DRAFT
ENVIRONMENTAL ASSESSMENT

FOR

TRAINING AND TESTING
AT

NAVAL BASE POINT LOMA,
CALIFORNIA

AUGUST 2022

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Abstract

Designation:	**Environmental Assessment**
Title of Proposed Action:	Naval Base Point Loma Training and Testing
Project Location:	San Diego, California
Lead Agency for the EA:	Department of the Navy
Affected Region:	San Diego County, California
Action Proponent:	Commander, U.S. Pacific Fleet
Point of Contact:	Naval Facilities Engineering Systems Command Southwest 750 Pacific Highway, Floor 12 San Diego, California 92132-0058 Contact: Naval Base Point Loma Environmental Assessment Project Manager NAVFAC_SW_NBPL_EV_Assessment@us.navy.mil
Date:	August 2022

The Commander of the United States Pacific Fleet, an operational force in the Pacific theater of the United States Navy (Navy), has prepared this Environmental Assessment in accordance with the National Environmental Policy Act, as implemented by the Council on Environmental Quality Regulations and Navy regulations. The Proposed Action would allow Navy forces to continue ongoing training and testing activities on Naval Base Point Loma and improve the capability of the peninsula to support additional training and testing activities. The Proposed Action would also allow for new training and testing activities, increase tempo of some current activities, and expand training into new areas. This Environmental Assessment evaluates the potential environmental impacts associated with the two action alternatives, Alternatives 1 and 2, and the No Action Alternative to the following resource areas: biological resources, noise, cultural resources, coastal resources (to include water resources and erosion), cultural resources, air quality, and public health and safety.

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EXECUTIVE SUMMARY

ES.1 Proposed Action

The United States (U.S.) Department of the Navy (Navy) has prepared this Environmental Assessment (EA) to evaluate potential environmental consequences resulting from training and testing at Naval Base Point Loma (NBPL), San Diego County, California. Commander, U.S. Pacific Fleet, a Command of the Navy, proposes to conduct military readiness training activities (hereinafter referred to as "training") and conduct research, development, testing, and evaluation activities (hereinafter referred to as "testing") at NBPL in San Diego, California. Proposed activities would take place on the terrestrial portions of NBPL and within areas for the scheduled use of Unmanned Aircraft Systems (UAS), existing facilities, and Over-the-Beach (OTB) training areas of NBPL. The Proposed Action is comprised of the continuation of ongoing training and testing, and new capabilities including proposed training and testing and range improvements, which include the following:

- conduct additional small UAS activities, including counter-UAS
- increase the number of Unmanned Systems (UxS) testing activities and expand the UxS Southern Testing Area
- conduct additional OTB training activities and increase the number of locations where OTB activities could occur
- conduct timed-fuse calculation training
- increase Improvised Explosive Device training
- conduct force protection activities
- conduct insertion and extraction training
- designate up to two unimproved helicopter landing zones (or HLZs) to support insertion/extraction activities of rotary-wing aircraft (does not include tilt-rotor aircraft)

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide a training area at NBPL with the capability to support increased levels of training by Explosive Ordnance Disposal and Naval Special Warfare (NSW) units and increased levels of testing by Naval Information Warfare Center (NIWC) Pacific.

The Proposed Action is needed for the Navy to meet statutory responsibilities to train and maintain combat-ready forces and to equip forces with the most advanced technologies. Local over-the-beach and insertion/extraction training venues with unique topographic features are limited, and use of out-of-area sites require excessive travel and expense, adversely affecting personnel located in the San Diego area. There are several naval facilities in the immediate vicinity of NBPL; however, none provide the unique topographic and varied terrain present at NBPL. Dedicated training areas that provide these capabilities while integrating with multiple commands would allow required training and further the Navy's execution of its congressionally mandated responsibilities under 10 U.S. Code section 8062. The Proposed Action would also promote additional integration with NIWC Pacific's development and testing activities, which would assist in developing testing scenarios and identifying gaps in technology. The Proposed Action would also enable the broader use of existing areas for the development and testing of NIWC Pacific's unmanned terrestrial and aerial systems, which would allow for more rapid introduction and use of these systems by the Fleet.

ES.3 Alternatives Considered

Alternatives were developed for analysis based upon the following screening factors:

1. Use existing facilities and infrastructure on NBPL
2. Take advantage of opportunities for coordinated/joint training (such as integrating NSW and Explosive Ordnance Disposal training with developing technologies)
3. Provide a realistic testing and training environment for land-based and amphibious operations, including rugged, highly dynamic, coastline areas
4. Minimize training time lost to travel (i.e., geographically close to training units)
5. Be compatible with adjacent land uses (e.g., residential, Cabrillo National Monument, Fort Rosecrans National Cemetery)
6. Be compatible with existing military and civilian airspace uses
7. Be compatible with other testing, training, and administrative activities on NBPL

There are two action alternatives that meet the screening criteria and the purpose and need for the Proposed Action. These two action alternatives as well as a No Action Alternative are carried forward for a full analysis of environmental impacts. Under Alternative 1, the Navy would conduct additional UAS and UxS testing activities in areas that have already been developed and maintained, and would expand the UxS Southern Testing Area to include a trail to support off-road testing. Additionally, the Navy would conduct additional OTB training activities, increase the number of locations where OTB activities could occur, increase the number of Improvised Explosive Device training activities, and conduct insertion and extraction training activities. Under Alternative 2, the Navy would conduct all testing and training activities listed under Alternative 1 and designate up to two unimproved HLZs to support insertion and extraction activities using rotary-wing aircraft (does not include tilt-rotor aircraft) for NSW unit-level training.

ES.4 Summary of Environmental Resources Evaluated in the Environmental Assessment

Council on Environmental Quality regulations, National Environmental Policy Act (NEPA), and Navy instructions for implementing NEPA specify that an EA should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact.

The following Endangered Species Act-listed species are known to occur in the project area: Orcutt's spineflower (*Chorizanthe orcuttiana*; endangered) and coastal California gnatcatcher (*Polioptila californica californica*; threatened). Accordingly, the Navy is consulting with the U.S. Fish and Wildlife Service on these threatened and endangered species.

This EA includes biological resources, noise, coastal resources (including water and geological resources), cultural resources, air quality, and public health and safety. Aesthetics/visual resources, environmental justice, and socioeconomics are not anticipated to be impacted and are therefore not evaluated in detail, as the Proposed Action is contained within an existing military installation, does not include construction, and does not include an increase or decrease in use of the local workforce.

ES.5 Summary of Potential Environmental Consequences of the Action Alternatives and Major Mitigating Actions

Under the No Action Alternative, training and testing activities at NBPL would continue as they are currently. Under this alternative, impacts such as noise and human and vehicle disturbance of special-status plant and wildlife species, including the federally listed Orcutt's spineflower, coastal California gnatcatcher, and Migratory Bird Treaty Act (MBTA)-protected avian species, would remain unchanged from current baseline levels.

Under Alternative 1, permanent vegetation removal would occur to 0.32 acre of vegetation from establishment and long-term maintenance of the proposed UxS Southern Test Area. Additional impacts on vegetation in limited areas along existing trails where Navy personnel meander off trails may occur. This may include soil compaction and disturbance around root bases, minor branch breaking from foot traffic during off trail and OTB activities, and the potential for an increase in nonnative invasive plant species. Activities that occur off trail are not proposed in any areas that are known to contain Orcutt's spineflower or that are considered high-quality habitat for the species. Furthermore, measures proposed to minimize impacts on Orcutt's spineflower would be implemented if training and testing activities are proposed in close proximity to known Orcutt's spineflower locations. Annual monitoring would continue to assess known and high-quality habitat areas, and training maps would be updated as needed based on results of annual monitoring.

Noise and human/vehicle disturbance may impact non-federally listed special-status species (reptiles, small mammals, birds, and bats) and the federally listed coastal California gnatcatcher and MBTA-protected avian species under Alternative 1. UAS takeoff and landing, UxS, the firing of blanks, Ultimate Training Munitions (marking rounds), simunitions, and Explosive Energetic Tool (EET) (EETs are small explosive charges encased in a plastic bottle full of water) detonations have the potential to generate noise that may disturb special-status species, including coastal California gnatcatchers and other MBTA-protected birds. The physical presence of humans, UAS, UxS, vehicles, and other equipment proximate to occupied habitat from activities such as OTB; land navigation; rappelling; cliff climbing/assault; foot patrolling; blank firing; and inert, or "mock," Chemical, Biological, Radiological, and Nuclear training, may result in disturbance to nesting coastal California gnatcatchers and MBTA-protected birds. Based on the proposed training and testing activities, Alternative 1 may impact seven pairs of coastal California gnatcatchers annually through minor habitat loss and harassment (from physical and noise disturbance).

Under Alternative 2, in addition to the impacts from Alternative 1, the use of the two HLZs by rotor-wing aircraft would generate noise, vibration, and rotorwash that may disturb coastal California gnatcatchers and MBTA-protected birds. Use of the HLZs will be restricted to outside of the avian breeding season (September 1 through February 14), and hence no additional pairs of coastal California gnatcatchers or MBTA-protected birds are anticipated to be negatively impacted beyond those previously discussed under Alternative 1.

Measures proposed to reduce impacts on the California gnatcatcher would be implemented, such as holding pre- and post-event coastal California gnatcatcher surveys, conducting training activities outside of the coastal California gnatcatcher breeding season (to the extent feasible, especially in optimal and suitable habitat), flying UAS at heights that are unlikely to cause noise harassment, and conducting a detailed noise study to assess the impacts of EET detonations.

Table ES-1 provides a tabular summary of the potential impacts on the resources associated with each of

the alternative actions analyzed.

ES.6 Public Involvement

Council on Environmental Quality regulations direct federal agencies to involve the public in the development of environmental impact analyses under NEPA.

The Navy will inform the public of the Proposed Action and the potential environmental impacts as documented in the Draft EA, as well as provide an opportunity for the public to review and comment on the analysis. The Navy will issue public notices in local newspapers indicating the availability of the Draft EA and the locations where public review copies are available. Project information and documents will be available on the Navy Region Southwest website (https://cnic.navy.mil/navysouthwestprojects) and at information repositories, typically public libraries. Locations of information repositories will be posted on the website and included in public notices.

The notice describes the Proposed Action, solicits public comments on the Draft EA, provides dates of the public comment period, and announces that a copy of this EA will be available for review. The ability of the public to provide input, express concerns, and have those concerns considered before decisions are made is a fundamental aspect of NEPA. For this project the Navy anticipates releasing the document to the public for a comment period of 15 days. During the comment period the public may submit comments via e-mail or U.S. postal mail to the NEPA Planner.

Table ES-1: Summary of Potential Impacts on Resource Areas

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Biological Resources	Impacts on vegetation alliances and other land cover types, non-federally listed special-status plant and wildlife species, and impacts on the coastal California gnatcatcher would continue at the current baseline levels. Impacts would occur from ongoing training and testing activities, including noise and disturbance from off-trail activities. There would be no impacts on Orcutt's spineflower. All impacts would be less than significant.	Less than significant impacts are anticipated from permanent removal of 0.32 acre of vegetation alliances and other land cover types from creation of the proposed UxS Southern Test Area. Less than signifcant impacts on non-federally listed special-status plant species and Orcutt's spineflower due to avoidance of occupied areas. Less than significant impacts on non-federally listed special-status wildlife species (including MBTA-protected birds) with incorporation of avoidance and minimization measures. Impacts from training and testing activities may occur to seven pairs of coastal California gnatcatchers through minor habitat loss and harassment. While some impacts may be reduced by implementation of the avoidance and minimization measures, loss of 0.32 acre of optimal coastal California gnatcatcher habitat, noise impacts, and the presence of humans, equipment (including UAS, UxS, and others), and other activities would negatively impact coastal California gnatcatchers.	No additional impacts beyond those analyzed under Alternative 1 are anticipated to vegetation alliances and other land cover types, non-federally listed special-status plant and wildlife species, and Orcutt's spineflower from use of the two HLZs. No additional impacts beyond those detailed under Alternative 1 would occur from use of the HLZs, since the HLZs would not be used during the avian breeding season.

Table ES-1: Summary of Potential Impacts on Resource Areas (continued)

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Noise Environment	UAS and simunition use is not expected to contribute significantly to the noise environment. The usage of EETs, though not increasing the community noise levels above 65 dBA, could be considered as intrusive by some members of the public.	The increase of UAS testing is not expected to contribute significantly to the noise environment at NBPL. Both EET and blank firing noise could be considered intrusive but would not increase the community noise levels above 65 dBA CNEL.	The increase of UAS testing is not expected to contribute significantly to the noise environment at NBPL. Both EET and blank firing noise could be considered intrusive but would not increase the community noise levels above 65 dBA CNEL. Helicopter usage is anticipated to be audible at sensitive receptors but would not increase the CNEL levels above 65 dBA.
Coastal Resources	Under the No Action Alternative, there would be no change from current levels of testing and training. Existing testing and training activities mostly occur on previously disturbed surfaces or improved and unimproved roads and trails. Operators are trained to avoid detection and leave no trace. Activities that occur off trail are designed to have minimal impacts. Therefore, no significant impacts would occur with implementation of the No Action Alternative.	Most of the testing and training activities proposed under Alternative 1 would occur on existing trails and hardened surfaces. Operators are trained to avoid detection and "leave no trace," and new testing and training activities (on or off trail) are designed to have minimal impacts. There would be some increases in pedestrian training activities and the use of UxS on unpaved surfaces or on unimproved trails; however, any potential impacts are expected to be minor. Therefore, implementation of Alternative 1 would not result in significant impacts on coastal resources.	Testing and training activities under Alternative 2, as described under Alternative 1, would not impact coastal resources. The proposed designation of HLZs at NBPL would occur on land already disturbed from previous development activities with no impacts on wetlands or surface waters. Therefore, implementation of Alternative 2 would not result in significant impacts on coastal resources.
Cultural Resources	Under the No Action Alternative, no new ground-disturbing activities would occur, and there would be no change to cultural resources. No significant impacts on cultural resources would occur.	No cultural resources are located in the additional Beach Landing Sites or new training areas under Alternative 1. No significant impacts on cultural resources would occur with implementation of Alternative 1.	No cultural resources are located in the additional Beach Landing Sites, new training areas, or new HLZ areas under Alternative 2. No significant impacts on cultural resources would occur with implementation of Alternative 2.

Table ES-1: Summary of Potential Impacts on Resource Areas (continued)

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Air Quality	Estimated emissions from baseline testing and training is below the applicable General Conformity *de minimis* levels.	Estimated emission increase is below the applicable General Conformity *de minimis* levels. GHG emission increases would not likely contribute to global warming to any discernible extent	Estimated emission increase is below the applicable General Conformity *de minimis levels*. GHG emission increases would not likely contribute to global warming to any discernible extent
Public Health and Safety	Under the No Action Alternative, there would be no change from current levels of testing and training. No public or non-participant on-base military personnel would be present in the locations where proposed testing or training activities would occur. Implementation of the No Action Alternative would not disproportionately affect children and no significant impacts on public health and safety would occur with implementation of the No Action Alternative.	The Navy would follow all applicable safety procedures for testing and training activities. No beach closure affecting swimmers or surfers would occur. There would be no significant impact on public health and safety as a result of impacts on air or water quality, or from noise associated with the Proposed Action. Implementation of Alternative 1 would not disproportionately affect children given absence of schools or parks in the immediate area and would not result in significant impacts on public health and safety.	Testing and training activities under Alternative 2, as described under Alternative 1, would not impact public health and safety or disproportionately affect children. The designation of HLZs to support insertion and extraction activities would likewise have no impact on the public, as the Navy would continue to restrict access to these areas on NBPL, and the public or non-participant on-base military personnel would not be present for HLZs activities. There would be no significant impact on public health and safety as a result of impacts on air or water quality, or from noise associated with the Proposed Action. Therefore, implementation of Alternative 2 would not result in significant impacts on public health and safety.

Notes: HLZ = Helicopter Landing Zone, NBPL = Naval Base Point Loma, UAS = Unmanned Aircraft System, EET = Explosive Energetic Tool, dBA = A-weighted decibels, CNEL = Community Noise Equivalent Level, UxS = Unmanned Systems, GHG = Greenhouse Gases, MBTA = Migratory Bird Treaty Act

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Draft Environmental Assessment

Naval Base Point Loma Training and Testing

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Acronyms and Abbreviations

Acronym	Definition
AGL	Above Ground Level
APE	Area of Potential Effect
BLS	Beach Landing Site
BMP	Best Management Practices
BTA	Bayside Training Area
CAA	Clean Air Act
CBRN	Chemical, Biological, Radiological, and Nuclear
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CH_4	Methane
CFR	Code of Federal Regulations
CNAF	Commander, Naval Air Forces
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRSW	Commander, Navy Region Southwest
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibel(s)
dBA	A-weighted decibels
DNL	Day Night Level
DOPAA	Description of Proposed Action and Alternatives
EA	Environmental Assessment
EET	Explosive Energetic Tool
EIS	Environmental Impact Statement
EMI	Electromagnetic Interference
EO	Executive Order
EOD	Explosive Ordnance Disposal
EODTEU ONE	Explosive Ordnance Disposal Training and Evaluation Unit ONE
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FP	Fully Protected
FRCDHD	Fort Rosecrans Coastal Defense Historic District
GHG	Greenhouse Gas
GVWR	Gross Vehicle Weight Rating
GWP	Global Warming Potential
HLZ	Helicopter Landing Zone
HS	Hydrogen Sulfide
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HSTT	Hawaii-Southern California Training and Testing
ICRMP	Integrated Cultural Resources Management Plan
IED	Improvised Explosive Device
Infil/Exfil	Infiltration and Extraction
lb.	pound(s)
Lmax	Maximum sound level
mi.	mile(s)
µg/m3	micrograms per cubic meter
MBTA	Migratory Bird Treaty Act
MTRS	Man Transportable Robotic System
MWB	Mineral Water Bottle
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NASNI	Naval Air Station North Island
Navy	U.S. Department of the Navy
NBC	Naval Base Coronado
NBPL	Naval Base Point Loma
NEPA	National Environmental

Acronym	Definition
	Policy Act
NH_3	Ammonia
NHPA	National Historic Preservation Act
NIWC	Naval Information Warfare Center
NM	Nautical Mile(s)
N_2O	Nitrous Oxide
NO_2	Nitrogen Dioxide
NRHP	National Register of Historic Places
NSW	Naval Special Warfare
O_3	Ozone
OEIS	Overseas Environmental Impact Statement
OTB	Over-the-Beach
Pb	Lead
PL	Point Loma
PM_{10}	Particulate Matter (dust particles less than or equal to 10 microns in diameter)
$PM_{2.5}$	Particulate Matter (dust particles less than or equal to 2.5 microns in diameter)
ppm	parts per million
PSD	Prevention of Significant Deterioration
ROG	Reactive Organic Compounds
SDAPCD	San Diego Air Pollution Control District
SE	State Endangered
SEAL	Sea, Air and Land Forces
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_4	Sulfates
SPL	Sound Pressure Level
SSC	Species of Special Concern
ST	State Threatened
STA	Seaside Training Area
tpd	Tons Per Day
tpy	Tons Per Year
TRANSDEC	Transducer Evaluation Center
UAS	Unmanned Aircraft System
USFWS	United States Fish and Wildlife Service
U.S.	United States
U.S.C.	United States Code
UxS	Unmanned Systems
VOC	Volatile Organic Compounds

1 Purpose of and Need for the Proposed Action

1.1 Introduction

Commander, United States (U.S.) Pacific Fleet, a command of the U.S. Department of the Navy (Navy), proposes to conduct military readiness training activities (hereinafter referred to as "training") and conduct research, development, testing, and evaluation (hereinafter referred to as " testing") activities at Naval Base Point Loma (NBPL) in San Diego, California. Proposed activities would take place on land and within areas for the scheduled use of Unmanned Aircraft Systems (UAS), existing facilities, and over-the-beach training areas of NBPL.

The Navy has analyzed the potential environmental effects of proposed testing and training activities at NBPL. The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality (CEQ) 2020 Regulations (parts 1500–1508 of Title 40 Code of Federal Regulations [CFR]) and Navy regulations for implementing NEPA (32 CFR part 775).

1.2 Background

NBPL consists of facilities both on the Point Loma peninsula and outlying areas in the greater San Diego metro area. There are no new activities proposed for the outlying facilities. Outlying facilities are not on the peninsula and do not fall within the area of effect for the Proposed Action; therefore, they are not discussed in this EA. Seven NBPL Peninsula Neighborhoods (Neighborhoods) make up the NBPL Peninsula—NBPL Subase; NBPL Ocean View; NBPL Seaside; NBPL East Ridge; NBPL Hillside; NBPL Topside; and NBPL Bayside. The NBPL Ocean View and NBPL Seaside neighborhoods occupy the Pacific side of NBPL Peninsula.

NBPL Main Base supports units of the U.S. Pacific Fleet Submarine Force and other afloat and shore-based commands. NBPL provides shore facilities, three deep draft piers, industrial maintenance support buildings, the Arco dry dock, quarters for transient and unaccompanied personnel, dining facilities, submarine training facilities, torpedo retrievers and support craft, a torpedo/missile magazine complex, and the attendant support infrastructure of utilities, roads, and grounds.

NBPL is home to Commander, United States 3rd Fleet; Submarine Squadron 11; Military Sealift Command Pacific; Defense Fuel Supply Point Loma; Naval Information Warfare Center (NIWC) Pacific; Explosive Ordnance Disposal Training and Evaluation Unit One (EODTEU ONE); attack submarines; Explosive Ordnance Disposal Mobile Unit One; and the Submarine Training Facility. The unique missions and activities of NIWC Pacific and Explosive Ordnance Disposal (EOD) at NBPL are described in detail in Chapter 2 (Proposed Action and Alternatives).

This assessment addresses the potential effects from the proposed training and testing only on the terrestrial areas of NBPL. The effects of the in-water portion of those training/testing activities that transition from/to the sea (Over the Beach [OTB]) are not considered herein as they are addressed in the Hawaii-Southern California Training and Testing (HSTT) Environmental Impact Statement (EIS)/Overseas Environmental Impact Statement (OEIS) (U.S. Department of the Navy, 2018a). The activities are discussed under the following categories in the HSTT EIS/OEIS: Personnel Insertion/Extraction Training (surface and Subsurface), Personnel Insertion/Extraction Training (Swimmer/Diver), and Small Boat Attack.

1.3 Location

NBPL is located on the Point Loma peninsula in San Diego, California, and is approximately 5 miles (mi.) from downtown San Diego and 12 mi. from the United States-Mexico border. NBPL is near several military installations and special areas, including Naval Base Coronado (approximately 2 mi.), Marine Corps Recruit Depot (approximately 4 mi.), Naval Amphibious Base Coronado (4.5 mi.), Silver Strand Training Complex (5 mi.), Naval Base San Diego (7 mi.), Naval Outlying Landing Field Imperial Beach (11 mi.), and Marine Corps Air Station Miramar (15 mi.).

NBPL is comprised of three main campuses: Peninsula, Old Town, and Harbor Drive. The Peninsula Campus includes the NBPL Subase, NBPL Seaside, NBPL Ocean View, NBPL East Ridge, NBPL Hillside, NBPL Topside, and NBPL Bayside neighborhoods. The northern half of the Point Loma peninsula includes residential neighborhoods of Point Loma and Ocean Beach; Point Loma Nazarene University; a support facility for the University of California, Scripps Institution of Oceanography; Sunset Cliffs Natural Park; and Shelter Island. Other landowners on the Point Loma peninsula are the Ballast Point Coast Guard Station, Cabrillo National Monument, Fort Rosecrans National Cemetery, and the Point Loma Wastewater Treatment Plant.

1.4 Purpose of and Need for the Proposed Action

San Diego supports the Pacific Fleet's largest concentration of naval forces, including expeditionary and special warfare units requiring specialized training in insertion and extraction, OTB operations, counteraction of threats from improvised explosive devices, and operations in a high-threat environment ashore. Currently, portions of this specialized training require out-of-area travel, which is inefficient and costly. The Proposed Action is the continuation of ongoing training and testing, new proposed training and testing, and range improvements.

The purpose of the Proposed Action is to provide a training area at NBPL with the capability to support increased levels of testing by NIWC Pacific and increased levels of training by EOD and Naval Special Warfare (NSW) units.

> "The Navy shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea. It is responsible for the preparation of naval forces necessary for the effective prosecution of war except as otherwise assigned and, in accordance with integrated joint mobilization plans, for the expansion of the peacetime components of the Navy to meet the needs of war." (10 U.S.C. section 8062)

The Proposed Action is needed for the Navy to meet statutory responsibilities to train and maintain combat-ready forces and to equip forces with the most advanced technologies. Local OTB and insertion/extraction training venues with unique topographic features are limited, and access to out-of-area sites require excessive travel and expense, adversely affecting personnel located in the San Diego area. There are several naval facilities in the immediate vicinity of NBPL; however, none provide the unique topographic and varied terrain present at NBPL. Dedicated training areas that provide these capabilities while integrating with multiple commands would allow required training and further the Navy's execution of its congressionally mandated responsibilities under 10 U.S. Code (U.S.C.) section 8062. The Proposed Action would also promote additional integration with NIWC Pacific's development and testing activities, which would assist in developing testing scenarios and identifying gaps in technology. The Proposed Action would also enable the broader use of existing areas for the development and testing of

NIWC Pacific's unmanned terrestrial and aerial systems, which would allow for more rapid introduction and use of these systems by the Fleet.

1.5 Scope of Environmental Analysis

This EA includes an analysis of the potential environmental impacts associated with two action alternatives and a No Action Alternative. The environmental resource areas analyzed in this EA include biological resources, noise, coastal resources (to include water quality and erosion), cultural resources, air quality, and public health and safety. In accordance with NEPA and CEQ guidelines, the description of the affected environment focuses only on resources potentially subject to impacts from the Proposed Action. Aesthetics/visual resources, environmental justice, and socioeconomics are not anticipated to be impacted and are therefore not evaluated in detail, as the Proposed Action is contained within an existing military installation, does not include construction, and would not cause an increase or decrease in use of the local workforce.

The area of potential effect for each resource area analyzed may differ due to the Proposed Action's interaction with or impact on the resource. For example, the study area for cultural resources may be the footprint of a particular training activity based on location, whereas the study area for air quality would include a larger regional area that may be impacted by airborne emissions.

1.6 Key Documents

Key documents are sources of information incorporated into this EA. Documents are considered key based on similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ guidance encourages incorporating documents by reference. Documents incorporated by reference in part or in whole include the following:

- *NBPL Integrated Natural Resources Management Plan* is the primary planning document for management of natural resources at NBPL (U.S. Department of the Navy, 2019).
- *NBPL Integrated Cultural Resources Management Plan* (ICRMP), along with a Programmatic Agreement, ensures the most time- and cost-effective methods of integrating preservation requirements with project and operations planning to facilitate the Navy's mission. The primary purpose of the ICRMP is to address all cultural resources requirements, planning, and management for the area of coverage (U.S. Department of the Navy, 2017).
- *NBPL and Cabrillo National Monument Joint Wildland Fire Management Plan* aims to protect personnel, facilities, and natural and cultural resources from the impacts of wildland fire; prioritize assets to be protected in the event of a fire; and ensure the perpetuation of native terrestrial habitats, fire-adapted plant communities, and rare species (National Park Service & U.S. Department of the Navy, 2012).

1.7 Relevant Laws and Regulations

The Navy has prepared this EA based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action, including the following:

- NEPA (42 U.S.C. sections 4321–4370h)
- 2020 CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508)
- Navy regulations for implementing NEPA (32 CFR part 775)
- California Clean Air Act (section 209[e][2][A])
- Clean Air Act (42 U.S.C. section 7401 et seq.)
- Clean Water Act (CWA) (33 U.S.C. section 1251 et seq.)
- Coastal Zone Management Act (16 U.S.C. section 1451 et seq.)
- National Historic Preservation Act (54 U.S.C. section 306101 et seq.)
- Endangered Species Act (ESA) (16 U.S.C. section 1531 et seq.)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. section 703 et seq.)
- Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. section 9601 et seq.)
- Emergency Planning and Community Right-to-Know Act (42 U.S.C. section 11001–11050)
- Executive Order (EO) 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis

1.8 Public and Agency Participation and Intergovernmental Coordination

CEQ regulations direct federal agencies to involve the public in the development of environmental impact analyses under NEPA.

The Navy will inform the public of the Proposed Action and the potential environmental impacts as documented in the Draft EA, as well as provide an opportunity for the public to review and comment on the analysis. The Navy will issue public notices in local newspapers indicating the availability of the Draft EA and the locations where public review copies are available.

The notice describes the Proposed Action, solicits public comments on the Draft EA, provides dates of the public comment period, and announces that a copy of this EA will be available for review.

The Navy is consulting with the U.S. Fish and Wildlife Service (USFWS) regarding this Proposed Action and impacts on Orcutt's spineflower (*Chorizanthe orcuttiana*; endangered) and coastal California gnatcatcher (*Polioptila californica californica*; threatened).

The Navy will also evaluate the effects of the Proposed Action on coastal resources and submit a negative determination to the California Coastal Commission pursuant to 15 CFR part 930.39.

The Navy entered into a Programmatic Agreement with the California State Historic Preservation Officer (SHPO) in 2014 that enables the NBPL to internally review and legally approve undertakings that are determined to have no adverse effect on historic properties (U.S. Department of the Navy, 2014). These decisions are reviewed by the SHPO through an annual report. While the Proposed Action is covered under the Programmatic Agreement, if undertakings are determined to have an adverse effect on historic properties, the Navy will consult with the SHPO and Tribes, in accordance with Section 106 of the National Historic Preservation Act (NHPA).

2 Proposed Action and Alternatives

2.1 Proposed Action

The Navy proposes to conduct testing and training activities on the terrestrial portions of NBPL and within areas for the scheduled use of UAS, existing facilities, and OTB training areas of NBPL. The Proposed Action is composed of the continuation of ongoing training and testing, and new capabilities including proposed training and testing and range improvements, which include the following:

- Conduct additional UAS activities, including counter-UAS
- Increase the number of Unmanned Systems (UxS) testing activities and expand the UxS Southern Testing Area
- Conduct additional OTB training activities and increase the number of locations where OTB activities could occur
- Conduct Timed-Fuse Calculation training
- Increase improvised explosive devices (IED) training and incorporate additional areas for IED training
- Conduct Force Protection activities
- Conduct insertion and extraction training
- Designate up to two unimproved helicopter landing zones (HLZ) to support insertion/extraction activities of rotary-wing aircraft (does not include tilt-rotor aircraft)

2.2 Alternatives Development

NEPA-implementing regulations provide guidance to federal agencies on the consideration of alternatives in an EA (40 CFR part 1502.14). These regulations require the decision maker to consider the environmental effects of the Proposed Action and a reasonable range of alternatives to the Proposed Action. The Navy determined alternatives based on the criteria that an alternative should meet the purpose and need, and be feasible, reasonable, and in accordance with Office of the Chief of Naval Operations Manual 5090.1E and CEQ regulations for implementing NEPA (40 CFR parts 1500-1508). Reasonable alternatives are those that are technically and economically practical or feasible. Alternatives considered in this EA were developed by a team of NBPL subject matter experts and NIWC Pacific, NSW, EOD, and environmental support personnel.

The purpose of including a No Action Alternative in environmental impact analyses is to allow agencies to compare the potential impacts of the proposed action with the known impacts of maintaining the status quo. For a federal action where ongoing programs will continue, even as new plans are developed, "'no action' is 'no change' from current management direction or level of management intensity." (43 CFR part 46.30)

The Navy developed a set of screening criteria for assessing whether an alternative meets the purpose of and need for the Proposed Action. Alternatives were evaluated based on their adherence to the following screening criteria:

1. Use existing facilities and infrastructure on NBPL
2. Take advantage of opportunities for coordinated/joint training (such as integrating NSW and EOD training with developing technologies)

3. Provide a realistic testing and training environment for land-based and amphibious operations, including rugged, highly dynamic, coastline areas
4. Minimize training time lost to travel (i.e., geographically close to training units)
5. Be compatible with adjacent land uses (e.g., residential, Cabrillo National Monument, Fort Rosecrans National Cemetery)
6. Be compatible with existing military and civilian airspace uses
7. Be compatible with other testing, training, and administrative activities on NBPL
    a. Noise/vibration (i.e., sensitive facilities could be negatively impacted from adjacent training)
    b. Rotor wash/blown debris (i.e., items disturbing the surface or water of the Transducer Evaluation Center pool negatively impact testing activities)
    c. Electromagnetic interference (EMI) (i.e., training activities should not disturb electromagnetically "silent" areas with radio frequency emissions)
    d. Health and safety of personnel and observers

2.3 Alternatives Carried Forward For Analysis

The Navy analyzed the No Action Alternative and two action alternatives in this EA:

- No Action Alternative – Continue existing testing and training to include the following activities:
    - Conduct UxS testing activities
    - Perform OTB training activities
    - Perform Land Navigation training activities
    - Perform Rappelling; Cliff Climbing/Assault; Foot Patrolling; Blank Firing; and Chemical, Biological, Radiological and Nuclear training
    - Perform Special Reconnaissance training activities
    - Perform IED training activities
    - Perform EOD combat skills training
    - Conduct EOD Chemical/Biological Warfare Agent/Homemade Explosive Hazards training
    - Conduct EOD Nuclear Hazard training
- Alternative 1 – Continue to conduct the testing and training activities described under the No Action Alternative and include the following activities:
    - Conduct additional UAS activities, including counter-UAS
    - Increase the number of UxS testing activities and expand the UxS Southern Testing Area
    - Conduct additional OTB training activities and increase the number of locations where OTB activities could occur
    - Conduct Timed-Fuse Calculation training
    - Increase IED training and incorporate additional areas for IED training
    - Conduct Force Protection activities
    - Conduct insertion and extraction training
- Alternative 2 – Conduct all testing and training activities listed under Alternative 1 and include the following activity:

- Designate up to two unimproved HLZs to support insertion/extraction activities of rotary-wing aircraft (does not include tilt-rotor aircraft)

Each alternative is discussed in the following sections.

