Draft Environmental Assessment

Berthing Facility
at Naval Base Coronado Camp Michael Monsoor
La Posta, California

August 2023

United States Department of the Navy
Naval Base Coronado

DRAFT
ENVIRONMENTAL ASSESSMENT
for a
BERTHING FACILITY
at
NAVAL BASE CORONADO, CAMP MICHAEL MONSOOR, LA POSTA, CALIFORNIA

August 2023

Abstract

Designation:	Environmental Assessment
Title of Proposed Action:	Environmental Assessment for a Berthing Facility at Camp Michael Monsoor
Project Location:	Naval Base Coronado, Camp Michael Monsoor, La Posta, California
Lead Agency for the EA:	Department of the Navy
Cooperating Agency:	None
Affected Region:	La Posta, San Diego County, California
Action Proponent:	Naval Base Coronado
Point of Contact:	Naval Facilities Engineering Systems Command Southwest Attention: Code EV2.JM 750 Pacific Highway, (12th Floor Environmental) San Diego, CA 92132-5190
Date:	August 2023

The United States Department of the Navy (Navy) has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as implemented by Council on Environmental Quality regulations and Navy regulations for implementing NEPA. This EA analyzes the potential impacts of constructing a berthing facility at Camp Michael Monsoor (CMM) located in La Posta, California. The Proposed Action would result in construction of a new berthing facility, infrastructure, and a warehouse adjacent to existing training facilities at CMM.

This EA evaluates the potential environmental impacts associated with the Proposed Action and No Action Alternative to the following resource areas: air quality, water resources, geological resources, and biological resources.

EXECUTIVE SUMMARY

ES.1 Proposed Action

Naval Base Coronado (NBC), an installation of the United States (U.S.) Department of the Navy (Navy), proposes to construct a new berthing facility[1] at Camp Michael Monsoor (CMM) in La Posta, California. Due to the lack of sufficient berthing facilities at CMM, personnel cannot berth overnight and have to commute from other regional Navy facilities, which negatively impacts training. The berthing facility would support the efficient execution of unit level training at CMM.

The Proposed Action would result in the development of an approximately 13,000-square-foot (1,207-square-meter) berthing facility for up to 120 personnel. The facility would include necessary site utilities and utility connections, a septic system, a trash enclosure, warehouses/storage units, and force protection features. The new berthing facility would be adjacent to existing training facilities at CMM.

ES.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide modern berthing facilities for personnel training at CMM. Providing berthing facilities with sufficient accommodations and capacity would reduce travel time for personnel utilizing the unique training areas provided at CMM.

The Proposed Action is needed to support the efficient execution of training requirements at CMM. By reducing travel time to training areas at CMM, Navy personnel can maximize their training opportunities. In this regard, the Proposed Action furthers the Navy's execution of its congressionally mandated roles and responsibilities under 10 United States Code section 8062.

ES.3 Alternatives Considered

The Navy identified the Proposed Action and No Action Alternative for further analysis.

Under the No Action Alternative, the Navy would not construct a new berthing facility at CMM, and personnel would continue to commute to CMM from NBC, other regional bases, and the existing berthing facility at Camp Morena. Overall, the No Action Alternative would not meet the purpose and need, as travel time would not be reduced for personnel utilizing the training areas at CMM and training opportunities would not be maximized.

The Navy identified one potential project with three potential courses of action (COAs) that would meet the project purpose and need and all three screening factors. All three COAs are located within the same approximately 3-acre (1.21-hectare) project area within walking distance of the primary training areas in the CMM valley. All construction staging and laydown areas would be located within the project area. If required, a preliminary staging area would be located on a portion of the gravel lot at Building 200B, immediately adjacent to the southwest corner of the project area.

[1] As used in this EA, a berthing facility refers to a location that provides basic accommodations for transient personnel to sleep, eat, and perform other basic daily functions.

The only difference between the three COAs is how the Navy would meet the berthing requirements. Under COA 1, the Navy would construct one, 120 person berthing building and under COAs 2 and 3, the Navy would construct two berthing buildings that over time would ultimately provide 120 berths. Thus, the Proposed Action analyzed in this EA consists of the following three COAs:

- COA 1: Single Building Berthing Facility for 120 Personnel
- COA 2: Two Building Berthing Facility for 120 Personnel (80/40 split)
- COA 3: Two Building Berthing Facility for 120 Personnel (60/60 split)

ES.4 Summary of Environmental Resources Evaluated in the EA

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

The environmental resource areas analyzed in detail in this EA include air quality and water, geological, and biological resources. Because potential impacts were considered to be insignificant, negligible, or nonexistent, the following resources were not evaluated in detail: cultural resources, land use, visual resources, airspace, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, socioeconomics, and environmental justice.

ES.5 Summary of Potential Environmental Consequences

Table ES-1 provides a summary of potential impacts anticipated from the No Action Alternative and Proposed Action (COAs 1-3).

ES.6 Public Involvement

The Navy published a Notice of Availability (NOA) announcing availability of the Draft EA for 30-day public review. The NOA was published in the *San Diego Union Tribune*, *East County Gazette*, and *Alpine Sun*. The Navy also uploaded the Draft EA to the Navy website (https://cnrsw.cnic.navy.mil/Operations-and-Management/Environmental-Support/Public-Information-Access-to-Navy-Projects/) and made the Draft EA available for public review at the San Diego County Library – Campo-Morena Village Branch located at 31356 Highway 94, Campo, CA 91906. The Navy will publish a second NOA announcing finalization of the EA and Decision Document in the aforementioned newspapers and upload the documents to the Navy website and make them available at the San Diego County Library – Campo-Morena Village Branch.

Because federally endangered species would be impacted by the Proposed Action, the Navy will initiate formal consultation pursuant to Section 7 of the Endangered Species Act with the U.S. Fish and Wildlife Service. The Final EA will reflect the outcome of consultation with the U.S. Fish and Wildlife Service.

Table ES-1. Summary of Potential Impacts to Resource Areas

Resource Area	*No Action Alternative*	*COA 1*	*COA 2*	*COA 3*
Air Quality	No Impact. No change in existing conditions or new impacts. However, personnel would still commute to CMM from other locations, and therefore, a reduction in transportation-related emissions would not occur.	Less Than Significant Impact. Potential increase in construction-related emissions (e.g., heavy equipment, dust), but would not substantially contribute to air basin pollution, exceed *de minimis* levels or trigger a conformity determination. Operationally, there would be a minor decrease in transportation-related emissions as fewer vehicle trips to/from CMM would occur.	Less Than Significant Impact. Impacts similar to, but slightly less than, COA 1. Under COA 2, less emissions would be generated in a single year, because the facility would be constructed in two phases in different years.	Less Than Significant Impact. Impacts similar to, but slightly less than, COA 1. Under COA 3, less emissions would be generated in a single year, because the facility would be constructed in two phases in different years.
Water Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Potential increases in groundwater use, stormwater runoff, erosion, and sedimentation during construction and upon completion of berthing facility – up to 0.90 acres (0.36 hectares [ha]) increase in impervious surfaces.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Up to 0.93 acres (0.38 ha) increase in impervious surfaces under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Up to 0.93 acres (0.38 ha) increase in impervious surfaces under COA 3.
Geological Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Potential increases in soil erosion and sedimentation from earthwork/grading 3.25 acres (1.32 ha); buildings designed to meet current earthquake codes.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Up to 3.58 acres (1.45 ha) of earthwork/grading under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Up to 3.58 acres (1.45 ha) of earthwork/grading under COA 3.
Biological Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Temporary and permanent impacts to wildlife during construction activities and upon completion due to habitat disruption and loss: permanent removal of up to 3.25 acres (1.32 ha) of vegetation within construction limits, permanent loss of up 0.64 acres (0.26 ha) of vegetation within the fuel management zone (FMZ), and permanent loss of up to 3.89 acres (1.57 ha) of Quino Checkerspot Butterfly (QCB) habitat.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Permanent removal of up to 3.58 acres (1.45 ha) of vegetation within construction limits, permanent loss of up to 0.96 acres (0.39 ha) of vegetation within FMZ, and permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Permanent removal of up to 3.58 acres (1.45 ha) of vegetation within construction limits, permanent loss of up to 0.96 acres (0.39 ha) of vegetation within FMZ, and permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat under COA 3.

Key: COA = Course of Action; FMZ = Fuel Management Zone; CMM = Camp Michael Monsoor; ha = hectares; QCB = Quino Checkerspot Butterfly

Draft
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Abbreviations and Acronyms

Acronym	Definition
BFR	Basic Facility Requirement
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMPs	Best Management Practices
BO	Biological Opinion
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMM	Camp Michael Monsoor
CO	Carbon Monoxide
CO_2e	Equivalent carbon dioxide
COA	Course of Action
CWA	Clean Water Act
EA	Environmental Assessment
EISA	Energy Independence and Security Act
EO	Executive Order
ESA	Endangered Species Act
FMZ	Fuel Management Zone
GSF	Gross Square Feet/Gross Square Foot
ha	Hectare
INRMP	Integrated Natural Resources Management Plan
km	kilometer
kVA	1,000 volt-amps
MBTA	Migratory Bird Treaty Act
MILCON	Military Construction
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Systems Command
NAVFAC SW	NAVFAC Southwest
Navy	U.S. Department of the Navy
NBC	Naval Base Coronado
NEPA	National Environmental Policy Act
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NSW	Naval Special Warfare
O_3	Ozone
$PM_{2.5}$	Fine particulate matter less than or equal to 2.5 microns in diameter
PM_{10}	Suspended particulate matter less than or equal to 10 microns in diameter
QCB	Quino Checkerspot Butterfly
ROI	Region of Influence
REPI	Readiness and Environmental Protection Integration
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SO_2	Sulfur Dioxide
SWPPP	Stormwater Pollution Prevention Plan
tpy	tons per year
U.S.	United States
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WFMP	Wildland Fire Management Plan

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1 Purpose of and Need for the Proposed Action

1.1 Introduction

Naval Base Coronado (NBC), an installation of the United States (U.S.) Department of the Navy (Navy), proposes to construct a new berthing facility[2] at Camp Michael Monsoor (CMM), in La Posta, California. The Navy anticipates construction of the berthing facility and associated infrastructure to begin in Fiscal Year 2024. The new berthing facility would accommodate up to 120 personnel. Due to the lack of sufficient berthing facilities at CMM, personnel cannot berth overnight and have to commute from other regional Navy facilities, which negatively impacts training. The berthing facility would support the efficient execution of unit level training at CMM.

The Navy has prepared this Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations, and Navy instruction for implementing NEPA.

1.2 Background

CMM is an essential training location for Navy Special Warfare (NSW) personnel. The secluded location and mountainous terrain at CMM provide a unique setting to conduct assault training and other specialized warfare training. The physical characteristics found at CMM are similar to the terrains of many foreign countries, thereby providing realism during training exercises with limited encroachment issues. The location and facilities at CMM support fulfillment of the NSW mission, which is to provide maritime special operations forces to conduct full-spectrum operations, unilaterally or with partners, to support national objectives.

1.3 Location

CMM is located in La Posta, California, on Bureau of Land Management (BLM) land and is approximately 50 miles (80 kilometers [km]) east of the City of San Diego on 3,385 unencumbered acres (1,370 hectares [ha]) (see ***Figure 1-1***). Parcels currently in use by the Navy are either withdrawn for exclusive Navy use or are under a temporary right-of-way grant on lands administered by the BLM. CMM is bordered to the north by the Cleveland National Forest and east, south, and west by BLM lands. The Commanding Officer of NBC administers the training areas and facilities at CMM. The Proposed Action would occur in an area generally referred to as "the valley," which is an area used by personnel for training (see ***Figure 1-2***).

The approximately 3-acre (1.21 ha) project footprint is located in a gently sloping area. Elevations in the project area range from approximately 3,200 feet to 3,300 feet (975 meters to 1,006 meters) above mean sea level. An ephemeral drainage runs parallel to the road frontage and connects to a downstream rock-lined channel. The topography surrounding the project area is rugged, with rock cliffs and steep slopes (Navy, 2021a).

[2] As used in this EA, a berthing facility is a location that provides basic accommodations for transient personnel to sleep, eat, and perform other basic daily functions.

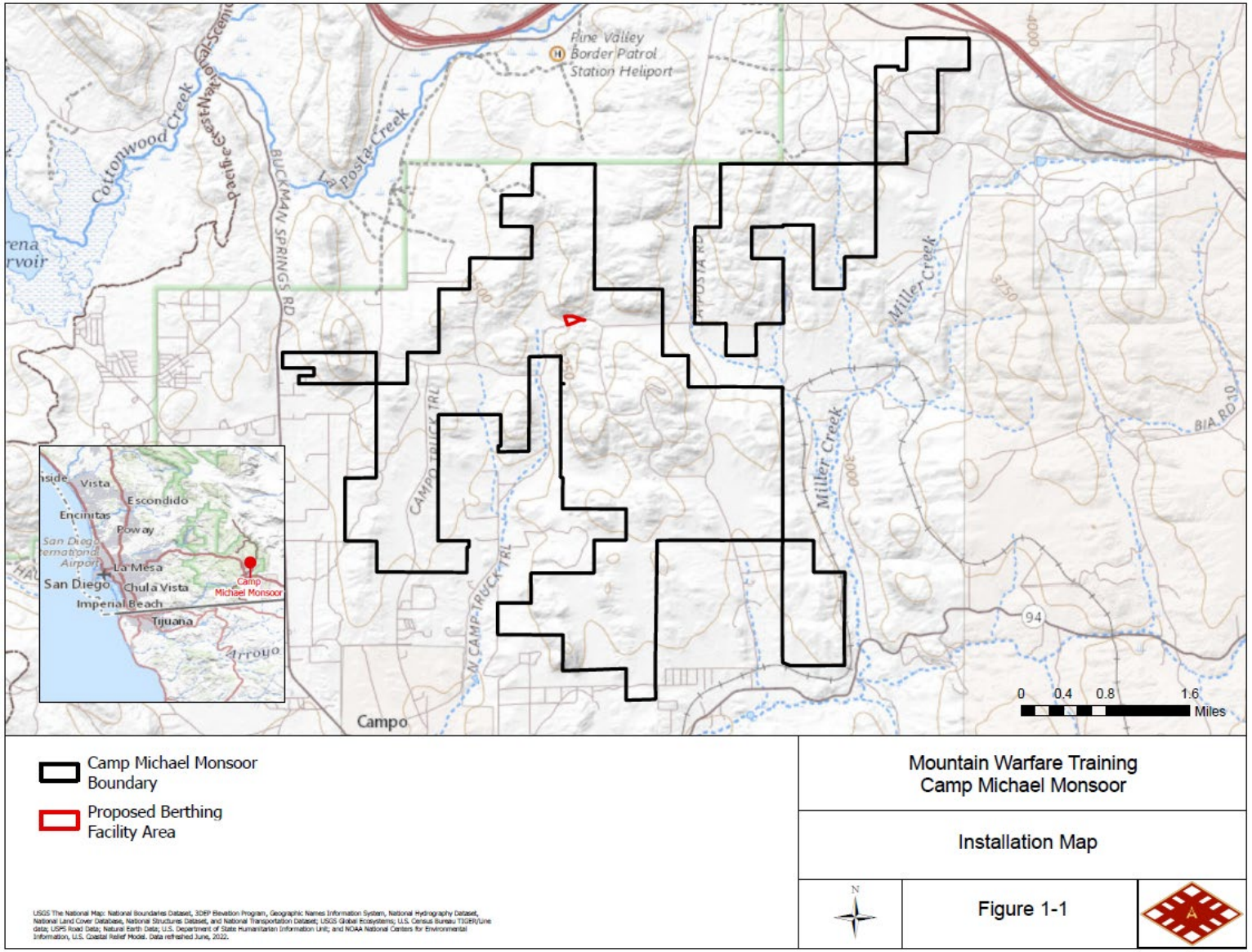

Figure 1-1 Installation Map

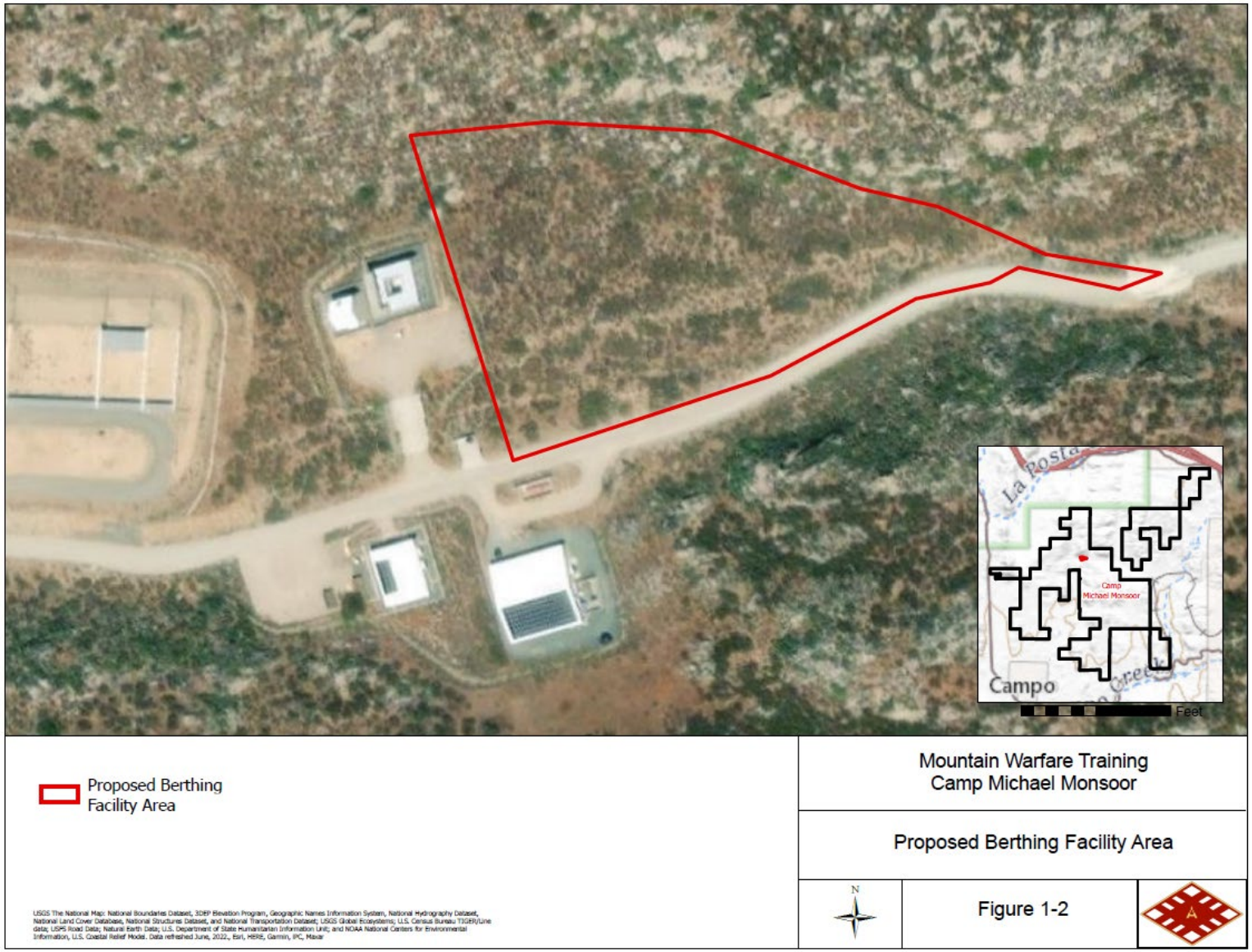

Figure 1-2 Proposed Berthing Facility Area

1.4 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide modern berthing facilities for personnel training at CMM. Providing berthing facilities with sufficient accommodations and capacity would reduce travel time for personnel utilizing the unique training areas at CMM.

Navy personnel either commute from NBC and other regional bases or use an existing berthing facility located on 60 acres (24.3 ha) in Camp Morena on lands leased from the County of San Diego. The existing Camp Morena berthing facility, which can accommodate approximately 201 personnel, is in disrepair. Furthermore, the Navy cannot upgrade the existing berthing facility because it is owned by the county. In addition, the Navy cannot build a new berthing facility on the property because it does not have a long-term lease.

> 10 U.S.C. section 8062: "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."

United Facilities Criteria (UFC) 2-000-05N, *Facility Planning Criteria For Navy/Marine Corps Shore Installations*, provides the space planning factors, criteria and techniques for use in developing Basic Facility Requirement (BFR) calculations and assessments. Establishing the BFR provides the space demand or support requirement for shore-based facilities, by category code, necessary to perform the peacetime missions of Navy shore activities. A BFR justification is the calculation of an installation, command, or region's facilities allowances based upon established planning criteria. For this project, the BFR worksheet identified a full operating capacity of 120 personnel and a requirement of 12,960 square feet (1,204 square meter). To meet these requirements at least 2 acres (0.8 ha) of developable land is necessary.

The Proposed Action is needed to support the efficient execution of training requirements at CMM. By reducing travel time to training areas at CMM, Navy personnel can maximize their training opportunities. In this regard, the Proposed Action furthers the Navy's execution of its congressionally mandated roles and responsibilities under 10 United States Code (U.S.C.) section 8062.

Constructing a new berthing facility co-located with training facilities would replace the deficient and geographically separated berthing facility with a new modern berthing facility that would meet BFR requirements and be adjacent to personnel's primary training facilities, resulting in reduced travel times and maximized training benefits.

1.5 Scope of Environmental Analysis

This EA analyzes potential environmental impacts associated with the No Action Alternative and three Courses of Action (COAs) for the Proposed Action (i.e., COAs 1-3). The environmental resource areas analyzed in detail in this EA include air quality, water resources, geological resources, and biological resources. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for geological resources may only include the construction footprint of a building, whereas the water resources study area would expand

out to include water resources that are located downstream from the project area that may be impacted by runoff, erosion, or sedimentation.

Resource areas not carried forward for detailed analysis include cultural resources, land use, visual resources, airspace, noise, infrastructure, transportation, public health and safety, hazardous materials and waste, socioeconomics, and environmental justice.

1.6 Key Documents

The following key documents have similar actions, analyses, and impacts as the Proposed Action and are incorporated by reference in part or in whole into this EA. Documents are considered to be key because of similar actions, analyses, or impacts that may apply to this Proposed Action. CEQ guidance encourages incorporating documents by reference.

