undertaking, prior to the  
33 expenditure of any Federal funds on the undertaking, to take into account the effect on any  
34 historic property.

35 The APEs for the Proposed Action are corridors along existing utilities and roads to support  
36 proposed maintenance and repair and vegetation control. These corridors consist of 82.0 feet  
37 (25 meters) on either side of roads, transmission lines, and water lines and 164.0 feet  
38 (50 meters) in all directions from structures. The determination of the APE for cultural resources

1 **Table 5-1. Summary of Applicable Statutes and Regulations**

<b>Regulation</b>	<b>Source</b>
<b>Noise</b>	
Noise Control Act of 1972	42 U.S.C. § 4901 et seq., Public Law (P.L.) 92-574
Occupational Noise Exposure	29 CFR § 1910.95
<b>Air Quality</b>	
Clean Air Act of 1970 and Amendments of 1977 and 1990, including the General Conformity Rule and the Greenhouse Gas Tailoring Rule	42 U.S.C. § 7401 et seq., as amended
Federal Leadership in Environmental, Energy, and Economic Performance (October 5, 2009)	EO 13514
<b>Water Resources</b>	
Clean Water Act of 1972	33 U.S.C. § 1251 et seq., as amended
Safe Drinking Water Act of 1974	42 U.S.C. § 300
Protection of Wetlands (May 24, 1977)	EO 11990
Floodplain Management (May 24, 1977)	EO 11988
Section 438 of the Energy Independence and Security Act	42 U.S.C. § 17094
<b>Biological Resources</b>	
Marine Mammal Protection Act of 1972	16 U.S.C. § 1361 et seq.
Magnuson-Stevens Fishery Conservation and Management Act (April 13, 1976)	16 U.S.C. § 1801–1882, as amended
Endangered Species Act of 1973	16 U.S.C. § 1531–1543
Migratory Bird Treaty Act of 1918	16 U.S.C. § 703–712
Sikes Act Improvement Act of 1977	16 U.S.C. § 670a–670o, 74 Stat. 1052
Invasive Species (February 3, 1999)	EO 13112
Protection and Enhancement of Environmental Quality (March 5, 1970)	EO 11514
Federal Noxious Weed Act	P.L. 93-629
Conservation of Migratory Birds (January 10, 2001)	EO 13186
California Endangered Species Act	Fish & Game Code §§ 2050, et seq.
<b>Hazardous Materials and Wastes</b>	
Resource Conservation and Recovery Act of 1976	42 U.S.C. § 6901, as amended
Comprehensive Environmental Response, Compensation, and Liability Act of 1980	42 U.S.C. § 103
Pollution Prevention Act of 1990	42 U.S.C. § 133
Toxic Substance Control Act of 1976	15 U.S.C. § 53
Superfund Amendments and Reauthorization Act of 1986	26 U.S.C. § 9507
Strengthening Federal Environmental, Energy, and Transportation	EO 13423
Federal Compliance with Pollution Control Standards	EO 12088
Defense Environmental Restoration Program	10 U.S.C. § 2701 et seq.
Occupational Safety and Health Act	29 U.S.C. § 15
<b>Cultural Resources</b>	
National Historic Preservation Act of 1966	16 U.S.C. § 470 et seq., as amended
Archaeological Resources Protection Act of 1979	16 U.S.C. § 470a–11, as amended

1 was stipulated in the PA executed in 2008 following consultation among the Navy, California  
2 SHPO, Advisory Council on Historic Preservation (ACHP), and 16 other consulting parties  
3 (Navy 2008). Any known cultural resource on NALF SCI that came into contact with the APE  
4 boundary was included in the analysis. No built environment historic resources or TCPs have  
5 been identified in the APE. The APE consists of 3,135.3 acres (1,268.8 hectares), of which  
6 431.2 acres (174.5 hectares) (13.75 percent) are considered sensitive for cultural resources.  
7 Most proposed activities within these sensitive areas would need to be reviewed by NALF SCI  
8 archaeologists before work can proceed; however, there are some exceptions for activities  
9 within the APE and outside of the sensitive areas. The process for consultation with NALF SCI  
10 archaeologists and the types of work covered under this EA is described in **Section 3.9.2.1**. The  
11 Proposed Action would abide by stipulations and avoidance measures identified in the PA.  
12 Therefore, the Proposed Action would be in compliance with the NHPA.

### 13 **5.1.2 Other Plans Related to NALF SCI**

#### 14 **5.1.2.1 NAVAL BASE CORONADO ACTIVITY OVERVIEW PLAN**

15 The NBC Activity Overview Plan specifically addresses the regional land and facility  
16 requirements from a functional point of view, and provides land use recommendations (NBC  
17 2010). The Proposed Action would be consistent with the objectives identified in the NBC  
18 Activity Overview Plan and the primary goal of development at NALF SCI.

## 19 **5.2 Irreversible and Irretrievable Commitment of Resources**

20 NEPA (42 U.S.C. § 4332 Section 102(2)(C)(v)) as implemented by CEQ regulation 40 CFR §  
21 1502.16 requires an analysis of significant, irreversible effects resulting from implementation of  
22 a Proposed Action.

23 An irreversible or irretrievable commitment of resources refers to impacts on or losses to  
24 resources that cannot be reversed or recovered, even after an activity has ended. Resources  
25 that are irreversibly or irretrievably committed to a project are those that are typically used on a  
26 long-term or permanent basis; however, those used on a short-term basis that cannot be  
27 recovered (e.g., non-renewable resources such as metal, wood, fuel, paper, and other natural or  
28 cultural resources) also are irretrievable. Human labor is also considered an irretrievable  
29 resource. All such resources are irretrievable in that they are used for a project and, therefore,  
30 become unavailable for other purposes.

31 **Material Resources.** Material resources used for the Proposed Action would include concrete  
32 or asphalt, reinforced concrete, and various other material supplies, and these would be  
33 irreversibly lost. The materials that would be consumed are not in short supply, would not limit  
34 other unrelated construction activities, and would not be considered significant.

35 **Energy Resources.** No significant effects would be expected on energy resources used as a  
36 result of the Proposed Action, though any energy resources consumed would be irretrievably  
37 lost. These include petroleum-based products (e.g., gasoline, diesel). During construction,  
38 gasoline and diesel would be used for the operation of construction vehicles. Consumption of  
39 these energy resources would not place a significant demand on their availability at NALF SCI.

1 **Human Resources.** The use of human resources for construction is considered an irretrievable  
2 loss in that it would preclude such personnel from engaging in other work activities. However,  
3 the use of human resources for the Proposed Action represents employment, and is considered  
4 beneficial.

### 5 **5.3 Relationship Between Short-Term Use of the Environment** 6 **and Long-Term Productivity**

7 NEPA requires consideration of the relationship between short-term use of the environment and  
8 the impacts that such use could have on the maintenance and enhancement of long-term  
9 productivity of the affected environment. Impacts that narrow the range of beneficial uses of the  
10 environment are of particular concern. Such impacts include the possibility that choosing one  
11 alternative could reduce future flexibility to pursue other alternatives, or that choosing a certain  
12 use could eliminate the possibility of other uses at the site. Short-term uses of the biophysical  
13 components of the human environment include direct impacts, usually related to construction,  
14 which occur over a period of less than 5 years. Long-term uses of the human environment  
15 include those impacts that occur over a period of more than 5 years, including permanent  
16 resource loss. The Proposed Action would require minimal construction resulting in short-term,  
17 minor effects. Establishing corridors along all utilities, roads, and structures to support ongoing  
18 and future vegetation management and asset maintenance and replacing the existing water  
19 storage tank would enhance long-term operations at NALF SCI. These are long-term, beneficial  
20 uses.

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3 Navy staff responsible for directing the preparation of the EA are listed as follows.

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\*Any Agency or Public comments will be placed here.

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A

Biological Assessment





**Final**

# Biological Assessment

Addressing Maintenance and Upgrades to  
Infrastructure

*Navy Auxiliary Landing Field  
San Clemente Island, California*



**July**

**2015**

## Abbreviations and Acronyms

AVMR	Assault Vehicle Maneuver Road
BA	Biological Assessment
BTR	Biological Technical Report
ESA	Endangered Species Act
FMP	Fire Management Plan
ft	foot/feet
INRMP	Integrated Natural Resources Management Plan
km	kilometer(s)
m	meter(s)
NALF SCI	Navy Auxiliary Landing Field, San Clemente Island
NBC	Naval Base Coronado
NM	nautical mile(s)
NRO	Natural Resources Office
RAA	Restricted Access Area
SCI	San Clemente Island
SERG	San Diego Restoration and Ecology Group
SHOBA	Shore Bombardment Area
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
WIB	Work Induction Board

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# 1. Introduction

The purpose of this Biological Assessment (BA) is to evaluate the effects to taxa protected under the Endangered Species Act (ESA) from upgrades and maintenance to infrastructure at Navy Auxiliary Landing Field, San Clemente Island Naval Base Coronado, California (NALF SCI). The primary mission of NALF SCI is to provide the naval services and other military departments with air, land, and sea space to conduct realistic training events in support of operational readiness requirements in a maritime environment (Navy 2013b). To complete this mission, infrastructure on NALF SCI (e.g., roads, transmission lines, water lines, and buildings) requires ongoing maintenance and repair. The Action Area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Action Area for this project consists of all maintenance corridors, as described in Section 2.2.

Species and subspecies discussed in this document include those listed as threatened, endangered, or proposed by the Federal government as of December 2014; and are known to occur or have habitat within the Action Area. As the lead agency for this BA, the U.S. Navy determined there are six plant and three wildlife taxa listed as threatened or endangered on NALF SCI.

The six plants listed as threatened or endangered on NALF SCI include: San Clemente Island (SCI) bush-mallow (*Malacothamnus clementinus*), SCI Indian paintbrush (*Castilleja grisea*), SCI larkspur (*Delphinium variegatum* ssp. *kinkiense*), SCI lotus (*Acmispon dendroideus* var. *traskiae*), SCI woodland star (*Lithophragma maximum*), and the Santa Cruz Island rockcress (*Sibara filifolia*). The SCI bush-mallow, SCI larkspur, and SCI woodland star were not observed during surveys conducted on NALF SCI in 2014 and are not expected to occur within the Action Area (HDR 2014). There will be no effects to these species from the proposed actions and as such, these species will not be discussed further in this document.

The three wildlife taxa listed as threatened or endangered include: San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*), San Clemente Bell's sparrow (*Artemisospiza belli clementeae*), and the western snowy plover (*Charadrius alexandrinus nivosus*). The western snowy plover will not be discussed further as there is no suitable habitat within the Action Area. The island night lizard (*Xantusia riversiana*) is present within the Action Area but was delisted effective May 1, 2014, and is not included in further discussion in this document.

Therefore, this BA addresses potential effects to three plant and two wildlife taxa that are expected to be present in the Action Area on NALF SCI (**Table 1-1**). These taxa are the SCI Indian paintbrush (*Castilleja grisea*), SCI lotus (*Acmispon dendroideus* var. *traskiae*), the Santa Cruz Island rockcress (*Sibara filifolia*), San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*) and the San Clemente Bell's sparrow (*Artemisospiza belli clementeae*).

This BA was prepared in accordance with legal requirements set forth under Section 7 of the ESA (16 United States Code [U.S.C.] 1536 [c]) and regulations promulgated to implement that section of the ESA.

**Table 1-1. Federally Listed Taxa Occurring on NALF SCI within the Action Area**

Taxa	Listing Status	Year Listed or Designated
<b>PLANTS</b>		
SCI Indian paintbrush ( <i>Castilleja grisea</i> )	Threatened	1977
SCI lotus ( <i>Acmispon dendroideus</i> var. <i>traskiae</i> )	Threatened	1977
Santa Cruz Island rockcress ( <i>Sibara filifolia</i> )	Endangered	1997
<b>WILDLIFE</b>		
San Clemente loggerhead shrike ( <i>Lanius ludovicianus mearnsi</i> )	Endangered	1977
San Clemente Bell's sparrow ( <i>Artemisiospiza belli clementeae</i> )	Threatened	1977

## 1.1 Status of Critical Habitat in the Action Area

The National Defense Authorization Act for Fiscal Year 2004 (Public Law 108-136) amended the ESA (7 U.S.C. 136, 16 U.S.C. 1531 et seq.) to limit areas eligible for designation as critical habitat. Specifically, Section 4(a)(3)(B)(i) of the ESA (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under Section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.” There is a current and signed NALF SCI Integrated Natural Resources Management Plan (INRMP); therefore, no critical habitat has been designated on NALF SCI.

## 2. Project Description

### 2.1 Project Location

The Southern California Range Complex encompasses surface and subsurface ocean operating areas, over-ocean military airspace, and NALF SCI. NALF SCI is owned and operated by the U.S. Navy and is overseen by Naval Base Coronado (NBC). It is the southernmost island of an archipelago of eight major Channel Islands in the Southern California Bight. NALF SCI is located 68 nautical miles (NM) (125 kilometers [km]) west of San Diego and 55 NM (101 km) south of Long Beach, California. The island is oriented northwest to southeast (**Figure 2-1**). It is approximately 21 miles (34 km) long, 4 miles (11 km) at its widest point, and 56 square miles (145 square km) or 36,480 acres (14,763 hectares) in total (Navy 2013b).

The primary mission of NALF SCI is to provide military departments with air, land, and sea space to conduct realistic training events in support of operational readiness requirements in a maritime environment (Navy 2013b).

### 2.2 Project Description

Under the Proposed Action, the U.S. Navy would conduct maintenance and repair at NALF SCI for existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure (i.e., electrical and water systems), and existing and temporary facilities. In addition, the U.S. Navy would: (1) establish 50-foot (ft) (15.2-meter [m]) corridors from the center line of all existing utilities and roads to support ongoing and future maintenance, upgrades, and vegetation management; and (2) establish 100-ft (30.5-m) maintenance corridors around all assets (e.g., buildings and structures) to support ongoing and future maintenance and for protection from potential wildfire damage. The Action Area for this project, which is defined as all areas to be affected directly or indirectly by the project, consists of all of these maintenance corridors. Shorelines are excluded because proposed actions are not anticipated to impact these areas. Marine areas surrounding NALF SCI also will not be affected by the Proposed Action.

**Figures 2-1 and 2-2** provide an overview of existing infrastructure locations and proposed maintenance corridors on NALF SCI; for detailed maps showing the corridors, see **Appendix B: Map Book**.

The combined analysis of the establishment of the corridors associated with all utilities, roads, and assets is intended to streamline environmental review and permitting, including requirements for compliance with the ESA. The combined analysis will eliminate segmentation, facilitate coordination of land use planning, expedite project execution, improve the evaluation of potential cumulative environmental impacts, assist in maintaining a baseline for future analysis, encourage agency coordination, and provide cost savings. Details of the Proposed Action are provided in **Section 2.2.1**.