2.3.1 No Action – Existing Testing and Training at Naval Base Point Loma

The No Action Alternative is included in this EA as an existing, or baseline, level of activity at NBPL required to support testing and training exercises. In other words, the No Action Alternative represents no change from current levels of testing and training. The following sections provide more detail on current tenants of NBPL and their associated testing and training activities.

2.3.1.1 Naval Information Warfare Center Pacific

2.3.1.1.1 Background

NIWC Pacific is a tenant of NBPL that conducts wide-ranging testing of systems to support requirements for the Navy, Marine Corps, Air Force, Army, Coast Guard, Department of Homeland Security, Defense Advanced Research Projects Agency, and other government agencies. These activities allow for technical innovation, targeted investment, effective technology transition, and the overall reduction of risk to the Fleet.

NIWC Pacific's workforce is comprised of thousands of engineers, scientists, and contractors who develop solutions to meet critical operational needs. Their workforce also includes the largest number of active-duty military personnel stationed at any naval laboratory or warfare center. This unique arrangement combines the Fleet and the operational expertise of the warfighter with the skills of NIWC Pacific's research staff to tackle and develop solutions to real-world problems facing the United States today and in the future. The natural geographic and environmental features of the NBPL surrounding area provide the required physical attributes critical to the development, testing, and evaluation of emerging technologies. NIWC Pacific is strategically spread across NBPL with access to the San Diego Harbor and Pacific Ocean.

NIWC Pacific's infrastructure is the result of over 80 years of strategic investment by the Navy and Department of Defense (DoD). It contains laboratories, test beds, and simulated environments that do not exist elsewhere and cannot be replicated without considerable cost, time, and effort. In these spaces, engineers and scientists collaborate across various agencies to develop large-scale virtual and integrated systems to support software development, rapid prototyping, systems integration, acquisition, training, experimentation, and fleet support operations.

2.3.1.1.2 Naval Information Warfare Center Pacific Research, Development, Testing, and Evaluation Activities

NIWC Pacific engineers and scientists develop, test, and evaluate novel technologies to provide new capabilities to the Fleet. This is a continuous and iterative process that occurs in labs and outdoor areas using simulated environments, commercial off-the-shelf and prototype systems, and operationally relevant hardware and software equipment that support a wide range of mission requirements.

Testing activities for UxS are a key focus within the areas included in this document. The NBPL seaside complex houses more than 100 NIWC Pacific government civilian and contractor employees who develop UxS technologies for the ground, amphibious, air, and sea surface domain in conjunction with partners from industry, academia, and other naval warfare centers. These activities occur within the UxS Development and UxS Integration and Experimentation Areas, and along designated routes shown

in Figure 2-1. Line of sight to the ocean provides the ability to test technologies across domains (i.e., land, sea, undersea, air), and conduct live and virtual testing between designated nodes.

Outdoor autonomous and unmanned vehicle testing occurs daily in maintained areas and on paved roads to ensure that upgrades to systems are continuously vetted in a controlled setting before deployment. Access to unpaved or unmaintained areas provides the ability to identify and describe differences in specific environments and supports the ability of multiple systems operating simultaneously to achieve a common goal.

Development of UAS represents a subset of the overall unmanned systems activities at NIWC Pacific. The DoD categorizes UAS into groups according to their size and capability, as shown in Table 2-1. The work at NIWC Pacific currently involves the use of Group 1 and Group 2 UAS. NIWC Pacific currently has three approved Interim Flight Clearances from Commander, Naval Air Systems Command Patuxent River: Group 1 and 2 multirotor, fixed-wing, and single-rotor UAS platforms up to 55 pounds. Commander, Naval Air Forces may grant approval for the use of platforms that share flight characteristics of Group 1 and Group 2 UAS and weigh greater than 55 pounds. These platforms are considered "Group 2 Heavy" for the purpose of this document.

Certified operators conduct UAS operations at NBPL on approved flight schedules in designated areas, marked as Point Loma (PL)-1 through PL-10 in Figure 2-1, with an authorized flight profile up to 1,500 feet above ground level. The designated areas provide features conducive for different mission needs and allow for concurrent flight events as necessary. UAS are launched by hand or take off vertically. UAS operations may be scheduled 24 hours a day, seven days a week. All UAS operations are performed in compliance with Federal Aviation Administration and Naval Air Systems Command regulations. Table 2-2 shows the current NIWC Pacific UxS testing seaside activities and the existing locations where activities occur.

Table 2-1: Department of Defense Unmanned Aircraft System Group Definitions

UAS Group	Maximum Weight (lb.)	Nominal Operating Altitude (Feet)	Authorized Operating Altitude (Feet)	Speed (knots)
Group 1	0–20	<2,800 AGL	1,500 AGL	100
Group 2	21–55	<2,800 AGL	1,500 AGL	<250
Group 2 (Heavy)	Greater than 55 lb. with CNAF waiver	<2,800 AGL	1,500 AGL	<250

Notes: (1) AGL = Above Ground Level; UAS = Unmanned Aircraft System; lb. = pound(s); CNAF = Commander, Naval Air Forces. (2) This table has been derived from Figure III-14 of the Joint Air Operations document (JP-3-30) to capture NIWC Pacific's specific weight and altitude allowances per most recently approved Interim Flight Clearances. Values presented in this table are subject to change based on Department of Defense policy guidance and specific NIWC Pacific approvals received.

Figure 2-1: Existing NBPL Testing (NIWC Pacific) and Training (NSW and EOD) Areas

Table 2-2: Current NIWC Pacific Testing Activities and Locations

Activity	Current Testing Location	Total Events per Year*
UAS Group 1 and 2	PL Areas 1–10	600
UxS on-road test and integration	UxS Development Area UxS Northern Test Area UxS Integration and Experimentation Area UxS Southern Test Area	200

*For this document, a single event is 0–24 hours in duration and may include multiple platforms (UAS and UxS) of various types and sizes. Representative platforms include small quadcopters and fixed wings weighing less than 55 pounds, man-transportable EOD Unmanned Ground Vehicles, quadskis, rovers, passenger vehicles, and tactical vehicles (e.g., MRZR [Polaris ATV], Light Strike Vehicle, Humvee).
Notes: UAS = Unmanned Aerial System, UxS = Unmanned System, PL = Point Loma

2.3.1.2 Naval Special Warfare Command

NSW units currently train in special reconnaissance scenarios, personnel recovery, OTB training, technical tactical operations, and target raids. Training locations at NBPL include the Robot Training Lane, Battery Woodward, cable/power line trail and outlook, and Infiltration and Extraction (Infil/Exfil) OTB Area (Figure 2-1). Table 2-3 shows the type of training and the locations where activities occur. These training activities require schedule deconfliction with NIWC Pacific and other tenants to ensure safety. In-water activities using small boats are routinely done in the offshore areas and are covered in Section 2.1.2 of the HSTT EIS/OEIS (U.S. Department of the Navy, 2018a).

In a typical OTB activity, a team would arrive from offshore to the infiltration location in Light Tactical Watercraft (small inflatable boats). Personnel would then launch from the craft to traverse the surf zone and cross over the beach by various methods (e.g., foot, climbing, rappelling dependent on the terrain encountered [e.g., gradual sand, rock or cliff]), conduct target exploitation (e.g., reconnaissance, observation, interdiction, direct action[1]), and depart in the reverse order. Operators use trails, unimproved roads, and paved access routes where possible. From the existing NBPL Seaside beach landing site, the destinations are Battery Woodward, the Robot Training Lane, and Rural Search Training Village. Between 4 and 25 personnel (depending on scenario) equipped with small backpacks and basic gear cross the beach, with 4−15 personnel observing the training. Others on the water tend to the Light Tactical Watercraft. Events are conducted mostly at night with the potential to extend through daylight hours, are no more than 24 hours in duration, and could include the use of simunitions (training ammunition). Each training exercise may be preceded by up to two hours of site preparation the day before (e.g., deployment of infrared illumination on trail) and followed by up to four hours of cleanup and assessment.

[1] Direct Action is defined as short-duration strikes and other small-scale offensive actions conducted as a special operation in hostile, denied, or politically sensitive environments and which employ specialized military capabilities to seize, destroy, capture, exploit, recover, or damage designated targets.

Table 2-3: Current NSW Training Activities and Locations

Activity	Current Training Location	Total Events per Year
Maritime Operations		
Over-the-Beach	Single Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Seaside Training Area Tower and Cable/Power Line Trail and Outlook	6
Land Navigation	Single Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler	6[1]
Rappelling, Cliff Climbing/Assault, Foot Patrolling, Blank Firing, and CBRN Training	Single Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler[2] STA Tower and Cable/Power Line Trail and Outlook	6[1]
Special Reconnaissance	Robot Training Lane	2

[1]These events would be coupled with the events presented in Over-the-Beach activities.

[2]Blank firing does not occur at Battery Whistler.

Notes: CBRN = Chemical, Biological, Radiological and Nuclear; Infil/Exfil = Infiltration and Extraction; STA = Seaside Training Area

Land navigation would be conducted concurrently with OTB activities and would include personnel on foot using land navigation techniques, such as compass and global positioning system tools, to navigate from beach landing sites to specified objectives (e.g., Battery Woodward, Battery Whistler, Robot Training Lane, Rural Training Search Village). These personnel also employ Tactical Site Exploitation techniques that allow them to collect information and material that may have intelligence value. Operators travel on foot primarily on existing unpaved trails and contiguous unpaved road; however, operator activity may extend up to 10 feet off the trail/road to facilitate concealment in vegetation. Operators try to evade detection and leave no trace of their presence (i.e., vegetation would remain untrampled, branches should remain unbroken, and footprints should not be visible).

If cliff climbing is part of the OTB activity, personnel would utilize basic climbing safety gear. Rappelling would employ top anchors (either natural or small anchoring devices such as several small pitons or two-bolt anchor to minimize ground disturbance). Foot patrols would be conducted similar to land navigation activities. Operators travel on foot primarily on existing unpaved trails and contiguous unpaved road; however, operator activity may extend up to 10 feet off the trail/road to facilitate concealment in vegetation. As with other components of OTB training, operators try to evade detection and leave no trace of their presence. If blanks are utilized during training activities, they would be employed for small-arms weapons (up to 150 rounds per training event) and only on the seaside of NBPL

near the training activity (insertion/extraction location, Robot Training Lane, Battery Woodward, Battery Woodward Bunker, and Battery Whistler). Participants would clear any spent brass as part of evading detection.

Chemical, Biological, Radiological, and Nuclear (CBRN) training would be a "mock" scenario without any actual CBRN materials involved in the training activity (only inert materials used). Operators would use decontamination systems for personnel and equipment; and employ, store, and distribute potable water.

Special reconnaissance training supports development of procedures to integrate fleet communication systems. Training includes the deployment and activation of a mobile target radar sensor on NBPL, which broadcasts standard maritime X/S band radar emissions to allow craft in the water to identify and collect data. The land portion of this training includes towing a small battery-powered radar emitter to a position just above the existing infil/exfil location (on a drivable unpaved road). Six to 10 personnel would be involved in this training activity. For personnel safety, during operation a standoff distance would be in place. There are no hazardous materials or wastes generated by this activity.

2.3.1.3 Explosive Ordnance Disposal

EODTEU ONE, a component of Explosive Ordnance Disposal Group ONE, provides EOD training to units on the U.S. West Coast preparing to deploy overseas. EODTEU ONE conducts intermediate level, or "Walk" phase, Explosive Energetic Tool (EET) training at NBPL using robots. This training requires laboratory and mock terrorist weapons/devices and mock cave/village scenarios. EETs are self-contained devices that include a very small explosive charge encased in a plastic bottle full of water (which severely inhibits the potential for fire). Focused training with EETs provides the capability to familiarize personnel with detecting, identifying, disarming, and securing dummy explosive devices, using of EETs, and developing techniques for the recovery, evaluation, disarming, and disposal of simulated IEDs hidden in various training locations. Training locations currently include the Robot Training Lane, Battery Woodward, Battery Whistler, and the Rural Search Training Village (Figure 2-1). These training activities require schedule deconfliction with NBPL and its tenants to ensure safety.

EET usage occurs approximately two to three times a month (approximately 30 events per year), based on each platoon's training schedule; three to five EETs are fired per training event. Student throughput is a maximum of one platoon (8–10 personnel) with two instructors on the IED training lane at any given time. The remaining students (8–10) operate inside the Batteries. Training takes place day and night to accommodate night training with night-vision devices. Table 2-4 shows the type of training and locations where activities currently occur. Expended materials from EET use would accumulate in areas used for these training activities, and operators would collect visible expended training materials to the extent practical.

EOD Combat Skills (Small Arms) training at NBPL consists of instruction, practice of coordinated tactics with small group patrols, threat response in urban environments, and the use of force following rules of engagement. These training activities involving 8–10 personnel would include small-arms (blank firing only), simunitions/Ultimate Training Munitions, and standard equipment that small patrols would employ to clear small urban environments (similar to the environment set up at the Rural Search Training Area). These activities can occur day or night (with use of night optics) at defined training locations (Robot Training Lane, Battery Woodward, Battery Whistler, and Rural Search Training Village). Following the training exercise, training materials (e.g., blank shell casings, simunition casings, any pyrotechnic casings) are removed to the maximum extent practicable.

EOD Chemical/Biological Warfare Agent/Homemade Explosive Hazards training is advanced training in operating under conditions in which a mock chemical or biological warfare agent may be present. The 10 annual training activities take place under replicated real-world field conditions at defined training locations (Robot Training Lane, Battery Woodward, Battery Whistler, and Rural Search Training Village) and may include neutralizing homemade explosives, assessing the tactical situation, recommending mitigation techniques, and employing advanced diagnostic procedures. Personnel perform mock chemical detection and identification; mock biological agent collection and sampling; practice decontamination of personnel, equipment and simulated casualties; and individual protective measures and first aid for unit personnel. No smoke or irritants are used during chemical/biological warfare training.

EOD Nuclear Hazard training consists of intermediate to advanced training on technical response procedures in a mock radiological environment; national nuclear support systems; radiological monitoring; and location, access, and diagnostics of nuclear weapons, improvised nuclear devices, and Radiological Dispersal Devices. Practical labs include detection, sampling, and identification of radiological sources in a controlled environment.

Table 2-4: Current EOD Training Activities and Locations

Activity	Current Training Location	Total Events per Year
Improvised Explosive Device	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	30
Combat Skills	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	7
Chemical/Biological Warfare Agent/Homemade Explosive Hazards Training	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	10
EOD Nuclear Hazards	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	10

Note: EOD = Explosive Ordnance Disposal

2.3.3 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

Under Alternative 1, the Navy would conduct additional UAS and UxS testing activities and expand the UxS Southern Testing Area to support off-road testing. The expanded UxS Southern Testing Area is located on an existing but abandoned unpaved road/trail and would require vegetation clearing and continual mowing for maintenance (both conducted outside of the California gnatcatcher breeding season) before use. Additionally, the Navy would conduct additional OTB training activities, increase the number of locations where OTB activities could occur, increase the number of IED training activities, and conduct insertion and extraction training activities.

2.3.3.1 Naval Information Warfare Center Pacific

- **Additional UAS activities:** Current NIWC Pacific activities employ Group 1 and 2 UAS. Under Alternative 1, the total number of annual flights would increase (Table 2-5). Additionally, NIWC Pacific would introduce the use of Group 2 Heavy UAS platforms.
- **Additional UxS Activities:** Under Alternative 1, the Navy would increase the number of UxS testing activities and expand the UxS Southern Test Area (Figure 2-2) to accommodate growth and the use of specific nonpaved/unmaintained paths (Table 2-5).

Table 2-5: Proposed Increases in NIWC Pacific Testing

Activity	Current Testing Locations	Proposed Testing Locations	Current Total Events* Per Year	Proposed Total Events* Per Year
UAS Group 1 and 2	PL Areas 1–10	PL Areas 1–10	600	1,200
UAS Group 2 Heavy	None	PL Areas 1–10	0	100
UxS on-road test and integration	UxS Development Area UxS Integration and Experimentation Area UxS Northern Test Area UxS Southern Test Area	UxS Development Area UxS Integration and Experimentation Area UxS Northern Test Area UxS Southern Test Area	200	300
UxS test and integration on defined unmaintained paths	None	UxS Southern Test Area (expanded)	0	50

*For this document, a single event is 0–24 hours in duration and may include multiple platforms (UAS and UxS) of various types and sizes. Representative platforms include small quadcopters and fixed wings weighing less than 55 pounds, man-transportable EOD UGVs, quadskis, rovers, passenger vehicles, and tactical vehicles (e.g., MRZR [Polaris ATV], Light Strike Vehicle, Humvee).
Notes: UAS = Unmanned Aerial System, UxS = Unmanned System, PL = Point Loma

Figure 2-2: Proposed Testing (NIWC Pacific) and Training (NSW and EOD) Areas, Alternative 1

2.3.3.2 Naval Special Warfare Command

- **Additional OTB locations and increase OTB activities:** Alternative 1 would include all current NSW activities described in Section 2.3.1.2 (Naval Special Warfare Command), new timed-fuse calculation training, and the incorporation of the following areas for growth (Figure 2-2) or increased activities (Table 2-6):
    - Three new NBPL Seaside Infil/Exfil Beach Landing Sites
    - One additional NBPL Bayside Infil/Exfil Beach Landing Sites
    - Use of Rural Search Training Village
    - Use of Bayside Training Areas B, F, G, and H

When using the proposed beach landing sites, operators would use trails, unimproved roads, and paved access routes where possible, but could use adjacent terrain off trail depending on the objective. From the proposed beach landing sites, typical destinations would continue to be Battery Woodward, Robot Training Lane, Battery Whistler, and the Rural Search Training Village, but could also include other destinations within the training areas and would be coordinated with other commands to ensure safety. Usage of other destinations would be subject to protective measures dictated as a result of any regulatory consultation.

Table 2-6: Proposed Increases in NSW Training

Activity	Current Training Location	Proposed Training Location	Current Total Events Per Year	Projected Total Events Per Year
Maritime Operations				
Over-the-Beach[1]	Existing Infiltration and Extraction Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler STA Tower and Cable/Power Line Trail and Outlook	Existing Infiltration and Extraction Location (west of Battery Woodward) Three (3) additional STA Infiltration and Extraction Locations One (1) additional BTA Infiltration and Extraction Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler STA Tower and Cable/Power Line Trail and Outlook BTAs B, F, G, and H	6	24 (day) 40 (night)
Timed-Fuse Calculation Training	None	Robot Training Lane Battery Woodward Battery Whistler Rural Search Training Village	0	40[2]

Table 2-6: Proposed Increases in NSW Training (continued)

Activity	Current Training Location	Proposed Training Location	Current Total Events Per Year	Projected Total Events Per Year
Land Navigation[3]	Single Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler	Existing Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Additional Infil/Exfil Locations • Rural Search Training Village • Three STA locations • BTA F, G, and H	6	24 (day) 40 (night)
Rappelling, Cliff Climbing/Assault, Foot Patrolling, Blank Firing, and CBRN Training	Single Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler STA Tower and Cable/Power Line Trail and Outlook	Existing Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler STA Tower and Cable/Power Line Trail and Outlook	6[3]	24 (day) 40 (night)[3]
Force Protection	None	Existing Infil/Exfil Location (west of Battery Woodward) Robot Training Lane Battery Woodward and Bunker Battery Whistler Rural Search Training Village STA Tower and Cable/Power Line Trail and Outlook BTAs B, F, G, and H Three (3) additional STA Infiltration and Extraction Locations One (1) additional BTA Infiltration and Extraction Locations	0	10
Special Reconnaissance	Robot Training Lane	Robot Training Lane	2	2

[1]New Over the Beach activities would include land demolition activities. [2] These events would be coupled with the nighttime events presented in the "Future Events" of Over-the-Beach activities. [3] These events would be coupled with Over-the-Beach activities.

Notes: STA = Seaside Training Area, BTA = Bayside Training Area, CBRN = Chemical, Biological, Radiological, and Nuclear

- **Timed-Fuse Calculation Training:** Timed-fuse calculation training typically involves NSW operators practicing proper fuse securing, handling, and use. There are no explosives used in this type of training at NBPL, and the training does not result in increased noise. To train operators on the proper fusing techniques, operators would practice cutting fuses to correct lengths and train on proper preparation and waterproofing of the fuses. Operators would then practice lighting the fuses to verify proper preparation. Timed-fuse calculation training is mandatory to introduce, improve, or enhance qualified NSW Sea, Air, and Land Forces techniques and to develop/refine Standard Operating Procedures.
- **Increase in Force Protection Training:** Force Protection Training is a future initiative with NBPL, NIWC Pacific, and other entities and aims to introduce a force in support of or in opposition to special operations, combat and maneuver, or other missions while executing NSW's specialized tasks. For example, if NBPL Physical Security is performing duties, NSW could participate in that event to practice performing its own activities. The integration of forces may also support other commands' tasks such as attacks, raids, assaults, Direct Action, patrols, surveillance, humanitarian relief, realistic military training, and counter-terrorism operations. Force protection would be unit level (8–10 personnel included in training and likely another 8–10 personnel observing). Any vehicles and personnel would remain on existing roads and within previously disturbed or developed areas.

2.3.3.3 Explosive Ordnance Disposal

Alternative 1 would include all current EOD activities described in Section 2.3.1.3 (Explosive Ordnance Disposal), the introduction of UAS activities, and the incorporation of the following areas to accommodate growth or increased activities (Table 2-7).

- **Additional IED Training:** Under Alternative 1, IED training events (including the use of EETs) at Battery Woodward, Robot Training Lane, Battery Whistler Training Areas, and the Rural Search Training Village would increase (Table 2-7).
- **Insertion and Extraction Training:** Under Alternative 1, proposed training may include covert insertion and extraction, both day or night, of between eight and 16 personnel and equipment at Battery Woodward, Robot Training Lane, Battery Whistler Training Areas, and the Rural Search Training Village (Figure 2-2). Insertion and extraction would use various tactics and transportation methods, such as by foot, vehicle, or small inflatable boats, similar to the methods described in Section 2.3.1.1 (Naval Information Warfare Center Pacific Research, Development, Testing, and Evaluation Activities) and at locations described in Table 2-7.

Table 2-7: Proposed Increases in EOD Training

Activity	Current Training Location	Proposed Training Location	Current Total Events Per Year	Proposed Total Events Per Year
IED	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	30	33
Combat Skills	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	7	7
Chemical/Biological Warfare Agent/Homemade Explosive Hazards Training	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	10	10
Nuclear Hazards Training	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village	10	10
Insertion/Extraction	None	Robot Training Lane Battery Woodward Battery Woodward Bunker Battery Whistler Rural Search Training Village Existing Infiltration and Extraction Location (west of Battery Woodward) Three (3) additional STA Infiltration and Extraction Locations[2] One (1) additional BTA Infiltration and Extraction[2]	0	30[1]

[1]Three of these events would include rotary-wing aircraft utilizing one of the two landing zones.
[2]These are the same locations as proposed by NSW in Table 2-6.
Notes: IED = Improvised Explosive Device, n/a = not applicable, NBPL = Naval Base Point Loma, EOD = Explosive Ordnance Disposal

2.3.5 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

Under Alternative 2, the Navy would conduct all testing and training activities listed under Alternative 1 and designate up to two unimproved HLZs on existing paved or unpaved roadways to support insertion and extraction activities using rotary-wing aircraft (does not include tilt-rotor aircraft) for NSW and EOD unit-level training (Figure 2-3).

Under Alternative 2, proposed training would also include insertion and extraction of a small team of personnel and equipment from these HLZs. Approximately 10 percent of the insertion or extraction training activities identified under Alternative 1 would include the use of rotary-wing aircraft under Alternative 2 (approximately three events per year). Insertion/extraction flights would approach the HLZs from directly west of the HLZs, typically flying at an elevation of 1,000 feet above ground level or less and depart in the opposite direction, only momentarily sitting stationary on the HLZ for loading or unloading (Figure 2-3).

Helicopters used in these exercises could originate from numerous locations (airfields or offshore platforms) but would always approach these HLZs from the west and coordinate with other commands to ensure safety.

Figure 2-3: Proposed Testing (NIWC Pacific) and Training (NSW and EOD) Areas, Alternative 2

2.4 Alternatives Considered but not Carried Forward for Detailed Analysis

The Navy considered conducting proposed activities at another regional training facility but determined to not carry this alternative forward for detailed analysis as it did not meet the purpose and need, nor did it satisfy the reasonable alternative screening factors presented in Section 2.2 (Alternatives Development).

Though there are several naval facilities in the immediate vicinity of NBPL, none provide the unique topographic and varied terrain present at NBPL. For example, while over-the-beach activities can occur at Silver Strand Training Complex or Naval Amphibious Base Coronado, the topography is low lying and relatively flat, which does not lend to training realism in a cliffside environment. Additionally, while there are locations in the region (e.g., San Clemente Island) that possess rugged coastline environments, the distance from NBPL greatly reduces the time available for testing or training activities.

NBPL also provides a unique opportunity for coordinated or joint training with multiple commands. Most of the regional training ranges operate at an almost-full capacity, which limits the available time and space for unit-level testing and training. Further, these ranges may require new infrastructure to support the proposed testing and training activities, which NBPL already possesses.

2.5 Best Management Practices Included in Proposed Action

This section presents an overview of the best management practices (BMPs) that have been incorporated into the Proposed Action. BMPs are existing policies, practices, and measures that the Navy would adopt to reduce the environmental impacts of proposed activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing, reducing, or eliminating impacts, they are distinguished from mitigation measures because BMPs are (1) existing requirements for the Proposed Action; (2) ongoing, regularly occurring practices; or (3) not unique to this Proposed Action. In other words, the BMPs identified in this document are inherently part of the Proposed Action and are not potential mitigation measures proposed as a function of the NEPA environmental review process. Table 2-8 includes a list of BMPs. Mitigation measures are discussed separately in Chapter 3 (Affected Environment and Environmental Consequences).

Table 2-8: Best Management Practices

BMP	Description	Impacts Reduced/Avoided
Integrated Natural Resources Management Plan (INRMP)	The INRMP guides effective management of natural resources in support of the Navy mission and ensures NBPL remains available and in good condition; manages natural resources through maintaining sustainable and stable populations and ecosystem processes to minimize and avoid future listings under ESA or designations of critical habitat.	Major INRMP provisions include (1) conservation, maintenance, and restoration of priority native species and habitats to reach or maintain self-sustaining levels through improved or maintained conditions of terrestrial, coastal, and nearshore ecosystems; (2) ecosystem sustainability; and (3) maintenance of the full suite of native species with appropriate emphasis on endemics.
Integrated Cultural Resources Management Plan (ICRMP)	The ICRMP details proper procedures to manage cultural resources in concert with activities carried out at NBPL. An ICRMP ensures compliance with NHPA Section 110 and other cultural resources statutes, regulations, and policies.	Major ICRMP provisions include (1) identification of responsibilities for cultural resources compliance; (2) documentation of the status of cultural resources; (3) documentation of cultural resources compliance; and (4) preservation of cultural resource collections and documents.
Naval Base Point Loma Wildland Fire Management Plan (WFMP)	The purpose of the NBPL WFMP is to protect personnel, facilities, and natural and cultural resources from the impacts of wildland fire; prioritize assets to be protected in the event of a fire; and ensure the perpetuation of native terrestrial habitats, fire-adapted plant communities, and rare species. This plan's approach balances firefighter and human safety and other values at risk while maintaining consistency with natural resource objectives and maximizing training opportunities.	The primary components of this approach are (1) preventing unplanned ignitions by managing fire ignition risk as hazardous weather and fuel conditions increase as the first line of defense; (2) managing fuel loads by establishing safety corridors or buffers where fuels are reduced, defensible space around structures, and modified low-intensity land; and (3) suppressing wildland fire, using timely and appropriate suppression response through tactical and strategic planning.

Notes: ESA = Endangered Species Act, NHPA = National Historic Preservation Act, BMP = Best Management Practice, NBPL = Naval Base Point Loma

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3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing any of the alternatives, and an analysis of the potential direct and indirect effects of each alternative.

All potentially relevant environmental resource areas were initially considered for analysis in this EA. In compliance with NEPA, the CEQ, and Department of Navy guidelines, the discussion of the affected environment (i.e., existing conditions) focuses only on those resource areas potentially subject to impacts. Additionally, the level of detail used in describing a resource is commensurate with the anticipated level of potential environmental impact.

"Significantly," as used in NEPA, requires the analysis of the potentially affected environment and degree of the effects of the action. The significance of an action must be analyzed under several perspectives, such as 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, 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. Degree of the effects refers to the severity or extent of the potential environmental impact, which can be thought of in terms of the potential amount of the likely change. In general, the more sensitive the affected environment, the lower the degree of the potential impact needs to be in order to be considered significant. Likewise, the less sensitive the affected environment, the higher the degree a potential impact needs to be in order to be considered significant.

This section includes biological resources, noise, coastal resources (including water and geological resources), cultural resources, air quality, and public health and safety. Aesthetics/visual resources, environmental justice, and socioeconomics are not anticipated to be impacted and are therefore not evaluated in detail, as the Proposed Action is contained within an existing military installation, does not include construction, and does not include an increase or decrease in the local workforce.

3.1 Biological Resources

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal.

Within this EA, biological resources are divided into two major categories: (1) terrestrial vegetation and (2) terrestrial wildlife. Threatened, endangered, and other special-status species are discussed in their respective categories.

Data describing biological resources on NBPL were obtained from numerous sources, including the 2019 NBPL Integrated Natural Resources Management Plan (INRMP) (U.S. Department of the Navy, 2019) and the draft Natural Resources Inventory for Naval Base Point Loma, San Diego, California (U.S. Department of the Navy, 2009). Furthermore, surveys for Orcutt's spineflower and coastal California gnatcatcher were conducted in 2021, and the survey results are included herein. These data sources provide the basis for the affected environment and environmental consequences to biological resources detailed herein.

The area of influence that may potentially be impacted by the Proposed Action (hereafter Proposed Action Area) encompasses all terrestrial portions of NBPL on the Point Loma peninsula (hereafter

peninsula); NBPL lands outside the peninsula are not part of the Proposed Action Area. The Proposed Action Area is the same regardless of the alternative. Activities associated with the Proposed Action that occur within the Pacific Ocean were assessed in the HSTT EIS/OEIS and associated Biological Opinions (U.S. Department of the Navy, 2018a) and are not included herein.

The following sections discuss the regulatory setting, affected environment, and environmental consequences of the various Proposed Action Alternatives on biological resources that occur within the Action Area.

3.1.1 Regulatory Setting

Multiple laws and regulations afford protection for special-status species that occur within the Proposed Action Area. These laws and regulations include the federal ESA (16 U.S.C. sections 1531 et seq.), the California ESA, the MBTA (16 U.S.C. sections 703 et seq.), EO 13186, and the Bald and Golden Eagle Protection Act (16 U.S.C. sections 668–668d). Species considered special-status for this EA are those covered under the regulations noted above or are listed as fully protected or species of special concern on the California Department of Fish and Wildlife Special Animals List (California Natural Diversity Database, 2022), or listed on the California Native Plant Society Inventory of Rare and Endangered Plants of California (California Native Plant Society, 2021). Regulations that pertain to federally protected waters are not discussed herein as no impacts on federally regulated waters are anticipated from the Proposed Action.

3.1.2 Affected Environment

The following sections provide descriptions of the existing conditions for the vegetation and wildlife present within the Proposed Action Area. The Proposed Action Area considered in this analysis is the same geographic extent for all alternatives considered. Non-listed special-status species are discussed first, followed by a discussion of threatened and endangered species, in each respective section below. Wetlands and waters present on NBPL are not discussed herein as there are no anticipated impacts on these resources from the Proposed Action Alternatives.

3.1.2.1 Vegetation Alliances and Other Land Cover Types

Vegetation surveys were conducted in 2008 and 2009 across NBPL and classified based on a 2010 National Park Service vegetation classification system (U.S. Department of the Navy, 2018b). Vegetation alliances and other land cover types within the Proposed Action Area are listed in Table 3-1. Vegetation alliances are described in detail in the NBPL INRMP (U.S. Department of the Navy, 2019) and depicted on Figure 3-1.