- Camp Michael Monsoor Final Engineering Study and Basis of Cost Estimate. Volume 1: Final Engineering Study Report (Navy, 2021a) – Studied the conceptual plan for constructing a berthing facility at CMM.
- Construction of Military Facilities at Naval Base Coronado, CMM (P-781) (Navy, 2008) – Analyzed construction and operation of facilities at CMM. As part of this project, BLM transferred 3,385 acres (1,370 ha) of public land to the Navy for exclusive military use through year 2033.
- EA for the Expansion of Range and Training Facilities and Training Support Operations at NBC, CMM (P-888) (Navy, 2013a) – Evaluated expansion and improvement of existing facilities and construction of new facilities at CMM.
- Biological Opinion (BO) – Formal Section 7 Consultation on the Military Construction Project (MILCON) P-888, Proposed Expansion of Range and Training Facilities and Training Support Operations at NBC, CMM, San Diego County, California (U.S. Fish and Wildlife Service [USFWS], 2013) – Evaluated expansion of range and training facilities and training support operations at CMM; included conservation measures for arroyo toad (*Anaxyrus californicus* (*Bufo microscaphus c.*) and Quino checkerspot butterfly (*Euphydryas ditha quino*) (QCB).
- Reinitiation of Formal Section 7 Consultation for the Expansion of Range and Training Facilities and Support Operations at CMM, NBC, San Diego County, California (USFWS, 2017) – Formal consultation reinitiated in an amended BO to cover effects to arroyo toad and QCB resulting from proposed modifications to P-888 project.
- Quino Checkerspot Butterfly Enhancement Plan for Camp Michael Monsoor, California (Navy, 2011) – Outlines a strategy to improve habitat for the QCB on portions of CMM; primary goal to provide a complex of enhanced habitat patches that will become self-perpetuating with diminishing management over time.
- Quino Checkerspot Butterfly Management Plan (Navy, 2019) – Provides guidance to protect the QCB, as well as its post-diapause host plants, diapause host plants, nectar sources, and habitat; presents a compilation of QCB-related information for CMM, including QCB biology, its history on CMM, conservation measures, habitat monitoring, wildland fire management, and monitoring and management approach; focuses on the following strategies to support QCB and QCB habitat at CMM: (1) manage QCB habitat, (2) implement mission-compatible conservation measures, (3) support Readiness and Environmental Protection Integration Program parcels, (4) monitor QCB, (5) conduct natural resources education and outreach, and (6) implement adaptive management.

- Wildland Fire Management Plan (WFMP) for NBC Assault and Tactical Weapons Complex, CMM, CA (Navy, 2018) – Details objectives and strategies for a fire management program, with implementation roles and responsibilities; assesses the on- and off-site wildland fire hazards and risks that may threaten life, property, and natural resources associated with the mission of CMM.
- Integrated Natural Resources Management Plan (INRMP), Naval Base Coronado, California (Navy, 2013b) – Guides the management of natural resources to support the installation mission, while protecting and enhancing installation resources for multiple use, sustainable yield, and biological integrity.

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 et seq.)
- CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508)
- Navy regulations for implementing NEPA (32 CFR Part 775)
- Clean Air Act (CAA) (42 U.S.C. Section 7401 et seq.)
- Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.)
- National Historic Preservation Act (54 U.S.C. Section 3001018 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.)
- Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. Section 668 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. Sections 11001 et seq.)
- Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C. Section 136 et seq.)
- Federal Noxious Weed Act (Public Law 93-629)
- Resource Conservation and Recovery Act (42 U.S.C. Section 6901 et seq.)
- Toxic Substances Control Act (15 U.S.C. Sections 2601 et seq.)
- Executive Order (EO) 11990, *Protection of Wetlands*
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*
- EO 13175, *Consultation and Coordination with Indian Tribal Governments*
- EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*
- EO 13807, *Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects*
- EO 13990, *Climate Crisis; Efforts to Protect Public Health and Environment and Restore Science*

- EO 13990, *Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis*
- EO 14008, *Tackling the Climate Crisis at Home and Abroad*
- Any additional, relevant statutes or governing directives

A description of the Proposed Action's consistency with these laws, policies, and regulations, as well as the names of regulatory agencies responsible for their implementation, is presented in ***Table 5-1*** in ***Section 5.1***.

1.8 Public and Agency Participation and Intergovernmental Coordination

Pursuant to CEQ regulations (40 CFR Part 1506.6), the Navy works to maximize public involvement in the development of the NEPA analysis for its proposed actions.

The Navy published a Notice of Availability (NOA) announcing availability of the Draft EA for 30-day public review. The NOA was published in the *San Diego Union Tribune*, *East County Gazette*, and *Alpine Sun*. The Navy also uploaded the Draft EA to the Navy website (https://cnrsw.cnic.navy.mil/Operations-and-Management/Environmental-Support/Public-Information-Access-to-Navy-Projects/) and made the Draft EA available for public review at the San Diego County Library – Campo-Morena Village Branch located at 31356 Highway 94, Campo, CA 91906. The Navy will publish a second NOA announcing finalization of the EA and Decision Document in the aforementioned newspapers and upload the documents to the Navy website and make them available at the San Diego County Library – Campo-Morena Village Branch.

Because federally endangered species would be impacted by the Proposed Action, the Navy will initiate formal consultation pursuant to Section 7 of the ESA with the USFWS. The Final EA will reflect the outcome of consultation with the USFWS.

2 Proposed Action and Alternatives

2.1 Proposed Action

The Navy proposes to construct a new berthing facility at CMM in the valley adjacent to existing training facilities to improve operational efficiency and to meet BFR requirements. Under the Proposed Action, the Navy would construct a new berthing facility that would accommodate up to 120 personnel. The facility would include necessary site utilities and utility connections, a septic system, a trash enclosure, warehouses/storage units, and any required force protection features. The Proposed Action is entirely infrastructure related. There would be no increase in training operations.

2.2 Alternatives Considered

2.2.1 Screening Factors

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and meet the purpose and need require detailed analysis. The following screening factors were used to evaluate potential alternatives.

1. Sited on Navy Lands – Facility must be sited on CMM lands to facilitate sustained Navy ownership and maintenance.

2. Proximity to Primary Training Areas – Location must provide quick and convenient access (i.e., ideally within 0.5-mile [0.8 km] walking distance) to the primary CMM training areas located in the valley.

3. Sufficient Physical Conditions to Support Construction – Location must be large enough (i.e., at least 2 acres [0.8 ha]) to accommodate a 12,960-square-foot (1,204-square-meter) berthing facility and associated elements to support 120 personnel.

The Navy identified several alternatives that were then evaluated against the screening factors. The potential alternatives considered include:

- **Construction of a Berthing Facility in the CMM Valley.** Under this potential alternative, the Navy would construct a new berthing facility in the CMM valley.
- **Continued use of Existing Camp Morena Berthing Facility.** Under this potential alternative, the Navy would request the repair, upgrade, and continued use of the existing Camp Morena berthing facility.
- **Construction of Camp Morena Berthing Facility.** Under this potential alternative, the Navy would demolish the existing Camp Morena berthing facility and construct a new berthing facility at the same location.
- **Construction of Berthing Facility at CMM Hilltop. Under this potential alternative, the Navy would** construct a new berthing facility at the CMM hilltop location.

2.2.2 Alternatives Carried Forward for Analysis

The Navy identified the Proposed Action and No Action Alternative for further analysis. The Proposed Action would meet the project purpose and need and all three screening factors

2.2.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. A new berthing facility would not be constructed at CMM, and personnel would continue to commute to CMM from NBC; other regional bases; and the existing berthing facility at Camp Morena, approximately 15 miles (24.1 km) from the CMM Main Gate. Overall, the No Action Alternative would not meet the purpose and need, as travel time would not be reduced for personnel utilizing the training areas at CMM and training opportunities would not be maximized. The No Action Alternative is carried forward for detailed analysis in accordance with NEPA requirements and serves to establish a comparative baseline for analysis.

2.2.2.2 Proposed Action – COAs 1-3

As part of the Camp Michael Monsoor Final Engineering Study Report (Navy, 2021a), the Navy prepared a BFR analysis for the berthing facility. The analysis identified a full operating capacity of 120 personnel and a requirement of 12,960 square feet (1,204 square meters). Navy planners established flexibility in execution by identifying initial operating capacity of 80 personnel and a minimum of 60 personnel as acceptable initial phase of development. Future capacity would be provided to reach the goal of providing berthing for 120 personnel.

As detailed in the Camp Michael Monsoor Final Engineering Study Report (Navy, 2021a), the Navy identified one potential project with three potential COAs that would meet the project purpose and need and all three screening factors. All three COAs are located within the same approximately 3-acre project area within walking distance of the primary training areas in the CMM valley.

The only difference between the three COAs is how the Navy would meet the berthing requirements. Under COA 1, the Navy would construct one, 120 person berthing building and under COAs 2 and 3, the Navy would construct two berthing buildings that over time would ultimately provide 120 berths. Thus, the Proposed Action analyzed in this EA consists of the following three COAs:

- COA 1: Single Building Berthing Facility for 120 Personnel
- COA 2: Two Building Berthing Facility for 120 Personnel (80/40 split)
- COA 3: Two Building Berthing Facility for 120 Personnel (60/60 split)

All three COAs are located within the same project area and would have similar component features. The only difference is the number and configuration of the buildings and the potential timing of implementation of the phases. ***Table 2-1*** summarizes the main attributes of each COA. The following sections provide the details associated with each COA.

All construction staging and laydown areas would be located within the project area. If required, a preliminary staging area would be located on a portion of the gravel lot at Building 200B, immediately adjacent to the southwest corner of the project area

Table 2-1 Comparison of Proposed Action Courses of Action

Proposed Action					
Project Element	*COA 1*	*COA 2*		*COA 3*	
		IOC	*FOC*	*IOC*	*FOC*
Project Area	3.25 acres	n/a	3.58 acres	n/a	3.58 acres
Building size(s)	12,960 SF	8,640 SF	4,440 SF (13,080 total SF)	6,480 SF	6,480 SF (12,960 total SF)
Total area improved	90,403 SF	75,202 SF	23,353 SF (98,555 total SF)	75,276 SF	19,445 SF (94,721 total SF)
Number of Berths	120	80	40 (120 total)	60	60 (120 total)

COA = course of action; IOC = initial operating capacity; FOC = full operating capacity; SF = square feet; n/a = not applicable.

2.2.3 COA1: Single Building Berthing Facility for 120 Personnel

COA 1 would include the following elements within the approximate 3.25-acre project footprint (see ***Figure 2-1***):

- An approximately 13,000 gross square foot (GSF) (1,207 square meter), pre-engineered, open bay berthing facility to accommodate up to 120 personnel
- A trash enclosure
- A transformer
- An on-site leach field
- A fire lane
- Drainage channel improvements
- Utilities service connections (underground)
- General site improvements
- On-site parking (unpaved)
- Outdoor recreation area
- Defensible space for wildland fire
- A 2,400 square foot (223 square meter) warehouse
- Staging areas (within existing previously disturbed areas)

COA 1 would result in the development of a 12,960 GSF (1,204 square meter) berthing building. The area needed to improve the site would be 90,403 GSF (8,399 square meter), inclusive of the 2,400 square foot (223 square meter) warehouse. The berthing facility would include restrooms, showers, a kitchen, a lounge, and meeting and support spaces. The berthing facility would be equipped with a sprinkler system. Utilities would include 55-65 1,000 voltamps (kVA) electrical service, potable water from groundwater, and communications.

Potable water would be delivered by a booster pump. Wastewater would be delivered to a new septic sewer system with leach lines located within the project area. A new fire hydrant and valve would be installed adjacent to the new berthing facility. Amenities such as a shade pavilion, a barbeque, and outdoor fitness and recreation area would also be constructed. Parking would be provided at the site within the project footprint. The berthing facility would also incorporate facility maintenance and antiterrorism features.

Figure 2-1 Proposed Action – COA 1: Single 120-person Building

The construction of the berthing facility would incorporate Leadership in Energy and Environmental Design, commonly referred to as LEED, and sustainable development concepts to achieve optimum resource efficiency, sustainability, and energy conservation. Prior to starting construction, stormwater and erosion control measures would be installed to reduce the potential for impacts to resource areas during construction. COA 1 also includes the installation of robust permanent stormwater and erosion control features that would reduce the potential for off-site impacts following construction. Construction is anticipated to take approximately 12 months to complete.

2.2.4 COA 2: Two Building Berthing Facility for 12 Personnel (80/40 Split

COA 2 would result in the construction of two detached berthing buildings. One building measuring 8,640 square feet (803 square meter) would have an 80-personnel capacity, and the other building measuring 4,440 square feet (412 square meter) would have a 40-personnel capacity. Combined, the two berthing facilities would measure 13,080 square feet (1,215 square meter). A 2,400 square foot (223 square meter) warehouse would also be located within the approximately 3.58 acre (1.45 ha) project area (see ***Figure 2-2***).

COA 2 would consist of the same elements as presented for COA 1. The Navy would construct the two berthing buildings either in phases, several years apart, or at the same time.

2.2.5 COA3: Two Building Berthing Facility for 120 Personnel (60/60 Split

COA 3 would result in the construction of two detached berthing buildings. Each of the two buildings would measure 6,480 square feet (602 square meter) and provide capacity for 60 personnel. Combined, the two buildings would measure 12,960 square feet (1,204 square meter) within the approximately 3.58-acre (1.45 ha) project area. Figure 2-1 depicts the major project elements associated with COA 3 (see ***Figure 2-3***).

COA 3 would consist of the same elements as presented for COA 1. The Navy would construct the two berthing buildings either in phases, several years apart, or at the same time.

2.3 Alternatives Considered but not Carried Forward for Detailed Analysis

The following alternatives were considered, but not carried forward for detailed analysis in this EA, as they did not meet the purpose and need or satisfy the screening factors.

2.3.1 Repair, Upgrade, and Continued Use of Existing Camp Morena Berthing Facility

Under this potential alternative, the Navy would request the repair, upgrade, and continued use of the existing Camp Morena berthing facility. This potential alternative does not meet the purpose and need or screening factors 1 and 2. The property is not located on Navy lands and would require a long-term renewal of the Navy's lease with San Diego County (expires in 2031). This potential alternative is also located off-CMM, approximately 15 miles (24.1 km) from the CMM Main Gate. Travel time would not be reduced for personnel utilizing the training areas at CMM and training opportunities would not be maximized. Therefore, this EA does not carry forward a detailed analysis of this alternative.

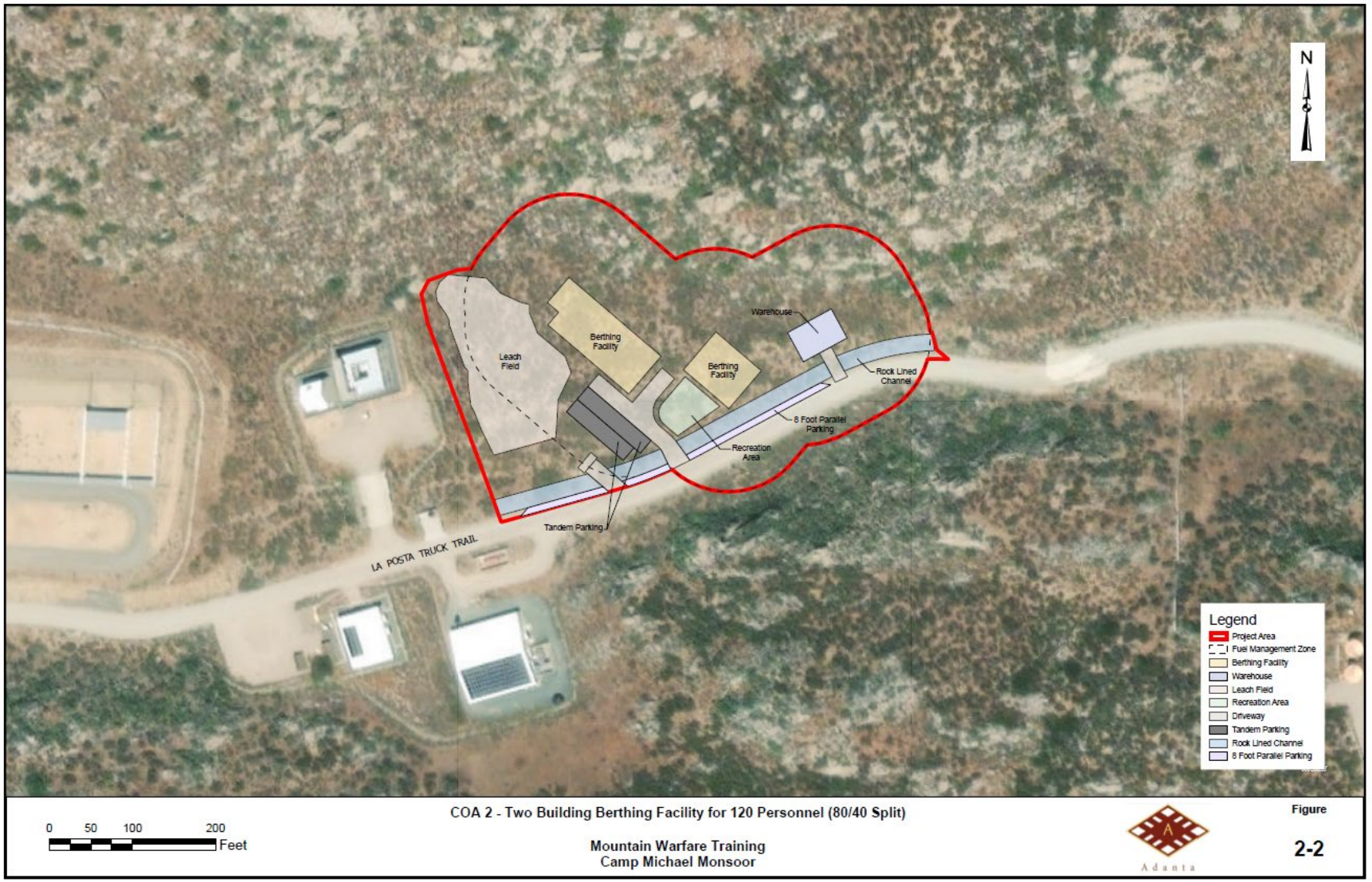

Figure 2-2 Proposed Action – COA 2: Two 80-person and 40-person Buildings

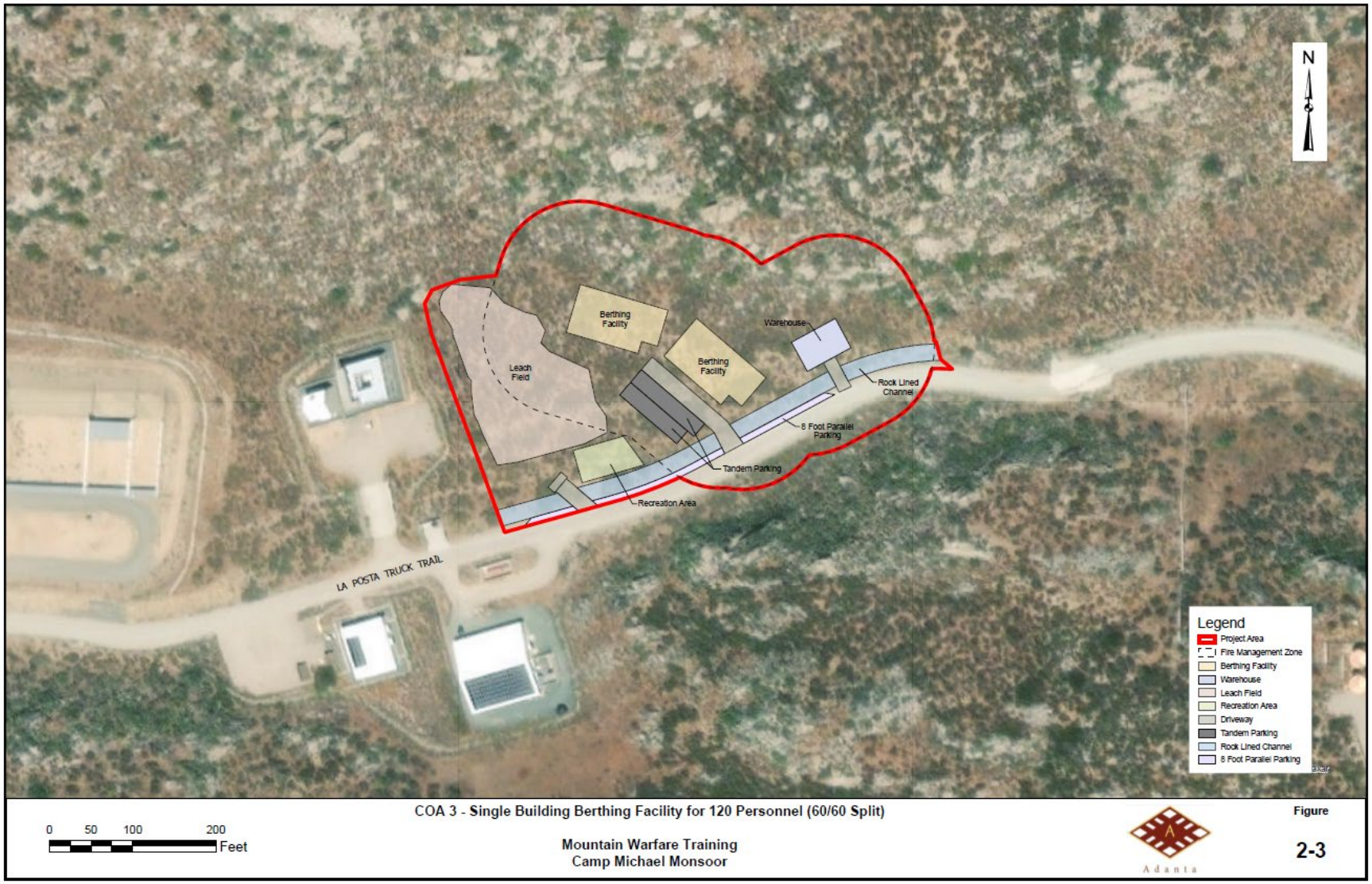

Figure 2-3 Proposed Action – COA 3: Two 60-person Buildings

2.3.2 Demolition and Construction of a Camp Morena Berthing Facility

Under this potential alternative, the Navy would request demolition of the existing berthing facility at Camp Morena and construction of a new, modern berthing facility at the same location. This potential alternative does not meet the purpose and need or screening factors 1 and 2. The property is not located on Navy lands and would require a long-term renewal of the Navy's lease with San Diego County (expires in 2031). This potential alternative is also located off-CMM, approximately 15 miles (24.1 km) from the CMM Main Gate. Travel time would not be reduced for personnel utilizing the training areas at CMM and training opportunities would not be maximized. Therefore, this EA does not carry forward a detailed analysis of this alternative.