Proposed special projects on NALF SCI, such as the projects described in this BA, are tracked through the NBC Site Approval and Project Review Process (**Figure 2-3**). Proposed special projects are reviewed initially by the NBC Work Induction Board (WIB) and are coordinated

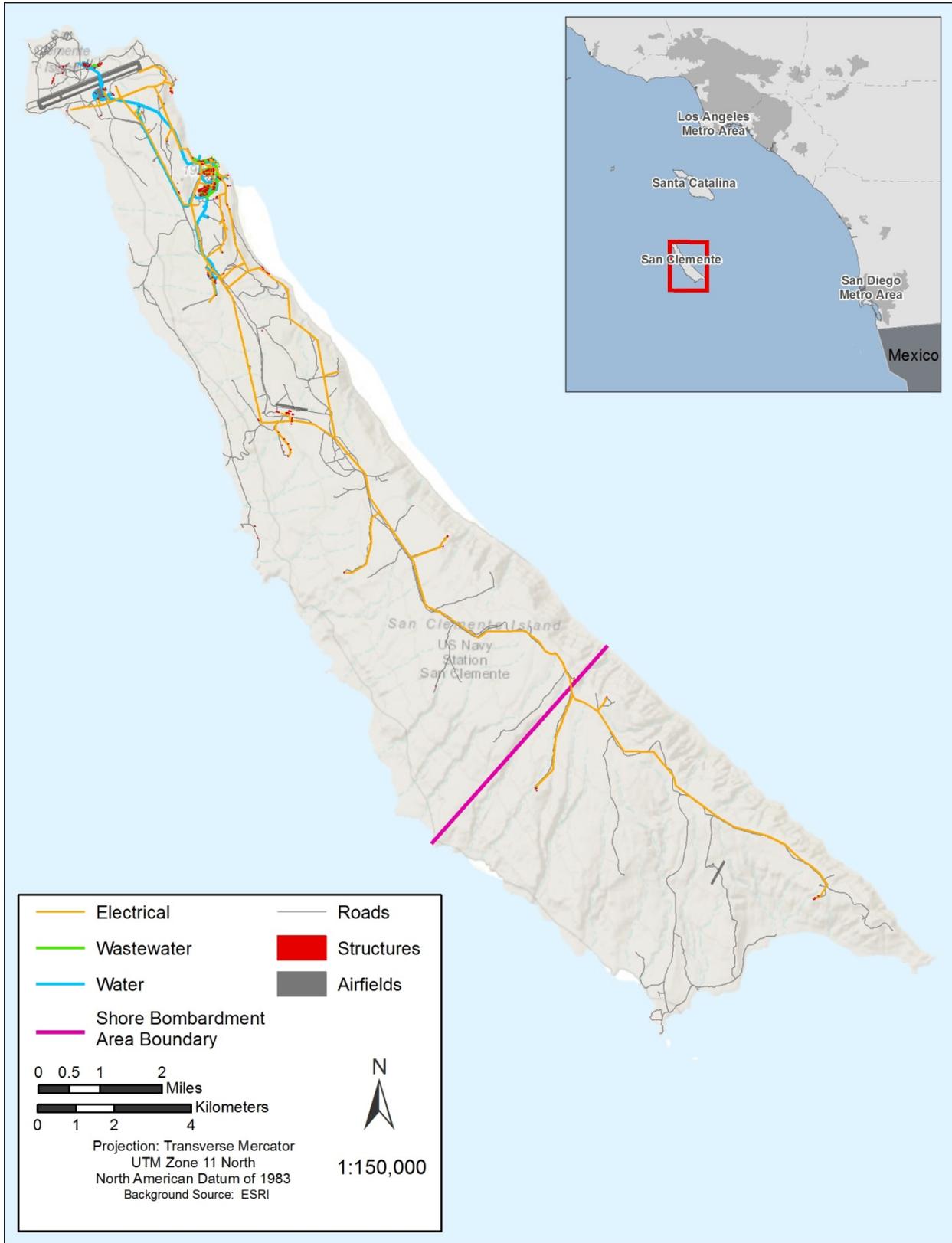


Figure 2-1. Location of NALF SCI and Proposed Corridors

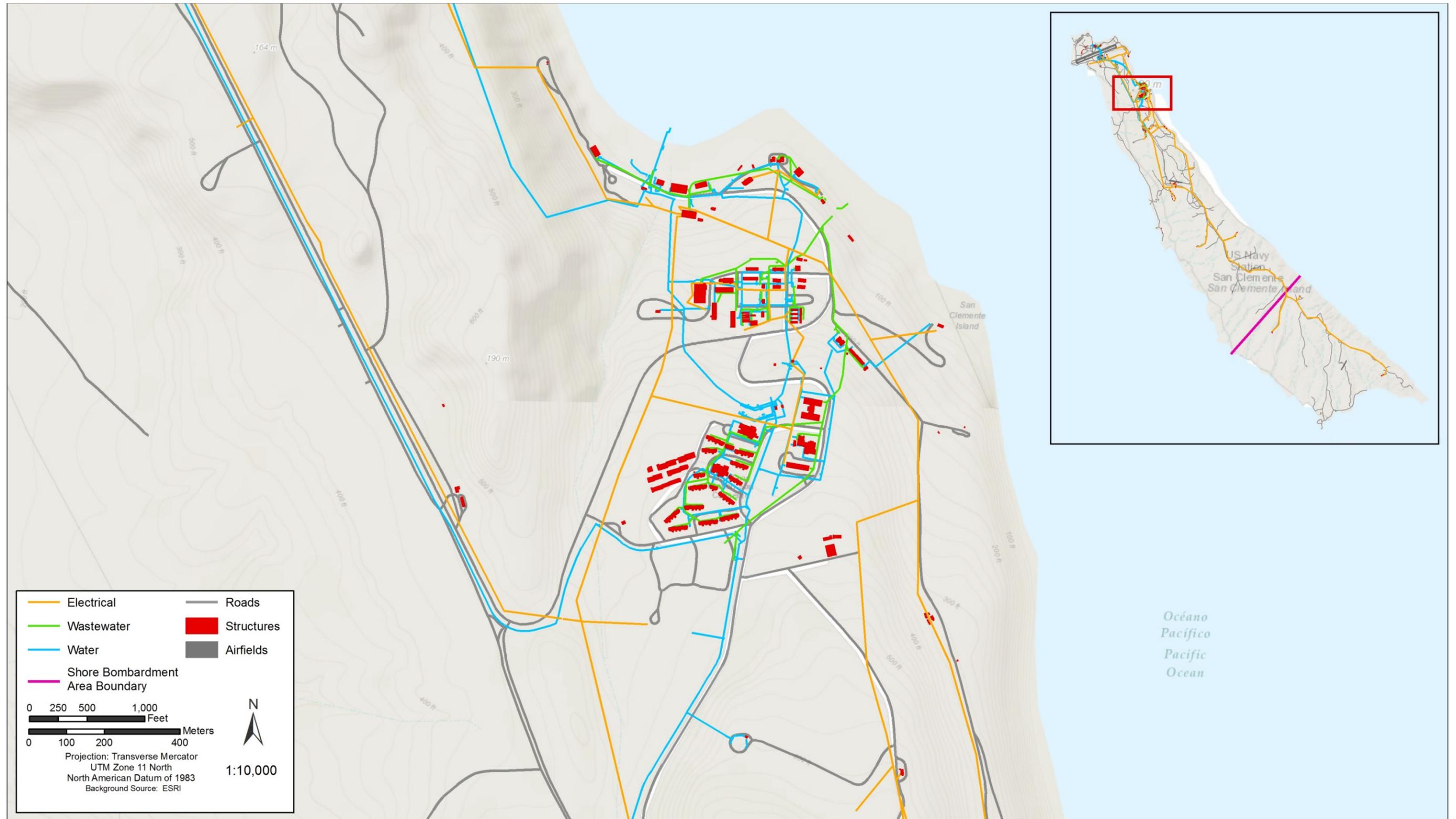


Figure 2-2. Detail of Proposed Corridors within Wilson Cove

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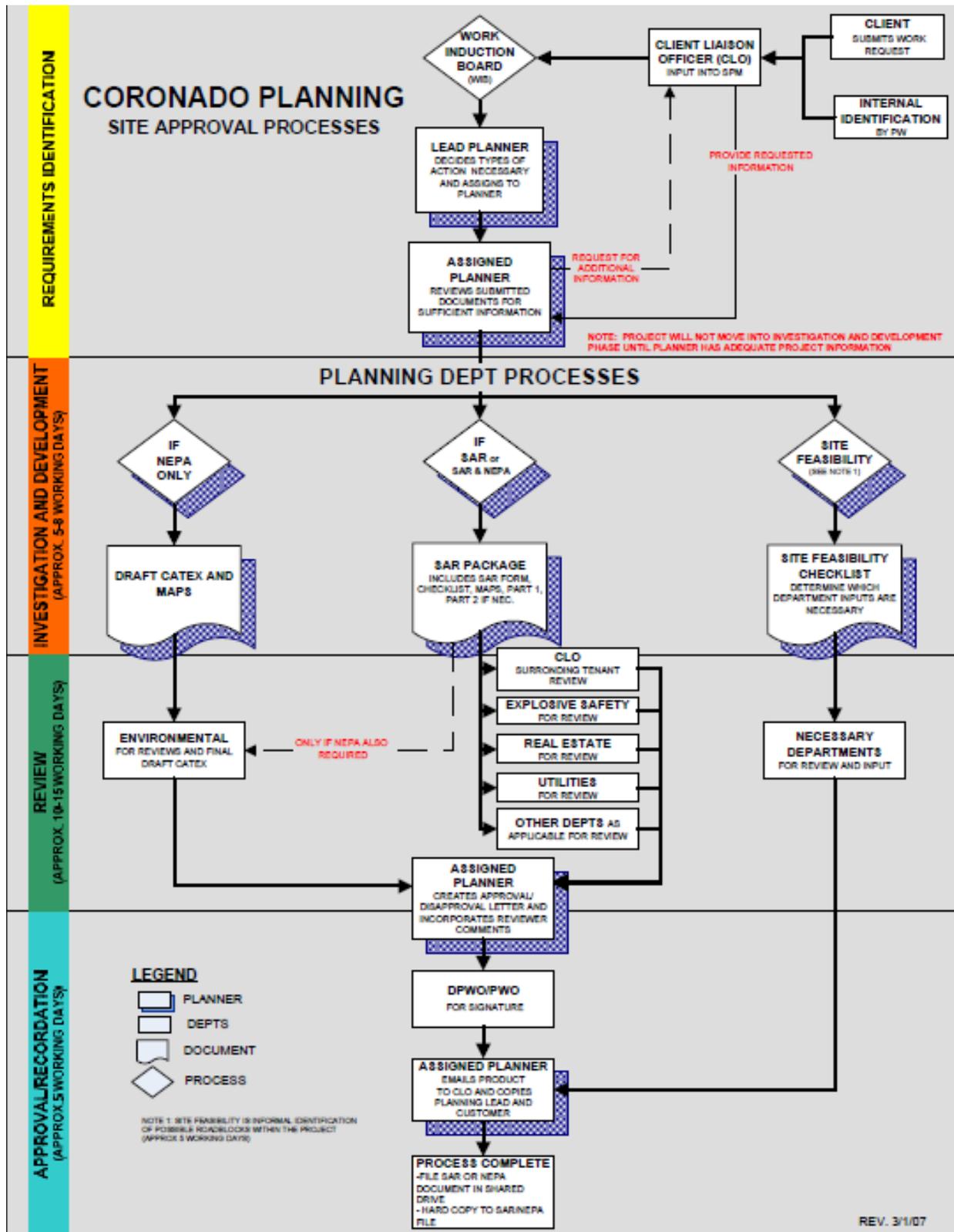


Figure 2-3. Naval Base Coronado Site Approval and Project Review Flow Chart (Navy 2013b)

through the NBC Planner and all departments on the installation. The WIB reviews submitted projects based on their need to fulfill training requirements, potential conflicts, and preliminary impact determination. The WIB preliminary impact determination includes review of potential permanent and temporary impacts. Permanent impacts have irreversible effects to the existing environment. Temporary impacts have reversible effects to the existing environment. Potential permanent and temporary impacts related to this project are provided in **Table 2-1**.

**Table 2-1. Utility and Infrastructure Corridor Length and Size within the Action Area Categorized by Temporary or Permanent Impacts**

Infrastructure Type	Corridor Length Linear Miles (Kilometers)	Corridor Area Acres (Hectares) <sup>1,2</sup>
<b>Temporary Impacts</b>		
Electrical System (Transmission Lines)	40.49 (65.16)	N/A
Electrical System (Wind Turbines)	N/A	1.9 (0.77)
Potable Water Utility	14.79 (23.80)	N/A
Wastewater Lines	3.43 (5.51)	N/A
<i>Roads Excluding RAA and Impact Ranges</i>	<i>118.55 (190.78)</i>	<i>1,089.1 (440.8)</i>
All Roads	129.48 (208.39)	1,206.1 (488.1)
<b>Permanent Impacts</b>		
All Buildings	N/A	81.4 (32.95)
<b>Total Impacts</b>		
<b>Total Excluding RAA and Impact Ranges</b>	<i>176.06 (283.32)</i>	<i>1,172.4 (474.52)</i>
<b>Total Including RAA</b>	188.19 (302.86)	1,289.4 (521.82)

RAA (Restricted Access Areas)

<sup>1</sup> Corridors of different designations overlap (e.g. transmission, water utility, and wastewater corridors fall within road corridor area); therefore, the area for these lines are represented by the roads area.

<sup>2</sup> Corridor areas were calculated by subtracting existing impacted areas within each corridor (buildings, parking lots, primary roads, and secondary roads).

### 2.2.1 Summary of Maintenance and Repair Activities

Under the Proposed Action, the U.S. Navy would establish 50-ft (15.2-m) corridors from the center line of all existing utilities and roads, and a 100-ft (30.5-m) maintenance corridor around other assets to support ongoing routine maintenance and upgrades and for wildfire protection on NALF SCI. **Figures 2-1 and 2-2** shows the probable corridors for the utilities, paved and unpaved roads, the Shore Bombardment Area (SHOBA) boundary, and other assets. The majority of maintenance and repair would be conducted from existing roads and other disturbed areas.

Occasionally, heavy equipment would be driven off existing roads and outside of existing footprints to conduct maintenance and repair. These disturbances would be infrequent and would not occur outside of the established maintenance corridors as shown in **Figures 2-1 and 2-2**. Any impacts outside of the delineated corridors will be quantified and reported to the U.S. Fish and Wildlife Service (USFWS) if they directly or could indirectly affect listed taxa. **Table 2-1** provides a summary of the size of the corridors and defines whether those corridors would result in temporary or permanent impacts. The only permanent impacts associated with the Proposed Action would be from establishing maintenance corridors and conducting vegetation

control around the perimeter of existing buildings. Although these impacts would be considered permanent, it is possible that managed vegetation corridors around facilities could continue to provide feasible habitat for some plants and wildlife. Additional details on each utility and infrastructure type are provided in the following paragraphs.

#### **ELECTRICAL SYSTEM**

NALF SCI has approximately 40 miles (64.37 km) of overhead 15-kilovolt electrical distribution lines. Reliability of the grid depends on routine maintenance and emergency access to all portions of the electrical distribution system. The majority of these distribution lines traverse remote areas with access only by dirt roads and two-track trails. Annual inspections of distribution lines require driving along the distribution route in some of the most remote areas of NALF SCI. Some of these routes are not traveled frequently enough to establish a visible roadway. A 50-ft (15.2-m) corridor is required on each side of the distribution line to allow large bucket trucks to access the distribution line and maneuver around the transmission poles to perform routine maintenance on electrical components (e.g., transformers, guy wires, lightning arresters). In addition, a 25-ft (7.6-m) corridor around the transmission poles is required and would be cleared of vegetation using a weed-whacker on an annual basis. There are approximately 975 transmission poles on NALF SCI. Emergency access to restore power due to downed distribution lines, blown fuses, and damaged transmission poles is severely diminished without routine maintenance capabilities and corridors for access.

Electrical system maintenance and repair would consist of the replacement of burned-out light bulbs, restoring/replacing damaged power lines or onsite power-generating systems (e.g., transformers, guy wires, lightning arresters), repair and replacement of associated electrical components, and, where necessary, vegetation clearing and debris removal. Maintenance on underground electrical lines (approximately 15,000 feet) would be through existing vaults and no trenching would occur. Replacement of electrical poles would occur within the same, or immediately adjacent to, the existing location and within the vegetation clearance corridor for that pole. Heavy equipment potentially needed to maintain electrical systems includes lifts, drill rigs, track-hoes, backhoes, excavators, weed-whackers, all-terrain vehicles, and flatbed trucks.

Most electrical system maintenance and repair would occur within the existing footprint; however, equipment would occasionally need to be driven outside of the existing footprint. These disturbances would be infrequent and would not occur outside of the established maintenance corridor.

#### **WATER SYSTEM**

NALF SCI has approximately 7 miles (11.2 km) of aboveground and underground water lines. A 50-ft (15.2-m) corridor on each side of every water line is required to ensure access for maintenance and emergency repairs. Maintenance activities would include sampling points along the water line, annual valve exercising, flushing, rust control, painting, stanchion maintenance, remote pumping station maintenance, air check valve maintenance, vegetation control, annual power-washing, and annual visual inspections. Occasionally, water lines can develop a leak (e.g., from rust), be damaged from contact with a vehicle, or leak at a pipe joint or flange. With a limited amount of stored water at NALF SCI, it is critical that the operators have access to valves along the water line to stop leaks if they occur and the flexibility to

excavate around the water line to make repairs. Egress and ingress routes to water lines would be designated on a project basis.

Water system maintenance and repair might require trenching, boring underground, dragging large hoses, welding, mowing, grubbing, and using generators. All soil removed during trenching activities would be backfilled into trenches. Heavy equipment potentially needed to maintain water systems include boom trucks, backhoes, excavators, jackhammers, forklifts, and valve-turning trucks. All maintenance and repair would occur within the survey corridors.

## ROADS

Many of the roadways (paved and unpaved) and culverts on NALF SCI are in need of repair. To conduct maintenance on roadways, a corridor around the roads, approximately 50 ft (15.2 m) from the centerline of the road on both sides, is required (see **Figure 2-2**). The lengths of the corridors are classified by roads outside of the Restricted Access Areas (RAA) and all roads including those within the RAAs. The RAAs include areas that have been identified as having or previously having unexploded ordnance, and therefore, are restricted.

Maintenance and repair of roads would consist of filling in potholes, re-grading road surfaces, improving water drainage measures, controlling vegetation and debris, and adding lost road surface material (i.e., gravel and fill) to reestablish intended surface elevation needed for adequate drainage. There are approximately 188.19 miles (302.86 km) of road within the Action Area. Approximately 12.13 miles (19.52 km) are located in RAAs or impact ranges; these roads could not be surveyed, but are included in the impact analysis. The remaining 176.06 miles (283.34 km) of roads within the Action Area were surveyed for resources from February to October of 2014. Most road activities would occur within the existing footprint; however, equipment would occasionally need to be driven off existing roads. All maintenance and repair on roads would occur within the survey corridors (see **Figure 2-2**).