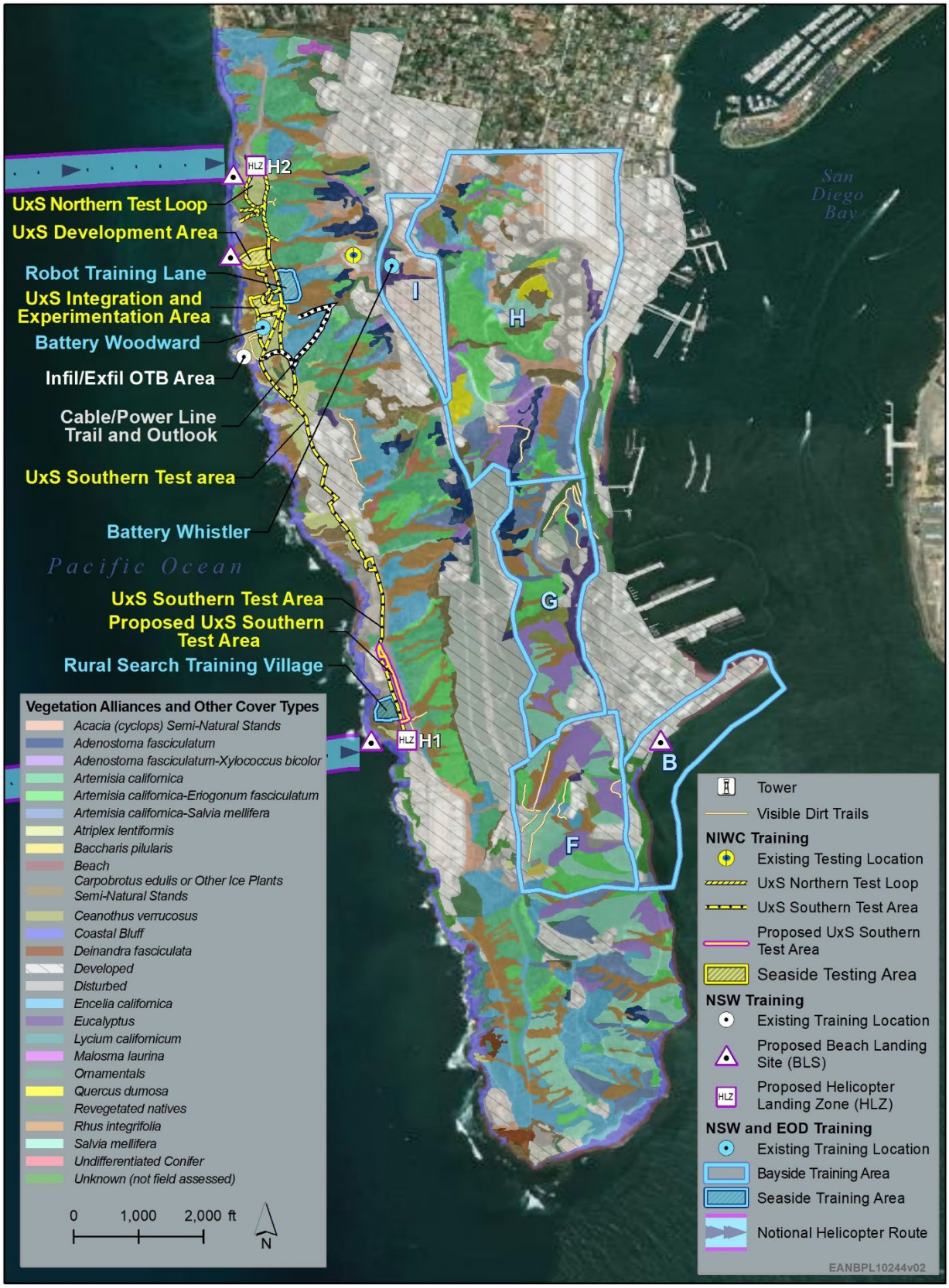

Figure 3-1: Vegetation Alliances on NBPL

Table 3-1: Vegetation Alliances and Other Land Cover Types Within the Proposed Action Area

Vegetation Alliance and Other Land Cover Types	Proposed Action Area (acres)
Acacia (cyclops) Semi-Natural Stands (cyclops acacia)	26.28
Adenostoma fasciculatum (chamise)	28.59
Adenostoma fasciculatum-Xylococcus bicolor (chamise-mission manzanita)	47.16
Artemisia californica (California sagebrush)	72.02
Artemisia californica-Eriogonum fasciculatum (California sagebrush-California buckwheat)	84.39
Artemisia californica-Salvia mellifera (California sagebrush-black sage)	37.49
Atriplex lentiformis (big saltbush)	29.93
Baccharis pilularis (coyote brush)	0.02
Beach	11.37
Carpobrotus edulis or Other Ice Plants Semi-Natural Stands	36.70
Ceanothus verrucosus (wart-stemmed ceanothus)	16.30
Coastal Bluff	32.50
Deinandra fasciculata (clustered tarweed)	1.43
Developed	396.28
Disturbed	78.28
Encelia californica (bush sunflower)	92.74
Eucalyptus	17.62
Lycium californicum (California boxthorn)	1.94
Malosma laurina (laurel sumac)	1.47
Ornamentals	14.94
Quercus dumosa (Nuttall's scrub oak)	6.91
Revegetated Natives	21.29
Rhus integrifolia (lemonade berry)	98.85
Salvia mellifera (black sage)	61.09
Undifferentiated Conifer	0.91
Unknown (not field assessed)	13.06
Grand Total	**1,229.56**

3.1.2.2 Non-Federally Listed Special-Status Plant Species

A rare plant survey in support of the INRMP was conducted in spring and summer of 2006 (U.S. Department of the Navy, 2019). This rare plant survey is the most comprehensive survey of rare plant species completed in recent history that encompasses the Proposed Action Area. Eighteen naturally-occurring non-federally listed special-status plant species are known to occur within the Proposed Action Area based on the 2006 survey. Additional information on non-federally listed special-status plant species is provided in the Vegetation Management Plan for Naval Base Point Loma (U.S. Department of the Navy, 2018b), hereafter Vegetation Management Plan. The locations of plants detected in 2006 are shown on figures within the Natural Resources Inventory for Naval Base Point Loma (U.S. Department of the Navy, 2009) and briefly discussed in Table 3-2 below. Non-federally listed special-status plant species recorded during the 2006 survey along with their California Native Plant Society (CNPS) sensitivity status and typical habitat on NBPL are listed in Table 3-2.

Table 3-2: Non-Federally Listed Special-Status Plant Species Observed Within the Proposed Action Area

Scientific Name (Common Name)	CNPS Status[1]	Typical Habitat within the Proposed Action Area	Specific Location Species was Detected
Abronia maritima (red sand-verbena)	CRPR 4.2	Well-developed beach dunes, semi-stabilized dunes	Located along the San Diego Bay-side beach within the Naval Station Magnetic Silencing Facility.
Acmispon prostratus [*Lotus nuttallianus*] (Nuttall's acmispon)	CRPR 1B.1	Coastal dunes, coastal sage scrub, beaches, urban weedy areas	Located along the San Diego Bay-side beach within the Naval Station Magnetic Silencing Facility.
Agave shawii (Shaw's agave)	CRPR 2B.1	Coastal bluff scrub, coastal sage scrub	Found primarily on the Pacific Ocean-side along the roadside.
Bergerocactus emoryi (golden-spined cereus)	CRPR 2B.2	Coastal sage scrub, sandy soils, dry bluffs and cliffs along coast	Northwestern corner of the Pacific Ocean-side.
Ceanothus verrucosus (wart-stemmed ceanothus)	CRPR 2B.2	Coastal sage scrub, southern maritime chaparral, dry hills, mesas	Located along the central crest and San Diego Bay-side.
Leptosyne [*Coreopsis*] *maritima* (Sea dahlia)	CRPR 2B.2	Coastal bluff scrub, sea bluffs, maritime succulent scrub, San Diego to Baja California	Found primarily in the northwestern portion of the Pacific Ocean-side.
Corethrogyne filaginifolia var. *incana* (San Diego sand aster)	CRPR 1B.1	Sandy openings within coastal sage scrub and coastal chaparral	Found primarily in the northwestern portion of the Pacific Ocean-side.
Cylindropuntia californica var. *californica* (snake cholla)	CRPR 1B.1	Chaparral, coastal sage scrub, sandy soils and dry slopes, canyons around San Diego	Found throughout the Proposed Action Area, but more common on the Pacific Ocean-side.
Eriogonum giganteum var. *giganteum* (Santa Catalina Island buckwheat)	CRPR 4.3	Rocky outcrops and cliffs; coastal scrub communities	Very restricted range in a few locations, mainly in the northwestern corner, adjacent to the west side at the top of the Cable/Power Line Trail and Outlook, and at the southern tip of the peninsula.
Euphorbia misera (cliff spurge)	CRPR 2B.2	Coastal sage scrub, maritime succulent scrub, rocky slopes, coastal bluffs	Found throughout coastal sage scrub and maritime succulent scrub on both sides of the Proposed Action Area, with higher prevalence on the Pacific Ocean-side.

Table 3-2: Non-Federally Listed Special-Status Plant Species Observed Within the Proposed Action Area (continued)

Scientific Name (Common Name)	CNPS Status[1]	Typical Habitat within the Proposed Action Area	Specific Location Species was Detected
Ferocactus viridescens (San Diego barrel cactus)	CRPR 2B.1	Dry hills, sandy to rocky soils, chaparral, coastal sage scrub, maritime succulent scrub	Found throughout coastal sage scrub and maritime succulent scrub on both sides of the Proposed Action Area.
Mucronea californica (California spineflower)	CRPR 4.2	Coastal dunes; coastal sage scrub, foothill woodland, chaparral, valley grassland	Found in association with Orcutt's spineflower (discussed below in Section 3.1.2.3, Federally Listed Plant Species) and around the TRANSDEC facility.
Nemacaulis denudata var. *denudate* (coast woolly-heads)	CRPR 1B.2	Coastal dunes and beaches	Located along the San Diego Bay-side beach within the Naval Station Magnetic Silencing Facility.
Orobanche parishii spp. *brachyloba* (short-lobed broomrape)	CRPR 4.2	Coastal bluff scrub, coastal dunes	Located in the northwestern corner on the Pacific Ocean-side.
Pinus torreyana var. *torreyana* (Torrey pine)	CRPR 1B.2	Chaparral, sandstone	Located in scattered areas in the northern portion of the Proposed Action Area.
Piperia cooperi (chaparral rein orchid)	CRPR 4.2	Coastal sage scrub, southern maritime chaparral, maritime succulent scrub	Located around the Defense Fuel Support Point Fuel Facility on the San Diego Bay-side.
Quercus dumosa (Nuttall's scrub oak)	CRPR 1B.1	Coastal sage scrub, southern maritime chaparral, sandy/ clay loam soils	Located on north-facing slopes primarily on the San Diego Bay-side.
Viguiera laciniata (San Diego County viguiera)	CRPR 4.3	Chaparral, coastal sage scrub, dry slopes below 2,500 feet in elevation	Located throughout the Proposed Action Area in scattered locations on both the Pacific Ocean and San Diego Bay-sides.

[1]Status Definitions
California Rare Plant Ranks (CRPRs):
1B.1 = Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
2B.1 = Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2B.2 = Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
4.2 = Plants of limited distribution; fairly threatened in California
4.3 = Plants of limited distribution; not very threatened in California
Notes: CNPS = California Native Plant Society, CRPR = California Rare Plant Rank, TRANSDEC = Transducer Evaluation Center

3.1.2.3 Federally Listed Plant Species

One federally listed plant species, Orcutt's spineflower, is known to occur with the Proposed Action Area and is discussed below.

3.1.2.3.1 Orcutt's spineflower

Orcutt's spineflower is listed as endangered by both USFWS and California Department of Fish and Wildlife. Orcutt's spineflower is a diminutive, herbaceous annual in the Polygonaceae family. Its yellowish stems are prostrate and may grow up to 6 inches in length, but typically only grow from 1 to 2 inches in length. This species is found on sandy soils developed from eroded coastal bluffs, within openings in chaparral and coastal sage scrub communities (U.S. Department of the Navy, 2009). Orcutt's spineflower tends to occur in loose, sandy soil in openings within maritime chaparral and coastal sage scrub below 492 feet (U.S. Department of the Navy, 2009). On NBPL, suitable soils include Carlsbad gravelly loam, Gaviota fine sandy loam, and marina loamy coarse sand. It is frequently found on gentle slopes, growing on the drip line of shrubs.

Flowering generally commences in March and continues through April, when several to many decumbent, open inflorescences are produced. Although little is known about the reproductive system of Orcutt's spineflower, it is known to produce one seeded fruit in the late spring and early summer. After the winter rains begin, the seeds germinate and develop small rosettes of narrowly oblanceolate leaves.

A survey conducted in 2010 confirmed three population of Orcutt's spineflower on NBPL (U.S. Department of the Navy, 2019) (labeled Known Occurrence 1 through 3 on Figure 3-2). One new location of Orcutt's spineflower was discovered in May 2020 in a small area west of Cabrillo Memorial Drive, south of Digital Road, and north of Fort Rosecrans National Cemetery (labeled Known Occurrence 4 on Figure 3-2).

In 2021, NBPL biologists were tasked with surveying for Orcutt's spineflower to confirm whether the species occurs outside of known locations. Prior to the initiation of spring surveys, Navy biologists outlined areas where surveys should be conducted based on previous survey data. A map developed from this assessment was used to identify potential high-, medium-, and low-quality habitat. Focused species surveys were then conducted within the areas of high-quality habitat. Areas mapped as high quality were surveyed twice by AECOM botanists during late spring/early summer 2021, approximately two weeks apart, for presence or absence of Orcutt's spineflower (AECOM, 2021). Focused surveys were conducted by slowly walking meandering transects throughout the survey areas and carefully examining the soil surface for the species.

High-quality areas were mapped west of Cabrillo Memorial Drive, west and south of the Transducer Evaluation Center Facility, and in areas both north and south of Woodward Road. High-quality habitat also exists north of a tower that is northeast of the bend on Woodward Road.

Based on 2021 survey results, no new locations for Orcutt's spineflower were found outside of the four locations historically documented. Therefore, four locations of Orcutt's spineflower are known within the Proposed Action Area, which are depicted on Figure 3-2.

Figure 3-2: Orcutt's Spineflower Locations on NBPL

3.1.2.4 Non-Federally Listed Special-Status Wildlife Species

This section discusses the non-federally listed special-status wildlife species (reptiles, birds, and mammals) documented within the terrestrial portion of NBPL and have the potential to be impacted by the Proposed Action Alternatives. Based on historical surveys conducted across NBPL over the Proposed Action Area, non-federally listed special-status wildlife species detected include 1 reptile, 22 bird, and 8 mammal species. These species, along with date of last detection (if known) and general habitat affinities, are listed in Table 3-3. Non-federally listed special-status wildlife species documented within the terrestrial portions of the Proposed Action Area with potential to be impacted by the Proposed Action are included in Table 3-3.

Table 3-3: Non-Federally Listed Special-Status Wildlife Species Observed in the Proposed Action Area

Scientific Name (Common Name)	Status[1]	Habitat Affinities	Occurrence within the Proposed Action Area
Reptiles			
Anniella stebbinsi (Southern California legless lizard)	CDFW SSC	Occurs in loose soil, especially in semi-stabilized sand dunes and in other areas with sandy soil, including coastal sage scrub and chaparral.	Observed during pitfall surveys performed between 2002 and 2010.
Birds			
Haliaeetus leucocephalus (bald eagle)	SE	This species is found in forested areas adjacent to large bodies of water, and can also be seen in dry, open uplands if there is access to open water for fishing.	Casual migrant; however, the species does not breed within the Proposed Action Area.
Circus hudsonius (northern harrier)	CDFW SSC	A range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes.	Casual migrant; however, the species does not breed within the Proposed Action Area.
Buteo swainsoni (Swainson's hawk)	ST	Found in grassland, desert, agricultural lands, mixed woodland, and savanna.	Casual migrant; however, the species does not breed within the Proposed Action Area.
Asio flammeus (short-eared owl)	CDFW SSC	Found in open areas with low vegetation, including prairie and coastal grasslands, meadows, savanna, marshes, dunes, and agricultural areas.	Casual migrant with no suitable breeding habitat present within the Proposed Action Area.
Falco peregrinus anatum (American peregrine falcon)	CDFW FP	Found in open areas often near water. Nests on cliff ledges, buildings, and bridges. Hunts for small to medium-size birds.	Confirmed historical breeding resident on the southern tip of Point Loma, but current breeding status is unknown.
Chaetura vauxi (Vaux's swift)	CDFW SSC	Species uses mature and old-growth coniferous and mixed forests for nesting. On wintering grounds, uses old-growth forest. Feeds over forest gaps and fields as well as towns.	Uncommon migrant in spring and no suitable breeding habitat present within the Proposed Action Area.

Table 3-3: Non-Federally Listed Special-Status Wildlife Species Observed in the Proposed Action Area (continued)

Scientific Name (Common Name)	Status[1]	Habitat Affinities	Occurrence within the Proposed Action Area
Cypseloides niger (black swift)	CDFW SSC	Forages over forests and in open areas. Nests behind or next to waterfalls and wet cliffs.	Rare migrant in spring and no suitable breeding habitat present within the Proposed Action Area.
Contopus cooperi (olive-sided flycatcher)	CDFW SSC	Olive-sided flycatcher habitat includes a variety of forest, woodland, and open situations with scattered trees, especially where tall dead snags are present.	Uncommon migrant recorded in spring from April through June and in fall from August through October. No suitable breeding habitat is present within the Proposed Action Area.
Empidonax traillii (willow flycatcher)	SE	The willow flycatcher is a rare migrant on Point Loma. The species occupies areas with willows or other shrubs near standing or running water.	Observed in 2015 during migration (U.S. Geological Survey, 2017). No suitable breeding habitat is present within the Proposed Action Area.
Pyrocephalus rubinus (vermilion flycatcher)	CDFW SSC	Found in open country, including arid scrublands, farmlands, and deserts. Relies on stream corridors within the scrub ecosystem, in areas where willow, sycamore, cottonwood, and other riparian-associated trees grow.	Casual migrant; however, the species has not been recorded breeding within the Proposed Action Area.
Campylorhynchus brunneicapillus sandiegensis (coastal cactus wren)	CDFW SSC	Found in areas of coastal sage scrub with tall *Opuntia* cacti and desert shrubs.	Casual vagrant; however, the species has not been recorded breeding within the Proposed Action Area.
Progne subis (purple martin)	CDFW SSC	A wide variety of open and partly open situations, frequently near water or around towns.	Rare migrant, and no suitable breeding habitat is present within the Proposed Action Area.
Leiothlypis luciae (Lucy's warbler)	CDFW SSC	Occurs in dry washes, riparian forest, and thorn forest.	Rare migrant, and no suitable breeding habitat is present within the Proposed Action Area.
Setophaga petechia (yellow warbler)	CDFW SSC	Habitat includes open scrub, second-growth woodland, thickets, farmlands, and gardens, especially near water; riparian woodlands, especially of willows.	Uncommon migrant, and no suitable breeding habitat is present within the Proposed Action Area.
Icteria virens (yellow-breasted chat)	CDFW SSC	Found in early successional stages of forest regeneration, shrubby old pastures, thickets with few tall trees, bushy areas, scrub, and woodland undergrowth, including low wet places near streams, pond edges, or swamps. Commonly found in sites close to human habitation.	Uncommon migrant, and no suitable breeding habitat is present within the Proposed Action Area.

Table 3-3: Non-Federally Listed Special-Status Wildlife Species Observed in the Proposed Action Area (continued)

Scientific Name (Common Name)	Status[1]	Habitat Affinities	Occurrence within the Proposed Action Area
Piranga rubra (summer tanager)	CDFW SSC	Found in various forest, woodland, and scrub habitats, and in scattered trees in clearings and pastures.	Uncommon migrant, and no suitable breeding habitat is present within the Proposed Action Area.
Xanthocephalus (yellow-headed blackbird)	CDFW SSC	Found in fresh-water marshes of cattail, tule, or bulrushes. In migration and winter also found in open cultivated lands, pastures and fields.	Uncommon migrant, and no suitable breeding habitat is present within the Proposed Action Area.
Riparia riparia (bank swallow)	ST	Found along cut riverbanks and steep slopes where it nests in excavated dirt burrows. Species does not nest in San Diego County.	Observed in 2009 (U.S. Department of the Navy, 2009) as a migrant, and no breeding habitat is present within the Proposed Action Area.
Mammals			
Chaetodipus californicus femoralis (Dulzura pocket mouse)	CDFW SSC	Found in sandy, well-drained soils within coastal sage scrub and chaparral communities. Often found in rocky areas.	Detected during small mammal surveys on NBPL (U.S. Department of the Navy, 2009). Likely occurs within suitable habitat throughout the Proposed Action Area.
Chaetodipus fallax fallax (San Diego pocket mouse)	CDFW SSC	Found in sandy, well-drained soils within coastal sage scrub and chaparral communities.	Detected during small mammal surveys on NBPL (U.S. Department of the Navy, 2009). Likely occurs within suitable habitat throughout the Proposed Action Area.
Neotoma lepida intermedia (San Diego desert woodrat)	CDFW SSC	Found in sandy, well-drained soils within coastal sage scrub and chaparral communities. Also inhabits desert areas with Yuccas and cactus.	Detected during small mammal surveys on NBPL (U.S. Department of the Navy, 2009). Likely occurs within suitable habitat throughout the Proposed Action Area.
Eumops perotis californicus (western mastiff bat)	CDFW SSC	Roosts in crevices and shallow caves on the sides of cliffs and rock walls, and occasionally buildings. Roosts are usually high above ground with unobstructed approach.	Observed on the Point Loma peninsula in 2016 (U.S. Department of the Navy, 2009). Unlikely to breed within the Proposed Action Area, and limited roosting habitat is present.
Lasiurus blossevillii (western red bat)	CDFW SSC	Roosting habitat includes forests and woodlands; foraging habitat includes grasslands, shrublands, open woodlands and forests, and croplands, but not deserts.	Observed on the Point Loma peninsula in 2016 (U.S. Department of the Navy, 2009). Unlikely to breed within the Proposed Action Area, and limited roosting habitat is present.

Table 3-3: Non-Federally Listed Special-Status Wildlife Species Observed in the Proposed Action Area (continued)

Scientific Name (Common Name)	Status[1]	Habitat Affinities	Occurrence within the Proposed Action Area
Lasiurus xanthinus (western yellow bat)	CDFW SSC	Roosting habitat includes large palm trees with well-developed dead palm frond skirts; foraging habitat includes grasslands, shrublands, and deserts.	Observed on the Point Loma peninsula in 2016 (U.S. Department of the Navy, 2009). Unlikely to breed within the Proposed Action Area, and limited roosting habitat is present.
Nyctinomops femorosaccus (pocketed free-tailed bat)	CDFW SSC	Associated with rugged canyons, high cliffs, and rock outcroppings in semiarid landscapes. Roosts in crevices in cliffs, outcrops, slopes, and shallow caves during the day, and also may roost in buildings or under roof tiles.	Observed on the Point Loma peninsula in 2016 (U.S. Department of the Navy, 2009). Unlikely to breed within the Proposed Action Area, and limited roosting habitat is present.
Nyctinomops macrotis (big free-tailed bat)	CDFW SSC	Habitat includes rocky areas in rugged or hilly country in both lowland and highland areas, including evergreen forest, woodlands, desert scrub, river floodplains, and stream courses in areas of mixed tropical deciduous forest and thorn forest. Roosts primarily in vertical or horizontal crevices near the tops of cliffs.	Observed on the Point Loma peninsula in 2016 (U.S. Department of the Navy, 2009). Unlikely to breed within the Proposed Action Area, and roosting habitat is absent.

[1]Status Designations: SE = State Endangered, ST = State Threatened, CDFW FP = California Department of Fish and Wildlife Fully Protected, CDFW SSC = California Department of Fish and Wildlife Species of Special Concern

Historical surveys for reptiles and amphibians were conducted between 2002 and 2010. Based on a compilation of pitfall surveys, 12 reptile and amphibian species have been documented on NBPL (U.S. Navy, 2019). Of these, only one non-listed special-status species, the Southern California legless lizard (*Anniella stebbinsi*; California Department of Fish and Wildlife species of special concern), has been documented on NBPL. The specific locations where Southern California legless lizards have been detected are not recorded; however, the species occurs in sandy, well-drained soils along coastal areas and within coastal sage scrub communities. Therefore, the species may occur throughout undeveloped portions of the Proposed Action Area.

Because the Proposed Action Area is located on the southern portion of a peninsula between the Pacific Ocean and San Diego Bay, and is within the Pacific Flyway, over 380 avian species have been documented on Point Loma (U.S. Department of the Navy, 2019). Many of these species have been documented as rare vagrants or casual migrants during brief stopovers. Due to the location of the Proposed Action Area, which is on the southern portion of the Point Loma peninsula, many avian species stop over briefly during migration as they fly along the coast. Furthermore, many avian species overwinter in the warm, protected waters of San Diego Bay. For resident avian species, vegetation within the Proposed Action Area is a critical resource as the habitat functions similar to an island, which

is cut off from adjacent natural habitats due to surrounding water and urban development within San Diego. The avian community within the Proposed Action Area has fluctuated with the expansion of several nonnative/feral species and the extirpation of species dependent on native sage scrub or grassland communities. A comprehensive list of avian species detected at NBPL is included in Appendix G of the INRMP (U.S. Department of the Navy, 2019) and the 2009 Natural Resources Inventory for Naval Base Point Loma, San Diego, California (U.S. Department of the Navy, 2009).

Thirty mammalian species have been recorded on NBPL (U.S. Department of the Navy, 2019). Non-federally listed special-status mammalian species documented on NBPL include three small mammal species that typically occur within mature coastal sage scrub communities and are likely present throughout suitable habitat within the Proposed Action Area. Five non-federally listed special-status bat species have been detected within Point Loma and may occur within the Proposed Action Area. The bat species were detected flying around and foraging; however, based on the most comprehensive bat roost survey, conducted in 2002, no confirmed bat roosts have been identified (Stokes et al., 2003).

3.1.2.5 Federally Listed Wildlife Species

Four federally listed wildlife species are known to occur within or adjacent to the Proposed Action Area: western snowy plover (*Charadrius nivosus nivosus*), California least tern (*Sternula antillarum browni*), least Bell's vireo (*Vireo bellii pusillus*), and coastal California gnatcatcher. Of these four species, only the coastal California gnatcatcher is a year-round resident and breeds within the Proposed Action Area. The coastal California gnatcatcher is discussed in greater detail below.

The other three federally listed wildlife species noted above are not analyzed in this EA due to a lack of suitable breeding habitat within the terrestrial portion of the Proposed Action Area. For western snowy plovers and California least terns, wide sandy beaches with well-developed dune systems where these species can nest are absent from the seaside of the Proposed Action Area and limited on the bayside. There are a few narrow beach locations along the Pacific Ocean and San Diego Bay side where these species may occasionally pause during migration; however, the habitat is generally too narrow to support breeding. Several nearby breeding locations are present, including one on Naval Base Coronado Naval Air Station North Island. No breeding western snowy plovers or California least terns are documented within the Proposed Action Area; hence, these two species are considered absent from the terrestrial portions of the Proposed Action Area and not discussed further in this EA.

The least Bell's vireo is an occasional migrant on NBPL during fall migration. However, no suitable breeding habitat (successional riparian vegetation) occurs within the Proposed Action Area and the proposed activities would not prevent migrant least Bell's vireos from moving through the habitat. Therefore, least Bell's vireo is not discussed further in this EA.

3.1.2.5.1 Coastal California Gnatcatcher

The coastal California gnatcatcher, a subspecies of the California gnatcatcher (*Polioptila californica*), was listed as a federally threatened species by the USFWS in 1993 (U.S. Fish and Wildlife Service, 1993). No recovery plan has been drafted for the coastal California gnatcatcher and, while critical habitat has been designated, none occurs within or adjacent to the Proposed Action Area.

The coastal California gnatcatcher is a non-migratory songbird found on the coastal slopes of Southern California. It ranges from Ventura County south to northwest Baja California, Mexico. The breeding season of the coastal California gnatcatcher extends from late February through August with the peak of nesting occurring from mid-March through mid-May. The breeding territory size of the coastal California

gnatcatcher ranges from 2 to 14 acres, with home ranges expanding from 13 to 39 acres during the non-breeding season. A breeding pair may attempt to nest as many as 10 times in a year, producing up to three successful broods in a season. There is evidence that this bird is susceptible to nest predation by a variety of snake, mammalian and avian predators (U.S. Department of the Navy, 2019).

The coastal California gnatcatcher is strongly associated with coastal sage scrub habitats below 820 feet in elevation in coastal areas and between 820 and 1,640 feet in elevation in inland areas; however, not all types of coastal sage scrub communities are used or preferred. This bird appears to be most abundant in areas dominated by California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*). The species' numbers are generally low in coastal habitats dominated by black sage (*Salvia mellifera*), white sage (*Salvia apiana*), or lemonadeberry (*Rhus integrifolia*); in inland areas, habitats dominated by black sage may be used more regularly. Coastal sage scrub vegetation occurs on the gentle coastal slopes and mesas of Southern California, which are prime locations for agriculture and development. USFWS has estimated that coastal sage scrub habitat has been reduced by 70–90 percent of its historical extent (U.S. Fish and Wildlife Service, 1993), and little of what remains is protected in natural open space.

Until 2015, there were no documented nesting coastal California gnatcatchers on NBPL. Sporadic sightings of coastal California gnatcatchers occurred in February 1993 and September 1995, 1998, 2004, and 2005 (U.S. Department of the Navy, 2019). In 2015, several incidental sightings of coastal California gnatcatchers were observed at NBPL by Installation Biologist Andrew Wastell (U.S. Department of the Navy, 2019). These sightings prompted protocol surveys completed in spring 2015 by Navy biologists, which confirmed presence of the species within the coastal sage scrub on the eastern side of NBPL and the slopes adjacent to Steam Plant and Ashburn Road. Since 2015, surveys in 2016, 2017, 2018, and 2020 have documented the expansion of coastal California gnatcatchers across NBPL (Clune, 2019; Shea, 2016, 2017). Locations of historical coastal California gnatcatchers are shown on Figure 3-3.

Protocol coastal California gnatcatcher surveys within the Proposed Action Area were most recently conducted during the 2021 breeding season (Hercules, 2021). In total, 18 pairs, one lone female, and one lone male were observed during the surveys (Figure 3-3). Of the 18 pairs detected during 2021 surveys, 16 pairs were detected on the west side of NBPL, and two pairs on the east side. Based on the protocol surveys, data points for each pair were consolidated into one main location that represented the core area where each pair was detected. The consolidated locations come from assessing 78 coastal California gnatcatcher observations throughout the surveys and determining the most likely groupings or use areas. Nesting behavior was observed for five pairs, and a few pairs were only observed once.

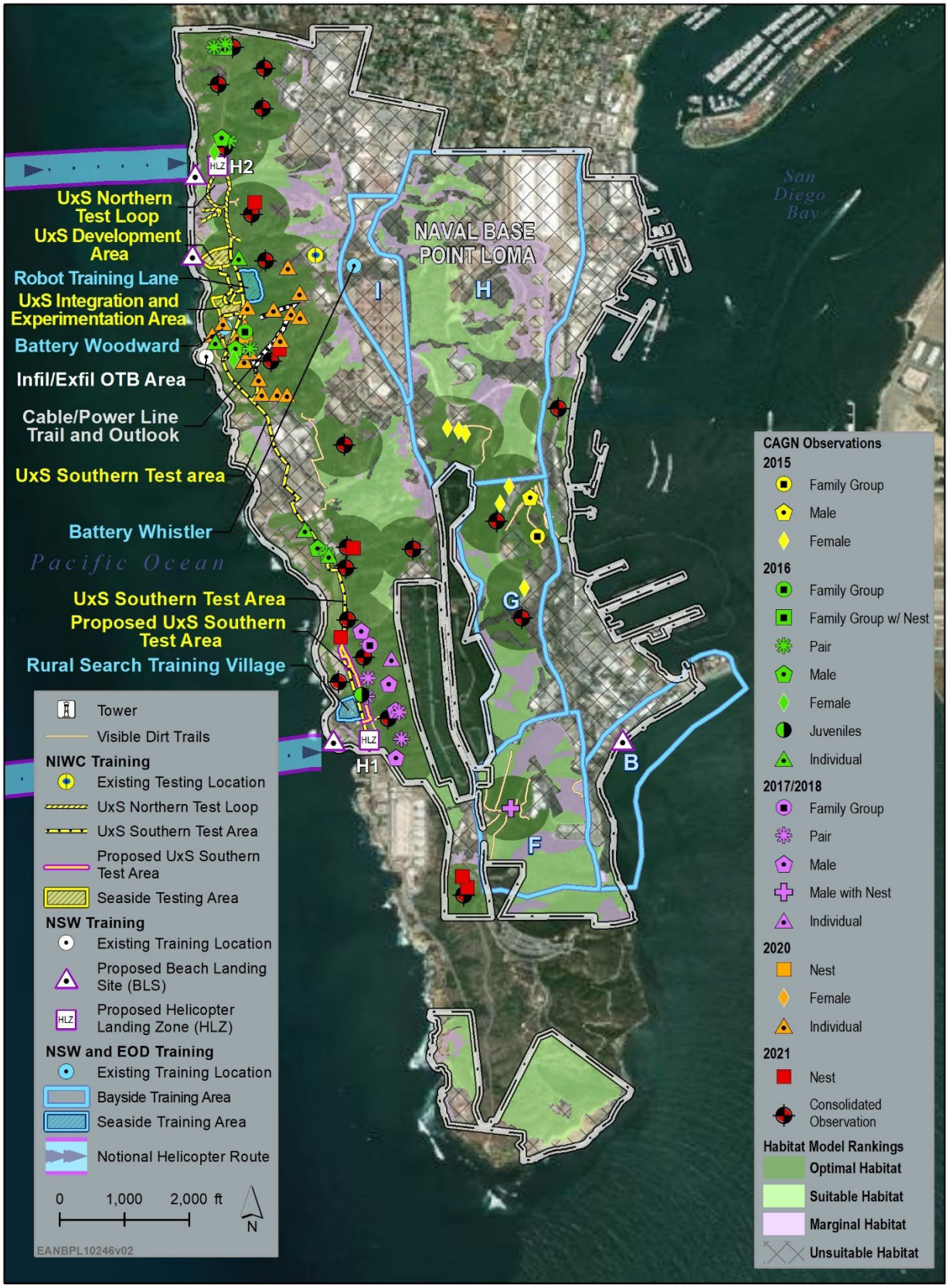

Figure 3-3: Historical Coastal California Gnatcatcher Locations on NBPL

3.1.2.5.2 Coastal California Gnatcatcher Habitat Model

To assess potential impacts of the Proposed Action on the coastal California gnatcatcher, a habitat model using geographic information systems ArcGIS software was created to compare coastal California gnatcatcher locations with proposed training and testing activities. The model was informed by the coastal California gnatcatcher critical habitat final rule (72 Federal Register 72010, 2007), including Primary Constituent Elements, was reviewed to develop specific parameters. Two main parameters were selected:

1. **Occupancy Status**. Historical data from 2015, 2016, 2017, 2018, 2020, and 2021 were combined into one data set. While the surveys did not cover all of NBPL each year, collectively, they provide a solid basis for areas known to be occupied by coastal California gnatcatchers.
2. **Vegetation Alliance/Community**. Per the critical habitat final rule, vegetation communities considered suitable included coastal sage scrub, maritime succulent scrub, southern-coastal bluff scrub, and coastal sage-chaparral scrub. These were broad types of vegetation communities that have multiple alliances grouped within them.