2.3.3 Construction of a Berthing Facility at the CMM Hilltop

Under this potential alternative, the Navy would construct a new berthing facility at the CMM hilltop location. This potential alternative does not meet screening factors 2 or 3. There is an existing small, 40-person berthing facility located at the CMM hilltop. The location is more than one mile from the primary training areas located in the valley, which is not within walking distance (i.e., 0.5 miles) (0.8 km) of the training areas, and the site does not have 2 acres (0.8 ha) of buildable terrain. The location consists of a high-relief area with limited flat or semi-flat topography. Thus, there is insufficient suitable land available to construct a 12,960 square foot (1,204 square meter) berthing facility to support up to 120 personnel. Therefore, this EA does not carry forward a detailed analysis of this alternative.

2.4 Best Management Practices Included in Proposed Action

Best Management Practices (BMPs) are existing policies, practices, and measures that the Navy would adopt to reduce potential environmental impacts of designated activities, functions, or processes. Although BMPs mitigate potential impacts by avoiding, minimizing, or reducing/eliminating impacts, BMPs are distinguished from potential 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 for the Proposed Action.

Mitigation measures are discussed separately in Chapter 3. BMPs include actions required by federal or state law or regulation. The recognition of the general management measures prevents unnecessarily evaluating impacts that are unlikely to occur.

3 Affected Environment and Environmental Consequences

This chapter presents a description of the environmental resources and baseline conditions that could be affected from implementing the No Action Alternative and Proposed Action 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 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 considerations of both context and intensity. Context means that the significance of an action must be analyzed under several perspectives such as society as a whole, 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. Intensity 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 context, the less intense a potential impact needs to be in order to be considered significant. Likewise, the less sensitive the context, the more intense a potential impact would be expected to be significant.

This chapter includes detailed analyses of air quality, water resources, geological resources, and biological resources. The following resource areas were not analyzed in detail in this EA, as potential impacts are considered negligible or non-existent.

Cultural Resources. No cultural resources have been identified within the project footprint (Underwood and Gregory 2004, Navy 2013a). Construction of the proposed berthing facility would take place entirely within the 3-acre project area. The Proposed Action would not affect eligible or listed properties on the National Register of Historic Places, or resources that are considered contributing properties to a listed or eligible historic district. Consistent with 36 CFR Part 800.5(d)(1), the Proposed Action has been determined to be consistent with a finding of "no historic properties affected." Accordingly, cultural resources is not carried forward for detailed analysis in this EA.

There is low potential for subsurface archaeological deposits to be uncovered during construction; however, should deposits be detected during construction, all work in the discovery area will cease until an archaeologist can provide input regarding the significance of the resource.

Land Use. NBC manages and administers CMM in accordance with the INRMP (Navy, 2013b). NSWG-1 (tenant) operates the training facilities. Land use in the CMM valley is devoted to the training and sustainment of the advanced skills that NSW Sea, Air, Land (SEALs) teams require in weapons and tactics prior to deployment. Predominant land uses in the general area outside of CMM include rural residential, agriculture, and recreation (e.g., horseback riding, hiking, and camping) activities (Navy, 2008b, as cited in Navy, 2013b). There are no public recreation trails in the project area or vicinity of CMM. There would be no change to existing land use, and the berthing facility would be consistent with existing and surrounding land uses; therefore, no impacts to land use would occur. Based on a review of the surface danger zones associated with the adjacent small arms ranges (NSW Center, 2023) and the

proposed berthing facility, the existing surface danger zones would not overlap the proposed berthing facility; therefore, there would be no incompatible land uses. Accordingly, land use is not carried forward for detailed analysis in this EA.

Visual Resources. Public lands surrounding CMM are designated by the BLM as Visual Resource Management Class III, where the Visual Management Objective is to partially retain the existing character of the landscape (Navy, 2013a). The CMM valley and project area are not visible by the public or sensitive viewers outside of CMM. The berthing facility would be consistent with the current visual setting and surrounding landscape and would conform to the Visual Management Objective set for the area. Therefore, no impacts to visual resources would occur. Accordingly, visual resources is not carried forward for detailed analysis in this EA.

Airspace. The Proposed Action would not result in a change in aircraft operations or construct tall buildings that may encroach on airspace. Therefore, impacts to airspace would not occur. Accordingly, airspace is not carried forward for detailed analysis in this EA.

Noise. The CMM valley is located in a remote area away from residential areas and sensitive noise receptors. The overall ambient noise environment in the project area is generally quiet, except during periodic training activities. Potential construction noise impacts would be temporary and vary depending on the type of equipment used, area that the action would occur in, and distance from the noise source. Construction noise impacts would be mitigated by implementing BMPs (e.g., utilizing mufflers on engines, hearing protection equipment, limiting construction hours to 7:00 A.M. to 5:00 P.M. Monday through Friday). Therefore, negligible noise impacts would occur. Accordingly, noise is not carried forward for detailed analysis in this EA.

Infrastructure. The CMM valley is currently served by existing utilities constructed primarily as part of P-888 (Navy, 2013a). All site utilities needed to support the Proposed Action are available with capacity in proximity to the project area (Navy, 2021a). Available water utility capacity exists to provide sufficient water pressure. Therefore, negligible impacts on utilities would occur, and the additional on-site berthing facility would provide the necessary infrastructure for the Navy to maximize their training opportunities. Accordingly, infrastructure is not carried forward for detailed analysis in this EA.

Transportation. The project area is located adjacent to La Posta Truck Trail and a single-lane road connecting to La Posta Road, which connects to Highway 8 via Old Highway 80. Traffic on La Posta Road is generally light due to its rural location. The Proposed Action would result in a temporary increase in traffic on these roadways during construction activities. Upon completion of the berthing facility, there would be less personnel traveling to CMM from NBC, other regional bases, and the Camp Morena berthing facility. Therefore, beneficial impacts on transportation would occur. Accordingly, transportation is not carried forward for detailed analysis in this EA.

Public Health and Safety. The project area and CMM valley are located in an area with no public access and no populations of children. In addition, the area is regularly patrolled and monitored for unauthorized access. The nearby small arms ranges have surface danger zones that delineate the areas where bullets and ricochets may travel. The Navy has determined that the surface danger zones would not overlap any portion of the proposed berthing facility.

A Health and Safety Plan would be prepared by the construction contractor and submitted for approval by the Navy prior to construction. This plan will address any site-specific health and safety issues, including a transportation plan for safety delivering large materials and equipment along La Posta Road

and specific emergency response services, procedures, and evacuation measures. Therefore, no impacts on public health and safety would occur. Accordingly, public health and safety is not carried forward for detailed analysis in this EA.

Hazardous Materials and Wastes. Various hazardous materials and wastes are used and generated at CMM. All materials are transported, stored, and disposed of in accordance with all applicable regulations. There are no active Environmental Restoration sites at CMM (Navy, 2013b). Waste generated during construction and operations would be segregated, stored, managed, and properly disposed of in a manner such that no adverse environmental health and safety impacts would occur as a result of the presence, handling, storage, and disposal of these wastes. The project includes an onsite leach field; wastewater would be delivered to a new septic sewer system with leach lines within the project area. The construction contractor would also prepare a Waste Management Plan, which would be implemented prior to construction activities. During construction activities, the construction contractor would also be required to implement proper fuels management procedures as specified in the WFMP for CMM (Navy, 2018). Therefore, negligible impacts associated with hazardous materials and wastes would occur. Accordingly, hazardous materials and wastes is not carried forward for detailed analysis in this EA.

Socioeconomics. The project area is located in a remote and isolated area for the dedicated use of training military personnel. There are no permanent populations within or adjacent to the project area. There would be a temporary and marginal increase in demand for construction crews that would most likely be drawn from San Diego, Riverside, and Imperial Counties. The temporary demand for construction services would not stimulate long-term changes in the socioeconomic environment (i.e., population, employment, income, housing, or schools). Therefore, negligible socioeconomic impacts would occur. Accordingly, socioeconomics is not carried forward for detailed analysis in this EA.

Environmental Justice. There are no permanent populations within or adjacent to the project area. Therefore, there would be no disproportionately high and adverse human health or environmental effects on any minority or low-income populations. Accordingly, environmental justice is not carried forward for detailed analysis in this EA.

3.1 Air Quality

3.1.1 Regulatory Setting

The CAA designates carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone, suspended particulate matter 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 as “criteria pollutants” for which the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS). CO, SO_2, NO_2, lead, and some particulates are emitted directly into the atmosphere from emissions sources. Ozone and some NO_2 and particulates are formed through atmospheric chemical reactions from other pollutant emissions (called precursors) that are influenced by weather, ultraviolet light, and other atmospheric processes.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by

pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

3.1.2 Affected Environment

CMM is located within the San Diego Air Basin (SDAB), which covers all of San Diego County. SDAB is in severe nonattainment for the criteria pollutant ozone (O_3). The portion of SDAB that contains CMM is also a maintenance area for criteria pollutant CO. San Diego County is classified by the USEPA as unclassified/attainment for all other criteria pollutants. Because San Diego County is in nonattainment for ozone and maintenance for CO, a General Conformity evaluation is required (USEPA 2023, 86 Federal Register 29522, San Diego Air Pollution Control District [SDAPCD] 2022).

Due to the nonattainment and maintenance status of these criteria pollutants within the SDAB, the use of *de minimis* thresholds to define the limit at which a formal Conformity Determination under the CAA General Conformity Rule is required. Air quality is further regulated in the SDAB by the SDAPCD. Rules set forth by SDAPCD regulate diesel engine emissions, dust generating activities, vehicle idling time limits, and the emissions allowable from heavy construction equipment. The nonattainment and maintenance status of the SDAB is also the context from a NEPA perspective, and the *de minimis* thresholds are measures of intensity appropriate to the context. Therefore, if the predicted project-related emissions are estimated to be below the applicable *de minimis* levels for criteria pollutants, emissions are presumed not to be significant under NEPA. Conversely, if the emissions are estimated to be above *de minimis* levels, they would require further analysis under NEPA.

3.1.3 Environmental Consequences

3.1.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur. There would be no change to existing air quality or new air quality impacts. However, personnel would still be forced to commute to CMM from NBC, other regional bases, and the existing Camp Morena berthing facility, and therefore, a reduction in transportation-related emissions would not be realized.

3.1.3.2 Proposed Acton

Although the Proposed Action would have relatively minor air quality impacts and associated criteria pollutant emissions would not substantially contribute to air basin pollution, a quantitative analysis was conducted for comparison with the applicable *de minimis* threshold levels.

Construction impacts would include emissions from heavy construction equipment, dust generated, and construction workers commuting to the project area. Emissions from operation of the facility are negligible on an annual basis due to the nature of the facility as a berthing facility with no industrial sources. Heat and hot water would be provided with electrical appliances. There is no anticipated increase or change in training or other operations at CMM after construction is complete.

The emissions from the Proposed Action are calculated by modeling the construction of the berthing facility with the largest amount of single year construction (COA 1) in the California air quality model CalEEMod 2020.4.0. COAs 1, 2 and 3 all have the same final goal of berthing space for 120 personnel. An aggressive construction schedule of one calendar year is assumed to represent an upper limit of the

estimated emissions to compare to thresholds for impact and the general conformity evaluation. Numerical results and details of the modeling are available in ***Appendix A*** and summarized in ***Table 3-1***.

Table 3-1 COA1: Combined Annual Emissions (in tons per year) with Evaluation of Conformity

Emission Source	*CO1*	*VOC2*	*NOX2*	*SOx*	*PM10*	*PM2.5*
Construction	0.99	0.29	0.92	<0.01	0.07	0.05
Annual Conformity *de minimis* Threshold[3]	100	25	25	N/A	N/A	N/A
Exceeds Conformity *de minimis* Threshold?	No	No	No	N/A	N/A	N/A

Notes:[1] SDAB is in severe nonattainment of the 2015 and 2008 8-hour O_3 standards; Volatile Organic Compounds (VOCs) and NO_x (Oxides of Nitrogen) are precursors to the formation of O_3. Part of the SDAB is a maintenance area for CO. The SDAB is in attainment of the SO_2 (Sulfur Dioxide), Lead, particulate matter less than 10 and 2.5 microns in diameter (PM_{10}, $PM_{2.5}$), National Ambient Air Quality Standards (NAAQS).

[2] SDAB is a moderate nonattainment area for the 2008 8-hour O_3 NAAQS; VOCs and NO_x are precursors to the formation of O_3.

Sources: USEPA 2023, 86 Federal Register 29522, SDAPCD 2022.

Implementation of the Proposed Action would contribute directly to emissions of greenhouse gases from the combustion of fossil fuels. Demolition, construction, and clearing activities under COA 1 would generate approximately 156 metric tons of equivalent carbon dioxide (CO_2e) if the proposed activities occurred during a single calendar year, as detailed in ***Appendix A***.

Upon completion of the berthing facility, there would be a reduction in daily vehicle trips from personnel traveling between CMM, NBC, other regional bases, and Camp Morena, because personnel training in the CMM valley would be able to berth overnight at the facility. This would result in a minor decrease in transportation-related emissions. The Proposed Action would not increase operational emissions, because there would be no change in operations that emit pollutants, such as painting, vehicle operations, or boilers.

The construction of the berthing facility and supporting elements would not exceed *de minimis* levels used as a threshold for impact and a level at which a further Conformity Determination would occur. The Proposed Action would not trigger a conformity determination under Section 176I of the CAA. The Navy has prepared a Record of Non-Applicability (refer to ***Appendix A***) for CAA conformity in accordance with Navy CAA Conformity Guidance. From an air quality perspective, COAs 2 and 3 would generate less emissions in a single year as compared to COA 1, because the berthing facility would be constructed in two phases in different years. Therefore, implementation of the Proposed Action would not result in significant impacts to air quality.

3.2 Water Resources

This discussion of water resources includes groundwater, surface water, wetlands, and floodplains.

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 which serve as drinking water supplies.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. A Total Maximum Daily Load is the maximum amount of a substance that can be

assimilated by a water body without causing impairment. A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards occur.

Wetlands are jointly defined by USEPA and U.S. Army Corps of Engineers (USACE) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamps, marshes, bogs and similar areas."

Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and are often home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body. Floodplain boundaries are most often defined in terms of frequency of inundation, that is, the 100-year and 500-year flood. Floodplain delineation maps are produced by the Federal Emergency Management Agency and provide a basis for comparing the locale of the Proposed Action to the floodplains.

3.2.1 Regulatory Setting

The Safe Drinking Water Act is the federal law that protects public drinking water supplies throughout the nation. Under the Safe Drinking Water Act, the USEPA sets standards for drinking water quality. Groundwater quality and quantity are regulated under several statutes and regulations, including the Safe Drinking Water Act.

Through the National Pollutant Discharge Elimination System (NPDES) program, CWA establishes federal limits on the amounts of specific pollutants that can be discharged into surface waters. The NPDES program regulates the discharge of point (i.e., end of pipe) and nonpoint sources (i.e., stormwater) of water pollution.

The California NPDES stormwater program requires construction site operators engaged in clearing, grading, and excavating activities that disturb one acre or more to obtain coverage under an NPDES Construction General Permit for stormwater discharges. Construction or demolition that necessitates an individual permit also requires preparation of a Notice of Intent to discharge stormwater and a Stormwater Pollution Prevention Plan (SWPPP) that is implemented during construction. As part of the 2010 Final Rule for the CWA, titled *Effluent Limitations Guidelines and Standards for the Construction and Development Point Source Category*, activities covered by this permit must implement non-numeric erosion and sediment controls and pollution prevention measures.

The USACE regulates the discharge of dredge or fill material into wetlands under Section 404 of the CWA as a subset of all "Waters of the United States." Waters of the United States is defined as (1) the territorial seas and traditional navigable waters, (2) tributaries, (3) certain lakes ponds, and impoundments, and (4) adjacent wetlands, and are regulated by USEPA and the USACE. The CWA requires that California establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads for the sources causing the impairment.

Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill material into wetlands and other Waters of the United

States. Any discharge of dredge or fill material into Waters of the United States requires a permit from the USACE.

Section 438 of the Energy Independence and Security Act (EISA) establishes stormwater design requirements for development and redevelopment projects. Under these requirements, federal facility projects larger than 5,000 square feet (465 square meter) must "maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow."

EO 11990, *Protection of Wetlands,* requires that federal agencies adopt a policy to avoid, to the extent possible, long- and short-term adverse impacts associated with destruction and modification of wetlands and to avoid the direct and indirect support of new construction in wetlands whenever there is a practicable alternative.

EO 11988, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development unless it is the only practicable alternative. Flood potential of a site is usually determined by the 100-year floodplain, which is defined as the area that has a one percent chance of inundation by a flood event in a given year.

EO 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, amends EO 11988 and establishes the Federal Flood Risk Management Standard to improve the nation's resilience to current and future flood risks, which are anticipated to increase over time due to the effects of climate change and other threats.

3.2.2 Affected Environment

The following discussions provide a description of the existing conditions for water resources at CMM. CMM's hydrology is influenced by several factors, including those that are natural (e.g., topographic, geologic, climatic) and human influenced (e.g., land use).

CMM is within the Tijuana Hydrologic Unit. The Tijuana Hydrologic Unit is drained by Cottonwood and Campo Creeks, which are tributaries of the Tijuana River. Runoff is primarily captured by Morena Reservoir and Barrett Lake on Cottonwood Creek. The Campo and Cameron Hydrologic Areas are two of eight hydrologic areas in the Tijuana Hydrologic Unit. The majority of CMM, including the project area, is in the Campo Hydrologic Area with a small portion of the CMM exclusive use area in the Cameron Hydrologic Area (Navy, 2013b).

3.2.2.1 Groundwater

The precise quantity of groundwater available in CMM is unknown. Groundwater quality in CMM is generally good (Navy 2013b). The primary potable water source for CMM comes from a groundwater well located near the main gate.

3.2.2.2 Surface Water

There are no permanent surface water resources within the project area. Ephemeral channels drain the project area and CMM valley and ultimately connect with Cottonwood Creek and on to the Tijuana River

drainage basin. Most water in the Cleveland National Forest (adjacent to the project area to the north) meets or exceeds federal and state water quality standards (Navy, 2013a).

On January 19, 2023, in support of this EA, contractors surveyed the project area to identify the potential presence and extent of potential wetlands and non-wetland waters subject to federal jurisdiction under Section 404 of the CWA. The survey area for the delineation encompassed the project area and a 300-foot (91-meter) buffer around the project area.

The delineation identified two ephemeral drainage features (one active and one inactive at the time) traversing the project area in a generally east to west direction. The contractors also concluded that the drainages are non-jurisdictional features due to lack of indicators of ordinary high-water marks and/or bed/banks and connection with navigable waters of the U.S. Furthermore, the drainages contained no obligate wetland classified plants and lacked wetland soil indicators. Therefore, all drainage features in, and in the vicinity of, the project area were determined to be erosional features that are not jurisdictional waters of the U.S. (Navy, 2023a).

CMM contains soils with moderate to high erosion hazards. The moderate to high erosion hazard coupled with steep topography, new infrastructure, recent above-average precipitation, and recurring disturbances from construction has caused persistent erosion, resulting in water quality issues at CMM and downstream areas. To initially identify and address these issues, the Navy prepared an engineering analysis (Naval Facilities Engineering Systems Command [NAVFAC SW], 2021). The analysis identified major sources of erosion within the CMM valley, and associated water resources subject to impact. The Navy intends to prepare and implement an erosion control plan to address cumulative erosion issues within the CMM valley.

3.2.2.3 Wetlands

Based on the field survey conducted on January 19, 2023, there are no wetlands located in the project area (Navy, 2023a).

3.2.2.4 Floodplains

Federal Insurance Rate Maps for the project area were not available through the FEMA Map Service center (FEMA, 2023). Based on recent field investigations (Navy, 2023a), the project area is not located in a floodplain.

3.2.3 Environmental Consequences

In this EA, the analysis of water resources considers potential impacts on groundwater, surface water, wetlands, and floodplains. Groundwater analysis focuses on the potential for impacts to the quality, quantity, and accessibility of the water. The analysis of surface water quality considers the potential for impacts that may change the water quality, including both improvements and degradation of current water quality.

Water Resources Potential Impacts:

- No Action: No impact.
- Proposed Action: Potential increase in stormwater runoff and erosion. Increase in impervious surfaces (up to 0.93 acres) and increased consumption of groundwater.

The impact assessment of wetlands considers the potential for impacts that may change the local hydrology, soils, or vegetation that support a wetland. The analysis of floodplains considers if any new

construction is proposed within a floodplain or may impede the functions of floodplains in conveying floodwaters, 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.

3.2.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline water resources. Therefore, no impacts to water resources would occur with implementation of the No Action Alternative.

3.2.3.2 Proposed Action

COA 1: Single Building Berthing Facility for 120 Personnel

The study area for the analysis of effects to water resources associated with COA 1 includes upstream and downstream resources primarily to the south and west of the project area where surface water eventually flows to the Tijuana River drainage basin.

Groundwater

Construction activities are not anticipated to reach depths that would encounter groundwater. Groundwater would be used during the construction phase primarily for dust control.

COA 1 would increase the amount of impervious surface by approximately 39,188 square feet or 0.90 acre (0.36 ha). The increase in impervious area would result in a localized reduction in infiltration capacity within the COA 1 footprint. Given the minimal change associated with the Proposed Action to the total installation-wide impervious area, a negligible net reduction of infiltration or recharge capacity is anticipated. The Proposed Action would incorporate low impact design features, which could include minimizing impervious surfaces, diverting flow from impervious surfaces to areas where it could infiltrate into the groundwater table, and providing biofiltration or other infiltration facilities to also allow for groundwater recharge.

During operations, water for domestic use would be supplied via a new connection to the existing water supply. Small quantities of water would also be used during the operations for landscaping maintenance purposes to water drought-tolerant, native species.

Surface Water

There are no perennial surface water features within the project area. The existing ephemeral drainage feature in the project area would be redirected into a rock lined channel and tied in with CMM's existing stormwater conveyance system, consistent with the existing development downstream from the project area.