Grading of existing dirt and previously graded roads would be conducted. Heavy equipment would be needed for activities such as grading, filling, and compacting. Grading with the use of commercial equipment (e.g., graders, bulldozers, dump trucks, and rollers) would be used to restore an adequate surface to graded earth roads. Graded roads would be slightly crowned and absent of windrows in the gutter line to avoid ponding and channeling within the road during rain events. Any associated roadside drainage would be maintained to ensure that runoff is removed from the road surface quickly and effectively without creating further erosion issues. The addition of material to these roads would be kept to the minimum needed to restore an adequate surface to graded earth roads. Most of the gravel and fill material would come from an on-island barrow pit. Occasionally gravel and sand would be delivered from an off-island source depending on resource availability. Importing soil and fill from the mainland would be avoided to the extent possible to prevent the transfer of invasive species. If soil and fill are not available on the island, it would be heat-treated, when feasible, before being transferred to NALF SCI.

Vegetation control would be conducted along roads from 2.0 to 5.0 ft (0.6 to 1.5 m) from the roadside depending on conditions (e.g., steep drop offs or un-safe conditions). Vegetation control would include mowing where possible and effective. In areas where terrain is prohibitive or where herbicide treatment would be more biologically effective, spot- or broadcast-application

herbicide treatment would be necessary. Vegetation control would typically occur on a quarterly basis, but would be triggered by vegetation conditions.

#### **FACILITIES**

NALF SCI needs to protect its assets (e.g., buildings and other structures) from potential wildfire damage. Maintenance and upgrades (e.g., additions, painting, and roof repair) are also required for some of the assets at NALF SCI. Therefore, a 100-ft (30.5-m) corridor is required around all of the assets on NALF SCI see **Figures 2-1 and 2-2** and **Table 2-1**).

Facilities, including buildings, wind turbines, barrow pits, walkways, generators, septic tanks, and parking lots would be maintained, repaired, and upgraded throughout NALF SCI. Most of the maintenance and repair would occur in the developed areas of NALF SCI. These activities would include painting, power-washing, roof repair/replacement, cleaning and replacing gutters, repairing concrete structures (e.g., on stairs or sidewalks), upgrading existing generators, disposing of septic tank contents annually, vegetation control, demolition of existing infrastructure, and movement of temporary facilities. These activities might involve the use of heavy equipment including excavators, bulldozers, dump trucks, pavers, cranes, forklifts, and scrapers.

Vegetation control, including mowing and herbicide treatment, would be implemented as conditions dictate (estimated to be quarterly) within 50 ft (15.2 m) of all structures in accordance with the defensible space parameters set forth in the Fire Management Plan (FMP), (Navy 2009).

NALF SCI would remove degraded, unsafe, and unused facilities. Removal of the facilities is necessary to minimize safety concerns, reduce maintenance costs, and clear land for new construction to avoid increased impacts to undeveloped areas. The majority of demolition activities would occur in developed areas and might involve ground disturbance and the removal of existing facilities, associated equipment, parking lots, and fencing. These activities may require use of heavy equipment including excavators, bulldozers and dump trucks. Some demolition activities may occur in more remote areas.

Most facility maintenance and repair would occur within the existing footprint; however, equipment would occasionally need to be driven off previously disturbed areas. These disturbances would be infrequent and would not occur outside of the established maintenance corridors.

#### **FENCES AND GATES**

Maintenance and repair of existing fences and gates would consist of welding metal fence components, replacing damaged or structurally compromised components, reinforcing or bracing foundations, repairing weather-related damage, and removing vegetation and accumulated debris. Work that would involve flame or sparks from welding, cutting, or grinding can pose a fire hazard. Precautions will be put in place to prevent ignitions. The risk of fire will also be mitigated by not conducting high risk activities during extreme and very high fire danger ratings as defined in the SCI Wildland FMP (Navy 2009).

Earth moving could be necessary for fence and gate maintenance. To replace damaged or structurally compromised portions of fences and gates, heavy equipment might be needed for

filling, compacting, and trenching. On-road haul trucks and excavators, or other such equipment, could be required to replace heavy fence and gate parts. Most fence and gate maintenance and repair would occur within the existing footprint; however, equipment would occasionally need to be driven off existing roads. These disturbances would be infrequent and would not occur outside of the established maintenance corridors.

#### **DRAINAGE MANAGEMENT STRUCTURES**

Maintenance and repair of drainage management structures would consist of cleaning blocked culverts of trash and debris and repairing/replacing nonfunctional or damaged structures where necessary. Replacement, repair, and installation of new culverts or flow structures would occur, as necessary, to maintain proper functionality. Riprap and other erosion-control structures would be repaired, resized, or installed to reduce erosion and improve water flow. In addition, maintenance and repair of low-water crossings would occur when necessary to maintain proper functionality. All debris and trash removed from culverts and grates would be disposed of at an appropriate disposal facility.

Low-water crossings consist of riprap at the edges and articulated matting or some similar hardened material in the middle. The riprap protects the articulated matting from washing away and enhances the stability and longevity of the materials. Maintenance and repair would consist of restoring and replacing damaged/displaced riprap. Articulated matting would be restored, replaced, or strengthened to maintain its functionality. Debris would also be removed to create a sustainable, efficient low-water crossing.

All of the culverts would be restored or replaced within their existing footprint. Culvert replacements and repairs would take place as needed. New culverts installed to protect the integrity of the road would be constructed within the existing footprint of the road. All new culverts would be constructed and installed in accordance with industry standards. Heavy equipment such as on-road haul trucks, cranes, and excavators would be required for replacing culverts, low-water crossings, and riprap for the maintenance and repair of drainage structures.

#### **VEGETATION CONTROL**

Vegetation control would consist of trimming, mowing, grubbing, weed-whacking, plant removal, and applying selective herbicides on a quarterly basis or as vegetative conditions dictate. Vegetation encroaching upon roads and other infrastructure would be maintained to ensure visibility, minimize fox road kills, and to protect assets from wildfire. Mechanical removal of an entire shrub or tree and tree trimming would be completed on a limited basis. Heavy equipment needed would include mowers, herbicide application equipment, trimmers, and mechanical grubbing equipment.

In many areas, vegetation would be controlled by mowing. In areas deemed too difficult to mow, such as under guardrails, within riprap, in areas with limited access due to safety concerns, and where most biologically effective, herbicides would be used, as appropriate. Herbicides are most commonly applied using broadcast and directed application. Broadcast application is commonly used along road sides and would be affixed to tractors or trucks. Directed application uses a spot-spray applicator either mounted on a back-pack or hand held. Herbicide use would be part of an integrated approach that uses minimal quantities of herbicide and would be

conducted by a licensed pesticide applicator in accordance with management described in the NALF SCI INRMP (Navy 2013b) and the NBC Integrated Pest Management Plan.

#### MONITORING REQUIREMENTS

Proposed special projects are reviewed initially at SCI by the WIB as described in **Section 2.2** and shown in **Figure 2-3**. The WIB reviews submitted projects based on their need to fulfill training requirements, potential conflicts, and preliminary impact determination. Proposed special projects on SCI are tracked through the NBC Site Approval and Project Review Process. Projects are submitted directly to the lead NBC Planner for evaluation. Project impact consideration is then coordinated through all departments on the installation. This process helps to monitor impacts to taxa on the island.

### 2.3 Avoidance and Minimization Measures

In 2013, the U.S. Navy completed an INRMP for NALF SCI (Navy 2013b). The INRMP provides NALF SCI with an implementable framework for managing natural resources on the land and water it owns or controls. Required by the Sikes Act (as amended), an INRMP is the primary means by which natural resources compliance and stewardship priorities are set and funding requirements are determined for Department of Defense installations. The INRMP provides goals and objectives for the use and conservation of natural resources on NALF SCI that integrate regional ecosystem, military, social (i.e., community), and economic concerns. It establishes planning and management strategies; identifies natural resources constraints and opportunities; supports the resolution of land use conflicts; provides baseline descriptions of natural resources necessary for the development of conservation strategies and environmental assessment; serves as the principal information source for the preparation of future environmental documents for proposed NALF SCI actions; and provides guidance for annual natural resources management reviews, internal compliance audits, and annual budget submittals (Navy 2013b).

The U.S. Navy is committed to avoiding or minimizing project-related environmental effects to the greatest extent possible. As part of this commitment, avoidance and minimization measures have been included to ensure that potential adverse impacts are avoided (if possible) or minimized to acceptable levels.

In addition to the avoidance and minimization measures listed below, NALF SCI staff will obtain necessary 404 permits from the U.S. Army Corp of Engineers and 401 certification from the Regional Water Quality Control Board before the start of any project that may discharge dredged or fill material into a jurisdictional wetland or other waters of the United States. Also, the FMP provides further direction on measures regarding fire prevention (Navy 2009). Avoidance and minimization measures include:

#### GENERAL AVOIDANCE AND MINIMIZATION MEASURES (GAM-M)

- **GAM-M-1.** Before project initiation, the project footprint, including temporary features such as staging areas and lay-down areas, will be clearly marked with flagging, fencing, or signposts. Federally listed plant known occurrences and listed bird breeding habitat within the project footprint will also be marked and avoided when practicable.

- **GAM-M-2.** All project-related activities will occur within the marked project footprint. All construction equipment will remain on existing roads within the project footprint. Project staging and lay-down areas will be designated within the project footprint, or on existing roads and parking lots.
- **GAM-M-3.** The U.S. Navy will develop and implement an employee environmental awareness program to ensure that the contractor(s) and all maintenance personnel are fully informed of the biological resources associated with the project. The program will be approved by the NBC Natural Resources Office (NRO) and will be a requirement for all maintenance personnel. The program will focus on: (a) the purpose for resource protection and a description of the federally listed plants and birds, and their habitats; (b) contractor identification of sensitive resource areas in the field (i.e., avoidance areas delineated on maps and by flags or fencing); (c) project avoidance and minimization measures, including speed limits, measures to prevent the introduction and spread of invasive weeds, erosion control measures, and trash control measures; (d) protocol to resolve issues that may arise at any time during the construction process; and (e) ramifications of noncompliance.
- **GAM-M-4.** An erosion control plan will be prepared and implemented prior to project initiation to minimize potential effects of project-related pollution and erosion/sedimentation if and when required by the WIB. The plan will include best management practices, such as silt fences, silt basins, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion and prevent the release of contaminants into the soil that could be harmful to federally listed taxa. The erosion control plan will be completed only when required by the WIB.
- **GAM-M-5.** Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures after consultation with NRO to ensure de-confliction with any sensitive resources.
- **GAM-M-6.** Vegetation clearing, grading, and blasting activities in or adjacent to federally listed bird breeding habitat will occur between August 1 and January 1 to avoid the nesting season.
- **GAM-M-7.** Maintenance vehicles will not exceed 15 miles per hour on the construction site and posted and briefed speed limits on roads and dirt roads.
- **GAM-M-8.** To control the spread of non-native plants, all equipment and/or vehicles will be cleaned and power-washed before entering NALF SCI, and when feasible will be cleaned at a vehicle and boot washing station in the project area. All project personnel will dry or pressure wash their boots before leaving the project area. Vehicle cabs will also be swept out during the cleaning process to remove plants or seeds. When feasible, any vehicle or construction equipment that has come into contact with vegetation or disturbed soil will be pressure washed before leaving the project area at any time. Pressure washing will focus on removal of plant materials and seeds, or mud containing seeds from the undercarriage of the vehicle or construction equipment. Best management practices will be established to capture wash runoff.

- **GAM-M-9.** All food-related trash will be placed in sealed bins or removed from the site daily.
- **GAM-M-10.** All equipment fueling will occur in designated areas with appropriate containment/best management practices.
- **GAM-M-11.** Maintenance and demolition debris will be properly disposed of and will not be discarded on site.
- **GAM-M-12.** Holes or trenches created during maintenance will be backfilled or covered at the end of each workday when feasible.
- **GAM-M-13.** All projects will be reviewed by the WIB before initiation. Impacts and proposed mitigation will be reviewed to minimize impacts.

#### SAN CLEMENTE LOGGERHEAD SHRIKE AVOIDANCE AND MINIMIZATION MEASURES (SCLS-M)

- **SCLS-M-1.** Maintenance and repair within occupied shrike habitat will occur between August 1 and December 31, if practicable. If activities need to occur during the shrike breeding season (January 1 through July 31) the NALF SCI Wildlife Biologist will be contacted prior to initiation of any activities. These activities will not occur within 300 ft (100 m) of an active shrike nest site.
- **SCLS-M-2.** Vegetation control in suitable habitat of San Clemente loggerhead shrike will be limited to the minimum necessary to maintain drivable access roads and visible shoulders and to maintain the functionality of other infrastructure. This limited vegetation control, if within occupied shrike habitat, will be conducted outside of the nesting season (August 1 through December 31).
- **SCLS-M-3.** The Navy will continue the shrike recovery and management program until analyses indicate the subspecies is self-sustaining and/or requires less intervention. The recovery and management program is applicable in the Action Area in addition to the rest of NALF SCI and includes the continuation of the following as described in the NALF SCI INRMP (Navy 2013b):
  - Conduct island-wide monitoring of all shrikes during the breeding season.
  - Continue to enhance and conserve shrike nesting locations and foraging areas as research dictates.
  - Continue the captive breeding and release program, until the point that population sustainability or recovery objectives are met.
  - Continue the predator management program to minimize losses of adult shrikes and their nests.
    - Maintain the program to annually remove as many feral cats, black rats, and other non-native rodents as feasible.
    - Complete the predator management study to estimate the home range size of cats and rats to improve effectiveness of management actions taken to control these non-native populations.

- Determine if ravens pose a population-level threat and investigate the need for raven control in support of shrike recovery.
- Develop a population sustainability/management plan, in coordination with the USFWS, documenting clearly defined recovery objectives and a sampling plan to be used for ongoing population monitoring. The completed model and plan will be externally reviewed prior to implementation.
- Minimize human-caused shrike mortality.
  - Discontinue the use of uncovered sticky glue traps for trapping rodents.
  - Enforce the 35-miles-per-hour speed limit on Ridge Road to minimize the likelihood of striking shrikes crossing roadways.
  - Regularly survey developed areas for potential shrike hazards.
- In accordance with recommendations from the most recent Five-Year Review, summarize and publish data on shrike recovery and management in peer-reviewed journals to facilitate recovery of similar species and to allow comment and modification, if appropriate, of current methodology.

#### SAN CLEMENTE BELL'S SPARROW AVOIDANCE AND MINIMIZATION MEASURES (SCBS-M)

- **SCBS M-1.** Maintenance and repair within occupied Bell's sparrow habitat will occur between August 1 and December 31, unless otherwise stipulated or approved by the Installation Wildlife Biologist.
- **SCBS-M-2.** Vegetation control in suitable habitat of Bell's sparrow will be limited to the minimum necessary to maintain drivable access roads and shoulder visibility and to maintain the functionality of other infrastructure. This limited vegetation control will be conducted between August 1 and December 31, unless otherwise stipulated or approved by the Installation Wildlife Biologist.
- **SCBS-M-3.** The U.S. Navy will manage the Bell's sparrow population for long-term persistence in a manner compatible with military training requirements. This management approach is applicable in the Action Area in addition to the rest of NALF SCI and includes the continuation of the following as described in the NALF SCI INRMP (Navy 2013b):
  - Conserve and maintain high quality Bell's sparrow habitat and control non-native predation pressure to meet recovery objectives for delisting.
  - Continue annual Bell's sparrow monitoring efforts and improve upon existing methods of sampling the population.
    - Complete and implement a sampling plan that will provide more precise estimates of population size.
    - Monitor incidental take of Bell's sparrows in accordance with the USFWS Biological Opinion (USFWS 2008).
  - Continue predator management efforts to remove non-native rats and feral cats from Bell's sparrow habitat. Complete the study to estimate the home range size

of cats and rats in order to improve effectiveness of management actions taken to control these non-native populations.

- Minimize disturbances in Bell's sparrow habitat during the breeding season to the maximum extent feasible compatible with military training requirements.
- Construction activities and grading within Bell's sparrow habitat will occur outside of the Bell's sparrow breeding season.
- Minimize loss of Bell's sparrow habitat to the maximum extent practical.
  - Site construction areas to avoid Bell's sparrow habitat.
  - Evaluate habitat recovery in Bell's sparrow habitat that burns along the West Shore outside Training Area and Range boundaries and implement habitat restoration activities, if needed.
- Update and improve delineation of Bell's sparrow habitat.
  - Identify areas of high quality occupied habitat that support nesting Bell's sparrows.
  - Identify areas on NALF SCI with high usage by juvenile and wintering Bell's sparrows.