Coastal California gnatcatcher observation points (from 2015 to 2021) were buffered by a 500-foot radius to create polygons. These polygons were merged to create an "occupied habitat" layer. Next, a NBPL vegetation mapping layer from 2011 was clipped to terrestrial habitat within NBPL. Vegetation alliances were ranked (high, medium, and low) based on their suitability for coastal California gnatcatcher, with "high" representing the most suitable coastal California gnatcatcher habitat and "low" the least suitable habitat. The vegetation alliances ranked "high" were also considered the most suitable in accordance with the vegetation communities detailed in the coastal California gnatcatcher critical habitat Primary Constituent Elements. Rankings of vegetation alliances were defined as follows:

1. **High**. This included eight vegetation alliances that represent the most suitable coastal California gnatcatcher breeding and foraging habitat.
2. **Medium**. This included seven vegetation alliances that represent habitat that is unlikely to support breeding but may occasionally be used for foraging.
3. **Low**. This included eleven vegetation alliances/land cover types that coastal California gnatcatchers are not likely to use, unless they are moving through, during dispersal, or incidentally detected within.

Lastly, the coastal California gnatcatcher occupied habitat layer was overlaid on ranked vegetation alliances to obtain the following coastal California gnatcatcher habitat model results:

1. **Optimal coastal California gnatcatcher habitat** = coastal California gnatcatcher occupied habitat and vegetation suitability ranked high.
2. **Suitable coastal California gnatcatcher habitat** = coastal California gnatcatcher unoccupied habitat and vegetation suitability ranked high.
3. **Marginal coastal California gnatcatcher habitat** = coastal California gnatcatcher unoccupied habitat and vegetation suitability ranked medium.
4. Unsuitable coastal California gnatcatcher habitat = vegetation suitability ranked low.

Coastal California gnatcatcher habitat model results are depicted on Figure 3-3.

3.1.3 Environmental Consequences

This analysis describes the potential impacts of the Proposed Action Alternatives to vegetation alliances and other land cover types, non-federally listed special-status plant and wildlife species, and federally listed plant and wildlife species within the Proposed Action Area. The Proposed Action Area considered in this analysis is the same geographic extent for all alternatives considered and includes terrestrial portions of NBPL on the Point Loma peninsula. Activities associated with the Proposed Action within the Pacific Ocean were assessed in the HSTT EIS/OEIS (U.S. Department of the Navy, 2018a) and are not discussed herein.

Biological Resource Potential Impacts:

- Removal of 0.32 acre of disturbed and big saltbush scrub from the proposed UxS Southern Test Area.
- Impacts on non-federally listed special-status species from off-trail activities and habitat impacts.
- Impacts on MBTA-protected avian species and coastal California gnatcatchers from noise sources, vegetation removal, and the presence of UAS, UxS, personnel, and equipment, including vehicles and helicopter rotorwash.

3.1.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and impacts on biological resources would remain at the current authorized levels and within previously approved training areas. Under the No Action Alternative, a streamlined approach for the increase in training and testing activities would not occur.

3.1.3.1.1 Vegetation Alliances and Other Land Cover Types

Under the No Action Alternative, there would be no permanent loss of vegetation as no new areas of NBPL would be used for testing and training activities. The proposed UxS Southern Test Area would not be trimmed and maintained long term.

3.1.3.1.2 Non-Federally Listed Special-Status Plant Species

Under the No Action Alternative, no additional impacts beyond those that already occur from current training and testing would occur from off-trail activities, including crushing, soil compaction, spread of invasive species, potential for increased wildlife, and potential damage to non-federally listed special-status plant species, which occur throughout NBPL. Most current training and testing activities occur within previously disturbed and developed areas that lack non-federally listed special-status plant species; hence, under the No Action Alternative, impacts would not occur on the species detailed in Table 3-2.

3.1.3.1.3 Federally Listed Special-Status Plant Species

Under the No Action Alternative, no impacts would occur to the four known Orcutt's spineflower populations as no training and testing activities would be conducted within these areas.

3.1.3.1.4 Non-Federally Listed Special-Status Wildlife Species

Under the No Action Alternative, no additional impacts would occur from increased off-trail activities, including crushing, soil compaction, spread of invasive species, potential for increased wildlife, and potential injury and mortality to non-federally listed special-status wildlife species, which occur throughout NBPL. Most current training and testing activities occur within previously disturbed and developed areas that lack non-federally listed special-status wildlife species; hence, under the No Action Alternative, it is unlikely impacts would occur on the species detailed in Table 3-3.

3.1.3.1.5 Federally Listed Special-Status Wildlife Species

Under the No Action Alternative, no impacts would occur on coastal California gnatcatchers from an increase in training and testing activities within and adjacent to occupied habitat. Impacts from increased noise and visual disturbance from UAS, UxS, personnel, vehicles, and equipment would not occur. There would be no increase in noise disturbance from use of EETs and other noise-producing devices. No increase in off-trail activities would be authorized.

3.1.3.2 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

Potential impacts from Alternative 1 would occur from implementation of new training and testing activities, and an increase in the annual number of training and testing events. The Proposed Action would result in increased training and testing activities primarily within the previously disturbed and developed areas on NBPL and increase the number and frequency of off-trail activities.

Under Alternative 1, permanent impacts would result from vegetation trimming (to be conducted outside of the avian breeding season) along an existing two-track dirt road for the proposed UxS Southern Test Area. Most impacts (especially noise and disturbance from physical presence of personnel and their equipment) would be short term in duration and temporary, limited to the duration of the specific training and testing events; however, training and testing activities have the potential to collectively cause more long-term disturbance impacts.

General and species-specific avoidance and minimization measures to be implemented as part of Alternative 1 are detailed in Table 3-15. These measures would be implemented as needed to avoid and minimize potential impacts on non-federally and federally listed special-status plant and wildlife species as detailed in the sections below.

3.1.3.2.1 Vegetation Alliances and Other Land Cover Types

Permanent impacts would occur to 0.32 acre of disturbed and big saltbush vegetation from clearing a 10-foot wide path along an existing abandoned two-track dirt road for the proposed UxS Southern Test Area. Vegetation would initially be trimmed back along the existing road edge and then periodically mowed or maintained free of vegetation (both performed outside of the California gnatcatcher breeding season) to allow UxS equipment to safely operate within the proposed UxS Southern Test Area.

Minor temporary impacts on vegetation may occur in limited areas along existing trails where Navy personnel meander off trail during OTB training activities, land navigation, rappelling, cliff climbing/assault, foot patrolling, and other activities. Impacts may include soil compaction, disturbance around root bases of plants, minor branch breaking from foot traffic, crushing of individual plants, the potential for increased erosion, and the spread of nonnative invasive plant species. Training activities are by nature intended to cause minimal vegetation damage as Navy personnel are attempting to avoid detection as part of their training. Impacts associated with Alternative 1 would be temporary and restricted to areas around the BLS/OTB locations and in proximity to existing unpaved trails. Specific impacts on vegetation from off-trail activities are considered nominal and not quantified herein.

In summary, a permanent loss of 0.32 acre of disturbed and big saltbush vegetation, along with impacts from off-trail activities are minimal in relation to the total 108.21 acres of disturbed and big saltbush vegetation within NBPL. Measures to reduce the spread of nonnative invasive plant species and reduce erosion from off-trail activities would be implemented (see detail in Table 3-15). Therefore, Alternative 1 would not result in significant impacts on vegetation alliances and other land cover types.

3.1.3.2.2 Non-Federally Listed Special-Status Plant Species

The loss of non-federally listed special-status plant species (listed in Table 3-2) is not anticipated since non-federally listed special-status plant species have not been documented within the proposed UxS Southern Test Area trail that would be trimmed and maintained free of vegetation. Minor temporary impacts on the species detailed in Table 3-2 may occur in limited areas along existing trails where Navy personnel meander off trail. Impacts may include soil compaction and disturbance (including the potential for erosion) around root bases, crushing of individuals, and minor branch breaking from foot traffic during off-trail and OTB activities. There is a potential for an increase in nonnative invasive plant species to move in from seeds attached to the shoes/clothing and equipment of personnel. Finally, some of the proposed training and testing activities may be a potential ignition source and increase the potential for a wildland fire.

In summary, impacts on non-federally listed special-status plant species detailed in Table 3-2 are anticipated to be minimal because most activities would occur on established roads and trails. OTB and off-trail activities are meant to cause minimal vegetation damage as training is designed for Navy personnel to avoid detection. While potential impacts from soil compaction, erosion, increased spread of nonnative invasive plant species and the potential for increased wildland fire may result in long-term impacts, these are unlikely with the implementation of the measures in Table 3-15. These measures include invasive species monitoring in compliance with the Vegetation Management Plan, and wildland fire management measures, as detailed in the *Naval Base Point Loma and Cabrillo National Monument Joint Wildland Fire Management Plan* (National Park Service & U.S. Department of the Navy, 2012), hereafter Wildland Fire Management Plan, which is currently being updated.

Firing blanks and timed-fuse calculation training would be allowed outdoors when the fire risk, as described in the WFMP, is classified as “Low” or “Moderate” (Figure 3-4). Timed-fuse training will primarily be conducted in clear areas such as dirt roads, with personnel standing by with fire extinguishers. There would be no fire risk restrictions when the training is conducted indoors (such as inside Battery Whistler or Battery Woodward).

With regards to UAS usage, operators follow a post-flight checklist that reminds individuals to remove batteries and place them in fire-safe containers. Air crews receive ground training, which includes topics on environmental issues, safety, risk mitigation, and how to respond to various unexpected scenarios. Individuals also receive training in course rules specific for the areas in which they are flying. If UAS crashes in an undeveloped area and fire is not imminent, operators follow operating procedures to assist with retrieval. If a fire is imminent, operators extinguish the fire if safe to do so and notify emergency services. If possible, operators retrieve the UAS and put the battery (if installed) into a fire-safe container.

POINT LOMA DAILY FIRE DANGER RATINGS and RESTRICTIONS		
Fire Danger Rating	Caution to Be Exercised	Necessary Precautions
LOW <4 mph 20-ft wind speed> 11-12 % 1-hr FFM	Use normal caution. Fires may start easily, but will have low rate of spread and fire intensity.	Care should be taken; Smoking is not permitted in vehicles or in remote areas of Point Loma. Survivable space standard fuel treatment measures will be in place by June 15 annually.
MODERATE 4-5 mph 20-ft wind speed 11-12 % 1-hr FFM	Use extra caution. Fires may start very easily. Fires are expected to have moderate rate of spread and fire intensity.	All Low Fire Danger Precautions are in place. This condition is the beginning of a fire ignition concern.
HIGH 6-8-mph 20-ft. wind speed 9-10% 1-hr FFM	Use extra caution. Fires are expected to have high rate-of-spread and fire intensity.	All Moderate Fire Danger Precautions are in place.
VERY HIGH 9-10 mph 20-ft wind speed 6-8 % 1-hr FFM	Extra protection caution. Fires will start easily and spread rapidly. Fires are expected to exceed 100 acres in one hour and burn very hot. Fires will be hard to contain at designated roads and fuel treatment areas without helicopters and 2 wildland fire engine companies.	All High Fire Danger Precautions are in place. Suppression assets should be on fire alert during the hours of 1000 to 1900 hours, staged to meet the goal of a 15-minute elapse time for responding to the site of any fire occurring on Point Loma.
EXTREME >10 mph 20-ft wind speed <6% 1-hr FFM	Use extreme caution. Fires will spread at extreme rates of spread and will burn at unacceptable fire intensities. Fires will spread by long distance spotting.	All Very High Fire Danger Precautions are in place. Confine visitors to CNM to paved roads and trails.
FFM = Fine Fuel Moisture. This is the actual fuel moisture content of the cured grass and other stems 1/4 inch or less in diameter. These fuels are very responsive to changes in the moisture content of the air, and are very		

Figure 3-4: Point Loma Daily Fire Danger Ratings and Restrictions

Thus, Alternative 1 is not anticipated to result in significant impacts on non-federally listed special-status plant species.

3.1.3.2.3 Federally Listed Plant Species

Alternative 1 would result in increased training and testing activities primarily within the previously disturbed and developed areas on NBPL. No permanent or temporary impacts are anticipated to occur to the four known locations of Orcutt's spineflower. Specifically, activities proposed to occur off-trail would not take place in areas with documented Orcutt's spineflower populations (Figure 3-2). One existing unpaved trail is located within Known Occurrence 3 as depicted on Figure 3-2. Measures detailed in Table 3-15 would be implemented to avoid and reduce potential impacts if training and testing activities are anticipated to use the trail through Known Occurrence 3. Specifically, if a training and testing activity is proposed within 50 feet of a known Orcutt's spineflower location, per OS-1 (Table 3-15), the Navy would clearly demarcate known occurrences in the field with markers or exclusion fencing prior to training and testing activities to ensure personnel do not disturb occupied areas. Additionally, per OS-2 (Table 3-15), the Navy would continue to conduct annual surveys for Orcutt's spineflower in areas of occupied and high quality habitat. The Navy would use annual survey data to update training maps with any new occurrences annually. New locations or expansion of existing areas where Orcutt's spineflower is detected would be avoided during training and testing activities. Therefore, under Alternative 1, the Proposed Action is anticipated to result in no significant impacts on Orcutt's spineflower.

Non-Federally Listed Special-Status Wildlife Species

Impacts on one non-federally listed special-status reptile species (Southern California silvery legless lizard) may occur from soil compaction and erosion during off-trail activities within areas of sandy soils. Soil compaction and erosion may reduce the habitat quality for the species due to increased training and testing. However, most impacts would be limited to previously established trails and nearby adjacent areas. The Vegetation Management Plan (U.S. Department of the Navy, 2018b) would be implemented

to improve overall habitat quality for the species through various restoration activities. Additional measures detailed in Table 3-15, may provide a benefit to the species. Therefore, potential impacts from Alternative 1, are not anticipated to result in local population-level impacts on the Southern California silvery legless lizard.

Impacts on non-federally listed special-status bird species detailed in Table 3-3, all of which are also protected by the MBTA, may occur from noise and the physical presence of personnel, UAS, UxS, tactical vehicles, and other equipment adjacent to nesting habitat. There is also a low potential for wildland fire (from use of blanks, simunitions, UTMs, among others) to destroy habitat and the spread of nonnative invasive plant species to reduce habitat quality. A description of impacts on federally listed wildlife species below would apply to birds protected by the MBTA as well.

Specifically, EET detonations may result in noise levels that exceed ambient levels and cause birds to vacate the area following detonations. Some species may flush off their nests and be less likely to occupy habitat near locations where EETs are used (i.e., may result in a reduction in the amount of habitat a species can use). To avoid and minimize impacts on MBTA-protected bird species, measure MBTA-1 in Table 3-15 would be implemented. These impacts may result in increased stress to migratory species, and resident birds that are sensitive to disturbance. Off-trail activities may also affect birds, especially if they are flushed off nests. Overall, Alternative 1 is likely to result in impacts on individual non-federally listed special-status bird species. With implementation of the measures in Table 3-15 (including the Vegetation Management Plan and Wildland Fire Management Plan [currently being updated]), impacts are not anticipated to result in a loss of individuals or reduction in local bird populations.

Impacts on non-federally listed special-status small mammal and bat species (detailed in Table 3-3) would be similar to those described above for birds (disturbance from noise and physical presence, potential for wildland fire), but may also include the potential for injury and mortality (from soil compaction and crushing during off-trail activities). Some small mammal species may temporarily seek shelter (return to their burrows) or avoid areas during training and testing events. The non-federally listed special-status mammal species are nocturnal (small mammals, and bats) and may experience increased impacts if training and testing events occur at night. Impacts on bat species are likely to be minimal and related primarily to displacement from migrating and foraging over vegetation communities and other land cover types during night-time training and testing activities. No bat roosts have been found within NBPL, and hence impacts on roosting bats from noise is unlikely. To avoid and minimize impacts on non-federally listed special-status small mammal and bat species, measures in Table 3-15 would be implemented. Measures would reduce the potential for aerial and mammalian predators to be attracted to the area. Overall, Alternative 1 may result in impacts on individual non-federally listed special-status mammal species; however, impacts are not anticipated to result in a reduction in the small mammal or bat populations on NBPL.

3.1.3.2.4 Federally Listed Wildlife Species

Alternative 1 has the potential to impact one federally listed wildlife species, the coastal California gnatcatcher, from training and testing activities. Impacts may occur from noise, human/vehicle disturbance, vegetation trimming for the proposed UxS Southern Test Area, increased spread of nonnative invasive plant species, and the potential for wildland fire, which can be exacerbated by the spread of nonnative invasive species. These impacts are first described in relation to the various training and testing activities under Alternative 1. Thereafter, a description of anticipated impacts on coastal

California gnatcatcher pairs is provided. It is assumed training and testing activities may occur year round, without seasonal restrictions, unless specifically detailed in the avoidance and minimization measures in Table 3-15. The coastal California gnatcatcher habitat model, detailed previously in Section 3.1.2.5.2 (Coastal California Gnatcatcher Habitat Model), was used as the basis for determining the extent of impacts on coastal California gnatcatcher pairs, based on specific types of impacts, as discussed below. The 2021 consolidated coastal California gnatcatcher locations were used as the basis for the number of pairs that may be impacted.

Description of Types of Impacts

Noise

Group 1 and Group 2 UAS takeoffs and landings within the UxS Development and UxS Integration and Experimentation Areas have the potential to generate noise that may disturb coastal California gnatcatchers. Per the coastal California gnatcatcher habitat model (Figure 3-3), the area surrounding the UxS Development Area and the UxS Integration and Experimentation Area is optimal habitat occupied by several pairs of coastal California gnatcatchers. During takeoffs and landings, noise levels may temporarily exceed the avian harassment limit used by USFWS, which is 60 A-weighted decibels (dBA). Once the UAS take off and attain the minimum altitude defined in Table 3-4, they may fly anywhere within the Proposed Action Area. Group 1 and Group 2 UAS are launched and recovered from developed areas with safety measures implemented prior to and during each flight to minimize the potential for a platform to land in an area that is not within the maintained areas of NBPL (i.e., developed training areas).

Table 3-4: Proposed Action UAS Sound Source Levels and Minimum Altitude Thresholds

Make and Model	Category	Type	Sound Level at Source (dB)[1]	Sound Level at 66 feet (dB)	Sound Level at 131 feet (dB)	Minimum Altitude for 60 dB Acoustic Threshold (AGL)
DJI Mavic	Group 1	Multirotor	70	64	58	131 feet
DJI Phantom 4 Pro 2.0	Group 1	Multirotor	76	70	64	220 feet
Draganflyer	Group 1	Multirotor	60	54	48	0–66 feet
Hexacopter APH-22	Group 1	Multirotor	58	52	46	0–66 feet
Raven sUAS	Group 1	Fixed Wing	70	64	58	131 feet
Raven Aerostar TIF-2675	Group 1	Tethered balloon	0	0	0	0 feet
RQ-27 Scan Eagle	Group 2	Fixed Wing	85	79	73	525 feet

[1](Airborne Drones, 2022)

Notes: dB = decibel(s), AGL = Above Ground Level

Table 3-4 includes representative Group 1 and Group 2 platforms flown by NIWC Pacific over NBPL for testing purposes, anticipated sound levels at 66 to 131 feet above ground level (AGL), and the recommended minimum altitude while flying over optimal coastal California gnatcatcher habitat during the breeding season. Per measure CAGN-3 (detailed in Table 3-15), to reduce the potential that noise

from UAS exceeds the 60 dBA acoustic threshold, UAS would maintain flight heights above optimal coastal California gnatcatcher habitat during the breeding season as detailed in Table 3-4. Furthermore, Group 1, Group 2 and Group 2 Heavy UAS would avoid flying below 50 feet AGL over optimal and suitable coastal California gnatcatcher habitat year round, unless specifically required for survey purposes or to meet a specific mission.

Additional noise impacts may occur from the firing of blanks, UTMs, and simunitions during training and testing events. Blanks, simunitions, and UTMs would be used in a variety of locations (Robot Training Lane, Battery Woodward, Battery Woodward Bunker, and Battery Whistler), and during insertion/extraction training, which occur adjacent to optimal habitat that is occupied by coastal California gnatcatchers. Weapon and training munitions were tested at NBPL on August 1, 2019, to determine the level of sound produced (U.S. Department of the Navy, 2020). Background noise was recorded at 40–42 dBA when no other activity was occurring, at 72–78 dBA when a vehicle driving on Woodward Road passed by, and at 78–79 dBA when a helicopter flew just offshore. At 50 feet, the simunition was recorded at 59–61 dBA; at 100 feet, the sound measured at 57–60 dBA; and at 150 feet, the sound measured at 54–56 dBA. The UTM rounds appeared quieter and recorded at 3–4 dBA less than those of the simunition rounds (U.S. Department of the Navy, 2020). Generally, the use of blanks, UTMs, and simunitions may occur during various training and testing events; while no specific noise analysis was conducted, they were considered to contribute to noise disturbance to coastal California gnatcatchers. Per CAGN-6, to the extent feasible, firing of blanks, simunitions, and UTMs, would be conducted within previously developed training areas and outside of coastal California gnatcatcher optimal habitat during the breeding season.

The loudest noise source from Alternative 1 training and testing activities is that produced by EET detonations, especially from mineral Water Bottles (MWBs) . While the Alternative 1 would slightly increase the EOD EET use by up to 15 EETs per year (an increase of three training events per year), the noise impact on coastal California gnatcatchers during the breeding season is currently unknown. EETs are only authorized for use year round at Battery Whistler, where there is no adjacent optimal coastal California gnatcatcher habitat. The other training locations (Battery Woodward, Robot Training Lane, and the Rural Search Training Village) are surrounded by optimal coastal California gnatcatcher habitat occupied by several pairs of coastal California gnatcatchers (Figure 3-3). Use of EETs is currently prohibited at these locations during the coastal California gnatcatcher breeding season. However, during the nonbreeding season, EETs are authorized for use at all designated training locations including Robot Training Lane, Battery Woodward, and Rural Search Training Village. Under Alternative 1, EOD proposes the use of EETs in the bunker at Battery Woodward during the coastal California gnatcatcher breeding season. Since noise effects for use of EETs within the bunker at Battery Woodward have not accurately been assessed, CAGN-7 would be implemented as part of Alternative 1. Per CAGN-7 (detailed in Table 3-15), potential impacts from noise by use of EETs during the coastal California gnatcatcher breeding season at the Battery Woodward Bunker would be analyzed by conducting a detailed avian-specific noise study prior to their use to ensure there are no impacts on coastal California gnatcatchers. Use of EETs at the Battery Woodward Bunker would not be authorized during the coastal California gnatcatcher breeding season until a noise study has been conducted. Furthermore, impacts from noise would be addressed as part of the consultation process with the USFWS.

Human/Vehicle Disturbance

Coastal California gnatcatchers may also be impacted by physical presence of humans, UAS, UxS, vehicles, and other equipment proximate to occupied habitat. The presence of UAS overhead may

trigger a predatory escape response in coastal California gnatcatchers, if UAS are flying low over occupied habitat. Some of the training and testing activities have the potential to flush coastal California gnatcatchers off their nests or away from roosting locations. Activities that may result in birds flushing off their nests have the potential to expose eggs or nestlings to predators and the elements. Conservation measure CAGN-3 would be implemented that restricts Group 1, Group 2, and Group 2 Heavy UAS from flying below 50 feet AGL over optimal and suitable coastal California gnatcatcher habitat regardless of the time of year. Furthermore, during the coastal California gnatcatcher breeding season, all UAS groups would maintain a sufficient altitude when flying over optimal coastal California gnatcatcher habitat to reduce noise levels, which would also result in a reduced potential for visual disturbance to coastal California gnatcatchers. There is also the potential for coastal California gnatcatchers to be disturbed while foraging, during courtship display, when feeding young, and during territorial defense, especially in the area around the proposed UxS Southern Test Area. The existing two-track dirt road traverses occupied coastal California gnatcatcher habitat on both sides of the road and hence coastal California gnatcatchers in the nearby vicinity may temporarily be disturbed while operators use the proposed UxS Southern Test Area. The presence of UxS adjacent to optimal habitat may result in avoidance of the area while training activities take place. The proposed UxS Southern Test Area is not currently used by NIWC Pacific for testing, and hence may be a new source of disturbance to nearby coastal California gnatcatchers.

Alternative 1 activities such as OTB, land navigation, rappelling, cliff climbing/assault, foot patrolling, blank firing, and CBRN training; and personnel and vehicle traffic may result in disturbance to nesting coastal California gnatcatchers and could elicit flushing from active nests, particularly if nests occur proximate to the training areas. Operator foot traffic could damage or crush nesting substrate and directly impact nests in areas where operators seek concealment in vegetation. If coastal California gnatcatchers are flushed away from their nests or their preferred habitat, they may experience increased predation and a potential for nests to fail from exposure to weather conditions such as wind, rain, and cool temperatures. Conservation measures CAGN-1 and CAGN-2 would be implemented to reduce potential for coastal California gnatcatchers or their nests to be disturbed by training activities that occur during the breeding season.

Approximately 0.32 acre of vegetation consisting of disturbed and big saltbush vegetation that is occupied by coastal California gnatcatchers would be trimmed back along a 10-foot-wide path for the proposed UxS Southern Test Area (Figure 3-3). This area already has an existing two-track dirt road that is currently not used by NIWC Pacific, and trimming vegetation back to provide a 10-foot wide section would permit the use of various UxS along the road corridor. The UxS Southern Test Area would be periodically mowed to maintain it free of vegetation. Based on 2021 data, this area is occupied by four pairs of coastal California gnatcatchers. The establishment of the UxS Southern Test Area would result in the minor loss of occupied habitat with the potential for increased edge effects as UxS, equipment, and personnel transit along the test area. Per CAGN-4, vegetation trimming would be conducted outside of the coastal California gnatcatcher breeding season.

Two additional impacts from humans and vehicles conducting training and testing activities under Alternative 1 are (1) the potential for increased spread of nonnative invasive plant species through off-trail activities associated with soil compaction and erosion; and (2) the potential for wildland fire (from expenditure of small time-fused explosives and non-live fire training rounds), which can be exacerbated by the spread of nonnative invasive species. Nonnative invasive plant species are often adapted to proliferate in disturbed areas within and adjacent to native vegetation communities, which may lead to

a deterioration of native vegetation communities. Measures to reduce the potential spread of nonnative invasive species are detailed in CM-6 and CM-7. Training and testing activities that use training rounds have a low potential to result in a wildland fire. However, if a wildland fire were to ignite and spread within NBPL, it may result in habitat damage and loss of coastal California gnatcatchers and other special-status species. As detailed in CM-8, the potential for wildland fire would be minimized through the implementation of the Wildland Fire Management Plan (National Park Service & U.S. Department of the Navy, 2012), which is currently being updated. Furthermore, site-specific and condition specific measures (as described in Section 3.1.3.2.2 [Non-Federally Listed Special-Status Plant Species]) would be included in training prior to scheduling training areas on NBPL.

Impact Analysis

Using the coastal California gnatcatcher habitat model (detailed in Section 3.1.2.5.2, Coastal California Gnatcatcher Habitat Model), an assessment was completed to determine the number of pairs that may be impacted by each of the Alternative 1 training and testing activities. The types of impacts discussed above were compared with the coastal California gnatcatcher habitat model and an estimation of the number of coastal California gnatcatcher pairs was determined as is discussed in the following sections.

An increase in the number of UAS and UxS annual events as compared to existing conditions, coupled with the use of UAS Group 2 Heavy, has the potential to cause noise and physical disturbance to resident coastal California gnatcatchers. Additionally, UAS may be viewed as an aerial predator, if flying low over coastal California gnatcatcher habitat. It is assumed the UAS and UxS would be deployed from the existing UxS Development and Integration and Experimentation Areas. These areas are surrounded by occupied coastal California gnatcatcher habitat (Figure 3-3). With implementation of CAGN-5, no coastal California gnatcatcher pairs are anticipated to be impacted.

No impacts on coastal California gnatcatchers are anticipated from an increase in annual UxS on-road test and integration events. These events occur on existing roads and other maintained areas, generate minimal noise, and are ongoing activities adjacent to occupied coastal California gnatcatcher habitat. The closest nest was 40 feet east of Woodward Road and because activities are generally transitory, no impacts are anticipated from an increase in annual events.

Impacts would occur on resident coastal California gnatcatchers in occupied habitat around the proposed UxS Southern Test Area from Alternative 1 (Figure 3-3). This area includes an existing but abandoned two-track unpaved road flanked by occupied coastal California gnatcatcher habitat. Vegetation would be trimmed back (outside of the coastal California gnatcatcher breeding season per CAGN-4) to maintain a 10-foot wide unpaved road where UxS testing would occur. While the vegetation was mapped in 2009 as disturbed and big saltbush (for a combined acreage of 0.32 acre), some of the habitat is unpaved road and some is adjacent vegetation. The area would be maintained long term through periodic vegetation trimming (outside of the coastal California gnatcatcher breeding season per CAGN-4). Hence, there would be permanent loss of a small linear portion of occupied coastal California gnatcatcher habitat along the existing unpaved road. In addition to permanent vegetation removal, the physical presence of UxS and personnel for training is anticipated to impact four coastal California gnatcatcher pairs.

While implementation of CAGN-1 and CAGN-2 (detailed in Table 3-15) may reduce impacts on nesting coastal California gnatcatchers, disturbance to four pairs of coastal California gnatcatchers may occur from personnel walking through the vegetation on existing trails and while conducting off-trail activities

from an increase in OTB training activities; land navigation; rappelling; cliff climbing/assault; foot patrolling; blank firing; and from CBRN training.

Other training and testing activities, namely special reconnaissance, combat skills, chemical/biological warfare agent/homemade explosive hazards, nuclear hazards, force protection, and insertion and extraction training would contribute to the collective impacts on coastal California gnatcatcher pairs primarily from noise and human presence as previously described. No additional coastal California gnatcatcher pairs are assumed impacted by these additional activities.

Since breeding was documented on NBPL in 2015, coastal California gnatcatchers have increased in population size across NBPL and as of 2021, at least 18 pairs occupy territories across most of the suitable habitat on NBPL. Most coastal California gnatcatchers within the Proposed Action Area occur on the western side of NBPL, which coincides with where the majority of Proposed Action activities would occur. Alternative 1 would increase the annual number of training and testing events, including the use of new areas for training activities, and expand activities that increase impacts on coastal California gnatcatchers, primarily on the western side of NBPL. To prevent double counting, each coastal California gnatcatcher pair was counted only once, if it would be affected by one or more of the Alternative 1 activities. Despite the implementation of avoidance and minimization measures in Table 3-15, Alternative 1 is anticipated to result in impacts on seven coastal California gnatcatcher pairs annually from minor habitat loss and harassment.

3.1.3.3 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

Under Alternative 2, the same number of training and testing events analyzed under Alternative 1 would be conducted, with the additional use of two unimproved HLZs. These two HLZs would be located on existing roads, would involve no vegetation trimming and no soil stabilizers, and would be used up to three times annually for approximately 10–15 minutes during each event. The HLZs are proposed for use outside of the avian breeding season (September 1 through February 14). The only additional impacts analyzed under Alternative 2 that differ from Alternative 1 include the potential for increased noise, vibration, and rotorwash during brief helicopter use of the HLZs.

3.1.3.3.1 Vegetation Alliances and Other Land Cover Types

Impacts on vegetation alliances and other land cover types would be the same as previously analyzed under Alternative 1 because there would be no vegetation trimming or disturbance during creation of the two unimproved HLZs. There would be temporary impacts from rotorwash to vegetation adjacent to the HLZs while aircraft take off, land, and temporarily hover over the HLZs. However, this additional source of directed wind would be temporary (10–15 minutes, three times a year). Therefore, Alternative 2 is anticipated to result in no additional impacts on vegetation alliances and other land cover types.

3.1.3.3.2 Non-Federally Listed Special-Status Plant Species

Impacts on non-federally listed special-status plant species would be the same as previously analyzed under Alternative 1. No impacts are anticipated from the temporary use of the two HLZs, and hence Alternative 2 is anticipated to result in no additional impacts on non-federally listed special-status plant species.

3.1.3.3.3 Federally Listed Plant Species

Impacts on Orcutt's spineflower would be the same as previously analyzed under Alternative 1 as there are no known locations or high quality habitat near the proposed HLZs. No impacts are anticipated from

the temporary use of the two HLZs, and hence Alternative 2 is anticipated to result in no additional impacts on Orcutt's spineflower.

3.1.3.3.4 Non-Federally Listed Special-Status Wildlife Species

Impacts on non-federally listed special-status wildlife species would be the same as previously analyzed under Alternative 1. There may be minor additional impacts from the temporary use of two HLZs, especially for MBTA-protected birds, however the HLZs are proposed for use outside of the avian breeding season (September 1 through February 14) as detailed in MBTA-2. Therefore, while use of the HLZs may temporarily disturb birds in the nearby vicinity, impacts on nesting birds would not occur. With incorporation of this conservation measure, Alternative 2 is anticipated to result in no additional impacts on non-federally listed special-status wildlife species.

3.1.3.3.5 Federally Listed Wildlife Species

Impacts on coastal California gnatcatchers would be the same as Alternative 1, with additional impacts from use of two HLZs. Temporary impacts may occur from noise, visual presence, vibration, and rotorwash from occasional use of the HLZs. The HLZs are proposed for use three times annually with aircraft temporarily using them for 10–15 minutes during landing, brief hovering, and takeoffs. Hence, the noise effect would be temporary and for a short duration.

There is also the potential for helicopter rotorwash to disturb birds. Disturbance from helicopter rotorwash would be short in duration and temporary, may extend outward several hundred feet, and would be restricted to the vegetation immediately adjacent to the two proposed HLZs, but would not occur during the breeding season.