The construction contractor would obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction and Land Disturbance Activities (General Permit Order 2022-0057-DWQ) prior to implementation of the project. Construction activities subject to this permit include clearing, grading, and disturbances to the ground, such as stockpiling, trenching, or excavation. In accordance with the Construction General Permit, the construction contractor would prepare a SWPPP before project implementation. The SWPPP would include an Erosion Control Plan that identifies

appropriate BMPs necessary to stabilize the soil in denuded or graded areas during construction. These measures could include straw bales, sandbags, gravel bags, silt fencing, siltation basins, earthen berms, tarps or water spraying, soil stabilization, temporary sedimentation basins, and revegetation with native plant species where possible, to decrease erosion and sedimentation. Following construction, disturbed areas not covered with impervious surface could be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential.

BMPs (e.g., installation of fiber rolls, sediment traps, jute netting, check dams) would be implemented to prevent inadvertent runoff of potential contaminants, such as construction debris, and petroleum products. The BMPs would also minimize erosion and impacts to surface water resulting from construction activities. BMPs could include the installation of fiber rolls, sediment traps, jute netting, check dams, and other measures. The construction contractor would coordinate with the NBC Natural Resources Office staff, the Construction Manager, and the Engineering Technician to ensure the proper BMPs are installed and maintained.

Construction activities would potentially generate pollutants, including sediment and other construction-related constituents (e.g., nutrients, trace metals, oil and grease, miscellaneous waste, and other chemicals). Any runoff could potentially transport suspended sediment and other constituents away from the area. As such, the project design would include BMPs and engineering controls to stabilize cut slopes and measures to revegetate exposed surfaces upon construction completion, to minimize soil loss and impacts to surface water quality.

COA 1 would be constructed in accordance with UFC 3-210-10, *Low Impact Development*, which provides technical criteria, technical requirements, and references for the planning and design for projects to comply with stormwater requirements.

Wetlands

Because there are no wetlands or jurisdictional Waters of the United States in the project area, no impacts to wetlands or jurisdictional Waters of the United States would occur.

Floodplains

The berthing facility would not be placed within a designated floodplain.

COA 2: Two Building Berthing Facility for 120 Personnel (80/40 Split)

Implementation of COA 2 would result in the same potential impacts to water resources as discussed under COA 1. The only difference would be COA 2 would increase the amount of impervious surface by approximately 0.93 acre (0.38 ha). The increase in impervious area would result in a localized reduction in infiltration capacity within the COA 2 footprint; however, the total amount of impervious area would be negligible when added to the total developed areas of CMM. While the area of disturbance and impervious surface would be slightly larger than proposed in COA 1, the same measures would be implemented to minimize potential impacts to water resources.

COA 3: Two Building Berthing Facility for 120 Personnel (60/60 Split)

Implementation of COA 3 would result in similar potential impacts to water resources as presented for COA 2. The same measures proposed under COAs 1 and 2 would be implemented to minimize potential impacts.

Summary

Implementation of the Proposed Action would increase impervious surfaces by less than one acre. No impacts to surface water features, wetlands, or floodplains would occur. The Proposed Action would comply with the requirements identified in the Construction General Permit. The Proposed Action would also install stormwater management features to minimize the potential for on- and off-site impacts from stormwater runoff and erosion. Therefore, implementation of the Proposed Action would not result in significant impacts to water resources.

3.3 Geological Resources

This discussion of geological resources includes topography, geology, and soils within a proposed project area. 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 regarding certain construction activities and types of land use.

3.3.1 Regulatory Setting

Because there is no prime or important farmland located in the project area, the Farmland Protection Policy Act is not relevant to this EA and is not discussed further.

3.3.2 Affected Environment

The following discussions provide a description of the existing conditions for each of the categories under geological resources at CMM and within the project area.

3.3.2.1 Topography

The topography in the area consists of rugged, mountainous terrain with steep slopes, sheer rock cliffs, and frequent rock outcroppings (Navy, 2013b). The approximately 3-acre (1.21-ha) project footprint is located in a gently sloping area known as the CMM valley. Elevations in the project area range from approximately 3,200 to 3,300 feet (975 to 1,006 meters) above mean sea level. Local drainage swales run parallel to the road frontage and connect to a downstream rock-lined channel. The topography surrounding the project area is rugged, with rock cliffs and steep slopes (Navy, 2019).

3.3.2.2 Geology

CMM lies within the geologic feature known as the Peninsular Ranges Batholith, which rises in elevation from the Coastal Plain. The rock outcroppings found at CMM and in the project area are primarily granitic with scattered zones of gabbro intrusive and mixed granitic metamorphic rocks as part of the La Posta Pluton (Navy, 2013b).

San Diego County lies within an active seismic region capable of subjecting the area to earthquakes of Seismic Zone 4 rating, as defined in Naval Facilities Engineering Command Design Manual Two (U.S. Navy, 2008b, as cited in Navy, 2013b). The seismic zone rating establishes building requirements for an area based on the probability of a high seismic event occurring in that region. Seismic Zone 4 is the highest rating, indicating the strictest building requirements.

The seismic shaking hazard rating for the project area is 20 to 30 percent peak ground acceleration. Major fault lines in the San Diego area tend to run northwest, although a secondary pattern of northeast-trending faults exists. There are no faults near CMM, but faults that may affect it are the Elsinore and Earthquake Valley faults, which are located approximately 9.3 miles and 15.5 miles (14.9 km and 25.0 km) respectively, to the northeast. These all have been historically active, and a major seismic event (6.2 or greater on the Richter scale) can reasonably be expected in San Diego County every 100 years (Navy, 2013a). Three unnamed faults run north-to-south over 2.5 miles (4 km) north of CMM (Navy, 2013b). There are no fault lines in the immediate area, but the San Jacinto and Elsinore Faults are close enough that they could potentially affect the project area (Navy, 2019).

3.3.2.3 Soils

Soils in CMM consist of Mottsville-Calpine and the Tollhouse-La Posta Rock land association. The Mottsville series consists of deep, loamy, coarse sands, occurring in valleys and on alluvial fans. The Calpine series is also granitic and occurs on alluvial fans, but consists of very deep coarse, sandy loams. Tollhouse soils are excessively drained, shallow, or very shallow coarse sandy loams. About 10 percent of the surface in this series is typically covered with rock outcrops and 20 percent with boulders. Permeability of these soils is rapid, runoff is medium to rapid, and the erosion hazard is moderate to high. The La Posta series consists of somewhat excessively drained loamy coarse sands. Rock outcrops cover 5 to 10 percent of the surface in some areas. The La Posta rocky loamy coarse sand is moderately sloping to moderately steep and is 16 to 32 inches (0.4 to 0.8 meters) deep. Permeability is rapid, runoff is medium, and the erosion hazard is moderate (Navy, 2013a).

The moderate to high erosion hazard of these soils coupled with steep topography, new infrastructure, recent above-average precipitation, and recurring disturbances from construction has caused persistent erosion issues at CMM and downstream areas. To initially identify and address these issues, the Navy prepared an engineering analysis (NAVFAC SW, 2021). The analysis identified major sources of erosion within the CMM valley, and associated resources subject to impact. The Navy intends to prepare and implement an erosion control plan to address cumulative erosion issues within the CMM valley.

3.3.3 Environmental Consequences

Geological resources are analyzed in terms of drainage, erosion, land subsidence, and seismic activity. The analysis of topography and soils focuses on the area of soils that would be disturbed, the potential for erosion of soils from construction areas, and the potential for eroded soils to become pollutants in downstream surface water during storm events. The analysis also examines potential impacts related to seismic events. BMPs are identified to minimize soil erosion impacts and prevent or control pollutant releases into stormwater. The potentially affected environment for geological resources is limited to lands that would be disturbed by any proposed facility development or demolition.

3.3.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to baseline geology, topography, or soils. Therefore, no impacts to geological resources would occur with implementation of the No Action Alternative.

3.3.3.2 Proposed Action

Geological Resources Potential Impacts:

- No Action: No impact.
- Proposed Action: Grading of up to 3.58 acres (1.45 ha). Potential increase in soil erosion. Buildings designed to meet current earthquake codes.

COA 1: Single Building Berthing Facility for 120 Personnel

Potential impacts from COA 1 would be limited to ground disturbance in areas of construction and the Fuel Management Zone (FMZ). The total amount of area graded would be up to 3.25 acres (1.32 ha). An additional 0.64 acres (0.26 ha) of vegetation within the 100-foot (30.5 meter) FMZ would be maintained and fire management would be consistent with the approved CMM WFMP. The WFMP would be updated to include new and expanded FMZs. Topography of the site would not be substantially altered from grading because the project area is relatively flat. No export or import of material would be required (Navy, 2019).

The construction contractor would obtain coverage under the Construction General Permit (General Permit Order 2022-0057-DWQ) and prepare a SWPPP before project implementation. The SWPPP would include an Erosion Control Plan that identifies appropriate BMPs necessary to stabilize the soil in denuded or graded areas during construction. These measures could include straw bales, sandbags, gravel bags, silt fencing, siltation basins, earthen berms, tarps or water spraying, soil stabilization, temporary sedimentation basins, and revegetation with native plant species where possible, to decrease erosion and sedimentation. Following construction, disturbed areas not covered with impervious surface could be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential.

The berthing facility would be designed and constructed to comply with the seismic design criteria identified in the International Building Code, NAVFAC P-355 Seismic Design Manual. The resulting berthing facility would also include stormwater management features to control runoff and minimize on- and off-site erosion and sedimentation. These and other avoidance and minimization measures are presented in ***Section 3.5***.

COA 2: Two Building Berthing Facility for 120 Personnel (80/40 Split)

Implementation of COA 2 would result in similar potential impacts to geological resources as presented for COA 1. The overall project area associated with COA 2 is approximately 0.65 acres larger than COA 1, encompassing approximately 4.54 acres (1.84 ha), including the 100-foot FMZ. Up to 3.58 acres (1.45 ha) would be graded with an additional 0.96 acres (0.39 ha) of vegetation within the FMZ would be maintained. While the area of disturbance and grading would be less than 20 percent greater than under COA 1, the same measures would be implemented to minimize potential impacts.

COA 3: Two Building Berthing Facility for 120 Personnel (60/60 Split)

Implementation of COA 3 would result in the same potential impacts to geological resources as presented for COA 2. The same measures proposed under COA 1 and 2 would be implemented to minimize potential impacts under COA 3.

Summary

Implementation of the Proposed Action would disturb up to 4.54 acres (1.82 ha) of vegetation. The topography of the site would not be substantially altered. The construction contractor would obtain coverage under the Construction General Permit and prepare a SWPPP. The berthing facility would be designed and constructed to comply with the seismic design criteria identified in the International Building Code, NAVFAC P-355 Seismic Design Manual. Therefore, implementation of the Proposed Action would not result in significant impacts to geological resources.

3.4 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.

3.4.1 Regulatory Setting

Special-status species, for the purposes of this assessment, are those species listed as threatened or endangered under the ESA and species afforded federal protection under the MBTA and BGEPA.

The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to conserve and recover listed species. Section 7 of the ESA requires action proponents to consult with the USFWS or National Marine Fisheries Service to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species or result in the destruction or adverse modification of designated critical habitat. Critical habitat cannot be designated on any areas owned, controlled, or designated for use by the Department of Defense where an INRMP Plan has been developed that, as determined by the Department of Interior or Department of Commerce Secretary, provides a benefit to the species subject to critical habitat designation.

The Navy will initiate Section 7 consultation with the USFWS. This EA will be updated to reflect the outcome of the consultation.

Birds, both migratory and most native-resident bird species, are protected under the MBTA, and their conservation by federal agencies is mandated by EO 13186 (*Migratory Bird Conservation*). Under the MBTA it is unlawful by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation. The 2003 National Defense Authorization Act gave the Secretary of the Interior authority to prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during

authorized military readiness activities. The final rule authorizing the Department of Defense to take migratory birds in such cases includes a requirement that the Armed Forces must confer with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate adverse effects of a proposed action if the action would have a significant negative effect on the sustainability of a population of a migratory bird species.

Bald and golden eagles are protected by the BGEPA. This act prohibits anyone, without a permit issued by the Secretary of the Interior, from taking bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

3.4.2 Affected Environment

This section provides a description of the existing conditions within the limits of construction and a 500-foot buffer. This area, or "action area" is a specific term used to define the area potentially subject to impact from implementation of the Proposed Action.

The following discussions provide a description of the existing conditions for each of the categories under biological resources at CMM. Federally listed threatened and endangered species are discussed in each respective section below with a composite list applicable to the Proposed Action.

3.4.2.1 Terrestrial Vegetation

Vegetation includes terrestrial plants, as well as freshwater aquatic communities and constituent plant species. The dominant plant species occurring in the action area is California ephedra (*Ephedra californica*), with California buckwheat (*Eriogonum fasciculatum var. polifolium*) being a co-dominant species. Based on the plant community classifications described by Sawyer and Keeler-Wolf in the 1997 Manual of California Vegetation, the vegetation alliances best matching those occurring in the action area include the following:

Californica Ephedra Alliance

This alliance occurs on the lower slopes and flats and is relatively open (~20 percent shrub cover), allowing for the occurrence of annual grasses and herbs, such as ripgut grass, red brome, filaree (*Erodium spp*.), and white pincushion. California ephedra (*Ephedra californica*) represents at least ≥ 2 percent absolute cover in the shrub canopy. Other shrub species may include California buckwheat, big sagebrush (*Artemisia tridentata)*, and California cholla (*Cylindropuntia californica*) (Sawyer and Keeler-Wolf, 1997).

The California Ephedra Alliance occurs over 3.16 acres (1.28 ha) of the action area.

California Buckwheat Alliance

This alliance appears to be another disturbance-mediated community. Total shrub canopy cover is approximately 3 percent, where California buckwheat is the dominant shrub, and other shrub species may include Hollyleaf cherry (*Prunus ilicifolia*) around hillside rock outcroppings. Ripgut grass and red brome are also present (Sawyer and Keeler-Wolf, 1997).

The California Buckwheat Alliance occurs in the northwest part of the action area covering 0.04 acres (0.02 ha).

Hollyleaf Cherry Alliance

The Hollyleaf cherry (*Prunus ilicifolia*) alliance occurs on the slopes within the WFMP planning area and intergrades with the Chaparral Whitethorn and Chamise alliances. Hollyleaf cherry is the dominant species, but chaparral whitethorn is a common associate. Chamise, California buckwheat, and birchleaf mountain mahogany may also be present. Similar to the Chaparral whitethorn Series, open areas support a dense cover of ripgut grass and red brome. Small islands of this community are also present on rock outcrops within the Chamise Series. On these rock outcrops, species such as monkeyflower, onion grass, silverleaf lotus, and fringed spineflower may be present (Sawyer and Keeler-Wolf, 1997).

The Hollyleaf Cherry Alliance occurs north of the action area, with 0.05 acres (0.02 ha) within the limits of construction along hillside rock outcroppings. The Hollyleaf cherry alliance also occurs to the south of the action area, south of La Posta Truck Trail.

QCB Host Plants and Nectar Sources

The action area contains habitat for QCB, a federally endangered species. QCB is known to occur in association with a variety of plant communities, soil types, and elevations. QCB is found in clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub where high densities of host plant species occur. In these community types, QCB is found in openings within the dominant plant community where there is sufficient cover of larval food (host) plants which co-occur with nectar sources for adults. QCB is closely associated with the presence of California buckwheat (*Eriogonum fasciculatum*), which has been found in all occupied QCB habitat documented to date (USFWS, 1997; USFWS, 2007b; Pratt, 2001; USFWS, 2003; Faulkner and Klein, 2008).

The most common larval host plant species below 3,000-foot (or roughly 1,000-meter) elevation in San Diego County is dot-seed plantain (*Plantago erecta*). Other host plants used for egg laying and larval feeding include other plantain species (e.g., *Plantago ovata, P. bigelovii, P. patagonica*), Coulter's snapdragon (*Antirrhinum coulterianum*), purple owl's clover (*Castilleja exserta*), Chinese houses (*Collinsia concolor* and *C. heterophylla*), and thread-leaved bird's beak. Southwestern plantain (*P. patagonica*) and Coulter's snapdragon were identified as major larval food plants at higher elevations and are thought to be the primary larval host plant species for QCB in parts of Riverside County and eastern San Diego County at elevations where dot-seed plantain is absent. Recent findings indicate that Chinese houses may also be important in these higher elevation areas (Pratt, 2001; USFWS, 2002; USFWS, 2003; Pratt and Pierce, 2010).

Within CMM, the main post diapause host plants have been documented as Coulter's snapdragon and Chinese houses, with California buckwheat as the preferred diapause host plant. The action area supports suitable habitat for QCB; in addition to the presence of Coulter's snapdragon, habitat on-site exhibits sandy open areas and breaks in shrub canopy for basking and is surrounded by hilltops. California buckwheat is evenly distributed within the action area. A moderate to high density of QCB nectar species is also present within the action area and includes California butterweed (*Senecio californicus*), fiddleneck (*Amsinckia* spp.), popcorn flower (*Plagiobothrys* spp.), chia (*Salvia columbariae*), yellow pincushion (*Chaenactis grabriuscula*) and white pincushion (*C.* artemisifolia). It is reasonable to assume that QCB could access this area of the CMM from other documented occupied areas through the network of open valley corridors, with lower growing shrub canopy, found throughout the

installation. QCB has been observed within REPI Parcel C nectaring in areas between 1,250 feet (381 meters) and 1,760 feet (536 meters) away from the nearest post diapause host plants (Vernadero, 2019).

Federally Listed Plant Species

Rare plant surveys in and near the action area occurred from March to July 2023. No federally listed plant species were documented within or near the action area.

Non-Federally Listed Special Status Plant Species

During the QCB host and nectar source surveys and rare plant surveys conducted from February through July 2023, the following common plants and California Native Plant Society listed rare plant species (***Table 3-2***) were recorded in the action area (Navy, 2023b). The list also includes plant species with the potential to occur in the action area. Species with an asterisk were documented during the surveys. Species without an asterisk have the potential to occur in the action area. Species in bold font are QCB larval host plants.

Table 3-2 Plant Species with Potential to Occur or Documented Occurrence in the Project Area

Common Name	***Scientific Name***	***Federal/ State Listing Status***	***California Rare Plant Rank***
Acourtia	*Acourtia microcephala*	NL	NL
*Artemisia leaved chaenactis, White pincushion	*Chaenactis artemisiifolia*	NL	NL
*Baby blue eyes, Baby blue-eyes	*Nemophila menziesii*	NL	NL
Bastardsage	*Eriogonum wrightii*	NL	NL
Big Sagebrush	*Artemisia tridentata*	NL	NL
*Blunt leaved lupine	*Lupinus truncatus*	NL	NL
*Brittlebush	*Encelia farinosa*	NL	NL
California aster	*Corethrogyne filaginifolia*	NL	NL
*California buckwheat, Mojave Desert California buckwheat	*Eriogonum fasciculatum* var. *polifolium*	NL	NL
California ephedra	*Ephedra californica*	NL	NL
*California peony	*Paeonia californica*	NL	NL
*California wood sorrel	*Oxalis californica*	NL	NL
*Canadian horseweed	*Conyza canadensis* var. *canadensis*	NL	NL
Cane cholla	*Cylindropuntia imbricata*	NL	NL
*Chaparral dodder, California dodder	*Cuscuta californica*	NL	NL
*Chaparral whitethorn	*Ceanothus leucodermis*	NL	NL
*Chaparral yucca	*Hesperoyucca whipplei*	NL	NL
*Chia sage	*Salvia columbariae*	NL	NL
Chinese houses	***Collinsia concolor***	**NL**	**NL**
*Coastal heron's bill, Redstem filaree	*Erodium cicutarium*	NL	NL
Common goldfields	*Lasthenia gracilis*	NL	NL
*Common sagebrush	*Artemisia tridentata*	NL	NL
Compact brome	*Bromus madritensis*	NL	NL
***Coulter's snapdragon**	***Antirrhinum coulterianum***	**NL**	**NL**

Common Name	*Scientific Name*	*Federal/ State Listing Status*	*California Rare Plant Rank*
*Crested needle grass	*Stipa coronata*	NL	NL
Cryptantha	*Cryptantha* spp.	NL	NL
Dark-tipped bird's beak	***Cordylanthus rigiduslor***	**NL**	**NL**
Deerweed	*Acmispon glaber var. brevialatus*	NL	NL
Fleabane	*Erigeron* spp.	NL	NL
*Foxtail chess, Foxtail brome	*Bromus madritensis*	NL	NL
Golden yarrow	*Eriophyllum confertiflorum* var. *confertiflorum*	NL	NL
Heartleaf jewelflower	*Streptanthus cordatus*	NL	NL
*Hedge mustard	*Sisymbrium officinale*	NL	NL
*Holly leaf cherry	*Prunus ilicifolia*	NL	NL
*Jimsonweed	*Datura wrightii*	NL	NL
Lupine	*Lupinus* spp.	NL	NL
Mallow	*Sidalcia* spp.	NL	NL
Matchweed	*Gutierrezia spp.*	NL	NL
Mediterranean grass	*Schismus barbatus*	NL	NL
Monkeyflower	*Mimulus aurantiacus*	NL	NL
Phacelias	*Phacelia* spp.	NL	NL
Pincushions	*Chaenactis* spp.	NL	NL
Popcorn flowers	*Plagiobothrys* spp.	NL	NL
Purple owl's clover	***Castilleja exserta***	**NL**	**NL**
Rat-tail fescue	*Festuca myuros*	NL	NL
Red brome	*Bromus rubens*	NL	NL
*Stinging lupine	*Lupinus hirsutissimus*	NL	NL
*Tarragon	*Artemisia dracunculus*	NL	NL
Tumble mustard	*Sisymbrium altissimum*	NL	NL
*White fiesta flower	*Pholistoma membranaceum*	NL	NL
*White sage	*Salvia apiana* var. *apiana*	NL	NL
White thorn lilac	*Ceanothus leucadermus*	NL	NL
*Whitestem filaree, Greenstem filaree	*Erodium moschatum*	NL	NL

Source: Navy 2009b, as cited in Navy, 2013b

Note: * = Plant species documented during 2023 surveys.

Key: Federal Status – C = candidate species for federal ESA listing; FT = federal threatened, NL = not listed, CRPR = California Rare Plant Rank 1B.1 = Rare, threatened or endangered in California or elsewhere, and seriously threatened in California, 1B.2 = Rare, threatened or endangered in California or elsewhere, and moderately threatened in California, 1B.3 = Rare, threatened or endangered in California or elsewhere, and not very threatened in California, 2B.2 = Rare, threatened or endangered in California but more common elsewhere, and moderately threatened in California.

3.4.2.2 Terrestrial Wildlife

Wildlife includes all animal species (i.e., insects and other invertebrates, freshwater fish, amphibians, reptiles, birds, and mammals) focusing on the species and habitat features of greatest importance or interest.