#### FEDERALLY LISTED PLANT AVOIDANCE AND MINIMIZATION MEASURES (FLP-M)

- **FLP-M-1.** Continue to protect the SCI Indian paintbrush through fire management planning, non-native plant management/control, restoration activities, and erosion control.
- **FLP-M-2.** Foster robust, geographically diverse, and redundant populations to maintain and increase the population and protect genetic diversity.
- **FLP-M-3.** Protect established populations of the SCI lotus through habitat enhancement activities (e.g., control and remove non-native species where needed).
- **FLP-M-4.** Control non-native species in habitat known to support the Santa Cruz Island rockcress, as practical.
- **FLP-M-5.** Monitor known populations of the Santa Cruz Island rockcress.

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## 3. Environmental Baseline

The first part of this section describes the current environment in the Action Area as influenced by past and present impacts of human activities. The current environment, impacts of human activities on NALF SCI, and current status of the federally listed taxa within the Action Area have been described in detail in the NALF SCI INRMP (Navy 2013b).

The remainder of this section describes in detail the environment on NALF SCI, and the results of surveys conducted to determine the presence of ESA-listed plants and other biological resources on the island.

### 3.1 Physiography

SCI is approximately 21 miles (34 km) long, 4 miles (11 km) at its widest point, and 56 square miles (145 square km) or 36,480 acres (14,763 hectares) in total (Navy 2013a, Navy 2013b). The island is entirely within the Pacific Plate, a highly active seismic zone with several faults. The island is made up of the exposed portion of an uplifted fault block composed primarily of submarine volcanic rock (andesite, dacite, and rhyolite). The terrestrial topography of SCI includes coastal terraces, upland marine terraces, a plateau, an escarpment, major canyons, sand dunes, and sandy beaches that support a varied assemblage of flora and fauna species (Navy 2013b).

### 3.2 Ongoing Maintenance and Repair Activities

The U.S. Navy regularly conducts maintenance and repair activities along and around existing utilities, roads, and other assets to support ongoing routine maintenance and upgrades including:

- Vegetation mowing and herbicide treatment along road shoulders to reduce SCI fox road kills.
- Ongoing maintenance of existing power lines and waterlines.

### 3.3 Biological Resources

#### 3.3.1 Rare Plant Background Research and Survey Methodology

Prior to conducting sensitive plant species surveys, HDR reviewed multiple documents to become familiar with the historical distribution of sensitive plant species on SCI and the probability for their occurrence within the Action Area. HDR reviewed a list of 41 sensitive plant species and GIS layers of known sensitive species occurrences on SCI that was provided by the U.S. Navy. HDR also conducted a review of previous sensitive plant surveys on SCI by San Diego State University's Soil Ecology and Restoration Group (Howe and Zink 2012) and Santa Barbara Botanic Garden (Junak and Wilken 1998), and reviewed information contained in SCI's INRMP (Navy 2013b).

Sensitive plant surveys were timed to coincide with the traditional blooming period of the target species to best facilitate detection and positive identification of these species. Surveys were

timed to detect early blooming species (surveys were conducted from February 28 to March 11, 2014, and from March 26 to April 3, 2014) and late blooming species (surveys were conducted from April 19 to April 28, 2014, and from May 9 to May 15, 2014). The surveys were floristic in nature and were conducted in a manner that ensured the highest likelihood of locating and identifying special status plant species.

Field maps, GIS Data Dictionaries, and field guides were prepared and distributed to each surveyor prior to field surveys. A visual examination of 100 percent of the Action Area was conducted utilizing meandering transects within the Action Area. The area surveyed was a 100-ft-wide corridor centered on the centerline of a road or transmission utility line. The corridor was divided in half with each surveyor surveying one side of a corridor. Surveyors thus surveyed an approximate 50-ft-wide swaths, walking meandering transects along this 50-ft-wide swath. Occurrences were mapped as point data with a visual estimate of numbers of individuals. Areas of multiple points generally reflected a large occurrence of individuals at varying densities.

### 3.3.2 Vegetation

Vegetation communities within the Action Area were mapped and characterized during field surveys conducted during 2014. Vegetation was mapped and classified based on the National Vegetation Classification System, the system used previously for vegetation mapping of NALF SCI (Navy 2013b). The National Vegetation Classification System is a hierarchical system which includes various categories ranging from the very broad Group Level (e.g., Coastal Baja California Norte Maritime Succulent Scrub) to the more specific Alliance and Association Levels (e.g., California Boxthorn Alliance; California Boxthorn-Coast Prickly Pear Association). During field surveys, conducted from February to October 2014, vegetation stands were mapped and classified to the association level within this system based on the dominant and co-dominant plant species present in each stand. For a more detailed description of the vegetation classification, refer to the Biological Technical Report (BTR) (HDR 2014, and included as **Appendix A**). **Table 3-1** presents acreages of vegetation community groups identified on NALF SCI during the 2014 surveys.

**California Maritime Chaparral Group** occurs in many of the canyons on NALF SCI. This evergreen, shrub community is dominated by lemonade berry (*Rhus integrifolia*) with several other shrub associate species such as California sagebrush (*Artemisia californica*) and island morning-glory (*Calystegia macrostegia* subsp. *amplissima*).

**Central and South Coastal California Sage Scrub Group** occurs primarily along the eastern escarpment of NALF SCI. This deciduous shrub community is dominated by California sagebrush, island morning-glory, or NALF SCI tarplant (*Deinandra clementina*). Other common associates include coast cholla (*Cylindropuntia prolifera*), coast prickly pear (*Opuntia littoralis*), and California boxthorn (*Lycium californicum*).

**California Perennial Grassland Group** occurs on the central plateau of NALF SCI and is dominated by the native purple needlegrass (*Stipa pulchra*) with other native and non-native annuals and perennials such as NALF SCI brodiaea (*Brodiaea kinkiensis*), goldfields (*Lasthenia californica*), filaree (*Erodium* spp.), and bromes (*Bromus* spp.).

**Table 3-1. Acreages of Vegetation Communities within Action Area on NALF SCI**

<b>Vegetation Community Groups</b>	<b>Acres (Hectares)</b>
California maritime chaparral	1.46 (0.59)
Central and south coastal California coastal sage scrub	32.54 (13.17)
California perennial grassland	125.18 (50.66)
Mediterranean California naturalized annual and perennial grassland	600.41 (242.98)
Pacific dune mat	5.50 (2.23)
California coastal evergreen bluff and dune scrub	37.08 (15.01)
Coastal Baja California norte maritime succulent scrub	465.81 (188.51)
Coastal marshes	0.51 (0.21)
Coastal strands and bluffs	2.44 (0.99)
Ruderal	271.00 (109.67)
Developed (including roads)	379.19 (153.45)
Restricted Access Area	112.45 (45.51)
San Diego and Ecology Research Group Revegetation Site	3.26 (1.32)
<b>TOTAL</b>	<b>2,036.83 (824.30)</b>

<sup>1</sup> Data from BTR (Appendix A)

**Mediterranean California Naturalized Annual and Perennial Grassland Group** occurs in the central portions of NALF SCI and is dominated by non-native grasses such as wild oats, ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*) and red brome (*Bromus madritensis* subsp. *rubens*). Other species such as island tarweed, coastal prickly pear, and coyote brush (*Baccharis pilularis*) may be scattered throughout. In more disturbed areas, Russian thistle (*Salsola tragus*) and Australian saltbush (*Atriplex semibaccata*) are prevalent.

**Pacific Dune Mat Group** includes areas of active and stabilized sand dunes on the north and south ends of the island and are dominated by silver burr ragweed (*Ambrosia chamissonis*), red sand verbena (*Abronia maritima*), salt grass (*Distichlis spicata*) and San Miguel Island milkvetch (*Astragalus miguelensis*). Non-native species such as crystalline iceplant (*Mesembryanthemum crystallinum*), sea fig (*Carpobrotus chilensis*), and Hottentot fig (*C. edulis*) have invaded areas of this community.

**California Coastal Evergreen Bluff and Dune Scrub Group** occurs on the upper plateaus of NALF SCI. Coyote brush is the dominant shrub and indicator species of this community. Associated species include island morning glory, purple needlegrass, SCI tarplant, and several species of brome.

**Coastal Baja California Norte Maritime Succulent Scrub Group** occurs on maritime coastal bluffs and terraces. This shrub and succulent community is dominated by California boxthorn, coast cholla, and coast prickly pear with several other shrub associate species such as island morning-glory, California sagebrush, and golden spined cactus (*Bergocactus emoryi*).

**Coastal Marsh Group** consists of alkali marshes located behind rock berms at Whale Point in the northwest corner of NALF SCI where it is subjected to tidal influence. Pickleweed

(*Arthrocnemum subterminale*) is the dominant species associated with alkali heath (*Frankenia grandiflora*), woolly sea-blite (*Suaeda taxifolia*), and saltgrass.

**Coastal Strands and Bluffs Group** are areas immediately along the coast that are sparsely vegetated. These areas include sandy strands where wave action or wind erosion create an unstable environment for plant establishment or steep rocky bluffs with little or no soil development.

**Ruderal Group** are areas that have been very disturbed that are in various stages of vegetation recovery. Most of these areas are dominated by non-native forbs such as Russian thistle, Australia saltbush, crystalline iceplant, sea fig, and Hottentot fig, and non-native grasses such as wild oats and bromes. Ruderal areas occur adjacent to existing structures, roadways and construction zones but also may be in remote areas that had once been actively used but are now fallow (e.g., old airfield).

In addition to the vegetation community groups, there are several other land type uses within the Action Area. Other land uses include:

- Developed areas include buildings and roads
- Restricted Access Areas include the Land Mine Area, BLU-97 Hazard Area and two Impact Areas within SHOBA. The RAA was not surveyed for biological resources
- Native planting (revegetation sites) sites created by the San Diego Restoration and Ecology Group (SERG).

### 3.3.3 Avian Background Research and Survey Methodology

#### FIXED-POINT SURVEYS

The point count survey protocol used during surveys on NALF SCI is based on the National Park Services protocol for the Channel Islands. The protocol was changed slightly during the survey period by the Navy. This change included switching the timed portion of the point count survey from 5 minutes to 10 minutes, reducing the distance of observation from 984.25 ft (300 m) to 328.08 ft (100 m), and changing the location of two of the point count locations to better include the future location of windmills. The final point count protocol called for 10 minutes of observation at 10 predetermined locations throughout the accessible portions of the island. Birds within 328.08 ft (100 m) of the point were recorded. Surveys began a half hour prior to sunrise and continued no later than four hours after sunrise. The species or subspecies of the bird was recorded, along with the distance to the individual, bearing height, method of observation, sex, and cluster size if appropriate. Other information recorded included:

- Point number
- Universal Transverse Mercator coordinates
- Start and end time
- Weather: temperature, wind speed, precipitation, cloud cover
- Noise level.

A total of 18 surveys were conducted from December 2013 to November 2014. Surveys were done once per month during winter and summer months and twice per month during migration periods (February – April and September – November). More frequent surveys were conducted during migration periods in order to accurately observe increases in diversity during these times.

Species or subspecies observed incidentally were recorded in addition to timed point count surveys. These observations are anecdotal and were not included in calculating abundance of species. All federally listed avian subspecies were noted.

### 3.4 Status of Listed Taxa in the Action Area

The following is a description of the status of the federally listed taxa potentially affected by the Proposed Action.

#### 3.4.1 Federally Listed Plants

Rare plant surveys were conducted throughout the non-restricted portion of the Action Area in 2014. **Table 3-2** presents the estimated number of individual plants documented and **Figure 3-1** shows the locations of the populations observed. Historical data from 1996 to 2013 is also provided in **Table 3-2** (Navy 2013b and Bryan Munson, pers. comm. 2014) to depict the relative proportion of the NALF SCI federally listed plant populations that have the potential to be impacted in the Action Area,.

**Table 3-2. Estimated Numbers of Federally Listed Plants within the Action Area Relative to Estimated Numbers on NALF SCI**

Federally Listed Plants	Estimated Number of Individuals within Action Area (2014)	Estimated Number of Documented Individuals on NALF SCI (1996-2013) <sup>1, 2</sup>
SCI Indian paintbrush ( <i>Castilleja grisea</i> )	120	53,280
SCI lotus ( <i>Acmispon dendroideus</i> var. <i>traskiae</i> )	483	9,847
Santa Cruz Island rockcress ( <i>Sibara filifolia</i> )	1 (100) <sup>3</sup>	3,700

<sup>1</sup> Navy 2013b; Bryan Munson pers. comm. 2014

<sup>2</sup> Additional information regarding results from past rare plant surveys on NALF SCI can be found in the NALF SCI INRMP (Navy 2013b).

<sup>3</sup> Only one individual of Santa Cruz Island rockcress was observed within the Action Area during the 2014 surveys; however, 2014 represented a drought year; higher numbers were consistently observed in previous years. Based on these previous observations, it is estimated that up to 100 individuals have the potential to be growing within the Action Area during years with average rainfall amounts (Bryan Munson pers. comm. 2014).

#### SAN CLEMENTE ISLAND INDIAN PAINTBRUSH

SCI Indian paintbrush is federally listed as threatened. SCI Indian paintbrush is a February to April-blooming subshrub that occurs on coastal bluffs in coastal sage scrub and maritime cactus scrub communities (Baldwin et al. 2012; Navy 2013b). This species is a SCI endemic (Baldwin et al. 2012; Howe and Zink 2012). It occurs on the southern two-thirds of the island from Jack Point south on both the east and west sides of NALF SCI (Navy 2013b). Dense, nearly contiguous patches of SCI Indian paintbrush cover the eastern escarpment from approximately

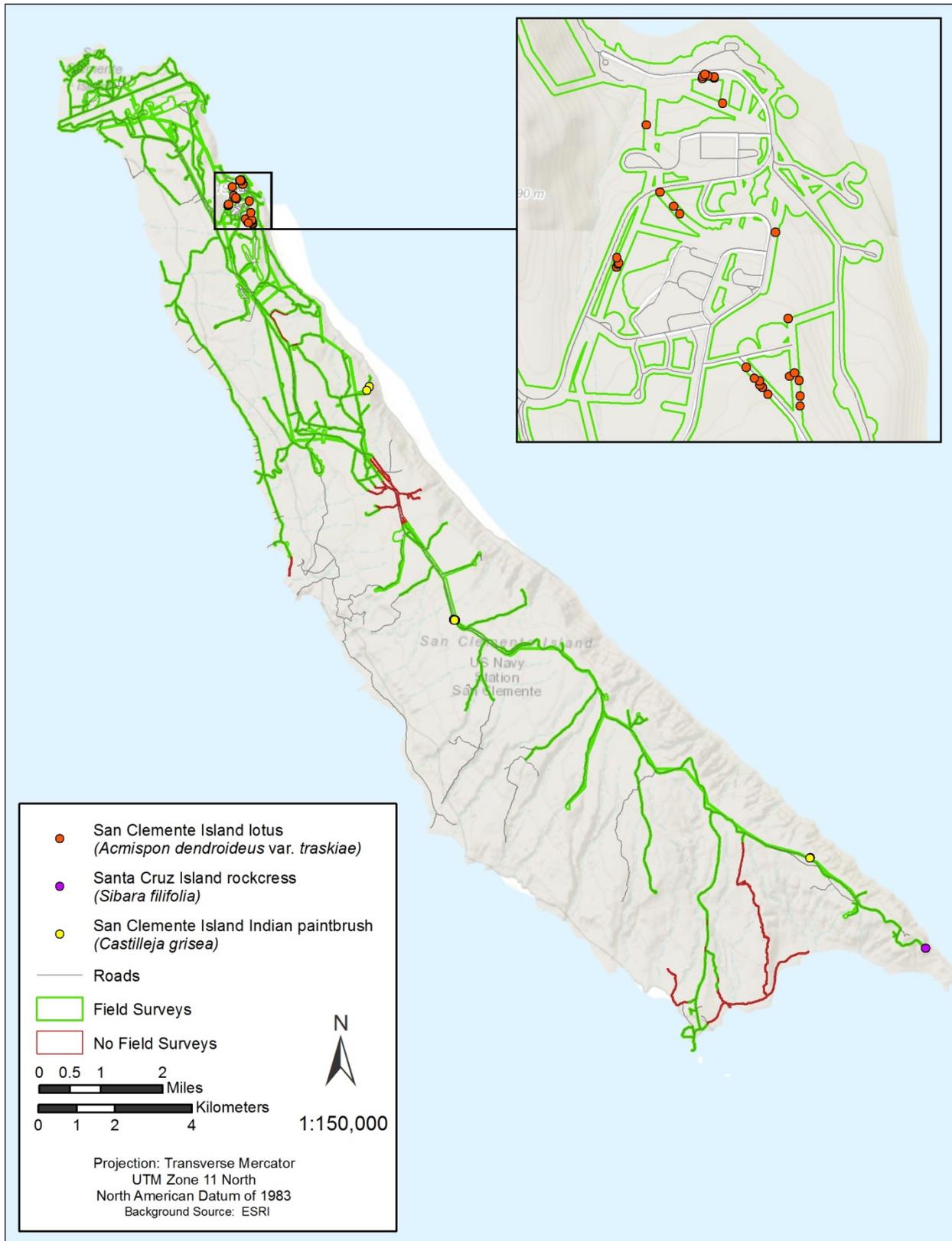


Figure 3-1. Federally Listed Plants Documented during 2014 Surveys of the Action Area

Stone Station south to Pyramid Point, and the majority of west side canyons and west shore terraces also have scattered populations (Howe and Zink 2012). In 2011–2012, SERG mapped 325 populations totaling 35,283 individuals (Howe and Zink 2012). The current population is between 35,000 and 60,000 (Navy 2013b).