Based on historical coastal California gnatcatcher data, both HLZs are located within occupied habitat with one pair around the northern HLZ location and another pair located around the southern HLZ location. As detailed in MBTA-2 (Table 3-15), the HLZs would not be used during the avian breeding season. Therefore, the additional impacts on coastal California gnatcatchers from short, temporary use of the HLZs outside of the breeding season is unlikely to result in additional impacts beyond those detailed under Alternative 1. Consequently, Alternative 2 may result in impacts on seven coastal California gnatcatcher pairs annually from minor habitat loss and harassment.

3.2 Noise Environment

This section of this EA describes potential impacts related to noise as a result of the Proposed Action and Alternatives. Types or sources of noise and the effects of noise on people and associated sensitive receptors in the human environment are discussed in this section.

Sound consists of minute vibrations that travel through a medium, such as air or water, and can be sensed by the human ear. Noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although continuous and extended exposure to high noise levels can cause hearing loss, the principal human response to noise is annoyance. An individual's response to a noise event is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

3.2.1 Regulatory Framework

3.2.1.1 Noise Control Act

The Noise Control Act of 1972, as amended, directs all federal agencies to carry out programs within their jurisdiction in a manner that promotes an environment free from noise that jeopardizes health and welfare, to the fullest extent within agency authority.

3.2.1.2 Federal Interagency Committee on Urban Noise

The federal government suggests land-use compatibility criteria for different noise zones; however, land-use compatibility is regulated at the local level. Based on the guidelines in the Federal Interagency Committee on Urban Noise (1980), residential areas and schools are considered compatible where the Day-Night average sound level (DNL) is less than or equal to 65 dBA. Outdoor recreational activities are compatible with noise levels less than or equal to 70 dBA. Parks are compatible with noise levels less than or equal to 75 dBA (Federal Interagency Committee on Urban Noise, 1980).

3.2.1.3 United States Environmental Protection Agency Noise Standards

The EPA determined a 24-hour exposure level of 70 dB as the level of environmental noise at which no measurable hearing loss would be expected to occur over a lifetime (U.S. Environmental Protection Agency, 1974). This exposure level is also the threshold for hearing loss avoidance.

3.2.1.4 U.S. Occupational Safety and Health Administration

Title 29 CFR contains the U.S. Occupational Safety and Health Administration's principal set of rules and regulations issued by federal agencies regarding occupational noise exposure. Specifically, regulations and standards governing general industry are provided in 29 CFR part 1910.95.

3.2.1.5 Existing Management Practices

Naval Facilities Planning in the Noise Environment (Publication P-970) provides allowable noise levels and guidance for selecting a site for new facilities within the noise environment of military installations. The document also discusses noise reduction techniques to render marginally acceptable locations suitable for use (Naval Facilities Engineering Command, 1978).

3.2.2 Approach to Analysis

3.2.2.1 Basics of Sound

The loudest sounds detected comfortably by the human ear have intensities a trillion times higher than sounds that can barely be detected. Therefore, using a linear scale to represent sound intensity is not feasible. The dB is a logarithmic unit used to represent the intensity of a sound, also referred to as the sound level. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. The most common scale for characterizing sound is the dBA, which gives greater weight to the frequencies of sound to which the human ear is most sensitive. It is correlated with annoyance caused by noise sources such as traffic and construction. Figure 3-5 provides typical A-weighted noise levels in various indoor and outdoor environments.

Some noise sources (e.g., air conditioner, vacuum cleaner) are measured as continuous sounds that maintain a constant sound level for a period of time. Other sources (e.g., automobile, heavy truck) are measured by the maximum sound produced during an event, such as a vehicle passing by. Other sounds (e.g., urban daytime, urban nighttime) are measured as averages taken over extended periods of time.

A variety of noise metrics have been developed to describe noise over different time periods, as discussed below.

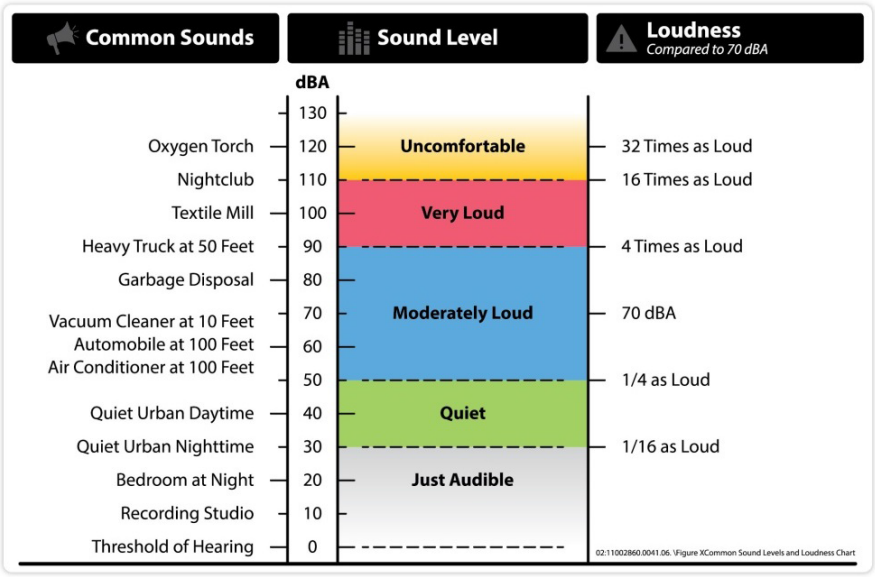

Figure 3-5: Typical A-Weighted Environmental Noise Levels

3.2.2.2 Noise Metrics

A metric is a system for measuring or quantifying a particular characteristic of a subject. Since noise is a complex physical phenomenon, multiple noise metrics help to more accurately quantify the noise environment. The noise metrics used in this EA are summarized below.

3.2.2.3 Day-Night Average Sound Level

The DNL metric is the energy-averaged sound level measured over a 24-hour period, with a 10 dB penalty assigned to noise events occurring between 10 p.m. and 7 a.m. (acoustic night). The Community Noise Equivalent Level (CNEL) is utilized in California, which adds a second penalty to noise events between 7 p.m. and 10 p.m. DNL/CNEL values are average quantities, mathematically representing the continuous sound level that would be present if all variations in sound level that occur over a 24-hour period were averaged to have the same total sound energy. DNL is the standard noise metric used by the U.S. Department of Housing and Urban Development, Federal Aviation Administration, EPA, and the DoD. Most people are exposed to sound levels of 50–55 DNL or higher on a daily basis. Research indicates about 87 percent of the population is not highly annoyed by outdoor sound levels below 65 dB DNL (Federal Interagency Committee on Urban Noise, 1980). Therefore, the 65 dB DNL noise contour is used to determine compatibility of military operations with local land use.

3.2.2.4 Equivalent Sound Level

Equivalent Sound Level, measured in dB, is a cumulative noise metric that represents the average sound level (on a logarithmic basis) over a specified period of time—for example, an hour, a school day, daytime, nighttime, weekend, facility rush periods, or a full 24-hour day (i.e., the equivalent sound level for a full 24-hour day is similar to the DNL metric but for the fact that the DNL metric includes the additional 10 dB for those events during acoustic night).

3.2.2.5 Noise Effects

Some studies have linked increases in noise with human health effects, such as hearing impairment, sleep disturbance, cardiovascular effects, and psychophysiological effects (U.S. Army Corps of Engineers, 2012; Van Kempen et al., 2002). Both short- and long-term exposure to very loud noises and long-term exposure to lower levels of sound (chronic exposure) can affect health. Damage to hair cells of the cochlea (the auditory portion of the inner ear) and hearing impairment can be caused by acute exposure to sounds greater than 120 dB (Babisch, 2005; Goelzer et al., 2001).

3.2.2.6 Propagation of Sound in the Environment

In an ideal setting in which sound propagates away from a point source in air without any outside influence (e.g., a barrier reflecting or attenuating the sound), sound energy radiates uniformly outward in all directions from the source in a pattern referred to as spherical spreading (noise in relation to biological resources, as well as how sound propagates in water, is discussed in Section 3.1, Biological Resources). As sound energy propagates away from the sound source, both the sound level and frequency change. For each doubling of distance from the source, the sound level attenuates (or drops off) at a rate of 6 dBA.

When a sound is not from a single point source but is instead from multiple sources along a line, like the noise made by the continuous movement of vehicles on a highway, the source of the sound appears to emanate from a linear source rather than from a point source. The sound level from a linear source decreases by approximately 3–4 dBA with a doubling of the distance from the source (Goelzer et al., 2001).

In a real-world setting, several factors can influence how sound propagates in the environment; the ideal case of spherical spreading is an approximation of reduction with distance. Wind is the single most important meteorological factor within approximately 500 feet of the sound source, while vertical air temperature gradients are more important in sound propagation over longer distances. Other atmospheric conditions such as air temperature, humidity, and turbulence also can have a major effect on received sound levels.

Whether natural or manmade, a large object or barrier in the path between a sound source and a receptor can reduce sound levels substantially. The impact of this shielding depends on the size and material of the object as well as the frequency content of the sound source. Natural terrain, buildings, and walls can serve as noise barriers, often reducing sound levels by 5–10 dB.

3.2.3 Affected Environment

NBPL lies outside the 65 dBA noise contours generated by aircraft activity at San Diego International Airport and Naval Air Station North Island (City of San Diego, 2007). The primary noise sources at the project site are pumps and equipment associated with industrial and naval operations. Nearby ambient sources include vessel traffic in the channel, vehicular traffic, operational noise from the Point Loma Wastewater Treatment Plant immediately south of the Rural Search Training Village, and air traffic associated with Naval Air Station North Island, the U.S. Coast Guard Air Station, and San Diego International Airport.

The NBPL waterfront area is an industrial area, where ambient (i.e., background) noise levels are typically higher than in residential areas. Sensitive receptors within NBPL boundaries include the NBPL child development center (day care facility for military personnel) located at Building 377 on Myers Road and a cluster of dormitories for NBPL submarine base personnel on Kerrick Road near Ballast Point.

The nearest sensitive receptor outside the NBPL boundary is the suburban residential neighborhood (La Playa) that borders NBPL to the north. Vehicle traffic on the roadways that provide the main access to the Point Loma peninsula (Rosecrans Street and Catalina Boulevard) is the main source of ambient noise in the residential neighborhood (U.S. Department of the Navy, 2007). Also audible are periodic aircraft from San Diego International Airport, and military aircraft on Naval Air Station North Island. Noise from trucks, along with periodic construction in the area, also contributes to the ambient sound levels. The City of San Diego exterior and construction noise ordinances apply at the NBPL property boundary.

3.2.4 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to sensitive receptor sites.

For the purpose of this analysis, operations that are meant to "leave no trace," are conducted stealthily, or produce minimal noise outside the immediate vicinity of the activity are not analyzed in detail in this section. OTB (without any IED or simunition use); land navigation; foot patrolling; Chemical, Biological, Radiological and Nuclear training; and special reconnaissance would not be considered a substantial source of off-site sound. The analysis below details noise events from UAS testing, OTB activities that include the use of simunitions or blanks, IED training, and training including helicopters (Alternative 2 only). Though Chapter 2 (Proposed Action and Alternatives) outlines activities by the various commands, this analysis aggregates the noise events into the categories just mentioned.

Potential Noise Impacts:

- Under the No Action Alternative, EET usage could be considered intrusive, but community noise levels would not exceed 65 dBA.
- Under Alternative 1, EET and blanks could be considered intrusive, but community noise levels would not exceed 65 dBA.
- Under Alternative 2, EET, blanks, and usage of helicopters during insertion and extraction training could be considered intrusive, but community noise levels would not exceed 65 dBA.

3.2.4.1 No Action Alternative

3.2.4.1.1 Unmanned Aircraft System Usage

The Navy currently conducts UAS training using Group 1 and Group 2 UAS platforms (not exceeding 55 lb.). As described in Section 2.3.1.1.2 (Naval Information Warfare Center Pacific Research, Development, Testing, and Evaluation Activities), certified operators conduct UAS operations at NBPL on approved flight schedules in designated areas, marked as PL-1 through PL-10 in Figure 2-1, with an authorized flight profile up to 1,500 feet above ground level. The designated areas provide features conducive for different mission needs and allow for concurrent flight events as necessary. UAS are launched by hand or take off vertically. UAS operations may be scheduled 24 hours a day, seven days a week. UAS are launched and recovered in developed areas on NBPL. Minimum altitudes are established such that the 60 dBA threshold for avian harassment used by USFWS is not exceeded.

Under the No Action Alternative, the Navy would continue to operate UAS with approximately 600 training events per year, averaging two flight events per day. Given the low number of daily flights, the distance of most airspaces from off-site sensitive receptors, and the low noise levels of UAS at altitude, it is unlikely that UAS usage would negatively impact community noise levels off-site of NBPL.

3.2.4.1.2 Blanks/Simunitions

As described in Section 2.3.1.2 (Naval Special Warfare Command), the Navy currently performs up to six Over-The-Beach activities annually, mostly at night; some may involve the use of simunitions. Simunitions used include marking cartridges, which are fired from standard weapons, though with less energy and less noise than a normal round. Simunitions used in training have a firing noise level of 104 dBA at 3 ft. (Ultimate Training Munitions, 2021). Given attenuation due to distance, the noise level of the simunition would drop to below 60 dBA within 500 feet of the firing location and would decrease further with increasing distance. At these levels, it is highly unlikely that noise from simunitions would be audible at any sensitive receptors.

3.2.4.1.3 Explosive Energetic Tool Usage

Currently Navy personnel train to disable simulated IEDs at NBPL. To train to disable IEDs, EOD personnel would use energetic explosive tools to disable simulated explosive devices. The Navy has performed internal acoustic testing of similar devices and found that at distances of 125 feet from an EET detonation, the maximum received sound level was approximately 112 dBA. With attenuation due to distance, the anticipated noise level at the nearest sensitive receptor off-base could be approximately 88 dBA. Table 3-5 shows the approximate received level at several of the sensitive receptors adjacent to NBPL. It is important to note that these estimated received levels are based on the 6 dB reduction per doubling of distance described above. In the real world, items such as vegetation, topography, wind, and buildings could all contribute to further attenuation of the noise event. These events would certainly be audible (especially if outside) but would only last for less than a second each. However, sound levels inside houses or buildings are typically 25 dB less than outside the structure due to the increased attenuation of sound through building materials.

Table 3-5: Improvised Explosive Device Usage and Approximate Received Sound Levels

Location	Sensitive Receptor	Distance from Detonation (miles)	Approximate Received dBA
Battery Whistler	Closest Residential Area	0.37	88
	Closest Recreational Area (Kellogg Beach)	0.77	81
	Point Loma Nazarene University	0.83	81
	Sunset View Elementary	1.44	76
	Silvergate Elementary	2.02	73
	Westminster Presbyterian Preschool	1.43	76
	Cabrillo Elementary	1.51	76
	Child Development Center, NBPL	0.41	87

Notes: L_{max} = maximum sound level, NBPL = Naval Base Point Loma

Under the No Action Alternative, the Navy would conduct 30 events per year, with approximately five EETs being detonated per training event. These detonations would occur over the course of the training event and could be detonated at the rate of two to three EETs an hour. Because of their short duration, these impulsive events do not contribute significantly to the noise environment, in terms of CNEL, as two detonations an hour would only slightly raise the ambient CNEL and would not raise the hourly equivalent sound level above 65 dBA. At these levels, it is not anticipated that noise from IED training would represent a notable degradation of the acoustic environment. However, these could be considered intrusive events, especially at night time, when each detonation would be more audible over quieter ambient night-time conditions. Though the community noise levels are not anticipated to be

negatively impacted, the Navy would notify the public prior to any night-time events in order to minimize public surprise or concern. Therefore, implementation of No Action Alternative would not result in significant impacts on the noise environment.

3.2.4.2 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

3.2.4.2.1 Unmanned Aircraft System Usage

Under Alternative 1, the Navy proposes to increase the use of Group 1 and 2 UAS platforms from 600 annual flights to 1,200 annual flights. This equates to approximately three to four flight events a day. Additionally, the Navy proposes to operate Group 2 Heavy UAS with approximately 100 training events per year, averaging two flight events per week. UAS would continue to be flown at altitudes resulting in approximate noise levels on the ground below 60 dBA. Additionally, noise received at sensitive receptors would be less than that directly below the UAS activity, further reducing the potential for degradation of the noise environment.

Given the low number of daily flights, the distance of most airspaces from off-site sensitive receptors, and the low noise levels of UAS at altitude, it is unlikely that UAS usage would negatively impact community noise levels off site of NBPL.

3.2.4.2.2 Blanks/Simunitions

Under Alternative 1, the Navy proposes to increase the number of Rappelling, Cliff Climbing/Assault, Foot Patrolling, Blank Firing, and CBRN Training activities from 6 to 64 annual events (40 of those events would occur at night), which could include the use of blanks. For reference, a 5.56 mm blank produces a peak sound level of about 144 dB (un-weighted) at a distance of 3 feet (Ultimate Training Munitions, 2021). This peak level would attenuate with distance, and at the closest sensitive receptor (approximately 5,000 feet) the received level would be approximately 78 dB (unweighted). The actual A-weighted peak level would be less than that, as the A-weighting reduces the influence of very low and very high frequency components of a noise event. Additionally, intervening structures or significant changes in topography can reduce the sound level at offsite sensitive receptors by 15 to 20 dBA.

Though the training event takes several hours, if 150 blank rounds were fired over the course of an hour, the one-hour Equivalent Sound Level at the closest sensitive receptor would rise to approximately 64 dB. Again, the A-weighted level would likely be slightly lower. Therefore, it is not anticipated that community noise levels would increase above 65 dBA whether the activity occurs during day or night. However, and similar to EET use, the individual noise from firing could be considered intrusive at adjacent properties and sensitive receptors. The Navy would issue a public notification prior to any event that could use blanks as part of the training to alert the public of the brief sounds from blank firing.

3.2.4.2.3 Explosive Energetic Tool Usage

Under Alternative 1, the Navy would increase IED training at NBPL from 30 to 33 events per year, with approximately five EETs being detonated per training event. These detonations would occur over the course of the training event and could be detonated at the rate of two to three EETs an hour. As mentioned in Section 3.2.4.1.3 (EET Usage), because of their short duration, these impulsive events do not contribute significantly to the noise environment, in terms of CNEL, as two detonations an hour would not raise the hourly equivalent sound level above 65 dBA and would only slightly raise the ambient CNEL. These could be considered intrusive events, especially at nighttime, when each detonation would be more audible over quieter ambient night-time conditions. However, at the levels

described, it is not anticipated that noise from IED training would represent a notable degradation of the acoustic environment or community noise levels. Due to the limited contribution of this noise to the DNL levels, implementation of Alternative 1 would not result in significant impacts on the noise environment.

3.2.4.3 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

3.2.4.3.1 Unmanned Aircraft System Usage

Similar to Alternative 1, Alternative 2 proposes to increase the use of Group 1 and 2 UAS platforms from 600 annual flights to 1,200 annual flights. As presented for Alternative 1, given the low number of daily flights, the distance of most airspaces from off-site sensitive receptors, and the low noise levels of UAS at altitude, it is unlikely that UAS usage would negatively impact community noise levels off-site of NBPL.

3.2.4.3.2 Blanks/Simunitions

Similar to Alternative 1, Alternative 2 proposes to increase the number of Rappelling, Cliff Climbing/Assault, Foot Patrolling, Blank Firing, and CBRN Training activities from 6 to 64 annual events (40 of those events would occur at night), which could include the use of blanks. As with Alternative 1, it is not anticipated that community noise levels would increase above 65 dBA. However, the Navy would issue a public notification prior to any event that could use blanks as part of the training to alert the public of the brief sounds from blank firing.

3.2.4.3.3 Explosive Energetic Tool Usage

Similar to Alternative 1, the Navy would increase IED training at NBPL from 30 to 33 events per year, with approximately five IEDs being detonated per training event. These detonations would occur over the course of the training event and could be detonated at the rate of two to three IEDs an hour. Because of their short duration, these impulsive events do not contribute significantly to the noise environment, in terms of CNEL, as two detonations an hour would not raise the hourly equivalent sound level above 65 dBA and would only slightly raise the ambient CNEL. At these levels, it is not anticipated that noise from IED training would represent a notable degradation of the acoustic environment.

3.2.4.3.4 Helicopter Usage

Under Alternative 2, proposed training would also include insertion and extraction of a small team of personnel and equipment from one of two unimproved HLZs. Approximately 10 percent of the insertion or extraction training activities identified under Alternative 1 would include the use of rotary-wing aircraft under Alternative 2 (approximately three events per year). Insertion/extraction flights would approach the HLZs from directly west of the HLZs, typically flying at an elevation of 1,000 feet above ground level or less and departing in the opposite direction, only momentarily sitting stationary on the HLZ for loading or unloading (Figure 2-3). Helicopters used in these exercises could originate from numerous locations (airfields or offshore platforms) but would always approach these HLZs from the west and coordinate with other commands to ensure safety.

A H-60 hovering approximately 30 feet off the ground would generate noise levels on the ground of nearly 105 dBA (U.S. Department of the Army, 2018). Maximum noise levels received under the helicopter when flying overhead at 1,000 feet would be approximately 74 dBA (Table 3-6) based on attenuation with distance which likely would be further reduced by the locations of the HLZs and the terrain and vegetation of the area around the HLZs. Combining these factors and that only three events

would be conducted each year, it is not anticipated that day-night levels at sensitive receptors would change. Individual activities may be audible but would not notably increase the CNEL levels at sensitive receptors.

Table 3-6: Helicopter Usage and Approximate Received Sound Levels

Location	Sensitive Receptor	Distance from Landing Zone (miles)	Approximate Received dBA
HLZ 1	Closest Residential Area	1.72	55
	Closest Recreational Area (Cabrillo National Monument)	0.63	64
	Fort Rosecrans National Cemetery	0.13	78
	Sunset View Elementary	2.78	51
	Silvergate Elementary	3.34	50
	Point Loma Nazarene University	2.12	54
	Child Development Center, NBPL	1.11	59
HLZ 2	Closest Residential Area	0.47	67
	Closest Recreational Area (Sunset Cliffs Natural Park)	0.52	66
	Point Loma Nazarene University	0.47	67
	Sunset View Elementary	1.15	59
	Silvergate Elementary	1.81	55
	Cabrillo Elementary	1.51	57
	Child Development Center, Naval Base	0.83	62

Note: L_{max} = maximum sound level, NBPL = Naval Base Point Loma

Under Alternative 2, noise impacts from NBPL training activities surrounding communities are expected to be minimal. Therefore, implementation of this action alternative would not result in significant impacts on the noise environment.

3.3 Coastal Resources

This discussion of coastal resources includes shorelines and topography, groundwater and geology, and soils and erosion within areas potentially impacted by the proposed action. None of the proposed activities described in Chapter 2 (Proposed Action and Alternatives) would occur in or around surface waters or wetlands. In-water activities (activities that begin at the shoreline) are not considered in this EA as they are addressed in the HSTT EIS/OEIS (U.S. Department of the Navy, 2018a). Accordingly, wetlands and surface water resources are not analyzed in this EA. Wildlife and vegetation are addressed

in Section 3.1 (Biological Resources). Shorelines can be located along marine waters, brackish estuaries, or freshwater bodies. Physical dynamics of shorelines include tidal influences, channel movement and hydrological systems, flooding or storm surge areas, erosion and sedimentation, water quality and temperature, presence of nutrients and pathogens, and sites with potential for protection or restoration. Shoreline ecosystems are vital habitat for multiple life states of many fish, birds, reptiles, amphibians, and invertebrates. Different shore zones provide different kinds and levels of habitat, and when aggregated, can significantly influence life. Organic matter that is washed onto the shore, or "wrack," is an important component of shoreline ecosystems, providing habitat for invertebrates, soil and organic matter, and nutrients to both the upland terrestrial communities and aquatic ecosystems.

Coastal Resources Potential Impacts:

Under the No Action Alternative, baseline activities would continue. There would be no significant impact on coastal resources.

Under Alternative 1, most of the proposed testing and training would either be associated with UAS, occur on existing trails and disturbed surfaces, or have minimal impacts on coastal zone resources. There would be no significant impacts on coastal resources.

Under Alternative 2, the designation of two new unimproved HLZs would require limited site clearance and grading, along with periodic maintenance (vegetation clearance to maintain the LZ). Impacts would be minimized through erosion and stormwater runoff controls. There would be no significant impacts on coastal resources.

Topography is typically described with respect to the elevation, slope, and surface features found within a given area. The geology of an area may include bedrock materials, mineral deposits, and fossil remains. The principal geological factors influencing the stability of structures are soil stability and seismic properties. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility determine the ability for the ground to support structures and facilities. Soils are typically described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use.

Groundwater is water that flows or seeps downward and saturates soil or rock, supplying springs and wells. Groundwater is used for water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition. Sole source aquifer designation provides limited protection of groundwater resources that serve as drinking water supplies.

3.3.1 Regulatory Setting

The Coastal Zone Management Act (CZMA) of 1972 provides assistance to states, in cooperation with federal and local agencies, for developing land and water use programs in coastal zones. Section 307 of the CZMA, called the "federal consistency" provision, provides states with the opportunity to comment on and review federal activities that may affect a state's coastal uses or resources. Generally, federal consistency requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program to the maximum extent possible.

The Navy reviewed the activities described in Chapter 2 (Proposed Action and Alternatives) and determined that training activities at NBPL require the preparation of a consistency evaluation as a federal agency activity. This EA includes analyses on different resource areas potentially affected by training and testing activities at NBPL, which include biological resources (Section 3.1 [Biological Resources]) at NBPL and in the nearshore environment, air quality (Section 3.5 [Air Quality]), and public access and public health and safety (Section 3.6 [Public Health and Safety]). The Navy's consistency evaluation will also include information included in this section, as described below (Section 3.3.2.1 [Shorelines and Topography], Section 3.3.2.2 [Groundwater and Geology], and Section 3.3.2.3 [Soils and Erosion]). The Navy's consistency evaluation will be submitted to the California Coastal Commission and include a determination of whether these activities are consistent with Section 307 of the CZMA (consistent to the maximum extent practicable with the enforceable policies of the California Coastal Commission).

3.3.2 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under coastal resources. Section 3.3.2.1 (Shorelines and Topography) provides an overview of the terrain along the Point Loma peninsula. Section 3.3.2.2 (Groundwater and Geology) describes the geological setting including a description of seismic faults in the area. Section 3.3.2.3 (Soils and Erosion) describes specific soil units on the peninsula and their susceptibility to erosion. As stated previously, the Navy's negative determination (prepared in accordance with Section 307 of the CZMA) will be informed by other sections of this EA, notably Section 3.1 (Biological Resources), Section 3.5 (Air Quality), and Section 3.6 (Public Health and Safety).

3.3.2.1 Shorelines and Topography

NBPL is on the Point Loma peninsula, which extends 4 mi. into the Pacific Ocean, providing shelter to the San Diego Bay. The rugged peninsula is divided by several natural drainages and canyons. Slopes ranging from 40 to 75 percent are common, and few areas on the peninsula are considered buildable (i.e., those areas with less than a 20 percent slope). The west side of the peninsula (where most of the proposed testing and training activities would occur) slopes up from the Pacific Ocean, exposing a rugged coastline with eroded sandstone cliffs above vast rocky benches, boulder fields, and small sandy beaches. Slopes gradually increase for a short distance from the ocean, then increase rapidly to the ridge in the center of the peninsula. Slopes on the east side of the peninsula also increase rapidly from the San Diego Bay to the central ridge. Elevations along the top of the ridge average approximately 350–375 feet above mean sea level and, in a few locations, rise to over 420 feet above mean sea level (U.S. Department of the Navy, 2019).

3.3.2.2 Groundwater and Geology

The Point Loma peninsula lies within the Peninsular Ranges Geomorphic Province, which consists of north/south-trending mountain ranges and associated valleys with a belt of marine terraces along the coast. Overall, the geology of the peninsula is made up of marine sandstone and siltstone (U.S. Department of the Navy, 2019).

Several seismic faults emerging from three main fault zones (Rose Canyon, La Nacion, and Point Loma) are beneath San Diego County. These fault zones are considered potentially active, and the potential for severe earthquakes exists; however, no historic ground surface ruptures have been recorded in these fault zones. Point Loma fault crosses northern Point Loma along the route of Nimitz Boulevard, while the Fort Rosecrans fault, which consists of a series of step-faults running along the Point Loma ridge,

extends from north of the installation boundary southward to the hillside above Ballast Point. Combined, these faults make up the Point Loma Fault Zone (U.S. Department of the Navy, 2019).

3.3.2.3 Soils and Erosion

There are four main soil series on Point Loma: the Carlsbad, Gaviota, Hambright, and Reiff series. The peninsula also has small areas of coastal beaches, marina loamy coarse sand, rough broken land, steep gullied land, and terrace escarpments. The following text provides general descriptions of the primary soils mapped on Point Loma.

Carlsbad series, 2–30 percent slopes: Moderately well-drained to well-drained, moderately deep, gravelly loamy sands occurring over a hardpan. These soils formed in material weathered in place from soft ferruginous sandstone. On Point Loma, this soil type lies beneath the Fort Rosecrans National Cemetery, developed lands, and a small amount of coastal sage scrub (U.S. Department of the Navy, 2019).

Gaviota series, 15–30 percent slopes: Well-drained, shallow, fine sandy loams that formed in material weathered from marine sandstone. This soil type is mapped over a large area on Point Loma (U.S. Department of the Navy, 2019).

Hambright series, 30–75 percent slopes: Well-drained, shallow, gravelly clay loams that formed in material derived from shaly breccia. These soils are in mountainous areas (U.S. Department of the Navy, 2019).

Reiff series, 0–9 percent slopes: Well-drained, very deep (as thick as 90 inches on shoreline cliffs), fine sandy loams formed in alluvium derived from granitic rock soils. These soils occur on alluvial fans and ocean terraces (U.S. Department of the Navy, 2019).

3.3.3 Environmental Consequences

In this EA the analysis of coastal resources looks at the potential impacts on shorelines and topography, groundwater and geology, and soils and erosion. Groundwater analysis focuses on the potential for impacts on the quality, quantity, and accessibility of the water. The analysis of shorelines considers if the Proposed Action would affect shoreline ecological functions such as channel movement and hydrological systems, flooding or storm surge areas, areas of erosion and sedimentation, water quality and temperature, presence of nutrients and pathogens, and sites with the potential for protection or restoration.

3.3.3.1 No Action Alternative

As described in Section 2.3.1 (No Action – Existing Testing and Training at Naval Base Point Loma), baseline testing and training activities would continue under the No Action Alternative. Section 2.3.1.1.2 (Naval Information Warfare Center Pacific Research, Development, Testing, and Evaluation Activities) describes the types of development, testing, and evaluation activities currently conducted at NIWC Pacific. Most of the activities involving UxS potentially impacting coastal resources occur in maintained areas and on paved roads (see Table 2-2 for a list of current locations for on-road test and integration activities) and would not affect coastal zone resources. Other activities currently conducted by NIWC Pacific involve UAS, which do not affect coastal resources as takeoffs and landings occur in maintained areas or previously disturbed habitat. Additionally, activities at the NBPL Transducer Evaluation Center facility, which include underwater acoustic testing of transducers, testing of remotely operated and

autonomous underwater vehicles, Navy Diver training and certification, and water-interface testing, do not affect coastal resources.

Section 2.3.1.2 (Naval Special Warfare Command) describes the unit level training conducted by NSW units, including OTB; land navigation; rappelling, cliff climbing/assault, foot patrolling, blank firing, and CBRN training; and special reconnaissance. Table 2-3 lists these training activities and their locations. Existing training activities typically use trails, unimproved roads, and paved access routes where possible, but operators are allowed to use adjacent terrain off trail depending on the objective. The Navy analyzed the potential for erosion from NSW training where they could facilitate erosion of substrates. Erosion broadly includes processes that include detachment, entrainment, transportation, and deposition of soil and other surface materials (Zachar, 2011). In the extreme, military foot traffic can affect bulk density of soils, infiltration rates, surface biomass, and surface litter, which are all factors which can contribute to erosion of substrates. Whitecotton et al. (2000) analyzed foot traffic erosion impacts over two years of intensive training at the U.S. Air Force Academy, Colorado, and estimated that soil loss was 30 times less likely at unused sites than sites used for continuous and year-round training and encampments. Most of the impacts within the training area were located within the encampment, where operators continuously inhabited the area for multiple days.

In contrast, NSW operators try to evade detection and leave no trace of their presence (i.e., vegetation should remain untrampled, branches should remain unbroken, and footprints should not be visible). Each training exercise may be preceded by up to two hours of site preparation the day before (e.g., deployment of illumination on trail) and followed by up to four hours of cleanup and assessment. Overall, the Navy anticipates very little discernable impact on vegetation and soils from the training. Off-trail training under the No Action Alternative, by design, has minimal impacts as it trains participants to avoid detection. Therefore, erosion of soils and degradation of topography would not likely be different than natural erosion processes in areas where the Navy does conduct training activities.

Section 2.3.1.3 (Explosive Ordnance Disposal) describes the EOD training activities conducted by EODTEU One. Table 2-4 lists the locations where EOD training activities currently occur. Disposal activities would occur on hardened surfaces with no impacts on surrounding areas.

Because of the limited use of off-trail areas, and the minimal impacts associated with testing and training proposed under the No Action Alternative, continued testing and training activities at NBPL would not result in significant impacts on coastal resources.

3.3.3.2 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

Table 2-5 lists the proposed increases in activities at the NIWC Pacific facility. Most of the proposed increases in activities are associated with UAS testing and training and would therefore not impact coastal resources. Most of the increases in UxS activities would occur on existing roads; however, Alternative 1 includes additional UxS activities in the Proposed Southern Test Area that would occur on an unimproved road. Although unimproved, this road has supported routine vehicle traffic in the past. UxS by comparison are relatively lighter vehicles and would not cause additional erosion. Minimal vegetation clearing is expected to allow UxS testing on this unimproved road.