Fish

No fish are known to occur at CMM or within the action area; however, fish and other aquatic species occur downstream of the action area in tributaries to the Tijuana River drainage basin.

Birds

CMM supports a variety of resident and migratory bird species, with 48 species documented within the exclusive use area during previous biological surveys at CMM. Resident species include the Spotted Towhee (*Pipilo maculatus*), Western Scrub Jay (*Aphelocoma californica*), Red-tailed Hawk (*Buteo jamaicensis*), Common Raven (*Corvus corax*), and Song Sparrow (*Melospiza melodia*). Migratory bird species on CMM use the natural open space within the exclusive use area as a temporary stopover point during the winter or summer seasons, while other migratory species, such as the Western Wood-Pewee (*Contopus sordidulus*), likely nest within the exclusive use area. Representative bird species observed within the exclusive use area during the 2004 wildlife surveys include the Wrentit (*Chamaea fasciata*), Bushtit (*Psaltriparus minimus*), and California Towhee (*Pipilo crissalis*) in the chaparral and sage scrub vegetation communities; the Song Sparrow, Yellow-rumped Warbler, and Acorn Woodpecker (*Melanerpes formicivorus*) in the oak woodland habitat; and the Red-tailed Hawk and Common Raven within the grassland communities (Navy, 2008b, as cited in Navy, 2013b).

Table 3-3 includes bird species documented in the action area during avian species surveys conducted on October 10, 2022, January 19 and April 12, 2023. The list also includes bird species with the potential to occur in the action area.

Table 3-3 Wildlife Species with Potential to Occur or Documented in the Project Area

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*
Birds			
*Black-chinned Sparrow	*Spizella atrogularis*	NL	NL
*Black-headed grosbeak	*Pheucticus melanocephalus*	NL	NL
Brewer’s sparrow	*Spizella breweri*	NL	NL
Bullock's Oriole	*Icterus bullockii*	NL	NL
*Bushtit	*Psaltriparus minimus*	NL	NL
California Thrasher	*Toxostoma redivivum*	NL	NL
*California towhee	*Melozone crissalis*	NL	NL
*Common raven	*Corvus corax*	NL	NL
Common yellowthro	*Geothlypis trichas sinuosa*	NL	NL
*House finch	*Carpodacus mexicanus*	NL	NL
*House wren	*Troglodytes aedon*	NL	NL
Lawrence's goldfinch	*Carduelis lawrencei*	BCC	NL
Northern harrier	*Circus cyaneus*	BCC	SSC
Nuttall's woodpecker	*Picoides nuttallii*	NL	NL
Oak titmouse	*Baeolophus inornatus*	NL	NL
*Red-tailed hawk	*Buteo jamaicensis*	NL	NL
*Rock wren	*Salpinctes obsoletus*	NL	NL
*Spotted towhee	*Pipilo maculates*	NL	NL
Tricolored blackbird	*Agelaius tricolor*	NL	ST, SSC
*Turkey vulture	*Cathartes aura*	NL	NL

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*
*Western scrub-jay	*Aphelocoma californica*	NL	NL
*White-crowned sparrow	*Zonotrichia leucophrys*	NL	NL
*White-tailed kite	*Elanus leucurus*		FP
*Wrentit	*Chamaea fasciata*	NL	NL
Mammals			
Bobcat	*Lynx rufus*	NL	NL
*California Ground Squirrel	*Spermophilus beecheyi*	NL	NL
*Coyote	*Canis latrans clepticus*	NL	NL
Deer mice	*Peromyscus maniculatus*	NL	NL
*Desert cottontail	*Sylvilagus audubonii*	NL	NL
*Mule deer	*Odocoileus hemionus*	NL	NL
Reptiles			
Coast patch-nosed snake	*Salvadora hexalepis virgultea*	NL	SSC
Coastal rosy boa	*Lichanura trivirgata roseofusca*	NL	NL
Common kingsnake	*Lampropeltis getulus*	NL	NL
*Common side-blotched lizard	*Uta stansburiana*	NL	NL
Garter snake	*Thamnophis sp.*	NL	NL
Gopher snake	*Pituophis catenifer*	NL	NL
*Granite spiny lizard	*Sceloporus orcutti*	NL	NL
Northern red diamond rattlesnake	*Crotalus ruber*	NL	SSC
San Diego horned lizard	*Phrynosoma coronatum blainvillii*	NL	SSC
Southern alligator lizard	*Elgaria multicarinata*	NL	NL
Western fence lizard	*Sceloporus occidentalis*	NL	NL
Western whiptail	*Cnemidophorus tigris*	NL	NL
Amphibians			
California tree frog	*Pseudacris cadaverina*	NL	NL
Pacific Tree Frog	*Pseudacris regilla*	NL	NL
Invertebrates			
Acmon blue	*Plebejus acmon*	NL	NL
Anise swallowtail	*Papilio zelicaon*	NL	NL
Chalcedon checkerspot	*Euphydryas chalcedona*	NL	NL
Checkered white	*Pontia protodice*	NL	NL
Cloudless (senna) sulphur	*Phoebus sennae marcellina*	NL	NL
Common buckeye	*Junonia coenia grisea*	NL	NL
Dogface butterfly	*Zerene sp.*	NL	NL
Edward's blue	*Hemiargus ceraunus gyas*	NL	NL

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status*
Funereal duskywing	*Erynnis funeralis*	NL	NL
Gorgon copper	*Lycaena gorgon*	NL	NL
Lupine blue	*Plebejus lupini*	NL	NL
Marine blue	*Leptotes marina*	NL	NL
Monarch	*Danaus plexippus*	NL	NL
Northern white skipper	*Heliopetes ericetorum*	NL	NL
Painted lady	*Vanessa cardui*	NL	NL
Pale swallowtail	*Papilio eurymedon*	NL	NL
Pearly marble	*Euchloe hyantis*	NL	NL
Quino checkerspot butterfly	*Euphydryas editha quino*	NL	NL
Silvery blue	*Glaucopsyche lygdamus*	NL	NL
Sleepy orange	*Eurema nicippe*	NL	NL
Small-checkered skipper	*Pyrgus scriptura*	NL	NL
Southern (silvery) blue	*Glaucopsyche lygdamus australis*	NL	NL
Spring white	*Pontia sisymbrii*	NL	NL
*West coast lady	*Vanessa annabella*	NL	NL
Western tailed-blue	*Everes amyntula*	NL	NL
Western tiger swallowtail	*Papilio rutulus*	NL	NL
Wright's checkerspot	*Thessalia leanira wrighti*	NL	NL

Source: Navy 2009b, as cited in Navy, 2013b
Key: Federal Status – BCC = Birds of Conservation Concern; C = Candidate species for federal ESA listing; FE = federally endangered; FT = federal threatened; NL = not listed; CDFW Status – FP = fully protected; SE = state endangered; ST = state threatened, SSC = species of special concern.
Note: * Species observed during QCB and vegetation surveys in 2023.

Mammals

Representative mammal species observed directly or detected indirectly by sign (e.g., tracks, scat, or fur) at CMM include the mountain lion (*Puma concolor*), bobcat (*Felis rufus*), coyote (*Canis latrans*), and mule deer (*Odocoileus hemionus*) (Navy, 2008b, as cited in Navy, 2013b). Mule deer tracks and coyote scat were incidentally observed during the 2023 avian and rare plant surveys. ***Table 3-3*** includes mammal species documented or having the potential to occur in the action area.

Amphibians

California tree frog (*Pseudacris cadaverina*), and Pacific tree frog (*Pseudacris regilla*) have been documented at CMM (Navy, 2008b, as cited in Navy, 2013b). The federally endangered arroyo toad, (*Anaxyrus californicus*) is known to occur at Cottonwood Creek outside of CMM. No amphibian species were documented during the 2023 biological surveys in the action area as it lacks suitable habitat.

Reptiles

Reptile species observed at CMM include relatively common species such as the garter snake (*Thamnophis sp*.), northern red diamond rattlesnake (*Crotalus ruber ruber*), western fence lizard (*Sceloporus occidentalis*), alligator lizard (*Elgaria multicarinata*) and side-blotched lizard (*Uta*

stansburiana). Also occurring on CMM are the common kingsnake (*Lampropeltis getulus*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), coastal rosy boa (*Lichanura trivirgata roseofusca*), western whiptail (*Cnemidophorus tigris*), granite spiny lizard (*Sceloporus orcutti*), San Diego gopher snake (*Pituophis catenifer*), and San Diego horned lizard (*Phrynosoma coronatum blainvillii*) (Navy, 2008b, as cited in Navy, 2013b). ***Table 3-3*** includes reptile species with the potential to occur in the action area.

Invertebrate Species

According to the 2013 NBC INRMP, 21 butterfly species have been documented on CMM (Navy 2009b, as cited in Navy, 2013b). These include monarch butterfly (*Danaus plexippus*) - a federal candidate species, and QCB (*Euphydryas editha quino*) - a federally endangered species (Navy, 2008b, as cited in Navy, 2013b). ***Table 3-3*** includes invertebrate species documented or with the potential to occur in the action area.

3.4.2.3 Non-Federally Listed Special Status Wildlife Species Potentially Occurring in the Region of Influence

Non-federally listed special status wildlife species include those listed under the California ESA, California Species of Special Concern, and California Fully Protected species. MBTA protects migratory birds and their nests, eggs, young, and parts from possession, sale, purchase, barter, transport, import, export, and take. For the purposes of the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." (50 CFR Part 10.12). The MBTA applies to migratory birds that are identified in 50 CFR Part 10.13.

There are three bird species of special concern known to occur on CMM — black-chinned sparrow (*Spizella atrogularis*), brewer's sparrow (*Spizella breweri*), and northern harrier (*Circus cyaneus*) (California Department of Fish and Game 2011 as cited in Navy, 2013a). These species have not been documented in the action area.

The northern red diamond rattlesnake (*Crotalus ruber ruber*) and San Diego horned lizard (*Phrynosoma coronatum blainvillii*), both California Species of Special Concern, have been observed on CMM (Navy 2012b, Navy 2012c, Navy 2012d as cited in Navy, 2013a). These species have not been documented in the action area. ***Table 3-3*** includes wildlife species documented or with the potential to occur in the action area, as indicated with an asterisk.

3.4.2.4 Threatened and Endangered Species Potentially Occurring in the Region of Influence and Critical Habitat Present in Region of Influence

Federally Listed Special Status Species: This includes species listed by the USFWS as threatened and endangered, as well as candidate species under consideration for a federal listing. ***Table 3-4*** summarizes the threatened and endangered species known to occur or potentially occurring on CMM and within the action area.

Table 3-4 Federally Listed Species Known to Occur or Potentially Occur Near the Project Area

Common Name	*Scientific Name*	*Federal Listing Status*	*State Listing Status/Rank*	*Critical Habitat Present?*
Quino checkerspot butterfly	*Euphydryas editha quino*	FE	NL /S1, S2	No
Monarch Butterfly	*Danaus plexippus*	C	S2	No
Least Bell's Vireo	*Vireo bellii pusilus*	FE	SE / S2	No
Southwestern Willow Flycatcher	*Empidonax traillii extimus*	FE	SE / S1	No
Arroyo toad	*Anaxyrus californicus*	FE	SE / S2	No

Source: Navy 2009b, as cited in Navy 2013b

Notes: Selections for Listing Status Column - C = candidate species for federal ESA listing; FE = federal endangered; SE = State endangered; NL = not listed; S1= State Rank Critically Imperiled; S2 = State Rank Imperiled.

Quino Checkerspot Butterfly. One federally listed endangered species known to occur within the action area is QCB, a subspecies of Edith's checkerspot butterfly (*Euphydryas editha*). QCB was listed as an endangered species by the USFWS on January 16, 1997 (62 Federal Register 2322). USFWS designated critical habitat for the QCB, which was revised in 2009 to include habitat immediately adjacent to CMM within Unit 9: La Posta-Campo (Federal Register Vol 74 No 115 Pages 28776- 28862). No critical habitat exists within the boundaries of CMM.

Due to implementation of the USFWS-reviewed INRMP, critical habitat for QCB has been exempt within CMM. NBC's INRMP was developed to comply with the guidance and required elements as described in this section (Navy, 2013b). Critical habitat is designated just outside of CMM boundary lines, and suitable habitat for QCB occurs throughout much of the installation. Active management of federally listed species and funding the projects as per the NBC INRMP and incoordination with the USFWS maintains this exemption. ***Figure 3-1*** presents the areas of QCB critical habitat.

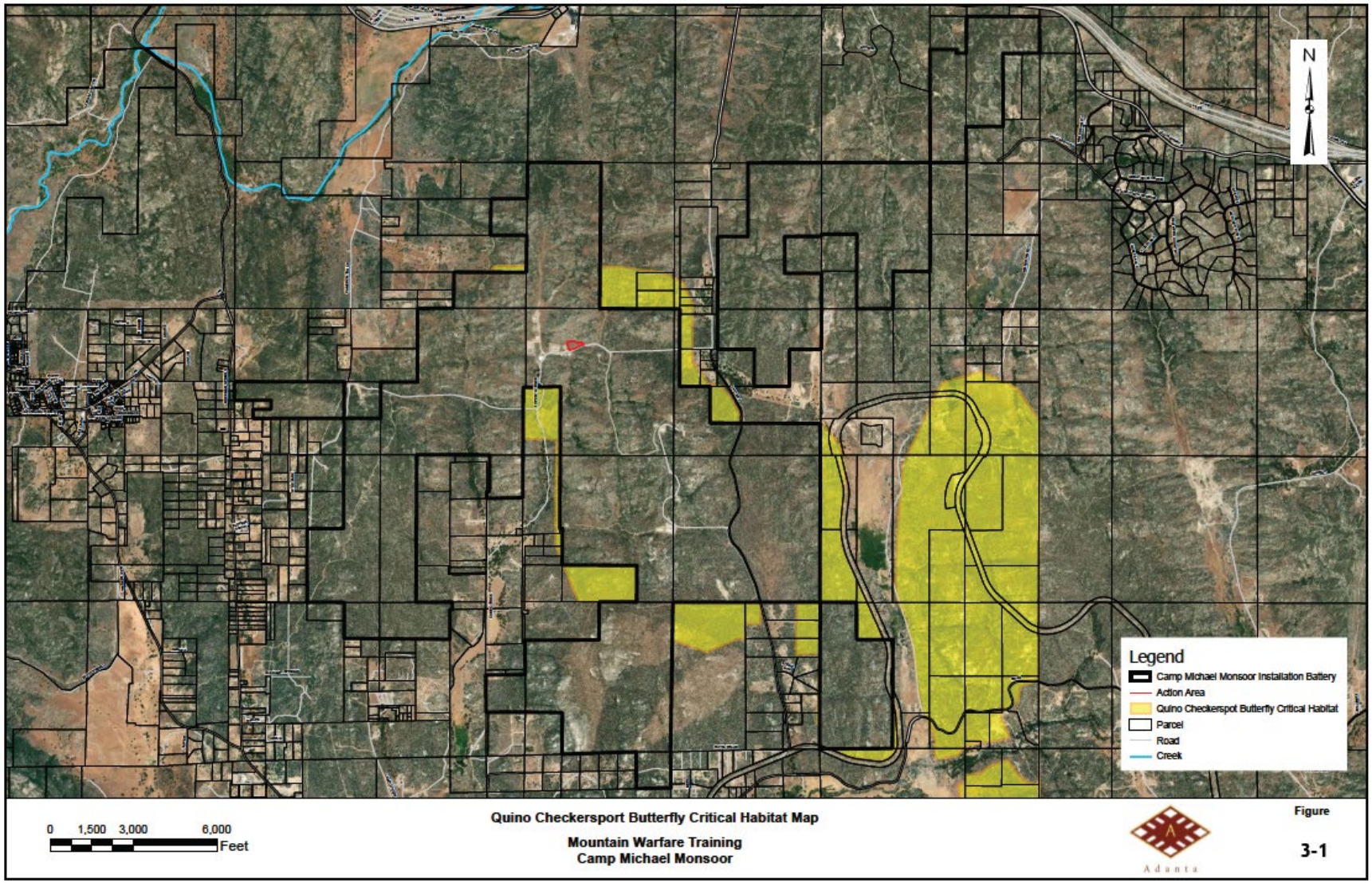

Figure 3-1 Quino Checkerspot Butterfly Critical Habitat

The full life cycle of a QCB includes egg, larva, pupa, and adult with larval stages divided into five to seven or more instars, or periods between molt (USFWS, 2003). Larvae begin to feed upon host plants immediately after hatching (USFWS, 2007b). Host plants are further described in ***Section 3.4.2.1***. During larval development, the host plants age, eventually drying out and becoming inedible. At the time of host plant senescence, if larvae are old enough and have accumulated sufficient reserves, they enter into an obligatory diapause. Diapause is a dormant state that enables larvae to maintain a low metabolic rate during periods when host plants are not available. The larvae remain in diapause throughout summer, fall and into mid-winter, and which may be broken after adequate fall or winter rains. While in diapause, larvae are much less sensitive to climatic extremes and can tolerate temperatures from over 120 degrees Fahrenheit to below freezing (USFWS, 2003). Extended periods of diapause may occur during times of drought (Murphy and White, 1984; Faulkner and Klein, 2008; Pratt and Emmel, 2009; USFWS, 2003; USFWS, 2007b).

Typically, there is one generation of adult butterflies per year, with a four- to six-week flight period in March and April. Depending on elevation, precipitation, and temperatures, adults could emerge from January through early April and fly as late as early May, although the timing of the flight period can vary depending on weather conditions, particularly temperature. The average adult QCB life span, approximately 10 to 14 days, is spent searching for mates, feeding on nectar, defending territories, basking in the sun (Emmel and Emmel, 1973; USFWS, 2003; Faulkner and Klein, 2008; USFWS, 2002).

QCB has been observed within CMM during previous survey efforts (2004 through 2021), as well as in nearby areas. Historical surveys have covered distinct, mostly unrepeated survey areas within the installation. Previous surveys within the valley, covering both the valley and the action area have been repeated (Vernadero, 2019; Navy, 2021b and 2023b).

QCB has not been observed in flight within the action area. The action area was surveyed during the 2023 flight season and has been the subject of previous years' surveys. The habitat within the action area supports all the essential elements to support QCB. The sandy and granitic and cryptogrammic crusts favored by primary host plant dot-seed plantain are not found within the action area, however, the site supports primary host plant, Coulter's snapdragon. This host plant has been consistently observed on-site as indicated by previous survey efforts within Parcel C and the valley. Coulter's snapdragon individuals and high-density populations within the action area were field verified in 2023 and prior (Navy, 2023b; Vernadero, 2019; Navy, 2021b).

Given that the QCB has been documented within the boundaries of CMM, protocol level surveys for the species were performed. Twelve protocol surveys for QCB were conducted in the action area from March to May 2023. No QCB were detected (Navy, 2023a). During a separate survey effort elsewhere on CMM, the first QCB to be identified at CMM in 2023 occurred on April 12, 2023. The QCB was observed approximately 3 miles southeast of the action area (Huffman and Associates, 2023).

Monarch Butterfly. The monarch butterfly (*Danaus plexippus*) is a candidate species under consideration by the USFWS for listing under Section 7 of the ESA. Although no monarch butterflies have been documented within the action area or at CMM, there is potential habitat for this species to nectar within the action area.

Arroyo Toad. The federal and state endangered arroyo toad (*Anaxyrus californicus*) occur at Cottonwood Creek outside of CMM. In 2019, a single adult arroyo toad was documented in Cottonwood Creek more than one mile northwest of the action area outside of CMM. The USFWS designated final critical habitat for the arroyo toad in 2011 (USFWS, 2011) with the nearest area of critical habitat

located 1.7 miles (2.7 km) from the northwest boundary of the CCM main compound and 0.6 miles (0.9 km) from the nearest CMM boundary. Based on an arroyo toad habitat suitability study conducted on January 19, 2022, there is no suitable habitat for arroyo toad within the action area (Navy, 2023b).

Least Bell's Vireo. There is no suitable habitat on CMM for the federal and state endangered least Bell's vireo (*Vireo bellii pusilus*), as they require riparian areas and surface water. Due to the lack of observed least Bell's vireo habitat onsite (Navy, 2023b) and the large distance from recorded breeding locations, it is not expected that the least Bell's vireo would use the action area; therefore, the least Bell's vireo does not have the potential to be affected by Proposed Action.

Southwestern Willow Flycatcher. There is no suitable habitat on CMM for the federal and state endangered southwestern willow flycatcher (*Empidonax traillii extimus*), as they require riparian areas and surface water. Due to the lack of observed southwestern willow flycatcher habitat onsite (Navy, 2023b) and large distance from recorded breeding locations, it is not expected that the southwestern willow flycatcher would use the action area; therefore, the southwestern willow flycatcher does not have the potential to be affected by the Proposed Action.

3.4.3 Environmental Consequences

This analysis focuses on wildlife or vegetation types that are important to ecosystem function or are protected under federal or state law or statute.

3.4.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur and there would be no change to biological resources. Therefore, no significant impacts to biological resources would occur with implementation of the No Action Alternative.

3.4.3.2 Proposed Action

COA 1: Single Building Berthing Facility for 120 Personnel

Biological Resources Potential Impacts:

- No Action: No impact.
- Proposed Action: Permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat. Temporary impacts to wildlife.

The action area for the analysis of effects to biological resources associated with COA 1 includes the entire 3.25 acres (1.32 ha) limits of construction and a 500-foot buffer.

Vegetation

Implementation of COA 1 would result in the permanent loss of nearly all vegetation occurring within the action area from grading and construction of the berthing facility. The limits of construction in COA 1 includes approximately 3.25 acres (1.32 ha) of land. The existing road along the frontage of the action area (La Posta Truck Trail) is paved and outside of the limits of construction.

The following vegetation alliances would be permanently removed within the 3.25 acres (1.32 ha) limits of construction:

- 3.16 acres (1.28 ha) of Californica Ephedra Alliance.
- 0.04 acres (0.02 ha) of California Buckwheat Alliance
- 0.05 acres (0.02 ha) of Hollyleaf Cherry Alliance.