Four populations of SCI Indian paintbrush, totaling 120 individuals, were observed in the Action Area during the 2014 focused rare plant surveys (**Figure 3-1**). Two individuals were observed at the eastern terminus of the transmission line corridor that is directly north of and parallel to Pacific View South Road. Three individuals were observed at the terminus of Pacific View South Road. A known historical occurrence of 102 individuals was observed on either side of the Assault Vehicle Maneuver Road (AVMR) approximately 1,000 ft (305 m) north of the intersection of AVMR and Horton Road. Another known historical occurrence of approximately 13 individuals was observed in the SHOBA along the periphery of the Action Area. This population is approximately 1.25 mile (2.01 km) south of the intersection of SCI Ridge Road and Adversary Road, and at the edge of the survey corridor. Only one individual of this population appears to be within the Action Area (Navy 2013b).

#### **SAN CLEMENTE ISLAND LOTUS**

SCI lotus is federally listed as threatened. SCI lotus is a February to August-blooming shrub that occurs on coastal bluffs, inland canyons, and open sites in grassy areas, and at the ecotone between grassland and maritime sage scrub (Baldwin et al. 2012; Navy 2013b). This species is a SCI endemic (Baldwin et al. 2012; Howe and Zink 2012). On NALF SCI, this species occurs along the entire length of the island from Wilson Cove to Pyramid Cove. Potential habitat includes most of the eastern escarpment and the cooler slopes on the western shore (Navy 2013b). In 2011–2012, SERG mapped 104 populations totaling 36,142 individuals (Howe and Zink 2012).

A population of SCI lotus totaling approximately 483 individuals was observed within the Action Area during the 2014 focused rare plant surveys (**Figure 3-1**). This population extends from Wilson Cove south to the hillsides immediately south of the NRO between that facility and the Water Tank Storage site. This is a known historical population. Approximately 197 individuals were observed adjacent to and south of the NRO complex. These individuals are a part of a larger population with additional individuals occurring adjacent to, but outside of, the Action Area. Approximately 162 individuals were observed in the native habitat adjacent to the Commons Complex between Wilson Cove North Road and Wilson Cove South Road. Another 124 individuals were observed on the hillside north of the Salty Crab, Infirmary, and Fire Station. Several other populations or occurrences of this species are known from elsewhere on NALF SCI; however, none are close to the Action Area.

#### **SANTA CRUZ ISLAND ROCKCRESS.**

Santa Cruz Island rockcress is federally listed as endangered. Santa Cruz Island rockcress is an April-blooming annual species that occurs on dry ridges (Baldwin et al. 2012). This species is a southern Channel Island endemic (Baldwin et al. 2012; Howe and Zink 2012). On NALF SCI, Santa Cruz Island rockcress occurs at the southeastern tip of NALF SCI on volcanic scree covered slopes of Pyramid Point (Navy 2013b; Howe and Zink 2012). In 2011–2012, SERG mapped six occurrences totaling 31 individuals (Howe and Zink 2012). The current island-wide

estimate for this species is 3,700 individuals, based on 2013 census (Bryan Munson pers. comm. 2014).

Only one individual of Santa Cruz Island rockcress was observed in the Action Area during 2014 surveys, at the southern terminus of SCI Ridge Road. This individual was part of a previously recorded population (Howe and Zink 2012; Emily Howe pers. comm. 2014); however, the size of the population in 2014 appears to have been adversely affected by drought conditions. As noted by Howe and Zink (2012), abundance varies depending on the amount and timing of precipitation. It is anticipated that this population/occurrence would cover a slightly larger area and contain more individuals within the Action Area in a wetter year. As such it is estimated that up to 100 individuals may occur in the Action Area at this location in a wetter year (Bryan Munson pers. comm. 2014). No other historical occurrences of this species have been documented within or adjacent to the Project Area.

### 3.4.2 Federally Listed Wildlife

There are two federally listed avian taxa known to occur or to have suitable habitat within or near the Action Area (**Table 3-3**). Historical data for these birds is described in detail in the INRMP (Navy 2013b). Additionally, new data collected in 2013 have been incorporated. **Table 3-3** lists acreages of vegetation communities utilized by two federally listed birds on NALF SCI.

**Table 3-3. Acreages Utilized by Federally Listed Avian Taxa within the Action Area**

Federally Listed Wildlife	Estimated Amount of Habitat within the Action Area acres (hectares)
San Clemente loggerhead shrike ( <i>Lanius ludovicianus mearnsi</i> )	730.21 (295.51) <sup>1</sup>
San Clemente Bell's sparrow ( <i>Artemisiospiza belli clementeae</i> )	1,813 (734.01) <sup>2, 3</sup>

<sup>1</sup> Data derived from winter observations 2010–2015.

<sup>2</sup> San Clemente Bell's sparrow estimated acres of territory based on 2014 data provided by Melissa Booker.

<sup>3</sup> Assumptions upon which these data were derived are described in **Section 4.3**.

#### SAN CLEMENTE LOGGERHEAD SHRIKE

The San Clemente loggerhead shrike is federally listed as endangered. The San Clemente loggerhead shrike is a predatory passerine found only on SCI. It has a curved beak or maxillary “tooth” at the end of its bill which aids in prey acquisition and evisceration. It feeds on a variety of prey including insects, lizards, rodents and small birds (USFWS 2009a).

Habitat alteration and invasive species have been the main reasons for the population decline of the San Clemente loggerhead shrike. Beginning in 1862, cattle and goat grazing drastically changed the ecosystem. Grazing animals were extirpated from NALF SCI in the early 1990s. Its population fell to a recent low of 14 individuals in 1998 and has increased since then due in part to recovery and captive breeding efforts on the island. The captive breeding, release, and recovery program continues to augment the wild population.

Over the past 20 years, the population estimate has ranged from a low of four breeding pairs in 1991 to a high of 82 in 2009 (Navy 2013b). In 2013, the minimum population estimate, including only adults observed in March, was 133 individuals. The potential breeding population was 147

adults, the effective breeding population was 137, and the maximum population estimate was 279 (NBC 2014). Above average rainfall prior to some breeding seasons, supplemental feeding at release sites, a captive propagation and reintroduction program, and an ongoing predator control program have contributed to the increase in the breeding population (Navy 2013b).

The majority of nesting occur in the canyons on the east and west side of the island, approximately from the southern boundary of the BLU-97 Hazard Area south to China Canyon (Navy 2013b). There were 99 nest sites observed in 2013, most of which were constructed (in decreasing order of frequency) in Catalina cherry (*Prunus ilicifolia* subsp. *lyonii*), lemonade berry, and sagebrush (Stahl et al. 2013).

Nest success of the San Clemente loggerhead shrike appears to be lower than that of mainland shrikes. San Clemente loggerhead shrikes in 2013 had a nest success rate of 47 percent which is close to the average for NALF SCI since 1998 at 48 percent (NBC 2014). Mainland shrikes have an average nest success rate of 65 percent (NBC 2014).

The U.S. Navy supports multiple cooperative efforts to aid in habitat restoration, conduct non-native predator control and support a captive breeding and release program. These cooperative agreements and programs help to increase native habitat and native species populations while supporting mission goals (USFWS 2009a).

San Clemente loggerhead shrikes were observed incidentally during site visits in 2014 but not during timed surveys. **Table 4-2** lists acreages of occupied habitat within the corridor for the federally listed wildlife. Shrike nesting habitat exists mainly in steep canyons and slopes but has increased with the reestablishment of shrub cover on the plateau south of VC-3/the old airfield. There is foraging habitat, but limited nesting habitat, for shrikes within the Action Area.

#### **SAN CLEMENTE BELL'S SPARROW**

The San Clemente Bell's sparrow is a small, non-migratory passerine endemic to SCI. The subspecies was federally listed as threatened due to its limited distribution on NALF SCI and habitat degradation due to overgrazing by pigs and goats. This subspecies breeds in maritime succulent scrub and coastal sage scrub habitats. Highest nest densities occur in areas of high boxthorn cover and low cover of bare ground (Navy 2013b). Much of this habitat is found on the island's north-west facing marine terraces at low elevations and on the eastern slope and within larger canyons where maritime sage scrub has re-established. The highest densities of breeding Bell's sparrows are found at lower elevations along the western shore between the sand dunes and Eel Point (Sullivan and Kershner 2005).

During the USFWS's 5-year review conducted in 2008, the population was estimated at 539 adults. Recent estimates of population size are from 3,241 to 5,824 individuals (IWS 2013). The population has expanded its occupied habitat and range, to breed in maritime sage scrub and other re-establishing shrub communities versus prior exclusive breeding in boxthorn dominated habitat. The population fluctuates nearly suppressing breeding in some years (presumably driven by drought) and having up to five clutches of eggs in other years (that appear to have more advantageous precipitation levels or patterns).

Military activities on the island could impact Bell's sparrow habitat; however, pairs continue to successfully inhabit and reproduce in habitat adjacent to military activities (USFWS 2009b).

This subspecies was observed during point count surveys in 2014. It breeds primarily in maritime succulent scrub and maritime sage scrub habitats, but also breeds in low densities in any of the shrub communities (**Table 3-3**). Based on the results of 2013 and 2104 Bell's sparrow stratified random sampling (completed by Institute for Wildlife Studies for the US Navy), there are approximately 1,813.77 acres (734 hectares) of suitable habitat within the Action Area.

## 4. Effects Analysis

### 4.1 Effects of the Action

Section 7 of the ESA defines “effects of an action” as the direct and indirect effects of an action on a species or critical habitat, together with the effects of other activities that are interrelated with or interdependent on that action, that will be added to the environmental baseline. This section describes the direct and indirect effects of the Proposed Action on federally listed threatened and endangered species.

**Table 4-1** provides the number of federally listed plants documented in the Action Area during 2014 surveys and therefore also the number of plants potentially adversely affected by the Proposed Action. **Table 4-2** provides the estimated acreage of habitat for the federally listed San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*), and the density of territories of the federally listed San Clemente Bell’s sparrow (*Artemisiospiza belli clementeae*).

#### 4.1.1 Direct and Indirect Effects

“Direct effects” are the direct or immediate effects of the project on the species, its habitat, or [designated/proposed] critical habitat (USFWS 1998). “Indirect effects” are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

This section analyzes both direct and indirect effects of the proposed action on federally listed taxa. **Sections 4.2** and **4.3** discuss the direct and indirect effects of the actions on federally listed plants and wildlife respectively.

#### INTERRELATED AND INTERDEPENDENT ACTIONS

“Interrelated actions” are actions that are part of a larger action and depend on the larger action for their justification. “Interdependent actions” are those that have no independent utility apart from the action under consideration (50 Code of Federal Regulations 402.02). There are no specific interrelated or interdependent actions related to the Proposed Action. Rather, the Proposed Action is supportive of the entire mission and actions that occur at NALF SCI.

#### 4.1.2 Beneficial Effects

Effects of the action analyses should consider beneficial effects, which are those effects of an action that are wholly positive, without any adverse effects, on listed species and designated critical habitat (USFWS 1998). Indirect beneficial effects would include replacement of electrical poles under the Proposed Action with more fire retardant poles as detailed in the FMP. This would help reduce the risk and spread of wildfires that threaten wildlife. Additionally, by developing and maintaining corridors along roads and other infrastructure on NALF SCI, employees will be able gain access to these areas and more closely map and monitor sensitive species on the island. These corridors will also allow for the implementation of a more substantial program to control the introduction and spread of invasive species through both monitoring and early detection.

**Table 4-1. Number of Federally Listed Plants within the Action Area**

Federally Listed Taxa	Number of Plants				
	Roads (50 ft from centerline)	Electrical Poles (25-ft radius)	Buildings (100-ft buffer)	Electrical Lines (50 ft from centerline)	Water Lines (50 ft from centerline)
SCI Indian paintbrush ( <i>Castilleja grisea</i> )	100	5	0	15	0
SCI lotus ( <i>Acmispon dendroideus</i> var. <i>traskiae</i> )	110	40	3	105	225
Santa Cruz Island rockcress ( <i>Sibara filifolia</i> ) <sup>1</sup>	1 (100) <sup>1</sup>	0	0	0	0

<sup>1</sup> Only one individual of Santa Cruz Island rockcress was observed within the Action Area during the 2014 surveys; however, 2014 represented a drought year; higher numbers were consistently observed in previous years. Based on these previous observations, it is estimated that up to 100 individuals have the potential to be growing within the Action Area during years with average rainfall amounts (Bryan Munson pers. comm. 2014).

**Table 4-2. Habitat/Territories of Federally Listed Wildlife within the Action Area**

Birds		
Habitat within Action Area <sup>1</sup>		
San Clemente loggerhead shrike ( <i>Lanius ludovicianus mearnsi</i> )	730.21 acres (295.51 hectares)	
Territory within Action Area by Density Category <sup>2</sup>		
	Density Category [territory/acre(hectare)]	Area per Density Category acre (hectare)
San Clemente Bell's sparrow ( <i>Artemisiospiza belli clementeae</i> )	High (.52)	435.52 (176.25)
	Medium (.36 - .20)	417.29 (168.87)
	Low (.02 - .13)	960.95 (388.88)
	Undocumented Density	002.07 (000.83)
	<b>Total Territory within Action Area</b>	<b>1,813.77 (734.01)</b>

<sup>1</sup> Data derived from winter observations 2010–2015. See **Section 4.3** for description of how area estimate was derived.

<sup>2</sup> San Clemente Bell's sparrow territories per hectare (density) based on 2014 data provided by Melissa Booker, NAVFAC SW. Densities from these data were categorized into 'high', 'medium' and 'low' in order to simplify the display of the data. The designations of these categories is not relative to densities elsewhere and is not meant to be interpreted as biologically high, medium, or low density of territories for San Clemente Bell's sparrow.

### 4.1.3 Cumulative Effects

Cumulative effects include future state, Tribal, local, and private actions that are reasonably foreseeable to occur, and that would contribute to cumulative anthropogenic effects on threatened and endangered species. Reasonably foreseeable activities that could occur on NALF SCI include only Federal or U.S. Navy activities because NALF SCI is managed by the U.S. Navy solely for military activities. No state, Tribal, local, or private actions that could result

in cumulative effects will occur within the Action Area. As a result, no cumulative effects are expected from the proposed project.

## 4.2 Federally Listed Plant Species

### 4.2.1 San Clemente Island Paintbrush

The current island-wide population of SCI paintbrush is approximately 53,280 individuals. Several different populations of SCI paintbrush were observed in the Action Area (**Figure 3-1**, **Table 4-1**). Each occurrence could be potentially affected by fugitive dust or damage from workers or equipment. However, general avoidance and minimization measures would be implemented. These specific occurrences and the corresponding effects to each population are described in the following paragraphs.

A known historical occurrence of 102 individuals was observed on either side of the AVMR approximately 1,000 ft (305 m) north of the intersection of AVMR and Horton Road. Direct, long-term effects to this species could arise from loss of individuals due to the maintenance of the AMVR and SCI Ridge Road and the maintenance of drainage structures along this segment of the AMVR and SCI Ridge Road, as approximately 10 of these 102 individuals are within 2 to 5 ft (0.6 to 1.5 m) of the edge of these roads. Direct, short-term effects could arise from construction equipment generating fugitive dust, though the close proximity of this population to AMVR likely means that these individuals are periodically exposed to fugitive dust from vehicular traffic on the AVMR. Maintenance of drainage structures could cause indirect effects to this population if increased surface storm runoff affects downstream individuals, as this population is in a swale feature.

A second occurrence of approximately 13 individuals was observed in SHOBA along the periphery of the Action Area. One individual of SCI paintbrush was observed within the Action Area, adjacent to the transmission line that parallels SCI Ridge Road. Direct, long-term effects to this population could occur during the maintenance and repair of the transmission line if individuals are crushed or otherwise damaged. Direct effects also could arise from fugitive dust generated by construction equipment.

A third occurrence of five individuals was observed at the eastern terminus of Pacific View South Road and the transmission line north of and parallel to this road. Two individuals were found along the transmission line within 25 ft (8 m) of a pole. Direct, long-term effects to these two individuals along the transmission line could occur from the maintenance and repair of the transmission line if individuals are destroyed. Direct, short-term effects could occur if individuals are damaged during these activities from trampling by workers or equipment. Individuals along the “alignment” of Pacific View Road are well beyond the limits of this roadway, and thus would not be affected.