Table 2-6 lists proposed increases in training activities by NSW. Under Alternative 1, OTB and Land Navigation are the only activities that could occur off trail. Most Land Navigation training would occur in conjunction with OTB. When using the proposed beach landing sites, operators would use trails, unimproved roads, and paved access routes where possible, but could use adjacent terrain off trail depending on the objective. From the proposed beach landing sites, typical destinations would continue

to be Battery Woodward, Robot Training Lane, Battery Whistler, and the Rural Search Training Village, but could also include other destinations within the training areas and would be coordinated with other commands to ensure safety. Off-trail training, by design, would have minimal impacts as it trains participants to avoid detection. Therefore, erosion of soils and degradation of topography would not occur.

Table 2-7 lists proposed increases EOD training activities. EOD training would occur at Robot Training Lane, Battery Woodward, Battery Woodward Bunker, Battery Whistler, and Rural Search Training Village. EOD activities would occur on hardened surfaces with no impacts on surrounding areas.

Because of the limited use of off-trail areas, and the minimal impacts associated with testing and training proposed under Alternative 1, implementation of Alternative 1 would not result in significant impacts on coastal resources. Based on the Navy's review of coastal resources potentially impacted by training and testing activities described under Alternative 1, the Navy's proposed training activities under Alternative 1 are consistent to the maximum extent practicable with the enforceable policies established by the California Coastal Commission.

3.3.3.3 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

Alternative 2 includes all of the proposed increases in testing and training activities and the designation of two unimproved HLZs on the western portion of the peninsula. HLZ establishment would not involve clearing of vegetation or grading as the HLZs would be located on existing unpaved roads. Periodic maintenance of the site would likely be required and be limited to maintaining vegetation for a clear and clean Landing Zone.

As with Alternative 1, proposed increases in testing and training activities would not result in significant impacts on coastal resources. The designation of two new unimproved HLZs would require the implementation of erosion and stormwater controls to minimize erosion and be consistent with established policies on NBPL to minimize impacts on coastal resources. Accordingly, Alternative 2's designation of two new unimproved HLZs would not result in significant impacts on coastal resources. Based on the Navy's review of coastal resources potentially impacted by training activities described under Alternative 2, the Navy's proposed training and testing activities under Alternative 1 are consistent to the maximum extent practicable with the enforceable policies established by the California Coastal Commission.

Cultural Resources Potential Impacts:

- No known archaeological resources, architectural resources, or traditional cultural properties will be significantly impacted as a result of the Proposed Action.

3.4 Cultural Resources

This discussion of cultural resources includes historic properties, architectural resources, archaeological resources, cultural items subject to the Native American Graves Protection and Repatriation Act, Indian sacred sites, and other properties of cultural significance.

3.4.1 Regulatory Setting

Cultural resources are governed by federal laws and Executive Orders, including the American Indian Religious Freedom Act; Archaeological Resources Protection Act of 1979; EO 13007, *Indian Sacred Sites*; Native American Graves Protection and Repatriation Act of 1990 (NAGPRA); and NHPA. For the purposes

of this analysis, the term "cultural resource" refers to all resources of cultural importance protected by these federal laws and Executive Orders.

The American Indian Religious Freedom Act provides protection of American Indian religious practices and the inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including, but not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

The Archaeological Resources Protection Act regulates archaeological investigation on public lands and the enforcement of penalties against those who loot or vandalize archaeological resources. The statute requires federal agencies to protect information about the locations and nature of these resources.

EO 13007 directs federal agencies to accommodate, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites.

NAGPRA provides for the disposition and repatriation of Native American and Native Hawaiian human remains, funerary objects, sacred objects, and objects of cultural patrimony. Federal agencies are required to consult with Indian tribes or Native Hawaiian organizations whenever planned activities on federal or tribal lands encounter, or are expected to encounter these cultural items, or when such items are inadvertently discovered on federal or tribal lands.

NHPA is the nation's primary historic preservation law, which defines the legal responsibilities of federal agencies for the identification, management, and stewardship of historic properties. Federal agencies' responsibility for protecting historic properties is defined primarily by sections 106 and 110 of the NHPA. Section 106 requires federal agencies to consider the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. Through consultation with interested parties, the applicable federal agency identifies historic properties potentially affected by the undertaking, assesses effects, and seeks ways to avoid, minimize, or mitigate any adverse effects on historic properties. Section 110 of the NHPA requires federal agencies to establish—in conjunction with the Secretary of the Interior—historic preservation programs for the identification, evaluation, and protection of historic properties, and to avoid adversely affecting National Historic Landmarks.

3.4.2 Affected Environment

In compliance with the NHPA, the Navy consults with regulators, American Indian, Alaska Native tribes, or Native Hawaiians, and other interested parties to identify historic properties and other cultural resources that may be impacted by the Proposed Action. Per NHPA, historic properties are defined as any district, site, building, structure, or object listed in, or eligible for listing in, the National Register of Historic Places (NRHP). For the purposes of this analysis, historic properties can be divided into three major categories:

- Archaeological resources (prehistoric and historic) include the place or places where the remnants of a past culture survive in a physical context that allows for the interpretation of these material remains.
- Architectural resources include standing buildings, structures, landscapes, and other built-environment resources of historic or aesthetic significance.
- Traditional cultural properties include properties associated with cultural practices and beliefs of a living community that are (a) rooted in the community's history, and (b) important to maintaining the continuing cultural identity of the community.

The Navy has conducted inventories of cultural resources at NBPL to identify historical properties that are listed or potentially eligible for listing in the NRHP. As summarized in the NBPL ICRMP, the entirety of NBPL has been surveyed for cultural resources with all known historic and archaeological resources documented (U.S. Department of the Navy, 2017). The ICRMP addresses all cultural resources requirements, planning, and management for the NBPL area of responsibility (U.S. Department of the Navy, 2017). A corresponding Programmatic Agreement between NBPL, California SHPO, and ACHP that was signed in 2014 and expires in 2024 is the primary NHPA compliance mechanism for NBPL.

Consistent with 36 CFR 800.16(d) and Stipulation 6 of the NBPL Programmatic Agreement, the area of potential effect (APE) for cultural resources is the geographic area or areas within which an undertaking (project, activity, program, or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. The Navy determined the APE for the Proposed Action to include terrestrial portions of NBPL and within areas for the scheduled use of UAS, existing facilities, and OTB training areas of NBPL currently used for testing and training activities. Additionally, the APE includes areas for newly proposed training and testing and range improvements, which include UAS activities, an expansion to the UxS Southern Testing Area, additional OTB training locations, additional IED training areas, and the designation of up to two unimproved HLZs.

3.4.2.1 Archaeological Resources

A total of 48 archaeological sites are recorded on NBPL lands, with the majority being comprised of prehistoric sites. Four archaeological sites within the Point Loma peninsula have been evaluated for listing in the NRHP and have been determined or recommended as eligible. The remaining archaeological sites include 13 that have been evaluated and recommended as not eligible for listing in the NRHP, nine that have been determined to have been destroyed since their original recordation, and 21 that remain unevaluated (U.S. Department of the Navy, 2017). One unevaluated archaeological site, CA-SDI-13891, is located within the APE along the existing ground navigation route where UxS testing activities occur. Site CA-SDI-13891 is a light lithic deposit consisting of one core, three flakes, and two pieces of debitage situated west of Woodward Road. Project activities are restricted to the paved surface of Woodward road in the vicinity of CA-SDI-13891 and have no impact on the site.

3.4.2.2 Architectural Resources

Architectural resources documented on NBPL lands include one historic district, the Fort Rosecrans Coastal Defense Historic District (FRCDHD), and 66 NHRP-eligible buildings, structures, or objects. The resources date to a number of eras, with noted build-ups associated with World War I and World War II. Fort Rosecrans was an Army cantonment that dominated land use on NBPL from the late 1890s through 1947, with the site being occupied by the Navy since the early 1950s. Individual NRHP-eligible resources as well as groupings include the FRCDHD, two groupings (Building A33 and the Zenith Arch), Building 190

at the San Diego Quarantine Station, and Quarters A. The FRCDHD is a discontiguous district that meets the criteria for listing in the NRHP for the role it played in defending the San Diego harbor for nearly half a century, from 1897 to 1945, and for its unique collection of buildings, structures and objects built to support that mission. The NRHP-eligible Battery Woodward and Battery Whistler are located within the APE (U.S. Department of the Navy, 2017).

3.4.2.3 Resources of Importance to Tribes

NBPL lies within the ethnographic area of federally recognized Kumeyaay tribes. The Kumeyaay Indian tribes have cultural affiliation for NBPL lands, but no Native American human remains have been intentionally excavated or inadvertently discovered on NBPL lands, nor have Native American cultural objects in archaeological collections from NBPL been determined to be subject to the NAGPRA (U.S. Department of the Navy, 2017). As discussed above, 48 archaeological sites are documented on NBPL lands, with the majority being comprised of prehistoric sites. The Navy consulted with Kumeyaay Indian tribes during the development of the Programmatic Agreement, and it was determined that the current inventory of historic and archaeological resources under the management responsibility of NBPL does not include resources eligible as Traditional Cultural Properties. NBPL does not have Tribes with treaty rights to natural resources.

3.4.3 Environmental Consequences

Analysis of potential impacts on cultural resources considers both direct and indirect impacts. Direct impacts may be the result of physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the importance of the resource; introducing visual, atmospheric, or audible elements that are out of character for the period the resource represents (thereby altering the setting); or neglecting the resource to the extent that it deteriorates or is destroyed. Indirect effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

3.4.3.1 No Action Alternative

Under the No Action Alternative, existing training and testing activities would continue within developed areas or within existing roadways or trails, and there would be no change in impacts on cultural resources. One unevaluated archaeological site, CA-SDI-13891, is located adjacent to the existing ground navigation route where UxS testing activities occur; no impact on this resource would occur as a result of the No Action Alternative as the testing activities are contained to the existing paved road surface at this location. The NRHP-eligible facilities Battery Woodward and Battery Whistler are located within the APE, but no adverse effects would occur from the continuation of existing training and testing activities. As such, no significant impacts on cultural resources would occur with implementation of the No Action Alternative.

3.4.3.2 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

As with the No Action Alternative, existing training and testing activities would continue, and there would be no change in impacts on cultural resources. No cultural resources are located in the additional Beach Landing Sites or new training areas that would be incorporated for growth or increased activities under Alternative 1. Therefore, implementation of the Preferred Alternative would not result in significant impacts on cultural resources.

3.4.3.3 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

As with the No Action Alternative, existing training and testing activities would continue, and there would be no change in impacts on cultural resources. As with Alternative 1, no cultural resources are located in the additional Beach Landing Sites or new training areas, and no cultural resources are located in the new HLZ areas proposed under Alternative 2. Therefore, implementation of this action alternative would not result in significant impacts on cultural resources.

3.5 Air Quality

This section of this EA describes air quality concerns associated with the Proposed Action. Congress passed the Clean Air Act (CAA) in 1970 and its amendments in 1977 and 1990 to improve air quality and reduce air pollution. The CAA and its amendments set regulatory limits on air pollutants and helped to ensure basic health and environmental protection from air pollution. Air pollution damages the health of people, plants, animals, and water bodies, as well as the exteriors of buildings, monuments, and statues. It also creates haze or smog that reduces visibility and interferes with aviation.

Air quality is defined by ambient concentrations of specific air pollutants the U.S. Environmental Protection Agency (EPA) determined may affect the health or welfare of the public and/or environment. The six major pollutants of concern are called "criteria pollutants": carbon monoxide (CO), sulfur dioxide (SO_x), nitrogen dioxide (NO_2), ozone, particulate matter (PM) dust particles less than or equal to 10 microns in diameter (PM_{10}), fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). Ambient air quality is reported as the atmospheric concentrations of specific air pollutants at a particular time and location. The units of measure are expressed as a mass per unit volume (e.g., micrograms per cubic meter [$\mu g/m^3$] of air) or as a volume fraction (e.g., parts per million by volume). The ambient air pollutant concentrations measured at a particular location are determined by the pollutant emissions rate, local meteorology, and atmospheric chemistry. Wind speed and direction, the vertical temperature gradient of the atmosphere, and precipitation patterns affect the dispersal, dilution, and removal of air pollutant emissions from the atmosphere.

Criteria air pollutants are classified as either primary or secondary pollutants based on how they are formed in the atmosphere. Primary air pollutants are emitted directly into the atmosphere from the source of the pollutant. Examples of primary pollutants are the smoke produced by burning wood and volatile organic compounds emitted by industrial solvents. Secondary air pollutants are those formed through atmospheric chemical reactions that usually involve primary air pollutants (or pollutant precursors) and normal constituents of the atmosphere. Ozone is a secondary pollutant that is formed in the atmosphere by photochemical reactions of previously emitted pollutants, or precursors (volatile organic compounds, nitrogen oxides, and suspended PM_{10}).

Some criteria air pollutants are a combination of primary and secondary pollutants. Particulate matter, including PM_{10} and $PM_{2.5}$, are generated as primary pollutants by various mechanical processes (e.g., abrasion, erosion, mixing, or atomization) or combustion processes. They are generated as secondary pollutants through chemical reactions or through the condensation of gaseous pollutants into fine aerosols.

3.5.1 Regulatory Setting

3.5.1.1 Criteria Pollutants and National Ambient Air Quality Standards

The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants. These standards set specific concentration limits for criteria pollutants in the outdoor air. The concentration limits were developed because the criteria pollutants are common in outdoor air, considered harmful to public health and the environment, and come from numerous and diverse sources. The concentration limits are designed to aid in protecting public health and the environment. Areas with air pollution problems typically have one or more criteria pollutants consistently present at levels that exceed the NAAQS. These areas are designated as nonattainment for the standards. If the air quality in a geographic area meets or is cleaner than the national standard, it is called an attainment area (designated "attainment/unclassifiable"). Maintenance areas are those previously designated as a nonattainment area and subsequently redesignated to attainment. Nonattainment areas for some criteria pollutants are further classified as shown below, depending upon the severity of their air quality problem, to facilitate their management:

- ozone—marginal, moderate, serious, severe, and extreme
- carbon monoxide—moderate and serious
- particulate matter—moderate and serious

States, through their air quality management agencies, are required under the CAA to prepare a State Implementation Plan (SIP) to demonstrate how the nonattainment and maintenance areas would achieve and maintain the NAAQS. The State of California has identified four additional pollutants for ambient air quality standards: visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. The California Air Resources Board has also established the more stringent California Ambient Air Quality Standards. Areas within California in which ambient air concentrations of a pollutant are higher than the state or federal standard are considered to be non-attainment for that pollutant.

3.5.1.2 Hazardous Air Pollutants

In addition to the six criteria pollutants, the EPA currently designates 187 substances as hazardous air pollutants under the federal CAA. Hazardous air pollutants are air pollutants known or suspected to cause cancer or other serious health effects, or adverse environmental and ecological effects (U.S. Environmental Protection Agency, 2015). NAAQS are not established for these pollutants; however, the EPA has developed rules and control standards that limit emissions of hazardous air pollutants from specific stationary (National Emissions Standards for Hazardous Air Pollutants) and mobile sources (Mobile Source Air Toxics). These emissions control standards are intended to achieve the maximum degree of reduction in emissions of the hazardous air pollutants, taking into consideration the cost of emissions control, non-air-quality health and environmental impacts, and energy requirements. These emissions are typically one or more orders of magnitude smaller than concurrent emissions of criteria air pollutants.

Table 3-7 shows both the federal and state ambient air quality standards.

Table 3-7: Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]
Ozone (O_3)	1-Hour	-	Same as Primary Standard	0.09 ppm (180 µg/m^3)
	8-Hour	0.070 ppm		0.070 ppm (137 µg/m^3)
Respirable Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual Arithmetic Mean	-		20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	35 µg/m^3	Same as Primary Standard	-
	Annual Arithmetic Mean	12.0 µg/m^3	15 µg/m^3	12 µg/m^3
Carbon Monoxide (CO)	8-Hour	9 ppm (10 µg/m^3)	None	9.0 ppm (10 µg/m^3)
	1-Hour	35 ppm (40 µg/m^3)		20 ppm (23 µg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard	0.030 ppm (56 µg/m^3)
	1-Hour	0.100 ppm (188 µg/m^3)		0.18 ppm (338 µg/m^3)
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	0.030 ppm	-	-
	24-Hour	0.14 ppm	-	0.04 ppm (105 µg/m^3)
	3-Hour	-	1300 µg/m^3 (0.5 ppm)	-
	1-Hour	75 ppb (196 µg/m^3)	-	0.25 ppm (655 µg/m^3)
Lead (Pb)[6]	30-Day Average	-	-	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	Same as Primary Standard	-
	3-Month Rolling Average	0.15 µg/m^3	Same as Primary Standard	-
Hydrogen Sulfide (HS)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m^3)
Sulfates (SO_4)	24-Hour			25 µg/m^3
Visibility Reducing Particles	8-Hour (10 a.m. to 6 p.m., Pacific Standard Time)			In sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70 percent.
Vinyl chloride[6]	24-Hour			0.01 ppm (26 µg/m^3)

Table 3-7: Ambient Air Quality Standards (continued)

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]

[1] NAAQS (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.
[2] California Ambient Air Quality Standards for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
[3] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
[4] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
[5] Concentration expressed first in units in which it was promulgated. Ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.
[6] The CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
Notes: ppm = part(s) per million, $\mu g/m^3$ = milligrams per cubic meter
Source: California Air Resources Board (2016)

3.5.1.3 Hazardous Air Pollutants

In addition to the six criteria pollutants, the EPA currently designates 187 substances as hazardous air pollutants under the federal CAA. Hazardous air pollutants are air pollutants known or suspected to cause cancer or other serious health effects, or adverse environmental and ecological effects (U.S. Environmental Protection Agency, 2015). NAAQS are not established for these pollutants; however, the EPA has developed rules and control standards that limit emissions of hazardous air pollutants from specific stationary (National Emissions Standards for Hazardous Air Pollutants) and mobile sources (Mobile Source Air Toxics). These emissions control standards are intended to achieve the maximum degree of reduction in emissions of the hazardous air pollutants, taking into consideration the cost of emissions control, non-air-quality health and environmental impacts, and energy requirements. These emissions are typically one or more orders of magnitude smaller than concurrent emissions of criteria air pollutants.

3.5.1.4 Greenhouse Gases

Activities conducted as part of the Proposed Action would involve mobile sources using fossil fuel combustion as a source of power (e.g., diesel-fueled equipment and vehicles), which results in generation of Greenhouse Gas (GHG) emissions. Global temperatures are moderated by naturally occurring atmospheric gases, including water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), which are known as GHGs. These gases allow solar radiation (sunlight) into the Earth's atmosphere but prevent radiative heat from escaping, thus warming the Earth's atmosphere. Gases that trap heat in the atmosphere are often called GHGs, analogous to a greenhouse. GHGs are emitted by both natural processes and human activities. State law defines GHGs as any of the following

compounds: CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (California Health and Safety Code Section 38505(g)). GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere; it is the "measure of the total energy that a gas absorbs over a particular period of time (usually 100 years), compared to CO_2" (U.S. Environmental Protection Agency, 2016). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that are the most common GHGs that result from human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310. CO_2, followed by CH_4 and N_2O. CO_2, and to a lesser extent, CH_4 and N_2O, are products of combustion and are generated from stationary combustion sources as well as vehicles. High GWP gases include GHGs that are used in refrigeration/cooling systems such as chlorofluorocarbons and hydrofluorocarbons.

3.5.2 Analysis Framework

The air quality impact evaluation comprises three analyses: (1) the CAA General Conformity Analysis, (2) an analysis under the National Environmental Policy Act, and (3) an analysis under EO 12114, *Environmental Effects Abroad of Major Federal Actions*. Each required analysis is described in the following sections. The air emissions generated by the proposed action include mobile source emissions from site preparation equipment, aircraft emissions, vehicles used for commute and training, and emissions from munitions training. The generated air emissions would be evaluated in one or more of the three identified analysis categories based on the geographical and spatial locations where emissions occur and CAA air quality status (nonattainment, maintenance, or attainment) of those respective locations, as well as pollutants emitted, type of emission source, and levels of emissions. The entire proposed action would occur within inland locations. As such, the impact of these emissions would be evaluated under the CAA General Conformity Rule for only those areas designated as nonattainment or maintenance and only for nonattainment or maintenance criteria pollutants. Impacts of all criteria pollutants emitted inland out to 12 nautical miles (NM) from this federal action would be evaluated under NEPA. No air pollutants would be emitted beyond 12 NM as a result of the Proposed Action. Therefore, an analysis under EO 12114 is not required.

3.5.2.1 General Conformity

Section 176(c)(1) of the CAA, commonly known as the General Conformity Rule, requires federal agencies to ensure that their actions conform to applicable implementation plans for achieving and maintaining the NAAQS for criteria pollutants for nonattainment and maintenance areas. Federal actions are required to conform with the approved SIP for those areas of the United States designated as nonattainment or maintenance areas for any criteria air pollutants under the CAA (40 CFR Parts 51 and 93 Subpart B). The purpose of the General Conformity Rule is to ensure that applicable federal activities do not cause or contribute to new violations of the NAAQS, do not worsen existing violations of the NAAQS, and do not delay attainment of the NAAQS.

A conformity evaluation must be completed for every applicable Navy action that generates emissions to determine and document whether a Proposed Action complies with the General Conformity Rule.

The General Conformity analysis is separate and distinct from the NEPA analysis. General Conformity is concerned with ensuring that non-permitted projects conform to the SIP. The EA analysis is concerned with whether an activity significantly affects the human environment. The two analyses are related in that an air impact that violates a SIP is probably "significant."

The first step in the Conformity evaluation is a Conformity Applicability Analysis, which involves calculating the non-exempt direct and indirect emissions associated with the action. If there is no

current activity (the Proposed Action is completely new), then the sum of the non-exempt direct and indirect emissions equals the net change in emissions (the current level would be zero). If the action is a change from a current level of emissions, then future emissions are evaluated against the current level, defined as the "current environmental baseline conditions." The net change, then, is the difference between the emissions associated with the action and the current environmental baseline emissions. The net change may be positive, negative, or zero. The emissions thresholds that trigger a Conformity Determination are called *de minimis* levels. The *de minimis* levels for nonattainment and maintenance pollutants under the General Conformity Rule are shown in Table 3-8. The net change calculated for the direct and indirect emissions are compared to the *de minimis* levels published in the Conformity Rule. If the net change in emissions does not exceed *de minimis* thresholds, then a General Conformity Determination is not required, and the emissions are presumed to conform to the SIP. If the net change in emissions equal or exceed the *de minimis* conformity applicability threshold values, a General Conformity Determination must be prepared to demonstrate conformity with the approved SIP.

Table 3-8: General Conformity *de minimis* Levels

Pollutant	Area Type	tpy
Ozone (VOC or NOx)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NOx)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
CO, SO2 and NO2	All nonattainment & maintenance	100
PM10	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
PM2.5*	All nonattainment & maintenance	100
Lead (Pb)	All nonattainment & maintenance	25

Notes: CO = carbon monoxide, NO_X = nitrogen oxides, NO_2 = nitrogen dioxide, Pb = lead, PM_{10} = particulate matter ≤ 10 microns in diameter, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, SO_2 = sulfur dioxide, TPY = tons per year, VOC = volatile organic compounds. *=There are four main $PM_{2.5}$ precursor pollutants (sulfur dioxide [SO_2], nitrogen oxides [NO_x], volatile organic compounds (VOC), and ammonia [NH_3]).
Source: 40 CFR 93.153(b)(1-2)

If NEPA documentation is prepared for an action, the determination that the Proposed Action is not subject to the General Conformity Rule is described in that documentation and a signed Record of Non-Applicability included in Appendix A (Air Quality Methodology and Calculations) for nonattainment areas. Otherwise, no documentation is required.

3.5.2.2 National Environmental Policy Act

Analysis of health-based air quality impacts under NEPA includes estimates of criteria air pollutants, hazardous air pollutants, and greenhouse gases occurring as result of a federal action occurring onshore out to the U.S. territorial sea limits (within 12 NM) for all construction or transport activities or those that involve vessels in U.S. territorial seas. In determining the total direct and indirect emissions caused by the action, agencies must project the future emissions in the area with the action versus the future emissions without the action, which NEPA entitles "the Baseline Condition/Affected Environment." The total direct and indirect emissions consider all emission increases and decreases that are reasonably foreseeable and are possibly controllable through an agency's continuing program responsibility to affect emissions.

For nonattainment and maintenance criteria pollutants, the conformity *de minimis* levels are useful as NEPA analysis screening thresholds to determine significance. For these pollutants, the General Conformity "*de minimis*" thresholds are identical to "major source" thresholds applicable to new stationary sources under the federal CAA. As such, they represent reasoned decisions under two regulatory programs as quantities that represent thresholds of increased concern. The thresholds are lowered as the air quality of a nonattainment or maintenance area worsens. For example, the threshold for an ozone precursor is 10 tons per year (tpy) in an extreme nonattainment area, but 100 tpy in a moderate nonattainment area.

The Prevention of Significant Deterioration (PSD) Program was adopted in the CAA under 40 CFR part 52.21. The PSD Program applies to major stationary sources of air pollutants located in attainment areas, requiring that a source demonstrate that it does not significantly deteriorate the air quality in attainment areas. Under PSD, a "major source" is defined as a facility that emits equal to or greater than 250 tons of a criteria pollutant or regulated precursor. As such, in attainment areas, the major emitting facility threshold of 250 tpy of a pollutant is the threshold of increased concern; therefore, this threshold is also a suitable screening threshold. In NEPA terms, the foregoing means that the thresholds serve as screening level thresholds of significance. That is, where emissions of a pollutant are below the threshold for a nonattainment, attainment, or maintenance area, as applicable, they would not be significant absent compounding factors, such as proximity of sensitive receptors. Where those emissions exceed the applicable threshold discussed above, they demand a harder look at factors such as region of dispersal. It should be noted that the thresholds are conservative in that they are designed to apply to stationary sources. However, the Navy is conservatively applying them to sources that may be diffused and dispersed. It should also be noted that by increasing and decreasing with the air quality of a region, these thresholds consider other activities in the region in the past and present. As such they are measures of cumulative impacts.

3.5.2.3 Greenhouse Gases

The Proposed Action is anticipated to release greenhouse gases into the atmosphere. These emissions are quantified primarily using methods elaborated upon in the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018* (U.S. Environmental Protection Agency, 2020) for the Proposed Action, and estimates are presented at the end of the discussion for each alternative under Section 3.5.4 (Environmental Consequences). A comparison of greenhouse gas emissions for each alternative, including No Action Alternative, is provided as required by the CEQ Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change (Council on Environmental Quality, 2016).

3.5.3 Affected Environment

NBPL is located in San Diego County, which is within the San Diego Intrastate Air Quality Control Region. The San Diego Air Pollution Control District (SDAPCD) is responsible for implementing and enforcing state and federal air quality regulations in San Diego County. Effective July 2, 2021, the EPA approved a request from the State of California to reclassify the San Diego County ozone nonattainment area from Serious to Severe for the 2008 ozone NAAQS and from Moderate to Severe for the 2015 ozone NAAQS. Under this reclassification, the General Conformity *de minimis* decreased from 50 tpy to 25 tpy for two pre-cursor pollutants of ozone: volatile organic compounds and NO_x. The County is classified by the EPA as unclassified/attainment for all other criteria pollutants. Because San Diego County is in nonattainment for ozone, a General Conformity evaluation is required. The most recent emissions inventory for the SDAPCD, in tons per day, is shown in Table 3-9. Emission sources associated with the existing use of NBPL include civilian and military personal vehicles, commercial and military vehicles, marine vessel engines, tactical support equipment, small stationary sources, and ongoing construction activities.

Table 3-9: San Diego Air Basin 2017 Estimated Annual Average Emissions

Category	CO (tpd)	NO_x (tpd)	ROG (tpd)	SO_2 (tpd)	PM_{10} (tpd)	$PM_{2.5}$ (tpd)
Stationary Sources	14.4	4.4	28.2	0.3	8.8	3.0
Area-Wide Sources	21.4	3.8	37.8	0.2	62.5	11.9
Mobile Sources	379.9	70.0	49.6	0.9	8.3	5.3
Natural (Non-Anthropogenic) Sources	6.5	1.3	72.9	0.2	1.0	0.9
Total	422.2	79.5	188.5	1.6	80.6	21.0

Source: (U.S. Environmental Protection Agency, 2017)
Note: CO = carbon monoxide, NO_X = nitrogen oxides, ROG = reactive organic gases, NO_2 = nitrogen dioxide, PM_{10} = particulate matter ≤ 10 microns in diameter, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, SO_2 = sulfur dioxide, tpd = tons per day

3.5.4 Environmental Consequences

Effects on air quality are based on estimated direct and indirect emissions associated with the action alternatives. The region of influence for assessing air quality impacts is the air basin in which the project is located, the San Diego Air Basin.

Air Quality Potential Impacts:

- No Action: No significant impact
- Alternative 1: No significant impact
- Alternative 2: No significant impact

3.5.4.1 Sources of Emissions

Table 3-10 summarizes the activities associated with the Proposed Action with potential impacts on air quality. Assumptions used to estimate the emissions are also presented. This EA focuses on the onshore areas of NBPL that could be used for training and additional testing, as well as training activities that transition over the beach into inland training areas. In-water activities (activities that begin at the shoreline) are not considered in this EA as they are addressed in

the HSTT EIS/OEIS (U.S. Department of the Navy, 2018a). Emission factors and schedules for operations were used to calculate total values of each emission type that would be emitted under each alternative. An emission factor represents the mass of a pollutant released into the atmosphere by a given source over a specified period of time. Emission factors can vary considerably depending on type of source, time of day, and schedule of operation. Criteria air pollutants are reported in tons, while greenhouse gases are reported in metric tons per the CAA. For the Proposed Action, only small quantities of hazardous air pollutants are expected to be emitted with very low potential exposure and health risk. A quantitative evaluation of hazardous air pollutant emissions is therefore not warranted and was not conducted. Emissions of Criteria Pollutant were compared to *de minimis* levels to ensure that the project meets the CAA General Conformity Rule requirements. Appendix A (Air Quality Methodology and Calculations) contains a summary of the air quality calculations.

Table 3-10: Air Emission Sources and Assumptions

Activity	Existing	Alternative 1	Alternative 2	Emission Sources	Assumptions
UxS testing activities – Groups 1 and 2	600	1200	1200	None	UAS flown over NBPL would all be electric.
UAS Group 2 Heavy	0	100	100	None	UAS flown over NBPL would all be electric.
Daily UxS on-road test and integration – Outdoor autonomous and unmanned vehicle in maintained areas and on paved roads	200	300	300	Dust and combustion emissions from vehicles	One vehicle per test, up to two miles per event on paved roads. Similar to regular vehicular traffic in maintained areas and on paved roads. Modeled Light-Heavy-Duty Trucks (GVWR 8,501–10,000 lb.) as surrogate for HMMWV.
UxS test and integration on defined unmaintained paths	0	50	50	Dust and combustion emissions from vehicles	Proposed route is split between near the facility and areas near the wastewater treatment plant. Assume half of the events involve passenger vehicle transit (i.e., 25 roundtrips). Each trip up to 1.5 miles, total. Modeled Gasoline- fueled Passenger Vehicle.

Table 3-10: Air Emission Sources and Assumptions (continued)

Activity	Existing	Alternative 1	Alternative 2	Emission Sources	Assumptions
OTB training activities	6	24 (day) 40 (night)	24 (day) 40 (night)	Dust and combustion emissions from personnel commute to the site	25 personnel in five vans travel to/from NASNI per event. Modeled as Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) In-water activities are not considered in this EA.
Timed-Fuse Calculation Training	0	40	40	None	No explosives are used in timed-fuse calculation training at NBPL. Operators would practice cutting fuses to correct lengths, train on proper preparation and waterproofing of the fuses, and practice lighting the fuses to verify proper preparation.
Land Navigation training activities	6	24 (day) 40 (night)	24 (day) 40 (night)	None. Incorporated with OTB training	None
Rappelling, Cliff Climbing/Assault, Foot Patrolling, Blank Firing, and Chemical, Biological, Radiological and Nuclear training	6	24 (day) 40 (night)	24 (day) 40 (night)	Emissions from blank firing	15 people, 10 rounds each, total of 150 rounds per event Modeled as Small Projectile (0.5-caliber Blank)
Special Reconnaissance training activities	2	2	2	None	None
IED training activities	30	33	33	Personnel commute to the site Emissions from EET events	3–5 EETs are fired per training event. 8–10 personnel with two instructors on the IED training lane at any given time, with 8–10 operating inside the Batteries. Assume two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL.

Table 3-10: Air Emission Sources and Assumptions (continued)

Activity	Existing	Alternative 1	Alternative 2	Emission Sources	Assumptions
EOD combat skills training	**7**	**7**	**7**	Emissions from firing small-arms blanks and simunitions	15 people, 10 rounds each, total of 150 rounds per event. Modeled as Small Projectile (0.5-caliber Blank)
EOD Chemical/ Biological Warfare Agent/Homemade Explosive Hazards training	10	10	10	None identified	No detonation activities would occur as part of this activity
EOD Nuclear Hazards	10	10	10	None identified	None
Force Protection activities in conjunction with ongoing activities	0	10	10	Personnel commute to the site Dust and combustion emissions from vehicles	Two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL. 20 miles per event during force protection activities. Ten personnel traveling by Light-Heavy-Duty Trucks (GVWR 8,501–10,000 lb.), used as surrogate for HMMWV.
Insertion and extraction training	0	30	30	Personnel commute to the site	Two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL.
Designate up to two unimproved helicopter landing zones to support insertion/extraction activities of rotary-wing aircraft	0	0	3	Aircraft emissions	Three H-60 flights per year, all within 3 NM. Assumed 4 hours per training event. Minimal construction with negligible emissions is anticipated.