Additional impacts to vegetation would result from implementation of a 100-foot FMZ buffer around all habitable structures. In compliance with the NBC, CMM Wildland Fire Operations Plan, a 100-foot (30.5 meter) FMZ is designated around occupied and high value structures, but cannot extend into designated open space areas, and must meet erosion control requirements (Navy, 2018). The FMZ in COA 1 includes approximately 0.64 acres (0.26 ha) of vegetation that would be maintained in perpetuity; fire management would be consistent with the approved CMM WFMP. The WFMP would be updated and consulted to include new and expanded FMZs. The following vegetation alliances would be maintained within the FMZ:

- 0.09 acres (0.04 ha) of Californica Ephedra Alliance.
- 0.18 acres (0.07 ha) of California Buckwheat Alliance.
- 0.37 acres (0.15 ha) of Hollyleaf Cherry Alliance.

QCB habitat occurs in both the limits of construction and in the FMZ. COA 1 would potentially result in a permanent loss of up to 3.89 acres (1.57 ha) of QCB habitat.

In addition to the direct disturbance of vegetation associated with vegetation clearing, construction activities could disturb habitats immediately adjacent to the construction footprint resulting in the loss of habitat quality due to an expected increase in non-native species. A summary of impacts by vegetation alliances is presented in ***Table 3-5***.

Table 3-5 COA1: Temporary and Permanent Impacts to Plant Communities

Plant Community Alliance	*Permanent Impacts in Construction Footprint (acres [ha])*	*Impacts within FMZ outside Construction Footprint (acres [ha])*	*Total Permanent Impacts (acres [ha])*
Californica Ephedra Alliance	3.16 acres (1.28 ha)	0.09 acres (0.04 ha)	3.25 acres (1.32 ha)
California Buckwheat Alliance	0.04 acres (0.02 ha)	0.18 acres (0.07 ha)	0.22 acres (0.09 ha)
Hollyleaf Cherry Alliance	0.05 acres (0.02 ha)	0.37 acres (0.15 ha)	0.42 acres (0.17 ha)
Total	**3.25 acres (1.32 ha)**	**0.64 acres (0.26 ha)**	**3.89 acres (1.57 ha)**

Notes: Ha= Hectare; FMZ = Fuel Management Zone

Adverse impacts on terrestrial vegetation would be minimized through the use of impact avoidance and minimization measures included in ***Section 3.5***. Permanent impacts would be offset through revegetation of QCB habitat elsewhere on CMM. The Navy proposes to salvage seed stock and plant material for revegetation as described in the 2011 Quino Checkerspot Butterfly Enhancement Plan for Camp Michael Monsoor, Campo CA (Navy, 2011) and the Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA (Navy, 2019).

Non-Federally Listed Special Status Plant Species

Impacts to non-federally listed plant species would occur during the grading and construction of COA 1 (***Figure 3-2***). Additional impacts to plant communities would include potential erosion, stormwater pollution, dust, and trampling due to foot and vehicle traffic and the loss of habitat quality. Adverse impacts on non-federally listed special status plant species would be minimized through implementation of impact avoidance and minimization measures included in ***Section 3.5***.

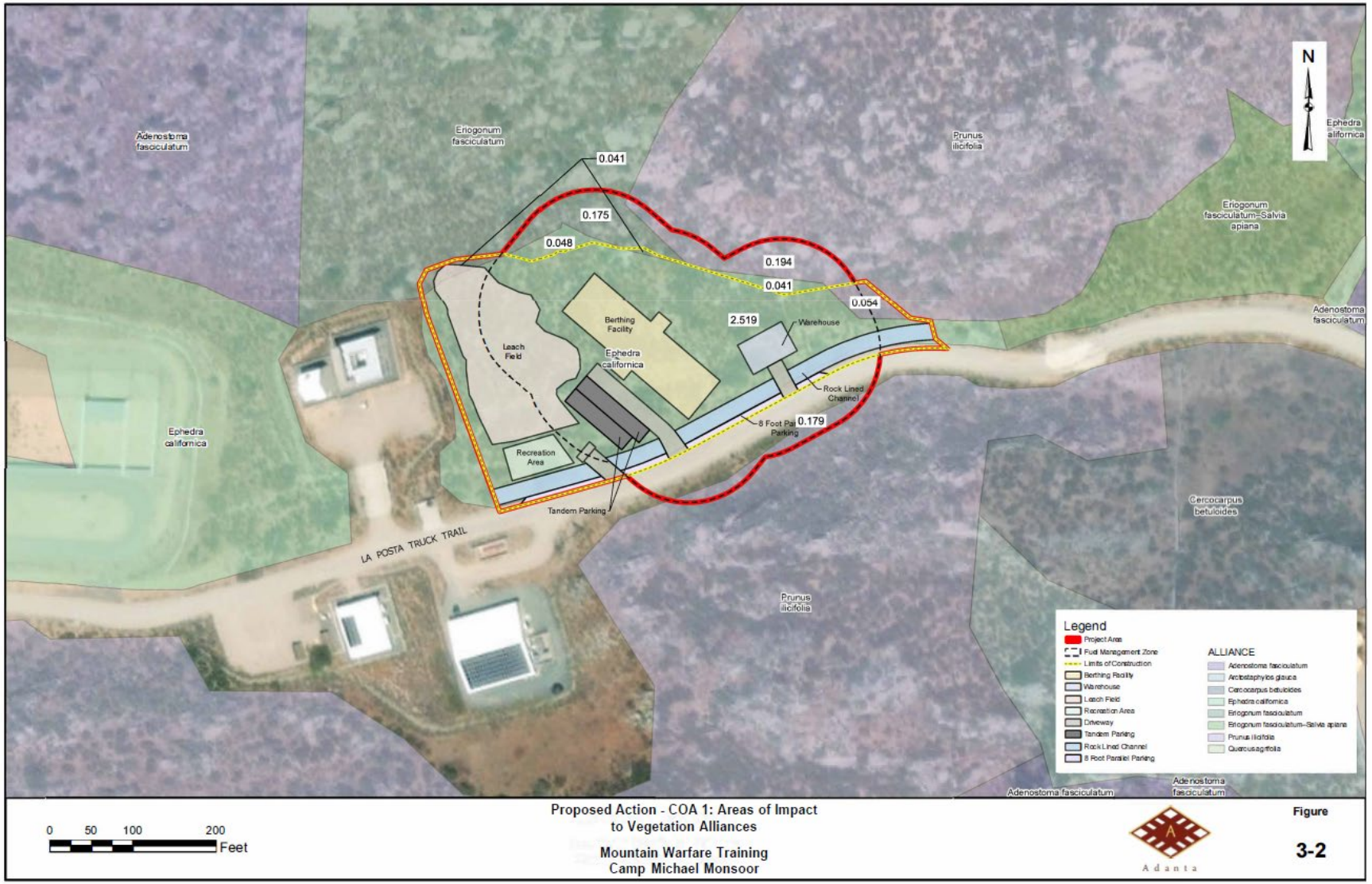

Figure 3-2 Proposed Action – COA 1: Areas of Impact to Vegetation Alliances

Federally Listed Plant Species

No federally listed plant species are known to occur in or near the action area. There would be no impacts to federally listed plant species.

Terrestrial Wildlife

COA 1 would result in the permanent loss of habitat for several wildlife species currently using the site. The Navy assumes most of these species would flush as the process of vegetation removal and grading begins. Grading and development of the action area would result in permanent, indirect impacts from the loss of habitat. Indirect impacts from grading and construction noise, dust, and vibration would be intermittent and temporary.

Preconstruction surveys would be required, and vegetation crushing, clearing, and trimming during the bird breeding season (February 1 through September 30) would be avoided in accordance with the MBTA. Wildlife monitoring would be provided throughout the construction phase. Lighting would be baffled downward preventing light from being directed into the adjacent undeveloped lands during construction and operation of the berthing facility. If an active bird nest is identified, biological monitors may stop or slow construction depending on the location.

Non-Federally Listed Special Status Wildlife Species

Non-federally listed special status wildlife species potentially affected by COA 1 include black-chinned sparrow, brewer's sparrow, and northern harrier and other birds protected under the MBTA, as well as sensitive reptiles such as the San Diego horned lizard and northern red diamond rattlesnake. Impacts to non-federally listed special status wildlife species include the removal of habitat from vegetation clearing and grading, and increased noise, dust, and vibration. Additional impacts to non-federally listed special status wildlife species include potential disturbance to nesting birds within areas surrounding the action area due to construction noise, dust, and vibration.

The same measures as identified for terrestrial wildlife would be implemented for non-federally listed special status wildlife species. With implementation of conservation measures described, there would be no significant impacts to non-federally listed special status wildlife, including avian species protected under the MBTA.

Threatened and Endangered Species

COA 1 would result in the following direct and indirect impacts to QCB:

- The permanent removal of up to 3.89 acres (1.57 ha) of QCB habitat, which contains Coulter's snapdragon.
- Construction-caused mortality due to individuals being crushed in the work area (direct/permanent).
- Death or injury of eggs, larvae, pupae, and adults from crushing, trampling, or burial during mitigation and monitoring activities. Because a restoration contractor experienced in revegetating QCB habitat will be conducting this activity, death or injury of QCB larvae from this activity will likely be low.
- Harm in the form of disturbance, displacement, and/or behavior disruption due to noise, dust, and vibrations from construction activities (temporary).
- Death or injury of eggs, larvae, and pupae from crushing, trampling, or burial during habitat clearing activities within up to 4.54 acres (1.84 ha) of QCB habitat (permanent).

- Death or injury of larvae incidental to capture, collection, and relocation during preconstruction surveys. Because biologist(s) experienced in handling and capturing QCB will be conducting this activity, death or injury of QCB larvae from this activity will likely be low.
- Death or injury of adults from vehicular collision. There is a low likelihood that any QCB would be killed from vehicular collision.
- Harm in the form of disturbance, displacement, and/or behavior disruption due to noise, dust, and vibrations from maintenance of FMZ (permanent).
- Harm in the form of disturbance, displacement, and/or behavior disruption due to noise, dust, and vibrations from ongoing use of facilities (permanent).
- Harm in the form of disturbance, displacement, and/or behavior disruption due to continued vehicle activity for maintenance and operation of facilities (permanent).
- Harm from decreased habitat and displacement due to ongoing erosion

Because QCB habitat would be impacted by the Proposed Action, the Navy will initiate formal consultation pursuant to Section 7 of the ESA with the USFWS, by submitting a Biological Assessment to the USFWS. The Navy determined that the Proposed Action "may affect and is likely to adversely affect" QCB due to the removal of QCB habitat. This section will be updated to reflect the outcome of USFWS consultation, to include QCB conservation measures to avoid or minimize direct impacts to the QCB and occupied QCB habitat. The Navy will be responsible for funding and implementing the measures as part of the Proposed Action.

To reduce potential impacts to QCB, the Navy proposes to translocate QCB larvae from the action area to one or more of the QCB management area mitigation sites identified in the 2011 QCB Enhancement Plan (***Figure 3-3***; Navy, 2011) located on CMM prior to vegetation removal or grading activities. The larval translocation and salvage of seed stock and plant material for QCB habitat revegetation or restoration would be performed per the guidelines identified in the 2011 Quino Checkerspot Butterfly Enhancement Plan for Camp Michael Monsoor, Campo CA (Navy, 2011) and the Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA (Navy, 2019) and as directed by the USFWS. With the proposed conservation measures, including vegetation salvage and larval translocation, the Proposed Action would not jeopardize the existence of QCB. The Navy would continue to manage habitats according to the INRMP, which is designed to protect and benefit threatened and endangered species. The INRMP contains conservation objectives and strategies to ensure natural resources are managed in support of the mission and regulatory compliance.

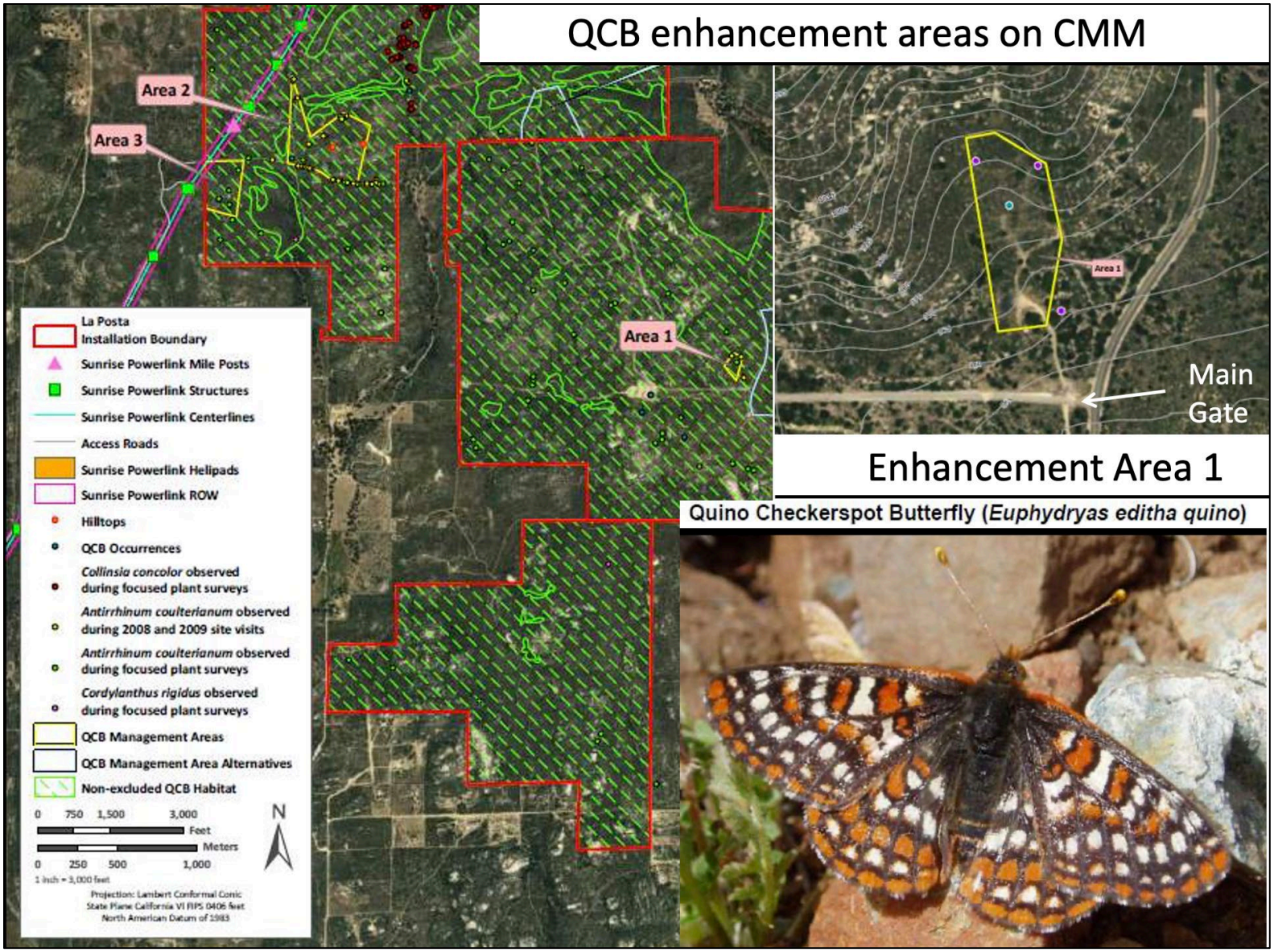

Figure 3-3 QCB Enhancement Areas at Camp Michael Monsoor

Monarch Butterfly: There is a potential for monarch butterfly to occur in the action area. The species was not detected during QCB surveys or during rare plant surveys conducted from February through July 2023; therefore, no impacts are anticipated.

COA 2: Two Building Berthing Facility for 120 Personnel (80/40 Split)

The study area for the analysis of effects to biological resources associated with COA 2 includes the entire 3.58 acres (1.45 ha) limits of construction and a 500-foot buffer.

Vegetation

Impacts to vegetation under COA 2 would be slightly more than the potential impacts under COA 1 above, due to the required FMZ around two smaller berthing buildings rather than one berthing building (***Figure 3-4***). The limits of construction for COA 2 are the same as they are for COA 3 (described below); approximately 3.58 acres (1.45 ha). The following vegetation alliances would be permanently removed within the limits of construction:

- 3.49 acres (1.41 ha) of Californica Ephedra Alliance
- 0.04 acres (0.02 ha) of California Buckwheat Alliance
- 0.05 acres (0.02 ha) of Hollyleaf Cherry Alliance

The configuration of two smaller berthing buildings rather than one berthing building (as proposed in COA 1) would potentially result in more impacts to vegetation within the 100-foot (30.5 meter) FMZ. The FMZ in COA 2 includes approximately 0.96 acres (0.39 ha) of vegetation that would be maintained in perpetuity consistent with the approved CMM WFMP. The WFMP would be updated to include new and expanded FMZs. The following vegetation alliances would be maintained within the FMZ:

- 0.09 acres (0.04 ha) of Californica Ephedra Alliance
- 0.26 acres (0.11 ha) of California Buckwheat Alliance
- 0.61 acres (0.25 ha) of Hollyleaf Cherry Alliance

QCB habitat occurs in both the limits of construction and in the FMZ. COA 2 would potentially result in a permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat. A summary of impacts by vegetation alliance is presented in ***Table 3-6***.

Table 3-6 COA 2: Temporary and Permanent Impacts to Plant Communities

Plant Community Alliance	*Permanent Impacts in Construction Footprint (acres [ha])*	*Impacts within FMZ outside Construction Footprint (acres[ha])*	*Total Permanent Impacts (acres [ha])*
Californica Ephedra Alliance	3.49 acres (1.41 ha)	0.09 acres (0.04 ha)	3.58 acres (1.45 ha)
California Buckwheat Alliance	0.04 acres (0.02 ha)	0.26 acres (0.11 ha)	0.30 acres (0.12 ha)
Hollyleaf Cherry Alliance	0.05 acres (0.02 ha)	0.61 acres (0.25 ha)	0.66 acres (0.27 ha)
Total	**3.58 acres (1.45 ha)**	**0.96 acres (0.39 ha)**	**4.54 acres (1.84 ha)**

Ha= Hectare; FMZ = Fuel Management Zone

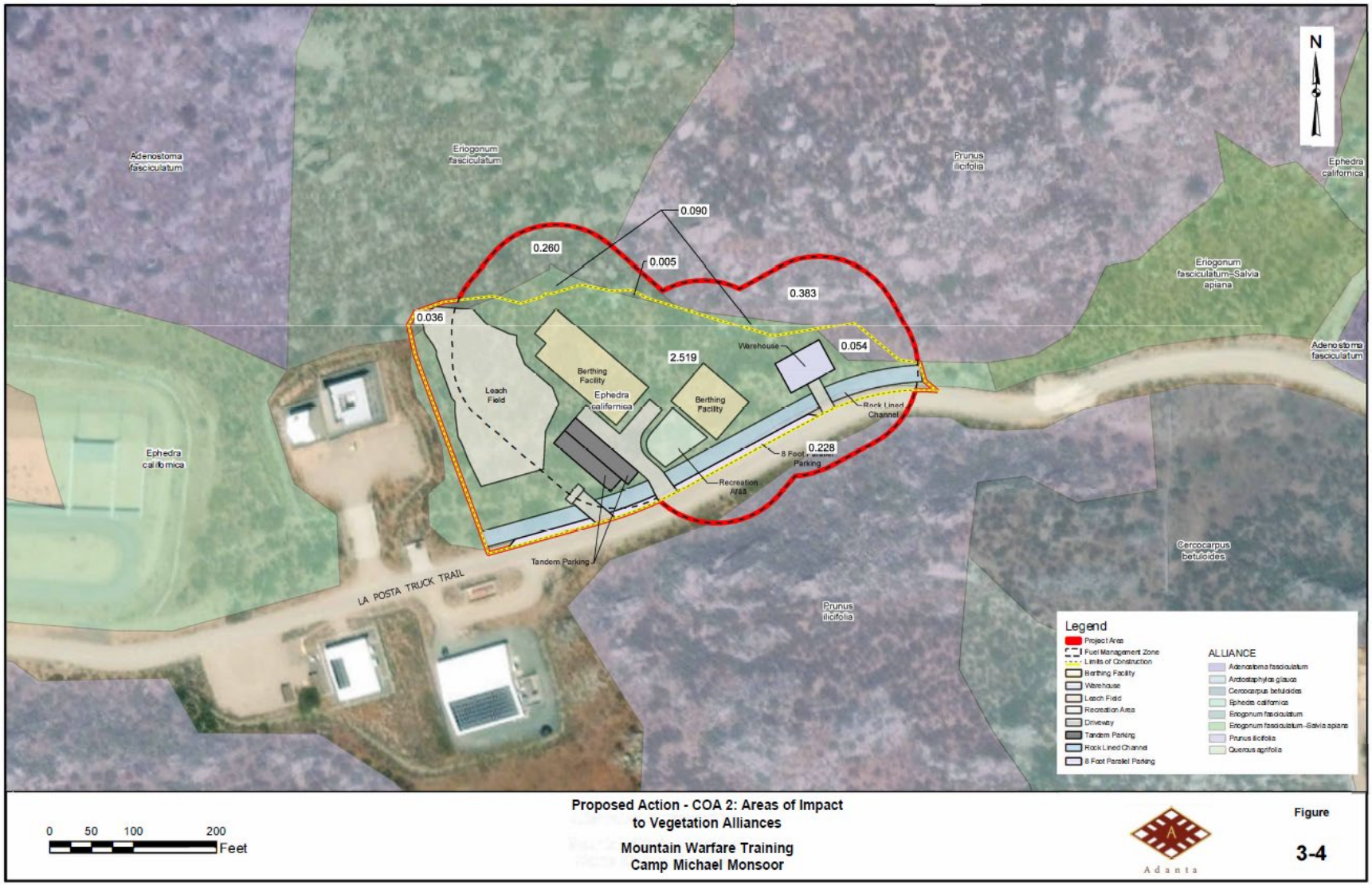

Figure 3-4 Proposed Action – COA 2: Areas of Impact to Vegetation Alliances

Non-Federally Listed Special Status Plant Species

COA 2 would result in the same impacts to non-federally listed special status plant species and rare plant communities as described for COA 1, with the exception of an 0.65-acre (0.26 ha) larger project footprint including the FMZ (3.89 acres [1.61 ha] in COA 1 versus 4.54 acres [1.83 ha] in COA 2) as presented in ***Table 3-6***. Adverse impacts on non-federally listed special status plant species would be minimized through implementation of impact avoidance and minimization measures presented in ***Section 3.5***.

Federally Listed Plant Species

No federally listed plant species are known to occur in or near the action area. Therefore, there would be no impacts to federally listed plant species.