Several other populations of SCI paintbrush are known to occur adjacent to the Action Area. Only one of these occurrences (alongside Marine Terrace Road) is in close proximity to the Action Area. The population at Marine Terrace Road is outside of the Action Area, but could be affected by emissions of fugitive dust.

To ensure that individuals will not be damaged by workers or equipment, the location of the plants will be clearly marked prior to maintenance and repair (GAM-M-1); all project-related activities will be limited to within the project footprint (GAM-M-2); and an employee environmental awareness program will be developed and implemented (GAM-M-3). To minimize impacts from construction equipment-generated fugitive dust, watering and other appropriate measures will be implemented (GAM-M-5), and maintenance vehicles will not exceed 15 miles per hour on the construction site (GAM-M-7). To minimize impacts from project-related pollution and erosion/sedimentation, an erosion control plan will be prepared and implemented (GAM-M-4).

All populations of the SCI paintbrush that occur within the Action Area (especially the occurrence in SHOBA) are in relatively undeveloped areas and are in areas that at some time might be subjected to fire management activities under the FMP (Navy 2009). Such activities could cause direct, short-term effects to this species from creation of fire lines, fuel breaks, and application of fire suppression materials (e.g., Phos-Chek). To avoid and minimize impacts from the creation of fire lines, fuel breaks and application of fire suppression materials (e.g., Phos-Chek) the U.S. Navy will evaluate fire lines and bladed areas disturbed by fire suppression activity and rehabilitate these areas as practicable and appropriate; determine whether seeding is appropriated for post fire erosion control; minimize impacts to listed species and occupied habitat associated with Phos-Chek by considering locations of federally listed species in advance of fuel break installation; monitor soil and vegetation responses to retardants and herbicide; and consider the locations of federally listed plants in advance of prescribed fire applications so that impacts can be avoided by location or timing where possible (Navy 2013b).

Up to 18 individuals of SCI paintbrush could be directly or indirectly adversely affected by the Proposed Action. The Navy therefore concludes that the proposed action may affect and is likely to adversely affect the SCI paintbrush.

#### 4.2.2 San Clemente Island Lotus

The current island-wide population of SCI lotus is approximately 9,847 individuals, Approximately 483 individuals of SCI lotus were observed within Wilson Cove, from Wilson Cove North Road near the gas station to south of the NRO complex (**Figure 3-1, Table 4-1**). The high number and density of facilities within Wilson Cove and the population size, extent, and interspersed nature of this population between and adjacent to these facilities makes the SCI lotus particularly susceptible to impacts from maintenance and repair activities. Individuals of this species are within water line corridors (approximately 218 individuals), transmission line corridors (approximately 101 individuals, of which 38 are within 25 ft [8 m] of pole locations), and adjacent to roads and road ditches (approximately 12 individuals within 2 to 5 ft [0.6 to 1.5 m] of roads). No individuals are known to be within 50 ft (15 m) of buildings and other structures. Direct, long-term effects could occur from repairs or maintenance for any of these facilities. To ensure that individuals will not be damaged by workers or equipment, the location of the plant will be clearly marked prior to maintenance and repair activities (GAM-M-1); all project-related activities will be limited to within the project footprint (GAM-M-2); and an employee environmental awareness program will be developed and implemented (GAM-M-3).

Direct, long-term effects could also occur during vegetation clearing around facilities. Direct, short-term effects could occur if any individuals are damaged during these maintenance activities, primarily from trampling by either workers or equipment, or from inadvertent damage from vegetation clearing. Impacts to this species could occur from construction equipment generated fugitive dust, hydrologic changes due to road ditch and culvert repairs and maintenance and damage from herbicide drift. To minimize fugitive dust, watering and other appropriate measures will be implemented (GAM-M-5) and maintenance vehicles will not exceed 15 miles per hour on the construction site (GAM-M-7). To minimize impacts from project-related pollution and erosion/sedimentation, an erosion control plan will be prepared and implemented (GAM-M-4).

The majority of the SCI lotus habitat on NALF SCI within the Action Area is in Wilson Cove in close proximity to buildings and structures. As such, most individuals are not likely to be affected by the FMP (Navy 2009). However, some activities under this plan may be implemented in this area and could adversely affect this species during creation of fire lines, fuel breaks, and application of fire suppression materials (e.g., Phos-Chek). To avoid and minimize the impacts from the creation of fire lines, fuel breaks and application of fire suppression materials (e.g., Phos-Chek), the U.S. Navy will evaluate fire lines and bladed areas disturbed by fire suppression activity and rehabilitate these areas as practicable and appropriate; determine whether seeding is appropriated for post-fire erosion control; minimize impacts to listed species and occupied habitat associated with Phos-Chek by considering locations of federally listed species in advance of fuel break installation; monitor soil and vegetation responses to retardants and herbicide; and consider the locations of federally listed plants in advance of prescribed fire applications so that impacts can be avoided by location or timing where possible (Navy 2013b).

Up to 369 individuals of SCI lotus could be directly or indirectly adversely affected by the proposed action. The Navy therefore concludes that the proposed action may affect and is likely to adversely affect the SCI lotus.

#### 4.2.3 Santa Cruz Island Rockcress

The current island-wide population of Santa Cruz Island rockcress is comprised of approximately 3,700 individuals. One individual of this species was observed within the Action Area during the 2014 plant surveys at the southern terminus of SCI Ridge Road (**Figure 3-1, Table 4-1**). This individual is part of a known, small historical population, but because of the drought, only one individual was observed in 2014. It is likely that in years of higher rainfall, the number of plants within the Action Area at this location would be closer to 100 individuals. The population is at the edge of the Action Area, and the only anticipated activity to occur there would be maintenance of SCI Ridge Road. This part of SCI Ridge Road is gravel and there is a turn-around at this road terminus. The plant found in 2014, and suitable habitat for this population, occurs at the periphery of the corridor a few feet from the shoulder of the turn-around. Direct, long-term effects to this individual from road maintenance are not anticipated, as this individual is beyond the proposed limits of disturbance (i.e., 2 to 5 ft [0.6 to 1.5 m]). To ensure that individuals will not be damaged by workers or equipment, the location of this and any other Santa Cruz Island rockcress present in the area will be clearly marked prior to

maintenance and repair activities (GAM-M-1); all project-related activities will be limited to within the project footprint (GAM-M-2); and an employee environmental awareness program will be developed and implemented (GAM-M-3).

To minimize the risk of fugitive dust adversely affecting Santa Cruz Island rockcress, watering and other appropriate measures will be implemented to control dust emissions during road maintenance (GAM-M-5), and maintenance vehicles will not exceed 15 miles per hour on the construction site (GAM-M-7). To avoid modifying storm water runoff patterns in this habitat and to minimize erosion/sedimentation, an erosion control plan will be prepared and implemented (GAM-M-4). In addition, all maintenance of the turnaround at the southern terminus of SCI Ridge Road will be conducted outside of the growing season of this species. The growing season for the Santa Cruz Island rockcress varies among years, and will be determined each year by SCI botanists. By implementing these measures, the risk of indirect effects to Santa Cruz Island rockcress will be insignificant.

Because there are very few Santa Cruz Island rockcress within the Action Area (only one was found there in 2014), because no maintenance activities or other direct effects will occur within suitable habitat for this species, and because measures will be implemented to avoid or minimize indirect impacts, the Navy concludes that adverse effects to this species are discountable and insignificant, and thus the proposed action may affect but is not likely to adversely affect, the Santa Cruz Island rockcress.

## **4.3 Federally Listed Wildlife**

### **4.3.1 San Clemente Loggerhead Shrike**

Based on data from 2010-2015 surveys, there have been 117 breeding locations and 1,267 wintering locations documented on NALF SCI. Of those documentations, 5 breeding locations and 473 wintering observation points fall directly within the Action Area.

#### **NESTING**

To comply with the Migratory Bird Treaty Act and avoid and minimize effects to nesting San Clemente loggerhead shrikes, all non-emergency maintenance activities would occur outside of the breeding season for this species (January 1 through July 31). In cases of emergency maintenance, such as downed power lines or broken water mains, crews might need to access areas within the Action Area without notice. These activities are extremely unlikely to occur and any emergency activities that have occurred in the past have not resulted in a single incident involving a listed species. Any non-emergency maintenance activity that occurs during the breeding season will be preceded by a notification to the Installation Biologist to ensure avoidance of any known shrike nests in the area. Any activity in the vicinity of a potentially active nest will be avoided.

#### **HABITAT LOSS**

The USFWS San Clemente loggerhead shrike 5-year review lists habitat loss as the main reason for the decline of the population. The USFWS listed introduced grazing mammals as the number one reason for habitat loss in the initial recovery plan in 1984 (USFWS 2009a). Having

extirpated all introduced grazing mammals in the early 1990s, nesting habitat and shrikes have increased.

Effects to San Clemente loggerhead shrike would ideally be assessed based on the area of suitable habitat within the project footprint. However, little data exists on San Clemente loggerhead shrike habitat suitability, so an approach using available observation data was developed. Wintering San Clemente loggerhead shrike locations are widespread, overlapping all breeding areas in proximity to the project footprint (see **Figure 4-1**). Due to this overlap, the wintering locations were used to analyze potential territory within the Action Area in order to most accurately reflect the distribution of habitat use across NALF SCI.

Winter San Clemente loggerhead shrike home ranges or territories are highly variable in size, ranging from 19.52 to 107.98 acres (7.9 to 43.7 hectares) (Lynn et al. 2003). Since winter territories include areas of little use the smaller end of the size range was used to estimate the area of territory within the Action Area. The wintering observation points were buffered to a 19.77-acre (8-hectare) circle with the point as the center. Based upon these winter observation point calculations, there are 730.21 acres of occupied or historically occupied San Clemente loggerhead shrike habitat within the Action Area (**Table 4-2**). Although the use of wintering point observations rather than breeding observation points for this analysis was determined to most accurately reflect the use of NALF SCI by the shrikes according to available data, this analysis may also overestimate effects.

The slow return of nesting habitat following the removal of ungulates from NALF SCI would not likely be affected by the proposed actions. Occasionally, heavy equipment would be driven off existing roads and outside of existing footprints to conduct maintenance and repair. These disturbances would be infrequent and would not occur outside of the established maintenance corridors as shown in **Figure 2-2**. Care would be taken to avoid crushing or removing shrubs or trees. Furthermore, most occupied shrike habitat is located within steep canyons. These steep canyons are inaccessible to repair vehicles and machinery and, although they are within the Action Area, would not be disturbed by repair crews or vehicles.

Direct, effects could occur in the form of vegetation removal surrounding structures during vegetation control and wildfire asset protection. Although vegetation removal around existing structures would result in loss of potential forage habitat for shrikes, it is unlikely that low-lying vegetation within 50 ft (15.2 m) of buildings and structures is used frequently by shrikes. Shrikes rarely use occupied buildings as nesting habitat and activities associated with removal of vegetation surrounding these structures is unlikely to impact nesting or foraging habitat.

Impacts to shrikes could occur if maintenance and repair activities were to cause fugitive dust sufficient to kill vegetation and thus modify foraging habitat. Direct effects could also occur if invasive vegetation introduced by construction activities caused competition with native vegetation and changed vegetation community make-up. These impacts would be avoided or minimized through avoidance and minimization measures stated in **Section 2.3** such as fugitive dust watering, erosion control and reduced speed limit.

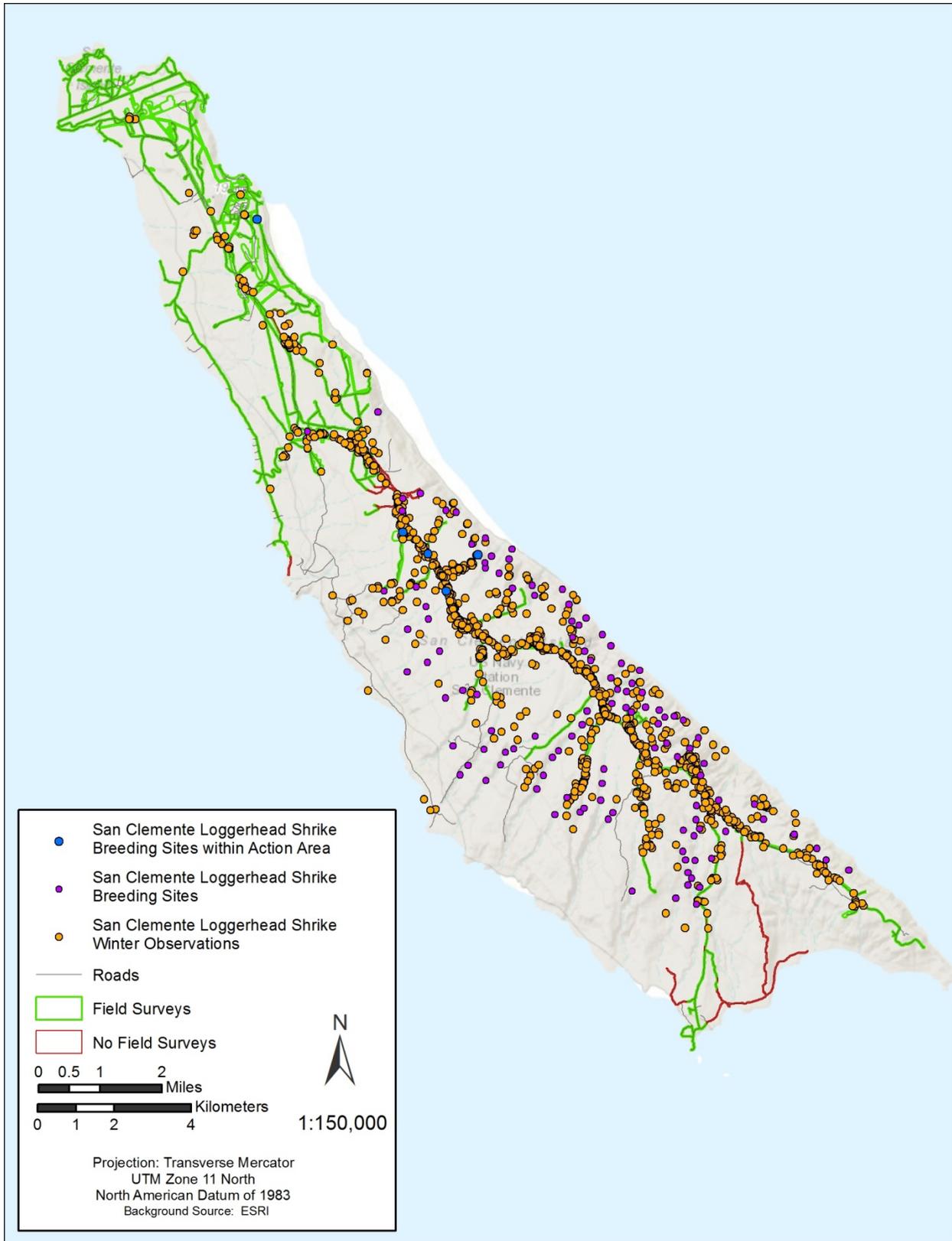


Figure 4-1. San Clemente Loggerhead Shrike Winter and Breeding Sites Documented on NALF SCI

Shrikes utilize power poles and lines as perches during foraging. The maintenance and upkeep of these structures could be considered beneficial effects as they provide continued perching and forage area. Additionally, the removal of vegetation surrounding such structures as well as along roadsides could increase the amount of forage habitat for shrikes while at the same time precluding fires which pose a threat to San Clemente loggerhead shrikes.

#### PREDATION

Direct or indirect effects from maintenance and repair would not cause any measurable increase in native or non-native predator populations or cause shrike nests to become more vulnerable to predation. Thus, maintenance and repair activities would have no effect on the predation of shrike nests.

#### DISPLACEMENT

Maintenance and repair could cause direct, short-term effects to non-nesting San Clemente loggerhead shrikes by causing them to modify their behavior and avoid areas where those activities are occurring. These activities would be temporary and birds would likely return after crews have left the work areas. In addition, because maintenance activities would be restricted to within and adjacent to existing disturbances, surrounding suitable habitat would remain available to birds that are temporarily displaced. Any loss of foraging opportunities or other uses of that habitat would be temporary and insignificant.

Indirect, long-term effects could occur if transmission line access roads that have been cleared during maintenance and repair activities cause an increase in secondary human use of otherwise un-visited areas. This increase of previously unused areas by humans could cause shrikes to abandon otherwise usable habitat near the corridor. This impact is unlikely, however, as installation personnel are prohibited from traveling off of established roads.

Habitat loss and displacement of the San Clemente loggerhead shrike could occur as a result of the proposed action. The Navy therefore concludes that the proposed action may affect and is likely to adversely affect the San Clemente loggerhead shrike.