Notes: NBPL = Naval Base Point Loma, NASNI = Naval Air Station North Island, NM = nautical mile(s), lb. = pound(s), HMMWV = High Mobility Multipurpose Wheeled Vehicle, EOD = Explosive Ordnance Disposal, IED = Improvised Explosive Device, EET = Explosive Energetic Tool, OTB = Over-The-Beach, UxS = Unmanned System, UAS = Unmanned Aircraft System

3.5.4.2 No Action Alternative

As described in Section 2.3.1 (No Action – Existing Testing and Training at Naval Base Point Loma), baseline testing and training activities would continue under the No Action Alternative. Table 3-11 presents the emissions associated with the No Action Alternative. As shown, no significant impacts on air quality or air resources would occur with implementation of the No Action Alternative.

Table 3-11: No Action Alternative Emissions

Emissions	Total Emissions, Tons/yr						
	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2, MT/year
Vehicle – Combustion	0.0032	0.0103	0.0012	4.57E-05	9.16E-04	0.0005	4.37
Vehicle – Dust					0.35		
Munitions	0.01	0.01			0.02	0.01	0.68
Total	**0.02**	**0.02**	**0.0012**	**4.57E-05**	**0.37**	**0.01**	**5.05**

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, VOC = volatile organic compounds, PM_{10} = particulate matter ≤ 10 microns in diameter, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, SO_x = oxides of sulfur, CO_2 = carbon dioxide, MT = metric ton

3.5.4.3 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

Under Alternative 1, Navy would continue to conduct the testing and training activities described under the No Action Alternative. Table 2-5 lists the proposed increases in activities by NIWC Pacific, Table 2-6 lists proposed increases in training activities by the Naval Special Warfare Command, and Table 2-7 lists proposed increases in EOD training activities. Appendix A (Air Quality Methodology and Calculations) contains a detailed description of methodologies and emission factors used to calculate the emissions. Table 3-12 summarizes the emissions associated with Alternative 1. All emissions occur within 3 NM.

Table 3-12: Estimated Air Emissions for Alternative 1

Emissions	Total Emissions, Tons/yr					
	CO	NOx	VOC	SO_x	PM_{10}	$PM_{2.5}$
Vehicle – Combustion	0.02	0.05	0.01	0.00	0.00	0.00
Vehicle – Dust					1.75	
Munitions	0.02	0.01			0.014	0.01
Aircraft	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.06**	**0.01**	**0.00**	**1.77**	**0.01**
NAA Emissions	0.02	0.02	0.00	0.00	0.37	0.01
Change in Emissions	**0.02**	**0.04**	**0.00**	**0.00**	**1.40**	**0.00**
General Conformity Nonattainment/Maintenance *de minimis* Levels	--	25	25	--	--	--
Exceeds *de minimis* Level?	N/A	No	No	N/A	N/A	N/A

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, VOC = volatile organic compounds, PM_{10} = particulate matter ≤ 10 microns in diameter, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, SO_x = oxides of sulfur, CO_2 = carbon dioxide, MT = metric ton

General Conformity

As shown in Table 3-12, the estimated emission increase due to implementation of Alternative 1 is below the applicable General Conformity *de minimis* levels. As such, a General Conformity Determination is not required. A record of non-applicability was prepared and is included in Appendix A (Air Quality Methodology and Calculations).

National Environmental Policy Act Impacts from Criteria Pollutants

Since all proposed activities occur within 3 NM of the shoreline, the General Conformity analysis presented above satisfies the NEPA analysis. As shown in Table 3-12, the estimated increase in emissions for Alternative 1 are well below the applicable General Conformity *de minimis* levels and PSD major thresholds used as screening level thresholds of significance.

Greenhouse Gases

Implementation of Alternative 1 would contribute directly to emissions of GHGs from the combustion of fossil fuels. Vehicle operations, including personnel commuting to the site, and emissions from munitions activities would increase the GHG emissions by approximately 18 metric tons of CO_2, as detailed in Appendix A (Air Quality Methodology and Calculations). These emissions have been compared with the nationwide greenhouse gas inventory emissions for potential significance. Estimated greenhouse gas emission increases associated with operations due to implementation of Alternative 1 would be far less than 0.00001 percent of greenhouse gas inventory of 5,222 million metric tons of CO_2 equivalent (CO_2e). The relatively insignificant GHG emissions would not likely contribute to global warming to any discernible extent.

Implementation of Alternative 1 would not result in significant impacts on air quality since the estimated emissions are well below all applicable thresholds.

3.5.4.4 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

Under Alternative 2, the Navy would conduct all testing and training activities listed under Alternative 1 and designate up to two unimproved HLZs to support insertion/extraction activities of rotary-wing aircraft (does not include tilt-rotor aircraft).

Table 3-13 summarizes the emissions associated with Alternative 2. All emissions occur within 3 NM.

Table 3-13: Estimated Air Emissions for Alternative 2

Emissions	Total Emissions, Tons/yr					
	CO	**NOx**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Vehicle – Combustion	0.02	0.05	0.01	0.00	0.00	0.00
Vehicle – Dust					1.75	
Munitions	0.02	0.01			0.01	0.01
Aircraft	0.06	0.05	0.01	0.00	0.03	0.03
Total	**0.10**	**0.11**	**0.01**	**0.00**	**1.80**	**0.05**
NAA Emissions	0.02	0.02	0.00	0.00	0.37	0.01
Change in Emissions	**0.09**	**0.09**	**0.01**	**0.00**	**1.43**	**0.04**
General Conformity Nonattainment/Maintenance *de minimis* Levels	--	25	25	--	--	--
Exceeds *de minimis* Level?	N/A	No	No	N/A	N/A	N/A

Notes: CO = carbon monoxide, NO_x = nitrogen oxides, VOC = volatile organic compounds, PM_{10} = particulate matter ≤ 10 microns in diameter, $PM_{2.5}$ = particulate matter ≤ 2.5 microns in diameter, SO_x = oxides of sulfur, CO_2 = carbon dioxide, MT = metric ton

General Conformity

As shown in Table 3-13, the estimated emission increase due to implementation of Alternative 2 is below the applicable General Conformity *de minimis* levels. As such, a General Conformity Determination is not required. A record of non-applicability was prepared and is included in Appendix A (Air Quality Methodology and Calculations).

National Environmental Policy Act Impacts from Criteria Pollutants

Since all proposed activities occur within 3 NM of the shoreline, the General Conformity analysis presented above satisfies the NEPA analysis for criteria pollutants and regulated precursors. As shown in Table 3-13, the estimated emissions for Alternative 2 are well below the applicable General Conformity *de minimis* levels and PSD major thresholds used as screening level thresholds of significance.

Greenhouse Gases

Implementation of the Alternative 2 would contribute directly to emissions of GHGs from the combustion of fossil fuels. Vehicle operations, including personnel commuting to the site, aircraft operations, and emissions from munitions activities would increase the GHG emissions by approximately 42 metric tons of CO_2, as detailed in Appendix A (Air Quality Methodology and Calculations). These emissions have been compared with the nationwide greenhouse gas inventory emissions for potential significance. Similar to Alternative 1, estimated greenhouse gas emission increases associated with operations due to implementation of Alternative 2 would be far less than 0.00001 percent of greenhouse gas inventory of 5,222 million metric tons of CO_2e. The relatively insignificant GHG emissions would not likely contribute to global warming to any discernible extent.

Implementation of Alternative 2 would not result in significant impacts on air quality since the estimated emissions are well below all applicable thresholds.

3.6 Public Health and Safety

This discussion of public health and safety includes consideration for any activities, occurrences, or operations that have the potential to affect the safety, well-being, or health of members of the public. A safe environment is one in which there is no, or optimally reduced, potential for death, serious bodily injury or illness, or property damage. The primary goal is to identify and prevent potential accidents or impacts on the general public. Public health and safety within this EA discusses information pertaining to community emergency services, construction activities, operations, and environmental health and safety risks to children.

Community emergency services are organizations which ensure public safety and health by addressing different emergencies. The three main emergency service functions include police, fire and rescue service, and emergency medical service.

Public health and safety during construction, demolition, and renovation activities is generally associated with construction traffic, as well as the safety of personnel within or adjacent to the construction zones.

Operational safety may refer to the actual use of the facility or built-out proposed project, or training or testing activities and potential risks to inhabitants or users of adjacent or nearby land and water parcels. Safety measures are often implemented through designated safety zones, warning areas, or other types of designations.

Environmental health and safety risks to children are defined as those that are attributable to products or substances a child is likely to come into contact with or ingest, such as air, food, water, soil, and products that children use or to which they are exposed.

3.6.1 Regulatory Setting

Aircraft safety is based on the physical risks associated with aircraft flight. Military aircraft fly in accordance with Federal Aviation Regulations (FAR) Part 91, *General Operating and Flight Rules*, which govern such things as operating near other aircraft, right-of-way rules, aircraft speed, and minimum safe altitudes. These rules include the use of tactical training and maintenance test flight areas, arrival and departure routes, and airspace restrictions as appropriate to help control air operations. In addition, naval aviators must also adhere to the flight rules, air traffic control, and safety procedures provided in Navy guidance.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to "make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

3.6.2 Affected Environment

Law enforcement for NBPL is the responsibility of the local precinct, under the supervision of the CNRSW Security Forces, Assistant Chief of Staff Force Protection. NBPL provides basewide internal security, as well as security patrols for the perimeter of the installation. Each precinct also oversees traffic control and enforcement (including traffic accidents) and crime prevention (including the operation of the Criminal Investigative Division), as well as providing law enforcement services to all tenant organizations.

Fire protection for NBPL is the responsibility of the installation's fire department. The fire department has a mutual aid agreement with other local fire departments, including the City of San Diego. These other local departments would provide as many fire engines as are required to respond to a call.

Areas where children may be present include the NBPL child development center (day care facility for military personnel) located at Building 377 on Myers Road, as well as two elementary schools outside of base property that would not be impacted by the Proposed Action, the Sunset View Elementary School and Cabrillo Elementary School.

3.6.3 Environmental Consequences

The safety and environmental health analysis contained in the respective sections addresses issues related to the health and well-being of military personnel and civilians living on or in the vicinity of NBPL. Specifically, this section provides information on hazards associated with increases in testing and training, additional testing and training locations, and the designation of two unimproved HLZs for training. Additionally, this section addresses the environmental health and safety risks to children.

3.6.3.1 No Action Alternative

Under the No Action Alternative, there would be no change from current levels of testing and training.

The study area for the No Action Alternative includes the UAS and UxS testing areas, existing OTB training areas, IED training areas, and existing insertion and extraction training areas, as well as a buffer around the base where air, water, or noise impacts could extend outside of the testing and training areas onto the Point Loma Peninsula.

Impacts on air quality are discussed in Section 3.5 (Air Quality), and there would be no significant impact on air quality as a result of the No Action Alternative; therefore, there would be no significant impact on public health and safety as a result of impacts on air quality. Impacts on water quality are discussed in Section 3.3 (Coastal Resources), and there would be no significant impact on water quality as a result of the No Action Alternative; therefore, there would be no significant impact on public health and safety as a result of impacts on water quality. Noise impacts are discussed in Section 3.2 (Noise Environment), and there would be no significant impact on the community noise levels outside of NBPL as a result of the No Action Alternative; therefore, there would be no significant impact on public health and safety as a result of impacts from noise.

Public Health and Safety Potential Impacts:

- No public or non-participant on-base military personnel would be present in the locations where proposed testing or training activities would occur.
- No beach closure affecting swimmers or surfers would occur.
- There would be no significant impact on public health and safety as a result of impacts on air or water quality, or from noise associated with the Proposed Action.

The public at sea and around the base is notified of the location, date, and time of hazardous activities via Notice to Airmen and Notice to Mariners. The testing activities and expansion of off-road testing would be limited to the boundaries of the training areas, and public or non-participant on-base military personnel access would continue to be restricted in all testing and training areas. Therefore, only personnel authorized with facility access would be present in the locations where these testing activities would occur, and no beach closure affecting swimmers or surfers would occur. Only small EET devices would be used in existing EOD training locations far from populated areas and in facilities designed specifically to support this activity. Furthermore, these training activities require schedule deconfliction with NBPL and its tenants to ensure safety.

The proposed training and testing activities occur in areas that are not accessible to the general public; therefore, the Navy has determined that there are no environmental health and safety risks associated with the Proposed Action that would disproportionately affect children.

Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.6.3.2 Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma

Under Alternative 1, the Navy would conduct additional UAS and UxS testing activities and expand the UxS Southern Testing Area to support off-road testing. Additionally, the Navy would conduct additional OTB training activities, increase the number of locations where OTB activities could occur, increase the number of IED training activities, and conduct insertion and extraction training activities.

Impacts on air quality are discussed in Section 3.5 (Air Quality), and there would be no significant impact on air quality as a result of Alternative 1; therefore, there would be no significant impact on public health and safety as a result of impacts on air quality. Impacts on water quality are discussed in Section 3.3 (Coastal Resources), and there would be no significant impact on water quality as a result of Alternative 1; therefore, there would be no significant impact on public health and safety as a result of impacts on water quality. Noise impacts are discussed in Section 3.2 (Noise Environment), and there would be no significant impact on the sensitive receptors outside of NBPL as a result of Alternative 1; therefore, there would be no significant impact on public health and safety as a result of impacts from noise.

The public at sea and around the base is notified of the location, date, and time of hazardous activities via Notices to Airmen and Notices to Mariners. The testing activities and expansion of off-road testing would be limited to the boundaries of the training areas, and these areas are not accessible to the public. Notification and area exclusion standard operating procedures would also be followed to minimize risk to non-participating personnel. Therefore public or non-participant on-base military personnel would not be present in the locations where these testing activities would occur, and no beach closure affecting swimmers or surfers would occur. Only small devices would be used in existing EOD training locations far from populated areas and in facilities designed specifically to support this work. Furthermore, these training activities require schedule deconfliction with NBPL and its tenants to ensure safety. The proposed training and testing activities occur in areas that are not accessible to the general public; therefore,, the Navy has determined that there are no environmental health and safety risks associated with the Proposed Action that would disproportionately affect children.

Therefore, implementation of Alternative 1 would not result in significant impacts on public health and safety.

3.6.3.3 Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training

Under Alternative 2, the Navy would conduct all testing and training activities listed under Alternative 1 and designate up to two unimproved HLZs to support insertion and extraction activities using rotary-wing aircraft (does not include tilt-rotor aircraft) for NSW unit-level training (see Figure 2-3). The study area for Alternative 2 is the same as described under Alternative 1, but the analysis for this alternative specifically focuses on the two unimproved HLZs proposed for training activities.

Impacts on air quality are discussed in Section 3.5 (Air Quality), and there would be no significant impact on air quality as a result of Alternative 2; therefore, there would be no significant impact on public health and safety as a result of impacts on air quality. Impacts on water quality are discussed in Section 3.3 (Coastal Resources), and there would be no significant impact on water quality as a result of Alternative 2; therefore, there would be no significant impact on public health and safety as a result of impacts on water quality. Noise impacts are discussed in Section 3.2 (Noise Environment), and there would be no significant impact on the sensitive receptors outside of NBPL as a result of Alternative 2; therefore, there would be no significant impact on public health and safety as a result of impacts from noise.

Testing and training activities under Alternative 2, as described under Alternative 1, would not impact public health and safety or disproportionately affect children, as access to testing and training areas on NBPL would continue to be restricted, and children and other members of the public would not be present in the location, date, or time of hazardous activities. The use of HLZs to support insertion and

extraction activities would likewise have no impact on the public, as these areas are located in areas that are not accessible to the public, and standoff distances and safety protocols will be followed by personnel during operational activities.

Therefore, implementation of Alternative 2 would not result in significant impacts on public health and safety.

3.7 Summary of Potential Impacts on Resources and Impact Avoidance and Minimization

A summary of the potential impacts associated with each of the action alternatives and the No Action Alternative is presented in Table 3-14. Table 3-15 provides a comprehensive list of all mitigation requirements associated with the Proposed Action.

Table 3-14: Summary of Potential Impacts on Resource Areas

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Biological Resources	Impacts on vegetation alliances and other land cover types, non-federally listed special-status plant and wildlife species, and impacts on the coastal California gnatcatcher would continue at the current baseline levels. Impacts would occur from ongoing training and testing activities including noise and disturbance from off-trail activities. There would be no impacts on Orcutt's spineflower. All impacts would be less than significant.	Less than significant impacts are anticipated from permanent removal of 0.32 acre of vegetation alliances and other land cover types from creation of the proposed UxS Southern Test Area. Less than signifcant impacts on non-federally listed special-status plant species and Orcutt's spineflower due to avoidance of occupied areas. Less than significant impacts on non-federally listed special-status wildlife species (including MBTA-protected birds) with incorporation of avoidance and minimization measures. Impacts from training and testing activities may occur to seven pairs of coastal California gnatcatchers through minor habitat loss and harassment. While some impacts may be reduced by implementation of the avoidance and minimization measures, loss of 0.32 acre of optimal coastal California gnatcatcher habitat, noise impacts, and the presence of humans, equipment (including UAS, UxS, and others), and other activities would negatively impact coastal California gnatcatchers.	No additional impacts beyond those analyzed under Alternative 1 are anticipated to vegetation alliances and other land cover types, non-federally listed special-status plant and wildlife species, and Orcutt's spineflower from use of the two HLZs. No additional impacts beyond those detailed under Alternative 1 would occur from use of the HLZs, since the HLZs would not be used during the avian breeding season.

Table 3-14: Summary of Potential Impacts on Resource Areas (continued)

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Noise Environment	UAS and simunition use is not expected to contribute significantly to the noise environment. The usage of EETs, though not increasing the community noise levels above 65 dBA, could be considered as intrusive by some members of the public.	The increase of UAS testing is not expected to contribute significantly to the noise environment at NBPL. Both EET and blank firing noise could be considered intrusive but would not increase the community noise levels above 65 dBA CNEL.	The increase of UAS testing is not expected to contribute significantly to the noise environment at NBPL. Both EET and blank firing noise could be considered intrusive but would not increase the community noise levels above 65 dBA CNEL. Helicopter usage is anticipated to be audible at sensitive receptors but would not increase the CNEL levels above 65 dBA.
Coastal Resources	Under the No Action Alternative, there would be no change from current levels of testing and training. Existing testing and training activities mostly occur on previously disturbed surfaces or improved and unimproved roads and trails. Activities that occur off trail are designed to have minimal impacts as operators are trained to avoid detection. Therefore, no significant impacts would occur with implementation of the No Action Alternative.	Most of the testing and training activities proposed under Alternative 1 would be associated with UAS or occur on existing trails and hardened surfaces. Operators are trained to avoid detection and new testing, and training activities are designed to have minimal impacts. There would be some increases in pedestrian training activities and the use of UxS on unpaved surfaces or on unimproved trails; however, any potential impacts are expected to be minimal. New testing and training activities are designed to have minimal impacts as operators are trained to avoid detection. Therefore, implementation of Alternative 1 would not result in significant impacts on coastal resources.	Testing and training activities under Alternative 2, as described under Alternative 1, would not impact coastal resources. The proposed designation of HLZs at NBPL would occur on land already disturbed from previous development activities with no impacts on wetlands or surface waters. The creation of HLZs would include erosion controls consistent with regulatory requirements and NBPL planning documents. Therefore, implementation of Alternative 2 would not result in significant impacts on coastal resources.

Table 3-14: Summary of Potential Impacts on Resource Areas (continued)

Resource Area	No Action Alternative	Alternative 1	Alternative 2
Cultural Resources	Under the No Action Alternative, no new ground disturbing activities would occur, and there would be no change to cultural resources. No significant impacts on cultural resources would occur.	No cultural resources are located in the additional Beach Landing Sites or training areas under Alternative 1. No significant impacts on cultural resources would occur with implementation of Alternative 1.	No cultural resources are located in the additional Beach Landing Sites, new training areas, or new HLZ areas under Alternative 2. No significant impacts on cultural resources would occur with implementation of Alternative 2.
Air Quality	Estimated emissions from baseline testing and training is below the applicable General Conformity *de minimis* levels.	Estimated emission increase is below the applicable General Conformity *de minimis* levels. GHG emission increases would not likely contribute to global warming to any discernible extent.	Estimated emission increase is below the applicable General Conformity *de minimis* levels. GHG emission increases would not likely contribute to global warming to any discernible extent.
Public Health and Safety	Under the No Action Alternative, there would be no change from current levels of testing and training. No public or non-participant on-base military personnel would be present in the locations where proposed testing or training activities would occur. Implementation of the No Action Alternative would not disproportionately affect children, and no significant impacts on public health and safety would occur with implementation of the No Action Alternative.	The Navy would follow all applicable safety procedures for testing and training activities. No beach closure affecting swimmers or surfers would occur. There would be no significant impact on public health and safety as a result of impacts on air or water quality, or from noise associated with the Proposed Action. Implementation of Alternative 1 would not disproportionately affect children given the absence of schools or parks in the immediate area and would not result in significant impacts on public health and safety.	Testing and training activities under Alternative 2, as described under Alternative 1, would not impact public health and safety or disproportionately affect children. The designation of HLZs to support insertion and extraction activities would likewise have no impact on the public, as these areas are located in areas that are not accessible to the public, and standoff distances and safety protocols will be followed by personnel during operational activities. There would be no significant impact on public health and safety as a result of impacts on air or water quality, or from noise associated with the Proposed Action. Therefore, implementation of Alternative 2 would not result in significant impacts on public health and safety.

Notes: HLZ = Helicopter Landing Zone, NBPL = Naval Base Point Loma, UxS = Unmanned Systems, UAS = Unmanned Aircraft System, GHG = Greenhouse Gas, MBTA = Migratory Bird Treaty Act, EET = Explosive Energetic Tool, dBA = A-weighted decibels, CNEL = Community Noise Equivalent Level.

Table 3-15: Impact Avoidance and Minimization Measures

Measure
Alternative 1 – Increase Testing and Training Locations and Events at Naval Base Point Loma
CM-1. A NBPL installation biologist, NAVFAC biologist, or contractor (depending upon the specific need) (collectively hereafter referred to as qualified biologist) will ensure compliance with the conservation measures, including any required surveys and monitoring activities. The qualified biologist(s) will have the experience and training necessary to conduct tasks described in this EA. Generally, when a qualified biologist is needed, the biologist will (1) be familiar with the federally listed species and associated habitats that require the survey or monitoring activity; (2) have a bachelor's degree with an emphasis in ecology, wildlife science, or related science; and (3) have previous experience with applying the terms and conditions of a Biological Opinion. In addition, where applicable, the qualified biologist will possess a Section 10(a)(1)(A) permit specific to the species and type of surveying or monitoring required.
CM-2. If it is determined that a listed species is harmed, the action and condition of the species affected will be reported immediately to the NBPL Natural Resources Department and any necessary follow-up steps will be implemented (such as taking the injured animal to an approved wildlife rehabilitation facility). The NBPL Natural Resources Department will notify USFWS of the incident within 24 hours.
CM-3. Trash generated from the Proposed Action will be contained within covered, secured trash bins that are inaccessible to wildlife. Food waste or trash generated from food products (e.g., wrappers, food containers) will be removed from NBPL on a regular basis to prevent attraction of predators (e.g., American crow [*Corvus brachyrhynchos*] or common raven [Corvus corax] and mammalian scavengers, such as rats [*Rattus* sp.], raccoons [*Procyon lotor*], and skunks [*Mephitis mephitis*]).
CM-4. Vehicles, UxS, and all other wheeled equipment will follow designated ingress and egress routes and will not be driven off-trail through areas with habitat for Orcutt's spineflower or coastal California gnatcatcher.
CM-5. Operators will receive environmental awareness instruction before authorization is provided to train on the site. The environmental awareness instruction will be provided by a qualified biologist and conducted annually for those commands that routinely utilize NBPL for training. Operators will be briefed on the natural resources, including listed species, and the protective conservation measures required to be followed while training on NBPL. Instruction will include a description of listed and sensitive species and habitats occurring on NBPL; details on each species' habitat requirements; the protective measures to be implemented for each species; the role of the NBPL Natural Resources Department, qualified biologists, and the responsibilities of those operating within NBPL to protect biological resources; the importance of complying with conservation measures; the method for reporting problems; and the steps to take for problem resolution.
CM-6. Operators that conduct training and testing activities on NBPL will perform a visual inspection of their boots, clothing, and equipment and remove any visible soil, mud, plant debris, and seeds prior to conducting any training through vegetated areas (including on unpaved roads and trails).

Table 3-15: Impact Avoidance and Minimization Measures (continued)

Measure
CM-7. Potential impacts from nonnative invasive species introduction and spread will be minimized by annual survey and treatment of invasive species on NBPL. These activities will be conducted in compliance with the Vegetation Management Plan (U.S. Navy, 2018b). In particular, the proposed UxS Southern Test Area will be surveyed annually for nonnative invasive plant species, and treatment will be conducted when necessary.
CM-8. To reduce the risk of wildland fire, Proposed Action training and testing activities which use blanks or fuses will only be conducted when the fire risk is determined to be Low or Moderate, as defined by the *Naval Base Point Loma and Cabrillo National Monument Joint Wildland Fire Management Plan* (National Park Service and U.S. Department of the Navy, 2012) (which is currently being updated), or will be conducted indoors. Sites for fuse training will be selected based on a low potential for fire, and personnel will be available nearby with fire extinguishers as needed.
OS-1. To avoid impacts on Orcutt's spineflower and its habitat, areas supporting known occurrences of Orcutt's spineflower will be avoided during Proposed Action activities. In particular, the visible dirt trail that occurs within Known Occurrence 3 (depicted on Figure 3-2) will be avoided by training and testing activities. If training and testing activities are proposed within 50 feet of known occurrences, a qualified biologist will clearly demarcate known occurrences in the field with markers prior to training and testing activities. Temporary markers will be removed once training is complete. Areas for avoidance will be clearly marked with carsonite posts or by other means that do not cause soil erosion or disturb Orcutt's spineflower habitat. Areas for avoidance will be marked on training maps and through geographic information system files and clearly identified to operators prior to training events that occur near known Orcutt's spineflower locations.
OS-2. A qualified biologist will conduct annual surveys for Orcutt's spineflower in areas of occupied and high quality habitat (Figure 3-2). Training and testing activities which are dispersed and have a limited footprint (such as infrequent foot traffic by small groups) will not be excluded from areas of high quality habitat for Orcutt's spineflower provided these areas remain unoccupied. If new areas of Orcutt's spineflower are identified, or areas of known occurrence expand, these will be clearly identified on training maps and avoided during training and testing activities.
CAGN-1. Based on the results of coastal California gnatcatcher habitat modeling (detailed in Section 3.1.2.5.2, Coastal California Gnatcatcher Habitat Model) the following measures will be implemented for training activities: a. Optimal and suitable coastal California gnatcatcher habitat: noise-producing training activities may occur year round, provided they remain on established roads, trails, and other developed/disturbed areas. Off-trail training will be avoided during the coastal California gnatcatcher breeding season (February 15–August 31) to the extent feasible, unless a pre-training coastal California gnatcatcher survey is conducted by a qualified biologist within the area proposed for training to determine occupancy status as described in measure CAGN-2, below. b. Marginal and unsuitable coastal California gnatcatcher habitat: training activities may occur year round without any seasonal restrictions. c. From September 1 through February 14 (nonbreeding season), training will be authorized throughout NBPL without any coastal California gnatcatcher habitat-based restrictions.

Table 3-15: Impact Avoidance and Minimization Measures (continued)

Measure
CAGN-2. If avoiding the coastal California gnatcatcher breeding season (February 15–August 31) for activities that require foot traffic through optimal and suitable habitat is not possible, the measures below will be employed in coordination with the NBPL Natural Resources Department and USFWS: a. A qualified biologist will conduct coastal California gnatcatcher surveys, with at least three surveys (with each survey conducted at least one week apart) prior to the training event during the coastal California gnatcatcher breeding season to locate coastal California gnatcatchers/nests and shrubs/areas frequently used by the species in the Proposed Action Area. b. If nests or shrubs/areas frequently used by coastal California gnatcatchers are detected within 25 feet of the proposed training areas, these areas will be marked for avoidance and incorporated into the training event as an avoidance area. Temporary markings will be removed once training is complete. c. Prior to the training event, instructors will place illuminated markers (visible only with infrared glasses) along the trail/road to facilitate adherence to the path of travel. Illuminated markers will be removed once training is complete. d. Operators will remain on existing/previously established trails/roads, with the exception of concealment (hiding in bushes) approximately 10 feet from existing/previously established trail/road. Training will include guidelines that render areas beyond approximately 10 feet from established trails/roads as out of bounds. e. A qualified biologist will conduct surveys the day after each training exercise during the coastal California gnatcatcher breeding season (February 15–August 31), and over two additional days (if no coastal California gnatcatchers are detected during the first post-training survey) to confirm continued coastal California gnatcatcher activity and incubation in the area. The NBPL Natural Resources Department will notify USFWS of the survey results within two weeks of the survey.
CAGN-3. Group 1, Group 2, and Group 2 Heavy UAS will avoid flying below 50 feet AGL over optimal and suitable coastal California gnatcatcher habitat year round, unless specifically required for survey purposes or to meet a specific mission. During the coastal California gnatcatcher breeding season, all UAS groups will maintain a sufficient altitude AGL when flying over optimal coastal California gnatcatcher habitat such that the 60 A-weighted decibel (dBA) threshold for avian harassment is not exceeded.
CAGN-4. Initial vegetation trimming along the existing two-track dirt road edges at the proposed UxS Southern Test Area will be conducted outside of the coastal California gnatcatcher breeding season. The minimal amount of vegetation will be trimmed to maintain a 10-foot wide area for UxS to safely operate. Long-term vegetation maintenance of the proposed UxS Southern Test Area will also be conducted outside of the coastal California gnatcatcher breeding season.
CAGN-5. The proposed HLZs will not be used during the coastal California gnatcatcher breeding season (February 15–August 31). Use of the HLZs will be authorized during the nonbreeding season from September 1 to February 14.
CAGN-6. To the extent feasible, firing of blanks, simunitions, and UTMs, will be conducted within previously developed training areas and outside of optimal coastal California gnatcatcher habitat during the breeding season.

Table 3-15: Impact Avoidance and Minimization Measures (continued)

Measure
CAGN-7. Due to the high instantaneous noise levels produced by EETs, their use will be restricted to the following locations and times of year: a. EET training devices (including, but not limited to MWBs and Titan "Poppers") may be used at Battery Whistler year round without seasonal restrictions due to the lack of adjacent optimal coastal California gnatcatcher habitat. b. EET training devices may only be used outdoors at Robot Training Lane, Battery Woodward, and Rural Search Training Village during the coastal California gnatcatcher nonbreeding season (September 1–February 14). c. Prior to use of EET training devices within the bunker at Battery Woodward during the coastal California gnatcatcher breeding season (February 15–August 31), a noise study will be conducted that accurately assesses the instantaneous A-weighted noise levels in decibels produced by use of these EETs, with a focus on the loudest EET (which is an MWB). The noise study will be conducted outside of the coastal California gnatcatcher breeding season. Depending upon the results of the noise study, the following additional measures will be implemented: i. If the instantaneous noise level from use of EETs within the bunker at Battery Woodward is 60 dBA or less when measured immediately outside of the bunker doors, then EETs may be used within the bunker during the coastal California gnatcatcher breeding season without any additional restrictions. The status of the bunker doorway(s) should be noted during the survey. The exact door conditions (e.g., doors fully closed) used during the reference sound level measurement should be noted and subsequently reenacted during all EET activities within the bunker. ii. If the instantaneous noise level exceeds 60 dBA when measured at the bunker doors, the distance from the bunker doors to where the noise level attenuates to 60 dBA will be measured. The distance from the Battery Woodward bunker doors to where noise levels are 60 dBA (hereafter referred to as the area of ensonification) will be used as the buffer distance around Battery Woodward whereby coastal California gnatcatcher surveys will be conducted prior to use of EETs at Battery Woodward during the coastal California gnatcatcher breeding season. One coastal California gnatcatcher pre-event survey within the area of ensonification will be conducted at least one week prior to use of EETs at Battery Woodward, with a second follow-up survey no more than 48 hours prior to each training event to ensure that no coastal California gnatcatcher nests are located within the area of ensonification. If no coastal California gnatcatcher nests are detected within the area of ensonification, then EET use may proceed. If a coastal California gnatcatcher nest is located within the area of ensonification, no EETs may be used at Battery Woodward until the nest has fledged or failed. If multiple events are planned during the coastal California gnatcatcher breeding season, then pre-event surveys will be necessary if more than two weeks lapse since the last survey was conducted.
MBTA-1. Initial vegetation trimming along the existing two-track dirt road edges at the proposed UxS Southern Test Area will be conducted outside of the avian breeding season (vegetation trimming will be authorized during the nonbreeding season from September 1 through February 14). The minimal amount of vegetation will be trimmed to maintain a 10-foot wide area for UxS to safely operate. Long-term vegetation maintenance of the proposed UxS Southern Test Area will be conducted outside of the avian breeding season. Off-trail activities will be authorized year round without the need to conduct pre-event surveys. Birds protected by the MBTA will also benefit from the measures for the coastal California gnatcatcher.
Public notification will occur prior to exercises utilizing blanks. Notification is to make public aware and minimize noise complaints.

Table 3-15: Impact Avoidance and Minimization Measures (continued)

Measure
Alternative 2 – Increase Testing and Training Locations and Events at Naval Base Point Loma and Designate Two Unimproved Helicopter Landing Zones for Training
MBTA-2. The proposed HLZs will not be used during the avian breeding season (February 14–August 31). Use of the HLZs will be authorized during the nonbreeding season from September 1 through February 14.