Terrestrial Wildlife

COA 2 would result in similar impacts to those described for COA 1. The only difference would be the construction of two smaller berthing buildings rather than one berthing building. This would result in a 0.65-acre (0.26 ha) larger project footprint (including the FMZ) than proposed under COA 1. COA 2 would result in a phased development which may result in additional impacts from construction activities when the second berthing building is constructed. Avoidance and minimization measures presented in ***Section 3.5*** would be implemented.

Non-Federally Listed Rare Wildlife Species

Potential impacts to non-federally listed special status wildlife species under COA 2 would be similar as proposed in COA 1. The only difference would be the phased construction of two smaller berthing buildings rather than one berthing building. This would result in a 0.65-acre (0.26 ha) larger project footprint (including the FMZ) than proposed under COA 1. With implementation of avoidance and minimization measures presented in ***Section 3.5***, COA 2 would result in less than significant impacts to non-federally listed special status wildlife, including avian species protected under the MBTA.

Federally Listed Threatened and Endangered Species

Potential direct and indirect impacts to federally listed threatened and endangered species, including QCB, would be similar to those presented for COA 1. The only difference would be the phased construction of two smaller berthing buildings rather than one berthing building. This would result in a project footprint (including the FMZ) that would be 0.65-acre (0.26 ha) larger than what is proposed under COA 1. COA 2 would result in the permanent removal of up to 4.54 acres (1.84 ha) of QCB habitat, which contains Coulter's snapdragon.

COA 3: Two Building Berthing Facility for 120 Personnel (60/60 Split)

The study area for the analysis of effects to biological resources associated with COA 3 includes the entire 3.58 acres (1.45 ha) limits of construction and a 500-foot (152-meter) buffer.

Vegetation

The limits of construction for COA 3 are the same as for COA 2; approximately 3.58 acres (1.45 ha) (***Figure 3-5***). The following vegetation alliances would be permanently removed within the limits of construction:

- 3.49 acres (1.41) ha) of Californica Ephedra Alliance.
- 0.04 acres (0.02 ha) of California Buckwheat Alliance
- 0.05 acres (0.02 ha) of Hollyleaf Cherry Alliance

The configuration of two smaller berthing buildings rather than one berthing building (as proposed in COA 1) would potentially result in more impacts to vegetation within the 100-foot (30.5 meter) FMZ. The FMZ in COA 3 includes approximately 0.96 acres (0.39 ha) of vegetation that would be maintained in perpetuity. The following vegetation alliances would be maintained within the FMZ:

- 0.09 acres (0.04 ha) of Californica Ephedra Alliance
- 0.25 acres (0.10 ha) of California Buckwheat Alliance
- 0.62 acres (0.25 ha) of Hollyleaf Cherry Alliance

QCB habitat occurs in both the limits of construction and in the FMZ. Therefore, COA 3 would potentially result in a permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat. A summary of impacts by vegetation alliance is presented in ***Table 3-7***.

Table 3-7 COA3: Temporary and Permanent Impacts to Plant Communities

Plant Community Alliance	*Permanent Impacts in Construction Footprint (acres [ha])*	*Impacts within FMZ outside Construction Footprint (acres[ha])*	*Total Permanent Impacts (acres [ha])*
Californica Ephedra Alliance	3.49 acres (1.41 ha)	0.09 acres (0.04 ha)	3.58 acres (1.45 ha)
California Buckwheat Alliance	0.04 acres (0.02 ha)	0.25 acres (0.10 ha)	0.29 acres (0.12 ha)
Hollyleaf Cherry Alliance.	0.05 acres (0.02 ha)	0.62 acres (0.25 ha)	0.67 acres (0.27 ha)
Total	**3.58 acres (1.45 ha)**	**0.96 acres (0.39 ha)**	**4.54 acres (1.84 ha)**

Ha= Hectare; FMZ = Fuel Management Zone

Non-Federally Listed Special Status Plant Species

COA 3 would result in the same impacts to non-federally listed special status plant species and rare plant communities as described for COA 2. There would be no significant impacts to vegetation communities.

Federally Listed Plant Species

No federally listed plant species are known to occur in or near the action area. Therefore, there would be no impacts to federally listed plant species.

Terrestrial Wildlife

COA 3 would result in the permanent loss of habitat for several wildlife species currently using the site. Potential impacts to wildlife would be similar to those described for COA 1. The only difference would be the construction of two smaller berthing buildings rather than one berthing building. This would result in a 0.65-acre (0.26 ha) larger project footprint (including the FMZ) than proposed under COA 1. COA 3 would result in a phased development which may result in additional impacts from construction activities when the second berthing building is constructed. Avoidance and minimization measures presented in ***Section 3.5*** would be implemented.

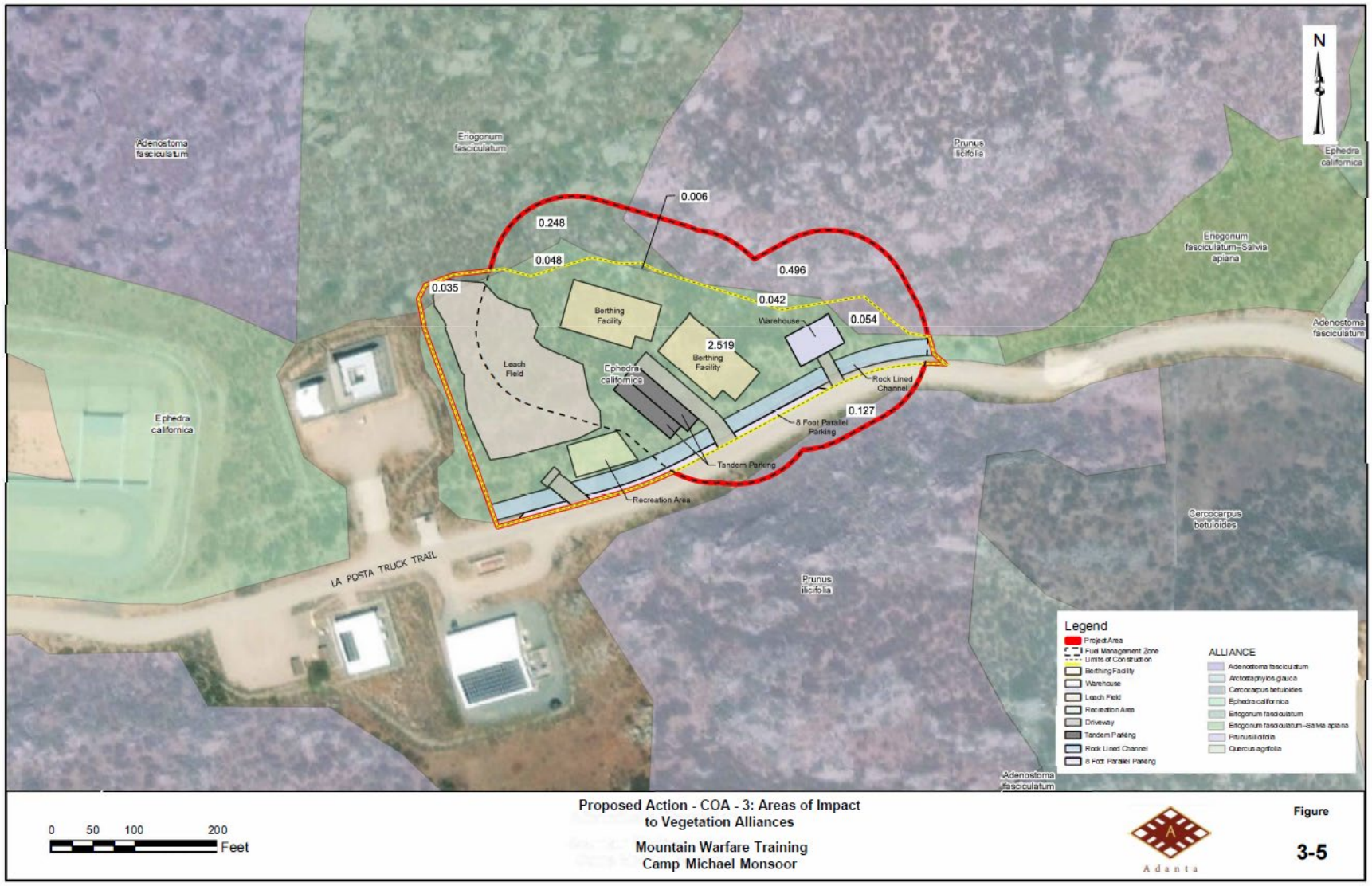

Figure 3-5 Proposed Action – COA3: Areas of Impact to Vegetation Alliances

Non-Federally Listed Special Status Wildlife Species

Potential impacts to non-federally listed special status wildlife species under COA 3 would similar to those described for COA 1. The only difference would be the phased construction of two smaller berthing buildings rather than one berthing building. This would result in a 0.65-acre (0.26 ha) larger project footprint (including the FMZ) than proposed under COA 1. With implementation of avoidance and minimization measures presented in ***Section 3.5***, there would be no significant impacts to non-federally listed special status wildlife, including avian species protected under the MBTA.

Federally Listed Threatened and Endangered Species

Potential direct and indirect impacts to federally listed threatened and endangered species, including QCB, would be similar to those described for COA 1. The only difference would be the phased construction of two smaller berthing buildings rather than one berthing building. This would result in a project footprint (including the FMZ) that would be 0.65-acre (0.26 ha) larger than what is proposed under COA 1.

COA 3 would result in the permanent removal of up to 4.54 acres (1.84 ha) of QCB habitat, which contains Coulter's snapdragon.

Summary

Implementation of the Proposed Action (COAs 1-3) would result in direct, permanent impacts to wildlife, including the federally endangered QCB through the loss of habitat. COAs 2 and 3 would result in a phased development, which may result in additional impacts from construction activities when the second berthing building is constructed. Operational use of the berthing facility may result in long-term, indirect impacts to wildlife species from increased light and noise. With implementation of the avoidance and minimization measures presented in ***Section 3.5***, implementation of the Proposed Action would not result in significant impacts to biological resources.

3.5 Summary of Potential Impacts to Resources and Impact Avoidance and Minimization Measures

Table 3-8 presents a summary of the potential impacts associated with the No Action Alternative and Proposed Action. ***Table 3-9*** provides a comprehensive list of all impact avoidance and minimization measures that would be implemented as part of the proposed action.

Table 3-8 Summary of Potential Impacts from the Proposed Action to Resource Areas Analyzed in Detail

Resource Area	*No Action Alternative*	*COA 1*	*COA 2*	*COA 3*
Air Quality	No Impact. No change in existing conditions or new impacts. However, personnel would still commute to CMM from other locations, and therefore, a reduction in transportation-related emissions would not occur.	Less Than Significant Impact. Potential increase in construction-related emissions (e.g., heavy equipment, dust), but would not substantially contribute to air basin pollution, exceed *de minimis* levels or trigger a conformity determination. Operationally, there would be a minor decrease in transportation-related emissions as fewer vehicle trips to/from CMM would occur.	Less Than Significant Impact. Impacts similar to, but slightly less than, COA 1. Under COA 2, less emissions would be generated in a single year, because the facility would be constructed in two phases in different years.	Less Than Significant Impact. Impacts similar to, but slightly less than, COA 1. Under COA 3, less emissions would be generated in a single year, because the facility would be constructed in two phases in different years.
Water Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Potential increases in groundwater use, stormwater runoff, erosion, and sedimentation during construction and upon completion of berthing facility – up to 0.90 acres (0.36 ha) increase in impervious surfaces.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Up to 0.93 acres (0.38 ha) increase in impervious surfaces under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Up to 0.93 acres (0.38 ha) increase in impervious surfaces under COA 3.
Geological Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Potential increases in soil erosion and sedimentation from earthwork/grading 3.25 acres (1.32 ha); buildings designed to meet current earthquake codes.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Up to 3.58 acres (1.45 ha) of earthwork/grading under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Up to 3.58 acres (1.45 ha) of earthwork/grading under COA 3.
Biological Resources	No Impact. No change in existing conditions or new impact.	Less Than Significant Impact. Temporary and permanent impacts to wildlife during construction activities and upon completion due to habitat disruption and loss: permanent removal of up to 3.25 acres (1.32 ha) of vegetation within construction limits, permanent loss of up 0.64 acres (0.26 ha) of vegetation within FMZ, and permanent loss of up to 3.89 acres (1.57 ha) of QCB habitat.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1. Permanent removal of up to 3.58 acres (1.45 ha) of vegetation within construction limits, permanent loss of up to 0.96 acres (0.39 ha) of vegetation within FMZ, and permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat under COA 2.	Less Than Significant Impact. Impacts similar to, but slightly greater than, COA 1 and the same as COA 2. Permanent removal of up to 3.58 acres (1.45 ha) of vegetation within construction limits, permanent loss of up to 0.96 acres (0.39 ha) of vegetation within FMZ, and permanent loss of up to 4.54 acres (1.84 ha) of QCB habitat under COA 3.

BMPs = Best Management Practices; FMZ = Fuel Management Zone; ha = hectares; QCB = Quino checkerspot butterfly