### 4.3.2 San Clemente Bell's Sparrow

Currently, there are 1,813.77 acres (734 hectares) of suitable San Clemente Bell's sparrow habitat within the Action Area. Of the 1,813.77 acres (734 hectares) of winter breeding habitat, about 435 acres (176.04 hectares) (24 percent) are estimated to have a high density of territories (0.50 territories per acre), 417 acres (168.75 hectares) (23 percent) have a medium density (0.36-0.20 territories per acre), and 961 acres (388.9 hectares) have a low density of breeding territories (0.02-0.13 territories per acre) (see **Table 4-2** and **Figure 4-2**).

#### NESTING

As part of the avoidance and minimization measures for the San Clemente Bell's sparrow, all non-emergency maintenance activities would occur outside of the breeding season for this species (breeding season is typically January 1 through July 31). Project proponents, planners, and/or supervisors should consult with the Installation Biologist to determine if the breeding season has begun or has ended as this bird exhibits substantial variation in breeding from year to year. In cases of emergency maintenance, such as downed power lines or broken water

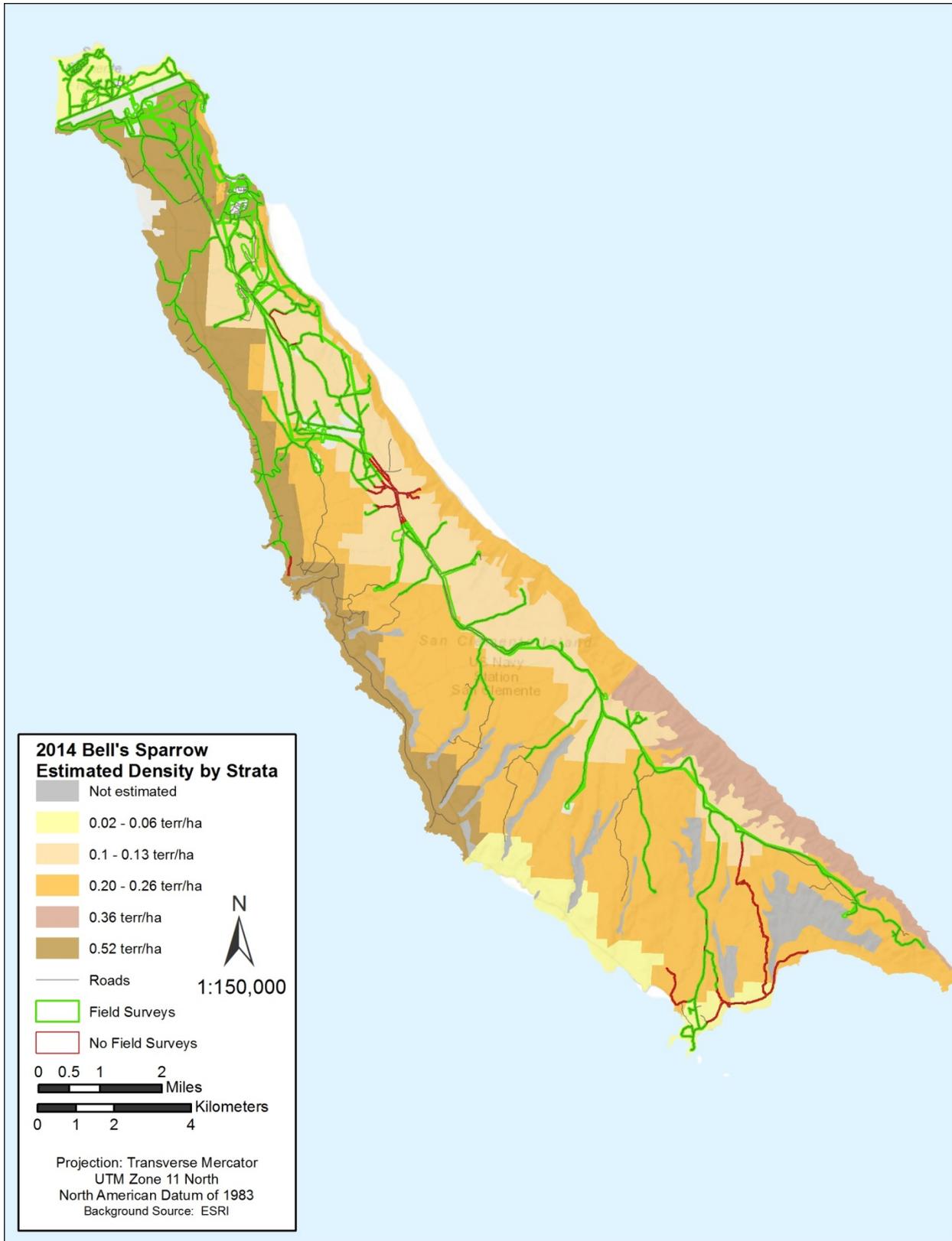


Figure 4-2. San Clemente Bell's Sparrow Estimated Density Based on Strata

mains, crews may need to access areas within the Action Area without notice. Any non-emergency maintenance that would occur during the breeding season would be preceded by a notification to the Installation Biologist to ensure avoidance of any known Bell's sparrow nests in the area. Any activity in the vicinity of a potentially active nest would be avoided. After-the-fact notification (including quantification if feasible) will be provided to the USFWS in the event that emergency actions adversely affect Bell's sparrow.

#### HABITAT LOSS

The USFWS Recovery Plan for the Endangered and Threatened Species of the California Channel Islands (USFWS 1984) lists habitat loss as a reason for the small population size of the San Clemente Bell's sparrow. Since then, non-native ungulates have been removed, associated habitat degradation has ceased, and vegetative recovery is evident throughout most of the island. However, alterations and impacts to habitat suitable to the Bell's sparrow still impact populations.

Vegetation around existing buildings will be removed during vegetation control and wildfire asset protection. However; the low-lying vegetation that generally occurs within 50 ft (15m) of buildings and structures is not foraging or nesting habitat for San Clemente Bell's sparrows; thus, these activities would not have a direct effect on Bell's sparrows.

Maintenance and repair of roads, fences, and drainage structures could have a direct effect habitat suitable for the San Clemente Bell's sparrow. Occasionally, heavy equipment would be driven off existing roads and outside of existing footprints to conduct maintenance and repair. These disturbances would be infrequent and would not occur outside of the established maintenance corridors as shown in **Figure 2-2**. Further, the habitat immediately surrounding roads and drainage structures is not likely to contain suitable nesting habitat and only marginal foraging habitat.

San Clemente Bell's sparrows have continually inhabited and reproduced in areas on the island with high levels of human activity. The Special Warfare and training area is a frequently used facility with abundant training and other activities. Bell's sparrows continue to occupy and breed in habitat directly adjacent to this facility (USFWS 2009b). This suggests this species is not adversely affected by moderate human activity. The proposed project activity level would be substantially lower than that within the aforementioned Special Warfare training areas.

Impacts to San Clemente Bell's sparrows could occur if maintenance and repairs were to cause fugitive dust sufficient to kill vegetation and thus change foraging habitat. Further indirect effects could occur if invasive vegetation introduced by construction activities caused competition with native vegetation and changed vegetation community make-up. Direct and indirect effects through these means would be avoided through measures stated in **Section 2.3** such as fugitive dust watering, erosion control and reduced speed limit.

Wildfires pose a threat to bird species such as the San Clemente Bell's sparrow. Vegetation clearing associated with the maintenance and upkeep of roads and power lines would help to preclude wildfires and could be considered a beneficial effect.

## **DISPLACEMENT**

Maintenance and repair could indirectly affect Bell's sparrows via displacement of individuals during these activities. Displacement of foraging Bell's sparrows would occur during brief maintenance and repair, and those individuals would likely return to the area shortly after crews have finished. Further, habitat surrounding infrastructure such as roads or transmission lines is usually not high quality habitat. Restricting work to non-breeding season will further minimize this affect.

Habitat loss and displacement of the San Clemente Bell's sparrow could occur as a result of the proposed action. The Navy therefore concludes that the proposed actions may affect and is likely adversely affect the San Clemente Bell's sparrow.

## 5. Conclusion

Based on the description of the proposed project within the Action Area in **Section 2**, the status of the species as described in **Sections 3**, and the analysis of the effects in **Section 4**, the U.S. Navy concludes that the proposed action may affect but is not likely to adversely affect the Santa Cruz Island rockcress, and is likely to adversely affect four other listed taxa considered in this BA (**Table 5-1**),

**Table 5-1. Determination of Effects on Federally Listed Taxa Potentially Occurring within the Action Area**

Taxa	Occurrence	Determination
<b>Plants (individuals)</b>		
SCI Indian paintbrush ( <i>Castilleja grisea</i> )	120	May affect and likely to adversely affect
SCI lotus ( <i>Acmispon dendroideus</i> var. <i>traskiae</i> )	483	May affect and likely to adversely affect
Santa Cruz Island rockcress ( <i>Sibara filifolia</i> )	none directly affected	May affect, not likely to adversely affect
<b>Wildlife Habitat/Territory [acres (hectares)]</b>		
San Clemente loggerhead shrike ( <i>Lanius ludovicianus mearnsi</i> )	730.21 (295.51) <sup>1</sup>	May affect and likely to adversely affect
San Clemente Bell's sparrow ( <i>Artemisiospiza belli clementeae</i> )	1,813.77 (734.01)	May affect and likely to adversely affect

<sup>1</sup> Calculated based on winter observations (2010–2015).

The U.S. Navy requests concurrence that the proposed action may affect, but is not likely to adversely affect the Santa Cruz Island rockcress. The U.S. Navy also requests formal consultation for the SCI Indian paintbrush, SCI lotus, San Clemente loggerhead shrike, and San Clemente Bell's sparrow, as the proposed action may affect and is likely to adversely affect these species.

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A

Biological Technical Report



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B

Map Book



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B

Record of Non-Applicability



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Appendix B: Record of Non-Applicability

**U.S. Department of the Navy**

**Clean Air Act - General Conformity Rule**

**Record of Non-Applicability (RONA)**

**Proposed Federal Action: Maintenance and Upgrades to Infrastructure at Naval Auxiliary Landing Field San Clemente Island, California**

**Naval Auxiliary Landing Field San Clemente Island**

The Clean Air Act, as amended, requires Federal actions to conform to an approved State Implementation Plan (SIP) designed to achieve or maintain an attainment designation for air pollutants, as defined by the National Ambient Air Quality Standards. The General Conformity Rule [40 Code of Federal Regulations (CFR) § 93 and 51] applies to Federal actions occurring in nonattainment or maintenance areas.

Under the Proposed Action, the Navy would conduct maintenance and repair at Naval Auxiliary Landing Field San Clemente Island, California, for existing infrastructure, including fences and gates, roads and crossovers, drainage structures, utility infrastructure, and existing and temporary facilities. In addition, the Navy would (1) establish 100-foot-wide corridors along all existing utilities and roads to support ongoing and future maintenance, upgrades, and vegetation management and (2) establish 100-foot buffers around all assets to support ongoing and future maintenance and for protection from potential wildfire damage.

The Proposed Action is considered routine maintenance and repair and involves routine repair and maintenance of roads, trails, and facilities, and the routine operation of facilities, mobile assets, and equipment. These actions fall under the list of General Conformity exemptions listed in 40 CFR 93.153(c)(2)(iv) and 40 CFR 93.153(c)(2)(xiii). In addition, the Proposed Action would have no significant effects on air quality. Accordingly, the Proposed Action at Naval Auxiliary Landing Field San Clemente Island, California, is considered to be in compliance with the California SIP and a formal General Conformity Determination is not required.

To the best of my knowledge, the information provided is correct and accurate, and I concur in the finding that the Proposed Action will conform to the California SIP.

Approved:  Date: 18 FEB 2016

Name JASON GOLUMBFSKIE - JONES  
Title ENVIRONMENTAL DIRECTOR, NBC

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Cultural Resource Site List



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Site Designation	Y (N/S)	X (E/W)	Site Diameter
AFDA-S3	0	0	60
AFDA-S4	0	0	60
BCC-E-005	90	68	90
BL-002	23	21	23
BL-003	15	23	23
BL-004	11	13	13
BL-005	11	12	12
BL-006	15	15	15
BL-009	13	13	13
BL-017	51	37	51
BL-028	22	14	22
BP-001	0	0	60
BP-004	0	0	60
BP-006	0	0	60
BP-009	0	0	60
BP-014	10	10	10
BP-016	0	0	60
BP-044	0	0	60
BP-074	0	0	60
BP-077	0	0	60
BP-079	0	0	60
BP-081 / U3-025	15.24	60.96	60.96
BP-082 / WSR-145	32	78.5	78.5
BPS-001	5.5	15	15
BPS-002	14	18	18
BPS-003	1	1.5	1.5
BPS-004	7	6.5	7
BPS-005	5.2	5.8	5.8
BUDS/NW-006	0	0	60
BUDS/SW-004 / C2-004	97	76	97
BUDS/SW-007 / T-007	110	60	110
BUDS/SW-007D	0	0	60
BUDS/SW-008 / T-007	46	36	46
BUDS/SW-014	19	16	19
BUDS-004	0	0	60
BUDS-004 locus (t)	0	0	60
BUDS-004 locus (v)	0	0	60
BUDS-004 locus (w)	0	0	60
BUDS-004B	0	0	60
BUDS-005B	0	0	60
BUDS-005C	0	0	60
BUDS-005D	0	0	60
BUDS-005E	0	0	60
BUDS-008	0	0	60
BUDS-009	9	7	9

Site Designation	Y (N/S)	X (E/W)	Site Diameter
BUDS-010	8	7	8
BUDS-012	0	0	60
BUDS-013	0	0	60
BUDS-014	0	0	60
BUDS-015	42	23	42
BUDS-021	19	17	19
BUDS-022	26	9	26
C1-002	0	0	60
C1-010	0	0	60
C2-005	12.5	8	12.5
C5-009	17	30	30
C5-011	56	8	56
C5-013	14	12	14
C5-014	30	30	30
C5-015	43	43	43
C5-016	17	12	17
C5-017	17	12	17
C5-018	47.5	40	47.5
C5-020	47.5	23.75	47.5
C5-021	15	15	15
C5-029	4.5	4	4.5
C5-034	6	6	6
C5-036	5	2.5	5
CCC-005	29	25	29
CCC-E-002	27	50	50
CCC-E-006	35	52	52
CCC-E-009	50	48	50
CCC-E-010	42	46	46
CCC-W-001	78	27	78
CCC-W-009	124	44	124
CHB-002	10	10	10
CL-002	0	0	60
DC-009	0	0	60
DC-010	0	0	60
DC-023	0	0	60
EC-005	0	0	60
EC-007	0	0	60
EC-014	0	0	60
EC-028	0	0	60
EC-029	0	0	60
EC-030	0	0	60
EC-122	0	0	60
EC-132	0	0	60
EC-144	0	0	60
EC-147	10	6	10
EC-150	0	0	60

Site Designation	Y (N/S)	X (E/W)	Site Diameter
EC-152/151	0	0	60
EC-154/155	0	0	60
EC-176	0	0	60
EC-234	0	0	60
EC-B	0	0	60
EPN-007	0	0	60
EPN-008 / WSR-095	8	6	8
EPN-009 / WSR-094	3.6	3.6	3.6
EPN-010 / WSR-096	10.4	8.5	10.4
EPN-013 / WSR-098	3.05	6.1	6.1
EPN-014 / WSR-097	3.1	3.2	3.2
EPN-017 / WSR-099	2.5	2.4	2.5
EPN-018 / WSR-100	0	0	60
EPN-019	0	0	60
EPN-020	0	0	60
EPN-022	0	0	60
EPN-026 / WSR-113	18.29	30.48	30.48
EPN-027 / WSR-112	27	16	27
EPN-031 / WSR-111	7.3	5.1	7.3
EPN-032	0	0	60
EPN-033 / WSR-116	7.62	13.4	13.4
EPN-034 / WSR-114	30.48	13.71	30.48
EPN-035 / WSR-104	12.1	13.7	13.7
EPN-036 / WSR-103	22	23	23
EPN-037 / WSR-101	0	0	60
EPN-038 / WSR-115	7	5	7
EPN-051	0	0	60
EPN-065	0	0	60
FR-001/5	25.6	23	25.6
FR-003	48	23	48
FR-004	0	0	60
GB-003 / SCRR-002	6.5	7.1	7.1
GB-004	0	0	60
GB-009 / SCRR-003	50	30	50
HC-003	105	55	105
HC-005	45	70	70
HC-007	53	37	53
HTD-011	86	76	86
HTD-012	87	110	110
LT-001	0	0	60
LT-038	0	0	60
LT-043	16	12	16
LT-046	8	6	8
LT-047	11	7	11
LT-048 / SCRR-013	7	4.2	7
LT-049 / SCRR-014	19	20	20