Notes: CM = Conservation Measure; OS = Orcutt's Spineflower; CAGN = Coastal California Gnatcatcher; MBTA = Migratory Bird Treaty Act

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4 Other Considerations Required by NEPA

4.1 Consistency with Other Federal, State, and Local Laws, Plans, Policies, and Regulations

In accordance with 40 CFR part 1502.16(c), analysis of environmental consequences shall include discussion of possible conflicts between the Proposed Action and the objectives of federal, regional, state and local land use plans, policies, and controls. Table 4-1 identifies the principal federal and state laws and regulations that are applicable to the Proposed Action, and describes briefly how compliance with these laws and regulations would be accomplished.

Table 4-1: Principal Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***
National Environmental Policy Act (NEPA); Council on Environmental Quality (CEQ) NEPA implementing regulations; Navy procedures for Implementing NEPA	This Environmental Assessment has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, and Navy NEPA procedures. Public participation and review were conducted in compliance with NEPA.
Clean Air Act	Criteria pollutant emissions would not be generated in significant enough quantities to affect the attainment status of the region and would be sufficiently dispersed to not appreciably impact local air quality.
Clean Water Act	The Proposed Action does not require a permit pursuant to sections 401, 402, or 404 of the Clean Water Act, as the proposed action does not include construction or demolition activities.
Coastal Zone Management Act (CZMA)	California Coastal Act of 1976 (CCA) Section 30008 defines the authority of the California Coastal Management Plan (CCMP). The CCMP enforces the CZMA and other federal laws that are related to planning or managing California coastal resources. The Proposed Action would occur within the boundary of Naval Base Point Loma (NBPL), which is federal property owned by the DoD. Federal definition of coastal zone excludes lands the use of which is by law subject solely to the discretion of or which is held in trust by the Federal government; however, activities that occur outside the coastal zone shall consider any direct, indirect, and cumulative effects to coastal uses or resources. As a federal agency, the Navy is required to determine whether its proposed activities would affect the coastal zone. This takes the form of a consistency determination, a negative determination, or a determination that no further action is necessary
National Historic Preservation Act (NHPA)	The Proposed Action is consistent with the national policy for the preservation of historic sites, buildings, archaeological sites, and objects of national significance. The Navy determined that the proposed undertaking for the Navy to conduct testing and training activities at NBPL would result in no adverse effect to historic properties, in accordance with NHPA Section 106.

Table 4-1: Principal Federal and State Laws Applicable to the Proposed Action (continued)

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***
Endangered Species Act (ESA)	In accordance with section 7(a)(2) of the ESA, the Navy has prepared a Biological Assessment that assesses the potential impacts of the Preferred Alternative on ESA-listed terrestrial species. The analysis in the Biological Assessment indicates that the Proposed Action may adversely affect the California gnatcatcher (see Section 3.1, Biological Resources). The Navy is currently in consultation with U.S. Fish and Wildlife Service regarding the Navy's findings that the Proposed Action may affect ESA-listed species.
Migratory Bird Treaty Act (MBTA)	The Proposed Action is not anticipated to result in adverse effects on migratory bird populations and would be in compliance with the MBTA.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Based on analysis in Section 3.6 (Public Health and Safety), the Navy has determined that the Proposed Action would not require CERCLA-related cleanup of uncontrolled or abandoned hazardous waste sites, accidents, or spills. The Navy would report any spill or release of hazardous substance of a quantity equal to or greater than the reportable quantity.
Emergency Planning and Community Right-to-Know Act	The Emergency Planning and Community Right-to-Know Act is applicable to the Proposed Action because small quantities of hazardous materials would be stored on site. Under the Proposed Action, the Navy would not manufacture, store, or otherwise use hazardous chemicals above Toxics Release Inventory (Emergency Planning and Community Right-to-Know Act Section 313) reporting thresholds.
Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*	The Proposed Action would not result in environmental health risks and safety risks that may disproportionately affect children.
Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*	The Proposed Action would not impact any known historic properties, potentially National Register of Historic Places-eligible properties, or traditional cultural properties and thus, no tribal consultation is anticipated. If tribal resources are discovered, the Navy would coordinate and consult with federally recognized tribes in compliance with EO 13175.
Executive Order 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*	Greenhouse Gas emissions would not be generated in significant enough quantities to affect the climate crisis. The GHG emissions from the Proposed Action were evaluated according to the "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," 81 Federal Register 51866 (August 5, 2016), as required by Executive Order 13990.

4.2 Irreversible or Irretrievable Commitments of Resources

Irreversible or irretrievable commitments of resources are those which cause either direct or indirect use of natural resources such that the resources cannot be restored or returned to their original condition. This includes the use of non-renewable resources such as metal and fuel, and natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. Another impact that falls under this category is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

For the Proposed Action, most resource commitments would be neither irreversible nor irretrievable. Most impacts are short term and temporary, or long lasting but negligible. Since there would be no building or facility construction, the consumption of materials typically associated with construction (e.g., concrete, metal, sand) would not occur. Energy usage typically associated with construction activities would not be expended and irreversibly lost. Fuel expended by vehicles, vessels, and aircraft during training activities would be irreversibly lost.

The Proposed Action would result in minor loss of 0.32 acre of habitat for plants or animals from establishment and long-term maintenance of the proposed UxS Southern Test Area. The Proposed Action may affect, and is likely to adversely affect, the coastal California gnatcatcher. As part of the rigorous training, the operators learn skills needed to avoid detection along with the goal of leaving no trace of their presence during or after training activities, which diminishes the likelihood of any physical disturbance to cultural resources. There would be no changes in land use within the training study area.

The amount of materials required for any training-related activities and energy used during the Proposed Action would be small. Although the proposed activities would result in some irreversible or irretrievable commitment of resources such as various metallic materials, minerals, and labor, this commitment of resources is not significantly different from that necessary for many other Navy training activities carried out over the past several years. Proposed activities would not commit natural resources in significant quantities.

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Appendix A
Air Quality Methodology and Calculations

A.1 Air Emissions

A.1.1 Emissions from Vehicle Activities

Vehicle activities associated with the Proposed Action include those related to personnel commuting to the site as well as vehicle operations during the training and testing exercises. Emission factors, in grams per mile from the CARB EMFAC2021 (v1.0.1) database of on-road and off-road mobile sources emissions inventories, were used to estimate the combustion emissions from vehicles activities.

Table A-1 summarizes the assumptions used. Tables A-2 and A-3 present the combustion emission factors and the estimated emissions, respectively.

Table A-1: Assumptions used for Estimating Combustion Emissions from Vehicle Operations

Activity	Emission Sources	Assumptions
Daily UxS on-road test and integration – Outdoor autonomous and unmanned vehicle in maintained areas and on paved roads	Dust and combustion emissions from vehicles	One vehicle per test, up to two miles per event on paved roads. Similar to regular vehicular traffic in maintained areas and on paved roads. Light-Heavy-Duty Trucks (GVWR 8,501–10,000 lb.) was used as surrogate for HMMWV, EMFAC Vehicle Category: LHD1 Vehicle weight of 5 tons was assumed.
UxS test and integration on defined unmaintained paths	Dust and combustion emissions from vehicles	Assumed half of the events involve passenger vehicle transit (i.e., 25 roundtrips). Each trip up to 1.5 miles, total. Modeled Gasoline-fueled Passenger Vehicle.
OTB training activities	Dust and combustion emissions from personnel commute to the site	25 personnel in five vans travel to/from NASNI per event. Modeled as Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.), EMFAC Vehicle Category: LHD2 Vehicle weight of 7 tons was assumed.
IED training activities	Personnel commute to the site	Assume two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL. EMFAC Vehicle Category: LHD2 Vehicle weight of 7 tons was assumed.
Force Protection activities in conjunction with ongoing activities	Personnel commute to the site Dust and combustion emissions from vehicles	Two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL. EMFAC Vehicle Category: LHD2 Vehicle weight of 7 tons was assumed. 20 miles per event during force protection activities. Ten personnel traveling by Light-Heavy-Duty Trucks (GVWR 8,501–10,000 lb.), used as surrogate for HMMWV.
Insertion and extraction training	Personnel commute to the site	Two Light-Heavy-Duty Trucks (GVWR 10,001–14,000 lb.) transport personnel from NASNI to NBPL

Notes: UxS = Unmanned Systems, lb. = pound(s), GVWR = Gross Vehicle Weight Rating, HMMWV = High Mobility Multipurpose Wheeled Vehicle, EMFAC = Emission Factor, OTB = Over-the-Beach, IED = Improvised Explosive Device, NASNI = Naval Air Station North Island, NBPL = Naval Base Point Loma

Table A-2: Combustion Emission Factors

Date												
Source: EMFAC2021 (v1.0.1) Emission Rates												
Vehicle Classification: EMFAC202x Categories												
Units: miles/day for CVMT and EVMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN												
https://arb.ca.gov/emfac/emissions-inventory/888484906c2b76efc6fa6f2c1c03f179564f9837												
Vehicle Category	**Fuel**	**NOx_RUNEX**	**PM2.5_RUNEX**	**PM2.5_PMTW**	**PM2.5_PMBW**	**PM10_RUNEX**	**PM10_PMTW**	**PM10_PMBW**	**CO2_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**SOx_RUNEX**
LHD1	Diesel	2.19	0.05	0.003	0.03	0.05	0.01	0.08	630.93	0.22	0.62	0.01
LHD2	Diesel	1.57	0.04	0.003	0.03	0.04	0.01	0.09	763.33	0.19	0.49	0.01

Table A-3: Estimated Combustion Emissions from Vehicle Activities

ALT	Activity	Transport				Emissions, ton/year						Emissions, MT/year
	Activity	Number of Vehicles	Number of Miles	Number of events	Total Miles	CO	NO_x	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO_2
No Action Alternative	Outdoor autonomous and unmanned vehicle testing on paved roads	1	2	200	400	0.0003	0.0010	0.0001	0.00000	0.0001	0.0000	0.252
1 and 2	Outdoor autonomous and unmanned vehicle testing on paved roads	1	2	300	600	0.0004	0.0014	0.0001	0.00000	0.0001	0.0001	0.379
1 and 2	UxS test and integration on defined unmaintained paths	1	1.5	25	37.5	0.0000	0.0001	0.0000	0.00000	0.0000	0.0000	0.029
No Action Alternative	Personnel Commute for OTB training activities	5	60	6	1800	0.0010	0.0031	0.0004	0.00001	0.0003	0.0001	1.374
1 and 2	Personnel Commute for OTB training activities	5	60	64	19200	0.0104	0.0333	0.0039	0.00015	0.0030	0.0016	14.656
No Action Alternative	Personnel Commute IED training activities	2	60	30	3600	0.0020	0.0062	0.0007	0.00003	0.0006	0.0003	2.748
1 and 2	Personnel Commute for IED training activities	2	60	33	3960	0.0022	0.0069	0.0008	0.00003	0.0006	0.0003	3.023
1 and 2	Personnel Commute for Force Protection activities	2	60	10	1200	0.0007	0.0021	0.0002	0.00001	0.0002	0.0001	0.916
1 and 2	Force Protection Training activities	2	20	10	400	0.0003	0.0010	0.0001	0.00000	0.0001	0.0000	0.252
1 and 2	Personnel Commute for Insertion and extraction training	2	60	30	3600	0.0020	0.0062	0.0007	0.00003	0.0006	0.0003	2.748

Particulate matter dust particles less than or equal to 10 microns in diameter (PM_{10}) are also generated from vehicles activities on paved and unpaved roads. Emissions were calculated using San Diego Air Pollution Control District methodology for estimating emissions from paved and unpaved haul roads. Variables were obtained from San Diego Air Pollution Control District Haul Road Emissions. Table A-4 presents the estimated uncontrolled emissions from vehicle activity on unpaved road; Table A-5 presents the estimated uncontrolled emissions from vehicle activity on paved road. It was assumed that water spraying or other dust suppressant would not be utilized.

Table A-4: Estimated Dust Emissions from Vehicle Activities on Unpaved Roads

Unpaved Roads, UxS test and integration on defined unmaintained paths

ALTs 1 and 2

Ea = (VMT)[(k)(5.9)(s/12)(S/30)(W/3)^0.7(w/4)^0.5((365-p)/365)](Ci)(1 - e)

Pollutant	PM10	TSP
VMT	38	38
k	0.36	0.8
s	15	15
S	15	15
Amount Hauled		
W-empty, tons	7	7
W-full, tons	7	7
w	4	4
p	40	40
e	0	0
Length (miles/round trip)		1
Emissions (lbs/year)	80.2	178.2
Emissions (tons/yr)	0.040	0.089

Assumed Light-Heavy-Duty Trucks (GVWR 10001-14000 lbs) - 7 tons

Assumed no control efficiency (water spray or other controls).

DEFAULT VALUES - UNPAVED HAUL ROADS

Variable	Variable Description	Default Values and Ranges
k	P30 particle size multiplier (lbs/VMT)	0.80 (PM30, from AP-42, Section 13.2.2)
k	PM10 particle size multiplier (lbs/VMT)	0.36 (PM10, from AP-42, Section 13.2.2)
s	Surface material silt content	15% (Usually 4 to 20%, test data)
p	Annual precipitation >0.01 in.	40 days/year (for San Diego County)
e	Control efficiency	80% (for water spray on roads)
e	Control efficiency	80% (for water spray with surfactant)

Table A-5: Estimated Dust Emissions from Vehicle Activities on Paved Roads

No Action Alternative

Outdoor autonomous and unmanned vehicle testing on paved roads
Commute for OTB training activities
Commute for IED training activities

Ea = (VMT)[(k)(sL/2)0.65(W/3)1.5](Ci)(1 - e)

Pollutant	PM10	TSP
VMT	5,800	5,800
k	0.016	0.082
sL	13.6	13.6
W-full, tons	5	5
W-empty, tons	5	5
e		
Emissions (lbs/year)	694.1	3,557.5
Emissions (tons/yr)	0.35	1.78

DEFAULT VALUES - PAVED HAUL ROADS

Variable	Variable Description	Default Values and Ranges
k	PM30 particle size multiplier (lbs/VMT)	0.082 (PM30, from AP-42 table 13.2-1.1)
k	PM10 particle size multiplier (lbs/VMT)	0.016 (PM10, from AP-42 table 13.2-1.1)
sL	Road surface silt loading	13.6 g/m2 (Usually 7 to 70, test data)
sL	Road surface silt loading	0.40 oz./yd2 (typical range is 0.21 to 2.1)
e	Control efficiency	80% (for water spray on roads)
e	Control efficiency	80% (for water spray and surfactant)
e	Control efficiency	0% (if sweeping only, note: sweeping is accounted for in the site specific sL)

ALTs 1 and 2

Outdoor autonomous and unmanned vehicle testing on paved roads
Commute for OTB training activities
Commute for IED training activities
Commute for Force Protection activities
Commute for Insertion and extraction training

Outdoor autonomous and unmanned vehicle testing on paved roads

ALTs 1 and 2

Ea = (VMT)[(k)(sL/2)0.65(W/3)1.5](Ci)(1 - e)

Pollutant	PM10	TSP
VMT	28,960	28,960
k	0.016	0.082
sL	13.6	13.6
W-full, tons	5	5
W-empty, tons	5	5
e		
Emissions (lbs/year)	3,466.0	17,763.0
Emissions (tons/yr)	1.73	8.88

A.1.2 Emissions from Munitions Activities

Available emissions factors (AP-42, *Compilation of Air Pollutant Emission Factors*) were used to estimate the emissions. These factors were then multiplied by the net weight of the explosive and the number of items that were used per year. This calculation provides estimates of annual emissions.

$$Emissions = EXP/YR \times EF \times Net\ Wt$$

Where:

Emissions = annual ordnance emissions

EXP/YR = number of explosives, propellants, and pyrotechnics items used per year

EF = air pollutant emissions factor per item

Net Wt = net weight of explosive, propellant, or pyrotechnics per ordnance item

Table A-6 presents the emission factors and references. Table A-7 presents the estimated emissions.

Table A-6: Munitions Emission Factors and References

Ordnance Information					Emission Factor (lb per item)							
Ordnance Type	**Ordnance**	**Component**	**Net Explosive Weight (NEW), pounds per item**	**Type**	**CO**	**NOx**	**VOC**	**PM10**	**PM2.5**	**CO2**	**Lead**	**Reference**
Military Dynamite Demolition Block Charge	medium velocity blasting explosive	Explosive	0.37	DODIC M591	5.40E-03	2.40E-03		8.90E-03	3.50E-03	3.30E-01	1.50E-04	AP 42, Chapter 15, Table 15.9.17-1, Emission Factors for the use of DODIC M591, M1 Military Dynamite Demolition Block Charge
SML PROJ	.50CAL BLANK		0.01		1.80E-03	2.80E-05		9.80E-05	8.80E-05	2.10E-03	1.20E-05	AP 42, Chapter 15, Table 15.1.29-1, Emission Factors for DODIC A598, M1A1 .50 Caliber Blank Cartridge

Table 15.9.17-1 EMISSION FACTORS FOR THE USE OF DODIC M591, M1 MILITARY DYNAMITE DEMOLITION BLOCK CHARGE – CARBON DIOXIDE, CRITERIA POLLUTANTS, METHANE, AND TOTAL SUSPENDED PARTICULATE[a]

EMISSION FACTOR RATING: C (except as noted)

CASRN[b]	Pollutant	lb per item	lb per lb NEW[c]
124-38-9	CO_2[f]	3.3 E-01	9.0 E-01
630-08-0	Carbon monoxide (CO)[g]	5.4 E-03	1.5 E-02
7439-92-1	Lead (Pb)	1.5 E-04	4.1 E-04
74-82-8	Methane[g]	6.5 E-05	1.7 E-04
--	Oxides of nitrogen (NO_x)[f]	2.4 E-03	6.5 E-03
--	PM-2.5[d,g]	3.5 E-03	9.4 E-03
--	PM-10[e]	8.9 E-03	2.4 E-02
12789-66-1	TSP	1.6 E-02	4.2 E-02

[a] Factors represent uncontrolled emissions. References 1, 3, and 6.
[b] CASRN = Chemical Abstracts Service Registry Number.
[c] NEW = net explosive weight. The NEW for this ordnance is 3.7 E-01 pounds per item. Reference 1.
[d] PM-2.5 = particulate matter with an aerodynamic diameter equal to or less than 2.5 micrometers (µm).
[e] PM-10 = particulate matter with an aerodynamic diameter equal to or less than 10 µm.
[f] EMISSION FACTOR RATING A.
[g] EMISSION FACTOR RATING B.

15.9.17 M591, M1 Military Dynamite Demolition Block Charge

15.9.17.1 Ordnance Description[1,2]

The M1 Military Dynamite Demolition Block Charge (DODIC M591) is a medium velocity blasting explosive used in military construction, quarrying, and demolition. This ammunition is used during combat and on firing ranges during training.

Table 15.1.29-1 EMISSION FACTORS FOR THE USE OF DODIC A598, M1A1 .50 CALIBER BLANK CARTRIDGE - CARBON DIOXIDE, CRITERIA POLLUTANTS, METHANE, AND TOTAL SUSPENDED PARTICULATE[a]

EMISSION FACTOR RATING: A (except as noted)

CASRN[b]	Pollutant	lb per item	lb per lb NEW[c]
124-38-9	CO_2	2.1 E-03	3.1 E-01
630-08-0	CO	1.8 E-03	2.7 E-01
7439-92-1	Lead (Pb)[f]	1.2 E-05	1.7 E-03
74-82-8	Methane	3.4 E-06	5.0 E-04
--	Oxides of nitrogen (NO_x)[f]	2.8 E-05	4.1 E-03
--	PM-2.5[d]	8.8 E-05	1.3 E-02
--	PM-10[e]	9.8 E-05	1.4 E-02
12789-66-1	TSP	8.7 E-05	1.3 E-02

[a] Factors represent uncontrolled emissions. References 1, 3, and 6.
[b] CASRN = Chemical Abstracts Service Registry Number.
[c] NEW = net explosive weight. The NEW for this ordnance is 6.89 E-03 pounds per item. Reference 6.
[d] PM-2.5 = particulate matter with an aerodynamic diameter equal to or less than 2.5 micrometers (µm).
[e] PM-10 = particulate matter with an aerodynamic diameter equal to or less than 10 µm.
[f] EMISSION FACTOR RATING B.

Table A-7: Estimated Munitions Emissions

Land Demolition - ALTs 1 and 2														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
Military Dynamite Demolition Block Charge	400	2.16	0.96	3.56	1.40	132.00	0.06	1.08E-03	4.80E-04	1.78E-03	7.00E-04	0.0599	3.00E-05
Total MT/yr						**0.05987**							
Blank Firing - No Action Alternative														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
SML PROJ	900	1.62	0.03	0.09	0.08	1.89	0.01	8.10E-04	1.26E-05	4.41E-05	3.96E-05	0.0009	5.40E-06
Total MT/yr						**0.00086**							
Blank Firing - ALT 1 and 2														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
SML PROJ	9,600	17.28	0.27	0.94	0.84	20.16	0.12	8.64E-03	1.34E-04	4.70E-04	4.22E-04	0.0091	5.76E-05
Total MT/yr						**0.00914**							
IED training activities - No Action Alternative														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
Military Dynamite Demolition Block Charge	4,500	24.30	10.80	40.05	15.75	1,485.00	0.68	1.22E-02	5.40E-03	2.00E-02	7.88E-03	0.6736	3.38E-04
Total MT/yr						**0.67358**							
IED training activities - ALT 1 and 2														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
Military Dynamite Demolition Block Charge	4,950	26.73	11.88	26.73	17.33	1,633.50	0.74	1.34E-02	5.94E-03	1.34E-02	8.66E-03	0.7409	3.71E-04
Total MT/yr						**0.74094**							
EOD combat skills training, Blank Firing - No Action Alternative, ALT 1 and 2														
Category	**Number of Items**	**Emissions (lb/year)**						**Emissions (ton/year)**						
	#/yr	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2**	**Lead**	**CO**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**CO_2, MT/year**	**Lead**
SML PROJ	1,050	1.89	0.03	0.10	0.09	2.21	0.01	9.45E-04	1.47E-05	5.15E-05	4.62E-05	0.0010	6.30E-06
Total MT/yr						**0.00100**							

A.1.3 Emissions from Aircraft Activities

Aircraft operations of concern are those that occur from ground level up to 3,000 feet (ft.) above ground level (AGL). The 3,000 ft. AGL altitude was assumed to be the ceiling of the mixing zone (known as the atmospheric mixing height) above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. Pollutants emitted by aircraft above 3,000 ft. AGL are excluded from the analysis of compliance with National Ambient Air Quality Standards. The pollutant emission rate is a function of the aircraft engine's fuel flow rate and efficiency. Emissions for one complete training activity for a particular aircraft are calculated by knowing the specific engine pollutant emission factors for each mode of operation.

For this analysis, emission factors for the platform (CH-60) were obtained from the Navy's Aircraft Environmental Support Office memoranda. Pollutant emissions were calculated by applying the emission factor, in pounds per hour or pound per operation, by the applicable operational parameter in hours or number of operations. Table A-8 presents the emission factors, and Table A-9 presents the estimated aircraft emissions.

Table A-8: Aircraft Emission Factors

General information

Aircraft	Engine Model	Engines (#)	Fuel Flow (lb/hr) /Engine	Fuel Flow (gal/hr)	Mode	Emission Indices, lb/1,000 lb fuel							Emissions Factors (lb/hr)						References
						CO	NOx	HC	VOC	SOx	PM	CO2	CO	NOx	VOC	SOx	PM	CO2	Source of Emissions Indices Information
H-60	T700-GE-401C (2)	2	600	171	Cruise	6.25	6.40	0.55	0.63	0.37	4.20	3221.36	7.50	7.68	0.76	0.44	5.04	3,866	AESO Memorandum Report No. 9929 Revision D, December 2019

Notes:
Fuel Sulfur Content is based on AESO Memorandum Report No. 2012-01 Revision H, JP-5, 2019 Index used
VOC = HC*1.15 (AESO Memoranda)

Estimated air emissions from landing and takeoff (LTO) cycle with a straight-in arrival

Aircraft	Engine Model	Engines (#)	Total Fuel Used for LTO	Fuel Flow (gal/hr)	Mode	Emissions from Single LTO, (lb/LTO)							
						CO	NOx	HC	VOC	SOx	PM	CO2	Source of Emissions Indices Information
H-60	T700-GE-401C (2)	2	661	94	LTO	12.31	3.36	1.37	1.58	0.24	2.34	2109.65	AESO Memorandum Report No. 9929 Revision D, December 2019

Notes:
1. For V-22, assumed Vertical Takeoff (conversion Mode) and Landing with Break (Airplane Mode) for a conservative estimate of emissions.
2. for V-22, VOC = THC x 1.16 x 1.15 (AESO Memorandum Report No. 9946 Revision G, May 2017)

AESO Memorandum Report No. 9929 Revision D

Aircraft Emission Estimates: H-60 Landing and Takeoff Cycle, Cruise Time and In-Frame Maintenance Testing Using JP-5

Table ES-1. Estimated air emissions for a single H-60 LTO Operation

Operation	Pounds per LTO						
	Fuel Used	CO_2	CO	THC	NOx	$PM_{2.5}$	PM_{10}
Single H-60 LTO	661.08	2,109.65	12.31	1.37	3.36	2.34	2.34

Table ES-1. Estimated air emissions for a single V-22 Takeoff or Landing

Operation	Pounds per Operation (lb/Op)						
	Fuel Used	CO_2	CO	THC[1]	NO_x	$PM_{2.5}$	PM_{10}
Vertical Takeoff (Conversion mode)	801	2,578.99	2.45	0.03	6.79	1.12	1.12
Short Takeoff (Airplane mode)	688	2,216.15	2.37	0.03	5.38	0.94	0.94
Short Landing (Airplane mode)	601	1,934.85	2.96	0.04	3.87	0.78	0.78
Vertical Landing (Conversion mode)	601	1,934.87	2.96	0.04	3.87	0.78	0.78
Landing w/Break (Airplane mode)	776	2,498.87	3.07	0.04	6.13	1.05	1.05

Note:

AESO Memorandum Report No. 9929 Revision D

Table 2. Estimated air emissions for one hour of H-60 Cruise Time

Aircraft: H-60						Engine(s): T700-GE-401C (2)						APU Type: T-62T-40-1					
Flight Operation and Flight Mode	Engine Power Setting[1]	No. of Engines in Use[1]	Time in Mode per Engine (min)	Fuel Flow Rate per Engine[2] (lb/hr)	Fuel Used[3] (lb)	Emission Indexes[2] (lb/1,000 lb fuel)						Emissions from One Hour of Cruise[4] (lb)					
						CO_2	CO	THC	NO_x	$PM_{2.5}$	PM_{10}	CO_2	CO	THC	NO_x	$PM_{2.5}$	PM_{10}
One Hour Cruise	65% torque	2	60.00	599.85	1,199.70	3,221.36	6.25	0.55	6.40	4.20	4.20	3,864.67	7.50	0.66	7.68	5.04	5.04

Notes:
1) Estimated from pilot interviews (references 2-5)
2) Fuel flow and emission indexes for the T700-GE-401C are from reference 6.
3) Fuel used = fuel flow x time-in-mode / 60 x no. of engines in use.
4) Emissions = fuel used / 1,000 x emission index

Table A-9: Estimated Aircraft Emissions

Insertion/extraction activities of rotary-wing aircraft - Takeoff and Landing Emissions					Emissions (ton/yr)					
Alternative	Aircraft	# of Events per Year	# of trainings per event	Total annual LTO	CO	NOx	VOC	SOx	PM	CO2, MT/year
2	H-60	3	1	3	0.02	0.01	0.00	0.00	0.00	3

Insertion/extraction activities of rotary-wing aircraft - Emissions								Emissions (ton/yr)					
Alternative	Aircraft	# of Events per Year	# of trainings per event	Total annual Training	# of training below 3,000 ft	Time per event, minutes	Time per event, hr	CO	NOx	VOC	SOx	PM	CO2, MT/year
2	H-60	3	1	3	3		4	0.05	0.05	0.00	0.00	0.03	21

A.1.4 Estimated Emissions for each Alternative

Tables A-10, A-11, and A-12 summarize the estimated emissions for each alternative.

Table A-10: Estimated Emissions – No Action Alternative

Emissions	Total Emissions, Ton/yr						
	CO	NOx	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO2, MT/year
Vehicle – Combustion	0.0032	0.0103	0.0012	4.57E-05	9.16E-04	0.0005	4.37
Vehicle – Dust					0.35		
Munitions	0.01	0.01			0.02	0.01	0.68
Total	**0.02**	**0.02**	**0.0012**	**4.57E-05**	**0.37**	**0.01**	**5.05**

Table A-11: Estimated Emissions – Alternative 1

Emissions	Total Emissions, Ton/yr						
	CO	NOx	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO2, MT/year
Vehicle – Combustion	0.02	0.05	0.01	0.00	0.00	0.00	22.00
Vehicle – Dust					1.77		
Munitions	0.02	0.01			0.02	0.01	0.81
Aircraft	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.04**	**0.06**	**0.01**	**0.00**	**1.79**	**0.01**	**23**
NAA Emissions	0.02	0.02	0.00	0.00	0.37	0.01	5.05
Change in Emissions	**0.02**	**0.04**	**0.00**	**0.00**	**1.43**	**0.00**	**17.76**
General Conformity Nonattainment/Maintenance *de minimis* Levels	--	25	25	--	--	--	--
Exceeds *de minimis* Level?	N/A	No	No	N/A	N/A	N/A	N/A

Table A-12: Estimated Emissions – Alternative 2

Emissions	Total Emissions, Ton/yr						
	CO	NOx	VOC	SO_x	PM_{10}	$PM_{2.5}$	CO2, MT/year
Vehicle – Combustion	0.02	0.05	0.01	0.00	0.00	0.00	22.00
Vehicle – Dust					1.77		
Munitions	0.02	0.01			0.02	0.01	0.81
Aircraft	0.06	0.05	0.01	0.00	0.03	0.03	24
Total	**0.10**	**0.11**	**0.01**	**0.00**	**1.83**	**0.05**	**47**
NAA Emissions	0.02	0.02	0.00	0.00	0.37	0.01	5
Change in Emissions	**0.09**	**0.09**	**0.01**	**0.00**	**1.46**	**0.04**	**42**
General Conformity Nonattainment/Maintenance *de minimis* Levels	--	25.00	25.00	--	--	--	--
Exceeds *de minimis* Level?	N/A	No	No	N/A	N/A	N/A	N/A

A-2 Record of Non-Applicability for Clean Air Act Conformity

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

A.2.1 Introduction

The United States Environmental Protection Agency (EPA) published Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule, in the November 30, 1993, Federal Register (40 CFR parts 6, 51, and 93). On April 5, 2010, the EPA finalized revisions to the General Conformity Rule (75 Federal Register 17253–17279). The U.S. Department of the Navy (Navy) published

Navy Guidance for Compliance with the Clean Air Act General Conformity Rule (July 30, 2013), as referenced in Chief of Naval Operations Manual M-5090.1, Environmental Readiness Program Manual dated September 3, 2019. These publications provide implementing guidance to document Clean Air Act Conformity Determination requirements. This RONA is provided to document compliance of the Proposed Action.

Federal regulations state that "no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity that does not conform to an applicable State Implementation Plan." It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable State Implementation Plan before the action is taken (40 CFR section 51.850[a]).

Federal actions may be exempt from conformity determinations if their emissions do not exceed designated *de minimis* levels for the criteria pollutants of nonattainment or maintenance in the areas of the federal action (40 CFR section 51.853[b]).

A.2. 2 Proposed Action

Action Proponent: U.S. Department of the Navy

Locations: Naval Base Point Loma, located within San Diego Air Basin/Air Pollution Control District, designated as a Severe ozone nonattainment area for the 2008 ozone National Ambient Air Quality Standards and a Severe ozone nonattainment area for the 2015 ozone National Ambient Air Quality Standards. The County is classified by the EPA as unclassified/attainment for all other criteria pollutants.

Proposed Action Name: Training and Testing at Naval Base Point Loma

Proposed Action and Emissions Summary:

Alternative 1 and Alternative 2 of the Proposed Action involve activities that produce emissions of ozone precursors within SDAPCD. As a result, Proposed Action emissions were evaluated to assess compliance with the applicable General Conformity Rule *de minimis* thresholds (Table A-13).

Table A-13: Criteria Pollutant *de minimis* levels for San Diego Air Basin Ozone Maintenance Area

Criteria Pollutant/Precursor	*de minimis* levels (tons/year)
Oxides of Nitrogen (NOx)	25
Volatile Organic Compounds (VOC)	25

Table A-14 presents the estimated emission increase associated with each alternative compared to the No Action Alternative and compares the emissions to the General Conformity Rule *de minimis* thresholds.

Table A-14: Estimated Emissions for Each Alternative

Emissions	Total Emissions, Ton/yr					
	CO	**NOx**	**VOC**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
No Action Alternative	0.02	0.02	0.0012	4.57E-05	0.37	0.01
Alternative 1	**0.04**	**0.06**	**0.01**	**0.00**	**1.79**	**0.01**
Alternative 2	**0.10**	**0.11**	**0.01**	**0.00**	**1.83**	**0.05**
Change in Emissions (ALT 1 – NAA)	**0.02**	**0.04**	**0.00**	**0.00**	**1.43**	**0.00**
Change in Emissions (ALT 2 – NAA)	**0.09**	**0.09**	**0.01**	**0.00**	**1.46**	**0.04**
General Conformity Nonattainment/Maintenance *de minimis* Levels	--	25	25	--	--	--
Exceeds *de minimis* Level?	N/A	No	No	N/A	N/A	N/A

A.2.3 Proposed Action Exemptions

The Proposed Action is exempt from the General Conformity Rule requirements based on the determination that the emissions are well below the *de minimis* threshold for all applicable pollutants.

A.2.4 Emissions Evaluation Conclusion

The Navy concludes that *de minimis* thresholds for affected pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting that conclusion is shown in Table A-14 above. The calculations, methodology, data, and references are contained in Section 3.5 (Air Quality) and in this appendix. Therefore, the Navy concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

RONA Approval

Signature:_____

Name/Rank:_____ Date:_____

Position:_____

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