Site Designation	Y (N/S)	X (E/W)	Site Diameter
LT-050	0	0	60
LT-060	16.5	26.5	26.5
LTC-004	0	0	60
LVTA/SE-005	0	0	60
LVTA/SE-021	0	0	60
LVTA/SE-022	0	0	60
LVTA/SE-023	0	0	60
LVTA/SE-024	0	0	60
LVTA/SE-025	0	0	60
LVTA/SE-026	0	0	60
LVTA/SE-027	0	0	60
LVTA/SE-031	0	0	60
LVTA/SE-032	0	0	60
LVTA/SE-034	0	0	60
LVTA/SE-037	0	0	60
LVTA/SE-046	0	0	60
LVTA-003	0	0	60
LVTA-007	0	0	60
LVTA-008	0	0	60
LVTB/NE-013	4.57	7.62	7.62
LVTB/NE-014	0	0	60
LVTB/NE-016	0	0	60
LVTB/NE-018	0	0	60
LVTB/NE-019	0	0	60
LVTB/NE-020	0	0	60
LVTB/NE-022	0	0	60
LVTB/NE-024	0	0	60
LVTB/NE-027	0	0	60
LVTB/NE-028	0	0	60
LVTB/NE-029	0	0	60
LVTB/NE-030	0	0	60
LVTB/NE-031	0	0	60
LVTB/NE-034	6.6	4.8	6.6
LVTB/NE-038	0	0	60
LVTB/NE-039	12.5	5.25	12.5
LVTB/NE-040	10	7.5	10
LVTB/NE-041	0	0	60
LVTB/NE-042	8.25	8.75	8.75
LVTB/NE-043	6.4	5.6	6.4
LVTB/NE-050	0	0	60
LVTB/NE-054	0	0	60
LVTB/NE-055	0	0	60
LVTB/NE-056	0	0	60
LVTB/NE-059	0	0	60
LVTB/NE-060	0	0	60
LVTB/NE-062	0	0	60

Site Designation	Y (N/S)	X (E/W)	Site Diameter
LVTB/NE-AA	0	0	60
MAG-002 / SCLI-1526	19	16	19
MAG-003	23	21	23
MAG-008 / SCLI-1459	26	28	28
MAG-009 / SCLI-1458	48	50	50
MTG-001	4	7	7
MTG-006	10	25	25
MTG-044	0	0	60
MTG-051	0	0	60
MTG-060	0	0	60
MTG-062	1	1	1
MTG-149	0	0	60
OAF/E-001	0	0	60
OAF/E-002	7.5	9	9
OAF/E-003	0	0	60
OAF/E-014	0	0	60
OAF/E-025	0	0	60
OAF/E-030	0	0	60
OAF-001	0	0	60
OAF-002	0	0	60
OAF-003	0	0	60
OAF-005	0	0	60
OAF-007	0	0	60
OAF-008	0	0	60
OAF-009 / PL-002	0	0	60
OAF-010	0	0	60
OAF-017	0	0	60
OAF-018	0	0	60
OAF-028	0	0	60
OAF-030 (sic)	0	0	60
OAF-033	0	0	60
OAF-040	0	0	60
OAF-041	0	0	60
OAF-048/049	168	232	232
OAF-050	0	0	60
OAF-051	105	70	105
OAF-052/055	40	45	45
OAF-054	29	29	29
OAF-056	26	12	26
OAF-057	10.5	9	10.5
OAF-078	24	13	24
OAF-079	10	6.2	10
OAF-081	5	3.5	5
OAF-084	0	0	60
OAF-085	30	24	30
OAF-AA	0	0	60

Site Designation	Y (N/S)	X (E/W)	Site Diameter
P1-003	60	35	60
P1-009	0	0	60
P1-010	0	0	60
P1-012	0	0	60
P11-005	24	15	24
P11-006	137	66	137
P15-001	20	30	30
P15-A	45	30	45
P15-D	35	30	35
P19-B	32	34	34
P1-A	0	0	60
P2-005	0	0	60
P2-006	0	0	60
P2-A	0	0	60
P2-D	0	0	60
P30-003 / STAF-011	0	0	60
P30-004 / STAF-012	0	0	60
P3-002	0	0	60
P3-003/004A	60	55	60
P3-003/004B	60	40	60
P3-003/004C1	0	0	60
P3-003/004C2	0	0	60
P3-006	0	0	60
P3-E	0	0	60
P3-F	0	0	60
P3-G	0	0	60
P4-003	0	0	60
P4-004	0	0	60
P4-005	31	30	31
P4-B	0	0	60
P5-A	8	15	15
P5-C	0	0	60
P5-F	0	0	60
P5-H	0	0	60
P6-001	0	0	60
P7-005	0	0	60
P8-004	0	0	60
P8-006	0	0	60
PB-?	0	0	60
PB-001	30	25	30
PB-002	15	15	15
PB-003	12	10	12
PB-004	13	7.5	13
PB-005	17	22	22
PB-006	20	12	20
PB-007	50	25	50

Site Designation	Y (N/S)	X (E/W)	Site Diameter
PB-008	21	13	21
PB-009	25	23	25
PB-010	25	35	35
PB-011	22	15	22
PB-012	37	30	37
PB-013	18	15	18
PB-016	0	0	60
PB-017	0	0	60
PB-021	25	25	25
PB-022	15	20	20
PB-024	20	20	20
PB-029	45	45	45
PB-034	29.7	25.2	29.7
PB-036	18	16.5	18
PB-037	25	22	25
PB-039	0	0	60
PB-040	0	0	60
PB-041	0	0	60
PB-042	0	0	60
PB-043	0	0	60
PB-044	0	0	60
PB-045	0	0	60
PB-046	0	0	60
PB-047	13	11	13
PB-048	0	0	60
PB-049	0	0	60
PB-050	10	9	10
PB-051	19	17	19
PB-052	25	33	33
PB-053	45	25	45
PB-054	0	0	60
PB-055	17	15	17
PB-056	0	0	60
PB-059	7	11	11
PB-060	0	0	60
PB-069	0	0	60
PB-070	24	22	24
PB-075	13	8	13
PB-077	22.5	53.34	53.34
PB-078	0	0	60
PB-080	0	0	60
PB-081	0	0	60
PB-082	0	0	60
PB-086	0	0	60
PB-087	0	0	60
PB-090	0	0	60

Site Designation	Y (N/S)	X (E/W)	Site Diameter
PB-095	0	0	60
PD-007	23	17	23
PD-013	51	30	51
PD-026	24	30	30
PD-027	17	22	22
PD-028	47	37	47
PD-044	0	0	60
PHR-001	17	16	17
PHR-002	15	16	16
PHR-004	48	104	104
PHR-006	60	55	60
PHR-007	34	34	34
PHR-012	49	79	79
PHR-013	27	35	35
PHR-016	90	137	137
PHR-017	23	30	30
PHR-019	32	37	37
PHR-020	28	36	36
PHR-022	71	38	71
PHR-025	42	55	55
PHR-030	54	40	54
PHR-036	65	90	90
PHR-038	44	64	64
PHR-040	32	21	32
PHR-048	47	55	55
PHR-049	62	43	62
PHR-058	52	69	69
PHR-059	53	134	53
PHR-062	135	264	264
PHR-085	240	220	240
PHR-085 partial	264	218	264
PHR-088	17	21	21
PHR-091	40	24	40
PHR-096	38	49	49
PHR-104	94	134	134
PHR-105	11	19	19
PHR-106	69	57	69
PHR-111	15	19	19
PK-002	46	41.5	46
PK-012	240	110	240
PK-013	240	110	240
PK-016	325	80	325
PK-017	325	80	325
PL-001	21	20	21
PL-005	17	16	17
PL-006	63	59	63

Site Designation	Y (N/S)	X (E/W)	Site Diameter
PL-009	90	75	90
PL-010	59	43	59
PL-012	19	28	28
PL-013	9.2	5.3	9.2
PL-016	40	35	40
PL-017	30.48	30.48	30.48
PL-018	0	0	60
PL-019	9	11	11
PL-021	18	21	21
PL-022	24.4	18.3	24.4
PL-023	34	22	34
PL-026	211	143	211
PL-028	18	17	18
PL-029	12	13	13
PL-030	8	8	8
PL-031	19	22	22
PL-034	20	17	20
PL-037	37	28	28
PL-061	50	45	50
PL-062	20	21	21
PL-063, 064, 065, 102	166	162	166
PL-066	13.5	7.8	13.5
PL-067	12	12	12
PL-068	0	0	60
PL-076	0	0	60
PL-078	0	0	60
PL-094	0	0	60
PL-095	27	28	28
PL-096	17	12	17
PL-098	78	61	78
PL-100	26	33	33
PL-101	50	56	56
PL-104	60	30	60
PRH-008	50	50	50
PRH-026	0	0	60
RB-002	16	24	24
RB-005	19	30	30
RB-006	16	11.5	16
RB-011	35.5	35	38.5
RB-032	25	37	37
RB-034	28	27	28
RB-035	17	12	17
RS-004	0	0	60
RS-018	7	8	8
RS-019	9	5	9
RS-070	0	0	60

Site Designation	Y (N/S)	X (E/W)	Site Diameter
RS-071	0	0	60
RS-078	5	5	5
RS-079	0	0	60
RS-081	10	15	15
RS-083	25	25	25
RS-084	0	0	60
RS-085	0	0	60
RS-088	10	13	13
RS-089	40	25	40
RS-090	6	5	6
RS-091	2	2	2
RS-092	1	1	1
RS-093	5	6	6
RS-094	0	0	60
RS-108	9	11	11
RS-139 / WSR-051	6	8	8
SA-012 / C6-009	9.1	8.5	9.1
SA-021 / C6-017	13	10.5	13
SA-022 / C6-018	21	7	21
SA-024 / C6-020	0	0	60
SA-034 / C6-028	0	0	60
SA-040 / C6-030	0	0	60
SA-055 / C6-036	17	15	17
SA-066	30.48	15.24	30.48
SA-073	0	0	60
SA-074 / C6-038	9.14	16.45	16.45
SA-088 / C6-030	0	0	60
SA-094B / C6-051	0	0	60
SA-102	15	15	15
SA-103	0	0	60
SA-108 / C6-056	0	0	60
SA-115	0	0	60
SA-J/K / C6-059	0	0	60
SCLI-1178	24.01	11.89	24
SCLI-1215	246	200	246
SCLI-1240	632	76	632
SCLI-1246	21	23	23
SCLI-1249	28	27	28
SCLI-1295	5.18	11.58	11.58
SCLI-1390	0	0	60
SCLI-1410	43	52	52
SCLI-1425	47	50	50
SCLI-1446	51	56	56
SCLI-1711	213	266	266
SCLI-1713	141	135	141
SCLI-1715	45	25	45

Site Designation	Y (N/S)	X (E/W)	Site Diameter
SCLI-1735	217	395	395
SCLI-916	15.2	12.5	15.2
SCRR-001	3	5	5
SCRR-005	13.5	22	22
SCRR-006	11.2	15	15
SCRR-008	5.5	8.6	8.6
SCRR-010	3	3	3
SCRR-011	3.5	8.5	8.5
SCRR-012	0	0	60
SDE-015	0	0	60
SDE-038	208	155	208
SDE-039	0	0	60
SDE-041	0	0	60
SDE-052	28	36	36
SR-001	49	81	81
SR-002	176	400	400
SR-003	91	220	220
SR-004	30	55	55
SR-005	41	45	45
SR-006	92	184	184
STAF-006	16	16	16
U21-010	8	9.6	9.6
UWR-008	12	12	12
WCDA/S-001	32.8	27.2	32.8
WCDA/S-003	6	6	6
WCDA/S-007	30	48	48
WCDA/S-009	4	4	4
WCDA/S-010	10.2	8.6	10.2
WCDA/S-015	8.9	8.9	8.9
WCDA/S-017	5.5	4.9	5.5
WCDA/S-018	4.3	4.7	4.7
WCDA/S-033	7.5	7.5	7.5
WCDA/S-036	35	50	50
WCDA/S-037	36	28.5	36
WCDA/S-038	2	2	2
WCDA/S-039	1.2	1.2	1.2
WCDA/S-041	18	4	18
WCDA/S-042	14.59	18.2	18.2
WCDA/S-043	27.6	23	27.6
WCDA/S-044	25.4	16.4	25.4
WCDA/S-053	6.2	6.2	6.2
WCDA/S-O	15	15	15
WCDA/S-Unknown	13	24	24
WCDA-001	54.3	48	54.3
WCDA-006?	18.1	23.2	23.2
WCDA-008A	24	20	24

Site Designation	Y (N/S)	X (E/W)	Site Diameter
WCDA-008B	6	6	6
WCDA-009?	26	26	26
WCDA-020	0	0	60
WCDA-021	6.4	5	6.4
WCDA-022B	0	0	60
WCDA-028	0	0	60
WCR-007	32	8	32
WCR-008	13	20	20
WCR-015	6	7	7
WCR-022	1	1	1
WCR-023	0	0	60
WCR-113	5	5	5
WCR-114 / WSR-143	15.2	11.2	15.2
WCR-115	1	1	1
WCR-160	3	3	3
WRW-005	55	64	64
WSR-001	16.8	16.8	16.8
WSR-002	12	9	12
WSR-004	6	10	10
WSR-005	1.5	1.7	1.7
WSR-006	70	70	70
WSR-007	70	80	60
WSR-008	45.7	63	63
WSR-009	6.2	4.3	6.2
WSR-010	9	8.6	9
WSR-011	4.3	4.5	4.5
WSR-014	10	10.3	10.3
WSR-015	12	6	12
WSR-016	11	13	13
WSR-017	16.8	12.2	16.8
WSR-019	3.5	3.3	3.5
WSR-020	16	14	16
WSR-021	7.6	7.6	7.6
WSR-022	5.4	4.6	5.4
WSR-023	16.5	13.4	16.5
WSR-024	7.6	10.3	10.3
WSR-025	4.3	4.6	4.6
WSR-026	0	0	60
WSR-027	0	0	60
WSR-028	6.1	6.2	6.2
WSR-029	8.22	16.1	16.1
WSR-030	13	15.5	15.5
WSR-031	11.2	6.78	11.2
WSR-032	3.8	4.9	4.9
WSR-033	8.3	8.3	8.3
WSR-034	1.5	2.6	2.6

Site Designation	Y (N/S)	X (E/W)	Site Diameter
WSR-035	22	21.3	22
WSR-039	8.9	3.7	8.9
WSR-040	4.5	10.5	10.5
WSR-041	8	16	16
WSR-042	0	0	60
WSR-043	10.1	6.8	10.1
WSR-045	3.5	4.6	4.6
WSR-047	2.7	2.9	2.9
WSR-048	10.7	10.7	10.7
WSR-049	3.8	3.9	3.9
WSR-052	2.8	2	2.8
WSR-053	17	9	17
WSR-054	5	3.6	5
WSR-055	36.6	32	36.6
WSR-056	27.4	6.1	27.4
WSR-057	0	0	60
WSR-058	2	2.1	2.1
WSR-059	5.9	4.7	5.9
WSR-060	0	0	60
WSR-061	8.5	10.3	10.3
WSR-064	3.2	4.6	4.6
WSR-065	36.6	32	36.6
WSR-066	8	4.3	8
WSR-067	2.75	3.05	3.05
WSR-068	45.7	27.4	45.7
WSR-069	7.2	12.8	12.8
WSR-070	1.5	1.7	1.7
WSR-071	2	2	2
WSR-072	4.5	4.7	4.7
WSR-073	24.4	16.8	24.4
WSR-074	13.7	11	13.7
WSR-075	14.6	18.9	18.9
WSR-076	15	14	15
WSR-077	16.5	7.3	16.5
WSR-078	7.3	8.2	8.2
WSR-079	6.3	5.4	6.3
WSR-080	2.3	1.7	2.3
WSR-081	2.5	1.6	2.5
WSR-082	10.2	107.2	107.2
WSR-082 extension	13	13	13
WSR-083 (Site Destroyed)	0	0	60
WSR-084	10.2	7.3	10.2
WSR-085	9	7.5	9
WSR-086	2.5	2	2.5
WSR-087	15.4	15.8	15.8
WSR-088	12	13	13

Site Designation	Y (N/S)	X (E/W)	Site Diameter
WSR-090	13	18	18
WSR-091	3	8.5	8.5
WSR-093	9	10	10
WSR-102	5.9	4.3	5.9
WSR-107/106	37	35	37
WSR-108	12.7	12.3	12.7
WSR-110	2	2.1	2.1
WSR-117	0	0	60
WSR-118	0	0	60
WSR-119	18.5	18.5	18.5
WSR-120	18	9	18
WSR-121	14	3.5	14
WSR-122	23.46	28.34	28.34
WSR-123	23	18	23
WSR-124	137	91	137
WSR-125	137	91	137
WSR-126	12	7	12
WSR-127	12.5	7	12.5
WSR-128	20	24	24
WSR-129	20	19	20
WSR-131	71	27	71
WSR-133	0	0	60
WSR-134	0	0	60
WSR-135	3	3.6	3.6
WSR-138	3.2	3.1	3.2
WSR-139	8.4	12.5	12.5
WSR-140	15	25	25
WSR-141	15	20	20
WSR-142	0	0	60
WSR-146	4	4.6	4.6