Table 3-9 Impact Avoidance and Minimization Measures for the Proposed Action

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
General Construction Measures				
The contractor's resident engineer (or on-site construction manager) and all construction personnel will ensure that all measures will be implemented during the construction period of this project.	Protection of resource areas in compliance with all applicable regulations	Duration of construction activities	Construction contractor	Completion of construction activities
The construction contractor will submit a Hazardous Waste Management Plan for approval by the Contract Officer prior to initiation of ground disturbing activity.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Fueling of equipment will be conducted in designated staging areas identified in the Hazardous Waste Management Plan.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Air Quality				
Particulate matter emissions from construction and operations activities will be minimized through dust abatement measures, including: • Applying soil stabilizers or other erosion control techniques, as appropriate, to disturbed, inactive portions of the project area to help bind soil together to make it less susceptible to erosion. • Revegetating all temporarily disturbed areas. • Watering exposed soil in disturbed areas during ground disturbing activities with adequate frequency for continued moist soil. • Reducing vehicle speeds and traffic to no more than 15 miles per hour in active construction areas. • Suspending excavation and grading activities during periods of high wind activity. • Cleaning all vehicles before they enter the project site.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
During construction activities, fugitive dust will be minimized by: • Applying soil stabilizers or other erosion control techniques, as appropriate, to disturbed inactive portions of the project area to help bind soil together to make it less susceptible to erosion. • Watering exposed soil in disturbed areas during ground disturbing activities with adequate frequency for continued moist soil. • Reducing vehicle speeds and traffic to no more than 15 miles per hour in active construction areas. • Suspending excavation and grading activities during periods of high wind activity. • Cleaning all vehicles before they enter the project site.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The contractor will minimize the production of dust by using biologically sound chemical treatments.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Water Resources				
The construction contractor will develop a SWPPP. The SWPPP BMPs would include an Erosion Control Plan that identifies the appropriate measures necessary to stabilize the soil in denuded or graded areas during construction.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The contractor would develop and implement site-specific stormwater BMPs. The BMPs would include the type, placement, and maintenance of erosion control features to be used during and following construction activities to ensure no impacts to downstream waterbodies.	Prevent runoff, sedimentation, and erosion/ BMPs work as designed; CWA, UFC 3-210-10, Low-impact development, and EISA	Prior to construction	Construction contractor	Completion of construction activities
Before the start of site grading and construction activities, straw wattle buffers (certified weed free) would be placed within and around the project area to reduce surface water flow velocities, and retard soil erosion and off-site transport.	Prevent runoff, sedimentation, and erosion/ BMP work as designed; CWA, Low LID and EISA	Prior to construction, regularly inspect for performance	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Sites for temporary stockpiling and handling of recyclable wastes will be established on site and avoided. When appropriate, stockpiled materials would be covered with tarps or other suitable materials, and the piles will be enclosed with a sediment fence to prevent wind- or rain-induced runoff and dispersion. Any encountered potentially contaminated materials would be disposed of in accordance with applicable federal, state, and local requirements.	Prevent runoff, sedimentation, and erosion / Little to no erosion detected; CWA, Low LID and EISA	Prior to construction, regularly inspect for proper establishment and avoidance	Construction contractor and Navy	Completion of construction activities
If concrete is used, concrete trucks would be washed out in a designated area where the material cannot run off-site or percolate into the groundwater. This area would be specified on all applicable construction plans and be in place before any concrete is poured. All residual solids would be cleaned daily. In the event concrete/asphalt cutting is performed with a wet saw, all water would be contained, and residual solids would be cleaned up.	Prevent runoff, sedimentation, and erosion / No indirect impacts to resources from runoff; CWA, Low LID and EISA	During construction, regularly inspect for proper performance	Construction contractor and Navy	Completion of construction activities
If rain occurs, a tarp or some other impermeable material would be placed for the concrete wash out traps to minimize inadvertent runoff.	Prevent runoff, sedimentation, and erosion / No inadvertent runoff; CWA, Low LID and EISA	During construction, regularly inspect for proper performance	Construction contractor and Navy	Completion of construction activities
Upon entering the site and daily thereafter, equipment would be inspected and maintained prior to working on site. Any leaks or hoses/fittings in poor condition would be repaired before the equipment begins work. Construction equipment would be staged on site in designated staging areas. All vehicles leaving the site would be inspected to prevent dirt/debris from being transported off site. All material/waste storage areas would be inspected daily to ensure containers are in good condition. All storm drain inlets in the work area would be protected to prevent dust and/or debris from entering the drain(s).	Prevent runoff, sedimentation, and erosion / No indirect impacts to resources from runoff; CWA, Low LID and EISA	During construction, regularly inspect for proper performance	Construction contractor and Navy	Completion of construction activities
Silt fencing would be used to prevent sediment and debris from entering the rock lined channels downstream during construction. Sediment and debris from the work site would be swept up and properly disposed of, so that they would not be tracked off site and enter a storm drain or receiving water.	Prevent runoff, sedimentation, and erosion / Stormwater runoff flows as engineered; CWA, Low LID and EISA	During construction, regularly inspect for proper performance	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Should construction occur during the rainy season (October through May), any soil, gravel, or debris stockpiles would be covered/bermed to prevent rain from washing away the stockpiles.	Prevent runoff, sedimentation, and erosion / No indirect impacts to resources from runoff; CWA	During construction, regularly inspect for proper performance	Construction contractor and Navy	Completion of construction activities
If metal cutting, grinding, or welding is part of the project (such as concrete reinforcing bars or metal fencing), measures would be put in place to prevent those pollutants from entering the water or storm drain systems. Also, at a minimum, metal slag/residues/shavings will be swept up and properly disposed at the end of each workday.	Protection of soils, waterways, and associated wildlife and plants / No indirect impacts to resources from runoff; CWA, ESA	During construction, regularly inspect for proper performance	Construction contractor	Completion of construction activities
Drip pans shall be placed under equipment to catch leaks. These drip pans shall be cleaned periodically. During rain events, these drip pans shall be moved so that the stormwater runoff does not become contaminated from their contents.	Prevent runoff, sedimentation, and erosion / No indirect impacts to resources from runoff; CWA	During construction, regularly inspect for proper performance	Construction contractor	Completion of construction activities
Wash water and residue from concrete and/or masonry work shall not be discharged into the stormwater system. Wash water shall be contained in a concrete washout area and allowed to evaporate, with the remaining solids disposed of as solid waste. With written approval from NBC environmental staff, the construction contractor may have the option to discharge wash water onto a pervious soil surface and allow it to infiltrate into the soil. Any remaining residue shall be disposed of as solid waste.	Protection of soils, waterways, and associated wildlife and plants / No indirect impacts to resources from runoff; CWA and ESA	Prior to and during construction activities, monitor for proper performance	Construction contractor	Completion of construction activities
The final project design would include engineering controls to stabilize cut slopes and exposed surfaces to minimize soil loss and impacts to surface water quality. Following construction, disturbed areas not covered with impervious surface could be reestablished with appropriate vegetation and native seed mixtures and managed to minimize future erosion potential.	Prevent stormwater pollution, runoff sedimentation, and erosion / No indirect impacts to resources from erosion; CWA	Include engineering controls in project design plans, periodically maintain and monitor	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Should the final engineering require an expanded project footprint with the potential to impact jurisdictional waters of the U.S., the Navy would coordinate with the USACE to determine if the Navy would be required to obtain a Water Quality Certification (per Section 401 of the CWA) and a wetland fill permit (per Section 404 of the CWA) prior to construction. Additional mitigation measures to minimize the potential for adverse impacts might be required, as set forth during the Section 401 and 404 of the CWA permitting process.	Protection of waterways and associated wildlife and plants / Project abides by permit requirements, as applicable; CWA	Prior to and during construction activities	Construction contractor and Navy	Completion of construction activities
Flagging and erosion control BMPs will be checked regularly, particularly within 24 hours of any storm event, to ensure that designated work areas are properly maintained throughout project construction.	Protection of terrestrial biological resources, water resources / No harm to water resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The construction contractor will submit erosion and sediment control inspection reports to the contract office once every 7 days and within 24 hours of a storm event producing 0.5 inch or more of rain.	Protection of terrestrial biological resources, water and geological resources / No harm to water, or geological resources listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Geological Resources				
A grading plan will be prepared and approved by NAVFAC and the NBC Environmental Department. Erosion control measures will be implemented to control runoff and minimize erosion in sloped areas of construction. The contractor supervisor will be in charge of overseeing the installation and removal of erosion control measures, unless the device is designed to remain in place post-construction, such as erosion control fabric. Erosion control measures could include silt fencing, water breakers, erosion control fabric, or seed-free certified straw bales. Re-vegetation with native species will occur in areas of cleared vegetation. Re-vegetation efforts will be coordinated with and approved by the NBC botanist.	Protection of soils, waterways, and associated wildlife and plants / No indirect impacts to resources from erosion; CWA	Prior to and during construction activities	Prior to and during construction activities	Prior to and during construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
To minimize impacts to soils and topography and limit erosion after project construction, the final project design will include engineered measures to stabilize the cut slopes (e.g., stepped terraces), protect exposed surfaces, and reduce/convey stormwater in a controlled manner. Where appropriate as determined by the NBC Botanist and NBC Wildlife Biologist, revegetation with plant species native to NBC may occur within the project footprint to minimize erosion. In addition, an erosion control plan will be developed before, and implemented during project construction. The plan will include BMPs, such as silt fences, gravel bags, restrictions on grading during the rainy season, and other measures to control erosion and prevent the release of contaminants into the soil.	Protection of soils, waterways, and associated wildlife and plants / No indirect impacts to resources from erosion; CWA	Prior to and during construction activities	Prior to and during construction activities	Prior to and during construction activities
The final project design will include engineering controls to stabilize cut slopes and exposed surfaces, to minimize soil loss and impacts to surface water quality. The controls would be developed and implemented in accordance with engineering standards in UFC 3-210-10, *Low Impact Development*, and Section 438 of the EISA.	Protection of soils, waterways, and associated wildlife and plants / No indirect impacts to resources from erosion; CWA	Prior to and during construction activities	Prior to and during construction activities	Prior to and during construction activities
Biological Resource Measures				
Before project initiation, the project footprint, including temporary features such as staging areas and lay down areas, will be clearly marked with flagging, fencing, or signposts. Bird species breeding habitat within the project footprint would also be marked and avoided where practicable.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
Prior to surface disturbance activities, the biological monitor will conduct an Employee Environmental Awareness Program to educate all project personnel regarding invasive weed prevention and control and wildlife protection during construction.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Navy biomonitors will be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resource during construction activities.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
A qualified biologist will educate construction personnel about sensitive species and their habitats, identification, required conservation measures, and reporting requirements. The biologist will also attend operationally related meetings as needed.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Vegetation clearing or grading outside of the approved project footprint shall be reported to the Navy Project Manager within 24 hours of discovery. The designated work area flagging and erosion control BMPs shall be checked regularly, including within 24 hours of any storm event, and maintained throughout the construction phase. Topsoil will be retained and re-used in re-vegetation of temporary disturbance areas. The Navy will contract with a Restoration Specialist familiar with CMM ecology to collect seed from host plants identified within the construction footprint of all proposed facilities and utilize this seed to enhance QCB habitat outside the construction footprint. At least two years of seed collection prior to construction/disturbance of plants is necessary to collect sufficient seed for meaningful habitat augmentation. Plant surveys shall include QCB larval host plants and nectar source plants including Coulter's snapdragon, dark-tipped bird's beak, Chinese houses, and purple owls clover.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
All light posts and permanent nighttime lighting associated with the project will be selected to provide the lowest illumination possible while still allowing for safe operations. To prevent disturbance to sensitive natural resources, the lighting will also be at the lowest height possible and will be shielded so that it is directed only toward areas needing illumination.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
To reduce perching by raptors and other birds, all light posts and tall structures will be designed to prevent perching and/or will be equipped with anti-perching material (e.g., nixallite).	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
All trash that may attract predators (e.g., corvids, opossums, raccoons) will be removed from the project area and disposed of, at least daily, in areas or in bins that wildlife cannot access.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
To avoid attracting predators, the project area will be kept as clean of debris as possible.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
No pets, specifically cats and dogs (except military working dogs), will be allowed at CMM as they may result in an increased level of predation or injury to sensitive natural resources.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
All vehicle traffic will be restricted to construction areas and currently established dirt or paved roads. No off-road vehicle use will be permitted.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The Navy will continue to monitor and address invasive species on CMM, as appropriate. The construction team will implement the following measures a. through g. below to prevent or minimize the spread of invasive plant species:	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
a.) To prevent invasive plant seeds, roots, or other propagules from being transported off CMM to the project area as well as from the project area to other parts of CMM, all contractor vehicles and equipment will be cleaned of visible soil and debris in a contained location, within a designated cleaning station constructed in the project staging area;	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
b.) To control the spread of existing non-native species on base, projects will be implemented as appropriate in accordance with the general methodology described in the QCB Habitat Enhancement Plan;	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
c.) All project personnel will ensure that their boots and equipment are free of visible soil and debris before entering or leaving the project area	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
d.) Vehicle tires or construction equipment that have come in contact with vegetation or disturbed soil will be cleaned in a contained location, within a designated cleaning station, prior to leaving the project staging area. Plant material and seeds, or mud containing seeds, will be removed from the undercarriage of the vehicle or construction equipment. Vehicle cabs will also be swept out during the cleaning process to remove seed and plant materials. Seed and plant debris will be collected and disposed of properly to avoid dispersal to other areas.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
e.) The introduction and spread of existing invasive weeds, particularly those in the mustard family, will be controlled throughout CMM.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
f.) Prior to ground disturbing activities, all project personnel will complete the Employee Environmental Awareness Program regarding invasive weed prevention and control. The spread of invasive weeds will be controlled, as needed, to prevent the spread of existing invasive weeds on CMM.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
g.) All construction activities, including mechanized clearing, grading, grubbing, vehicle traffic, equipment staging, and soil deposition will be confined to the project footprint.	Protection of terrestrial biological resources, water resources / No harm to water resources, listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Contain sediment runoff within the limits of construction through the use of siltation fences, silt ponds, straw bales, sandbags, gravel bags, silt fencing, siltation basins, earthen berms, tarps or water spraying, soil stabilization, temporary sedimentation basins, and re-vegetation with native plant species where possible, to decrease erosion and sedimentation.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Any revegetation of temporary impact areas within the project area would have post construction maintenance included as part of the scope of work. This would include maintaining/watering/weeding/restoration of temporary impact areas to ensure success of restoration efforts (2-3 years post construction depending on extent and details of restoration action)	Protection of terrestrial biological resources	Post-construction	Construction contractor and Navy	2-3 years following completion of construction activities
Biological Resources: Avoidance of Nesting Birds				
Mowing, clearing, and grading of vegetated areas will be conducted during the non-breeding season (September through February), when feasible, to reduce the risk of take of nesting birds protected under the MBTA. If mowing, clearing, or grading of vegetation must occur during the breeding season (March through August), a nest search survey will be conducted no more than 72 hours prior to these activities. Any active nests found during the survey will be provided with a buffer (buffer size will be determined based on each situation by the contractor approved wildlife biologist) and avoided. No nighttime construction (including the use of lighting) will occur during the nesting season (March through August).	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Prior to vegetation clearing or grubbing or grading, nesting birds surveys within and adjacent to the project area would be conducted to further reduce any impacts to migrating birds. If found, an appropriate buffer would be established around the nest to further reduce any impacts to protected bird species.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
Biological Resources - Quino Checkerspot Butterfly Avoidance Measures				
Prior to the initiation of ground disturbing activities, the project footprint, including laydown and staging areas, will be clearly delineated using techniques such as flagging, survey lath, or wooden stakes.	Protection of terrestrial biological resources / No harm to listed birds; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
The construction contractor will provide construction-level designs and a revised assessment, if necessary, of project impacts on QCB to the Navy and Contracting Officer for approval prior to initiation of ground disturbing activities.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
A contractor approved biomonitor will be responsible for monitoring and reporting compliance with avoidance and minimization measures for biological resources during construction activities. The biomonitor will have demonstrated experience identifying habitats, plants, and wildlife typical of east San Diego County and the project, as well as QCB (i.e., eggs, larvae, and adults) and QCB host and nectar plants; the biomonitor conducting larval surveys and/or salvage must hold current applicable USFWS permit(s).	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The biomonitor will review and approve all vegetation clearing in the project footprint prior to clearing and will be on site during the delineation of the project footprint boundaries and the initial phases of vegetation clearing to ensure compliance with CMs outlined in the BO associated with the berthing facility or other relevant BO CMs.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
If host plants cannot be avoided in the FMZ, a QCB biologist with current applicable USFWS permit(s) will survey for QCB adults, larvae, and eggs within the impact areas. The QCB biologist will salvage and/or relocate any QCB adults, larvae, and host plant containing eggs and larvae found in the impact areas to a location supporting suitable QCB habitat that will not be impacted. The Carlsbad Fish and Wildlife Office (CFWO) will be notified of any QCB relocation within 24 hours following relocation.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
FMZ activities will follow WFMP BO conservation measures.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
To avoid impacts to QCB from herbicide drift, broadcast spray of any herbicide will be prohibited. If spot treatments are needed during the QCB breeding season, a Navy approved biologist will conduct surveys for, and avoid impacts to, host plants.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
FMZ activities will leave as much litter/ground cover as feasible to reduce the spread and abundance of nonnative plants. WFMP activities will avoid the creation of bare soil in maintenance activities, to the extent possible, to reduce nonnative plant establishment and spread. The Navy will conduct weed control in fuel management areas as needed to control the spread of existing nonnative species at CMM.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Biological Resources - Quino Checkerspot Butterfly Mitigation Measures				
Implement a habitat enhancement program to compensate for the loss of occupied QCB habitat associated with facilities construction. Avoid direct impacts to QCB during construction by: • Conducting surveys for host plants during the spring preceding construction. Surveys will occur within the construction footprint and 10-meter (32.8-foot) buffer around the limits of construction by a qualified biologist. • Construction personnel shall use existing roads or existing parking lots for staging area whenever possible. • Examining any host plants detected within the construction footprint for larvae during the active season, and moving larvae detected to a pre-selected area at least 10-meter (32.8-foot) from the edge of the construction limits; biomonitor conducting larval surveys and/or salvage must hold current applicable USFWS permit(s). • Prior to the initiation of work activities, the project footprint, including laydown and staging areas, will be clearly delineated using techniques such as flagging, survey lath, or wooden stakes. • To the maximum extent practicable, fuel management and road work will be conducted outside the QCB reproduction season, using methods that will exert minimal ground disturbance.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Impacts to host plants in and immediately adjacent to the project footprint will be avoided to the maximum extent possible through modifications to construction boundaries, where possible, and/or by marking and avoiding a buffer area around host plants.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Vegetation clearing will be prohibited until QCB surveys have been conducted during the QCB survey season from the 3rd week in March to through the second Saturday in May. Vegetation clearing from May 16 to August 31 must be approved by an NBC biologist prior to its implementation.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
Revegetation of areas that may be temporarily impacted by the project construction will be accomplished primarily through augmentation of host and nectar plant populations specific to the action area and invasive weed control. The revegetation may also include hydroseeding and container planting with species specific to CMM and will be implemented by the restoration contractor following the techniques outlined below: a. Topsoil from temporarily impacted areas not infested with invasive weeds will be salvaged, stockpiled, and reapplied as the surface horizon following construction. b. Soil salvage will preclude the need to use preemergent herbicide. However, if invasive weeds become problematic at the site, preemergent herbicide may be used in conjunction with other invasive weed control techniques. Use of preemergent herbicide must be approved by the NBC biologist. c. For hydroseeding, seed stock must be derived from local source populations at a similar elevation to that at which it will be used. d. To preserve genetic variability to the maximum extent feasible, reseeding stock to be used must come from the most proximate seed stock to the project site within San Diego County, and the location and source must be approved by the NBC biologist. Seed from CMM or an adjacent property will be used to the maximum extent possible. e. Seed mixtures will include at least one QCB host plant (e.g., Coulter's snapdragon) and a mix of QCB nectar plants specific to the action area. f. Large shrubs will not be used in seed mixes or plantings. g. Seed mixtures, including those applied through hydroseeding, will be applied at the beginning of the rainy season.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
h. Where feasible, restored areas will be re-contoured to match the surrounding landscape. i. Within a year of seeding/planning and continuing for the life of the revegetation project, invasive weed control will be implemented following the techniques outlined in the QCB Enhancement Plan. j. Revegetated areas will meet the following success criteria. Within 3 years of initiation of restoration activities, revegetated areas will be composed of at least 70 percent QCB host species (i.e., white snapdragon, Chinese houses, or thread- leaved bird's beak (Cordylanthus rigidus) and nectar species (i.e., popcorn flower, yellow pincushion, California butterweed, ball gilia, inland California buckwheat, winged pectocarya, and rancher's fiddleneck) relative to a reference site. The revegetated areas will also contain no more than 5 percent cover of invasive weeds (excluding invasive grasses). The reference site will be located near the revegetated areas and will contain QCB habitat typical of CMM as determined by the NBC Botanist. The Restoration Contractor will submit an annual report to the NBC Botanist documenting completed and ongoing revegetation activities and results relative to the success criteria. The NBC Botanist will determine if success criteria have been achieved and will submit a monitoring report to the Service within 6 months of completion of restoration activities. If success criteria have not been met within 3 years, the NBC Botanist will include in the monitoring report an analysis of the cause(s) of failure and proposed remedial actions. The Navy will continue restoration activities in revegetated areas until success criteria are met or until the USFWS agrees that, despite the Navy's implementation of contingency measures, environmental conditions (i.e., years of drought) have impacted the Navy's ability to achieve success criteria within the 3-year monitoring period.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The Navy will create a natural resources brochure and video with information on native species and habitat at CMM, including information regarding QCB appearance and biology. The brochures will be provided at each CMM range along with the range cards.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
The Navy will conduct construction contractor training and require that contractors report any suspected take to the biological monitor (to include collection of any dead suspected QCB to provide to the biological monitor). Briefings or range manuals distributed to CMM trainees will include material regarding QCB appearance and biology.	Protection of terrestrial biological resources / ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
The Navy's approved biologist will conduct host plant and larval surveys during spring preceding construction. The survey will identify plant material including seed stock to be salvaged. The survey will also identify locations of larvae for translocation.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
Seed collection will be conducted by personnel qualified to identify, collect, and properly store Coulter's snapdragon seed. The Navy will contract with a Restoration Specialist familiar with CMM ecology to collect seed from host plants identified within the construction footprint of all proposed facilities and utilize this seed to enhance QCB habitat outside the construction footprint. At least two years of seed collection prior to construction/disturbance of plants is necessary to collect sufficient seed for meaningful habitat augmentation.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
Larval salvage will be conducted by personnel qualified to identify, handle, and maintain QCB larvae.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities
Larval salvage efforts will continue each year prior to completion of clearing and grubbing for the berthing facility construction. Navy will use a combination of techniques to relocate larvae outside the construction footprint, including an examination of host plants detected within the construction footprint for larvae during the active season, and moving larvae detected to a pre-selected area (i.e., QCB Management Areas) at least 10 meters (32.8 feet) from the edge of the construction limits. The Navy will maintain larvae recovered from the construction limits through diapause and release these larvae to QCB Management Areas, using qualified personnel. Post-diapause larvae or adult butterflies recovered immediately preceding construction may also be relocated. All salvage work will be conducted in accordance with QCB salvage protocol described in the 2011 Quino Checkerspot Butterfly Enhancement Plan for Camp Michael Monsoor, Campo CA (Navy, 2011) and the Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA (Navy, 2019).	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to and during construction activities	Construction contractor and Navy	Completion of construction activities
Botanical surveys will be conducted as close as possible to the flowering period of white snapdragon and Chinese houses and within 1 year prior to construction. Surveys will be conducted prior to grading activities to identify the locations of all primary and secondary host plants that are located within the clearly defined construction footprint.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	Prior to construction activities	Construction contractor and Navy	Completion of construction activities

Measure	*Anticipated Benefit/ Evaluating Effectiveness*	*Implementing and Monitoring*	*Responsibility*	*Estimated Completion Date*
Construction personnel will avoid host plants outside of the limits of construction when possible. This may be accomplished by slight modifications in construction boundaries, where possible, or by marking a 10-foot (3 meter) buffer area around host plants.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities
An annual report will be submitted to the USFWS that describes and summarizes the implementation of the proposed project, including a cumulative total of the amount of habitat affected to track takes, and associated conservation measures. The USFWS Division of Law Enforcement, San Diego, California (619-557-5063) and the USFWS Carlsbad Fish and Wildlife Office (760-431-9440, ext. 274, 260, or 243) will be immediately notified should any QCB adults or larvae be found sick, injured, or dead in the project area. Written notification to both offices will be made within 5 calendar days and will include the collection date and time, the location of the butterfly(s), and any other pertinent information. Care will be taken in handling dead specimens to preserve biological material in the best possible state.	Protection of terrestrial biological resources / No harm to QCB; MBTA, ESA	During construction activities	Construction contractor and Navy	Completion of construction activities

BMPs = Best Management Practices; BO = Biological Opinion; CM = Conservation Measure; CMM = Camp Michael Monsoor; COA = course of action; EISA = Energy Independence and Security Act; ESA = Endangered Species Act; FMZ = fuel management zone; LID – Low Impact Development; MBTA = Migratory Bird Treaty Act; NBC = Naval Base Coronado; QCB = Quino checkerspot butterfly; SWPPP = Storm Water Pollution Prevention Plan; UFC = United Facilities Criteria; USFWS = United States Fish and Wildlife Service; WFMP = Wildland Fire Management Plan; USACE = U.S. Army Corps of Engineers

4 Cumulative Impacts

This section (1) defines cumulative impacts; (2) describes past, present, and reasonably foreseeable future actions relevant to cumulative impacts; (3) analyzes the incremental interaction the Proposed Action may have with other actions; and (4) evaluates cumulative impacts potentially resulting from these interactions.

4.1 Definition of Cumulative Impacts

Cumulative impacts are defined in the 2022 NEPA updates, under 40 CFR section 1508.1(g)(3) as "*effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time*."

CEQ and USEPA have published guidance addressing implementation of cumulative impact analyses—*Guidance on the Consideration of Past Actions in Cumulative Effects Analysis* (CEQ, 2005) and *Consideration of Cumulative Impacts in EPA Review of NEPA Documents* (USEPA, 1999). CEQ guidance entitled *Considering Cumulative Impacts Under NEPA* (1997) states that cumulative impact analyses should

"*…determine the magnitude and significance of the environmental consequences of the Proposed Action in the context of the cumulative impacts of other past, present, and future actions...identify significant cumulative impacts…[and]…focus on truly meaningful impacts."*

Cumulative impacts are most likely to arise when a relationship or synergism exists between a Proposed Action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the Proposed Action would be expected to have more potential for a relationship than those more geographically separated. Similarly, relatively concurrent actions would tend to offer a higher potential for cumulative impacts.

4.2 Scope of Cumulative Impacts Analysis

The scope of the cumulative impacts analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the study area delimits the geographic extent of the cumulative impacts analysis. In general, the study area includes those areas previously identified in Chapter 3 for the respective resource areas. The time frame for cumulative impacts centers on the timing of the Proposed Action.

Another factor influencing the scope of cumulative impacts analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the Proposed Action, the analysis employs the measure of "reasonably foreseeable" to include or exclude other actions. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for Environmental Impact Statements and EAs, management plans, land use plans, and other planning related studies.

4.3 Past, Present, and Reasonably Foreseeable Actions

This section focuses on past, present, and reasonably foreseeable future projects at and near the Proposed Action. In determining which projects to include in the cumulative impacts analysis, a preliminary determination was made regarding the past, present, or reasonably foreseeable action. Specifically, using the first fundamental question included in ***Section 4.1***, it was determined if a relationship exists such that the affected resource areas of the Proposed Action (included in this EA) might interact with the affected resource area of a past, present, or reasonably foreseeable action. If no such potential relationship exists, the project was not carried forward into the cumulative impacts analysis. In accordance with CEQ guidance (CEQ, 2005), these actions considered but excluded from further cumulative effects analysis are not catalogued here as the intent is to focus the analysis on the meaningful actions relevant to informed decision-making. Projects included in this cumulative impacts analysis are listed in ***Table 4-1*** and briefly described in the following subsections.

Table 4-1 Cumulative Action Evaluation

Action	*Level of NEPA Analysis Completed*
Past Actions	
Construction of Military Facilities at Naval Base Coronado, Camp Michael Monsoor (P-781)	EA (2008)
Expansion of Range and Training Facilities and Training Support Operations at Naval Base Coronado, Camp Michael Monsoor (P-888)	EA (2013)
Wildland Fire Management Plan	EA, (2016) BO (2017)
Quino Checkerspot Butterfly Enhancement Plan	N/A
Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA	N/A
Integrated Natural Resources Management Plan	EA (2013)
Present and Reasonably Foreseeable Future Actions	
No actions currently identified	N/A

4.3.1 Past Actions

4.3.1.1 Construction of Military Facilities at Naval Base Coronado, Camp Michael Monsoor (P-781)

The Navy prepared this EA (Navy 2008) for the construction and operation of the following training facilities:

- Close combat structure;
- Simulated residence for training;
- Logistics and support facilities; and,
- Method of Entry structure.

As part of this project, BLM issued Public Land Order No. 7807 on January 17, 2013. The order transferred 3,385 acres (1,370 ha) of public land (encompassing the Previously Withdrawn Parcel and Parcels C, E, and G) to the Navy for exclusive military use through year 2033. The Navy completed the EA for this project in 2008; the BLM issued a Record of Decision for this project in February of 2010. The

Navy issued a memo to file in September 2011 covering changes to the project description. See ***Figure 4-1*** for a map showing the project location.

4.3.1.2 EA for the Expansion of Range and Training Facilities and Training Support Operations at Naval Base Coronado, Camp Michael Monsoor (P-888)

This EA evaluated the Navy's proposal to expand and improve existing facilities and construct new facilities at CMM. The EA addressed the potential environmental impacts associated with the improvement of existing facilities (Range 110) and construction of new facilities (e.g., rifle and pistol ranges). The Navy has not yet completed construction for this project (Navy, 2013a). See ***Figure 4-1*** for a map showing the project location.

Construction (particularly from P-781 and P-888) has caused persistent erosion issues at CMM and downstream areas. To initially identify and address these issues, in 2021, the Navy prepared an engineering analysis (NAVFAC SW, 2021). The analysis identified major sources of erosion within the CMM valley, and associated resources subject to impact. P-888 has been halted, and several requirements noted in the BO for the project have not been met. As a result, erosion issues across the valley have not been addressed causing degradation of infrastructure, roadways, and habitat (within CMM boundaries and across private property). The Navy will prepare and implement an erosion control plan to address cumulative erosion issues within the CMM valley.

4.3.1.3 Wildland Fire Management Plan for Naval Base Coronado Assault and Tactical Weapons Complex, CMM, CA

The WFMP details objectives and strategies for a fire management program, with implementation roles and responsibilities. This plan assesses the on-site and off-site wildland fire hazards and risks that may threaten life, property, and natural resources associated with the mission of CMM (Navy, 2018).

4.3.1.4 Quino Checkerspot Butterfly Enhancement Plan for Camp Michael Monsoor

This plan outlines a strategy to improve habitat for the QCB on portions of CMM. The primary goal is to provide a complex of enhanced habitat patches that will become self-perpetuating with diminishing management over time (Navy, 2011).

4.3.1.5 Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA

This management plan provides guidance to protect the QCB, as well as its post-diapause host plants, diapause host plants, nectar sources, and habitat. This plan presents a compilation of QCB-related information for CMM, including QCB biology, its history on CMM, conservation measures, habitat monitoring, wildland fire management, and monitoring and management approach. This plan focuses on the following strategies to support QCB and QCB habitat at CMM: 1) manage QCB habitat, 2) implement mission-compatible conservation measures, 3) support REPI Program parcels, 4) monitor QCB, 5) conduct natural resources education and outreach, and 6) implement adaptive management (Navy, 2019).

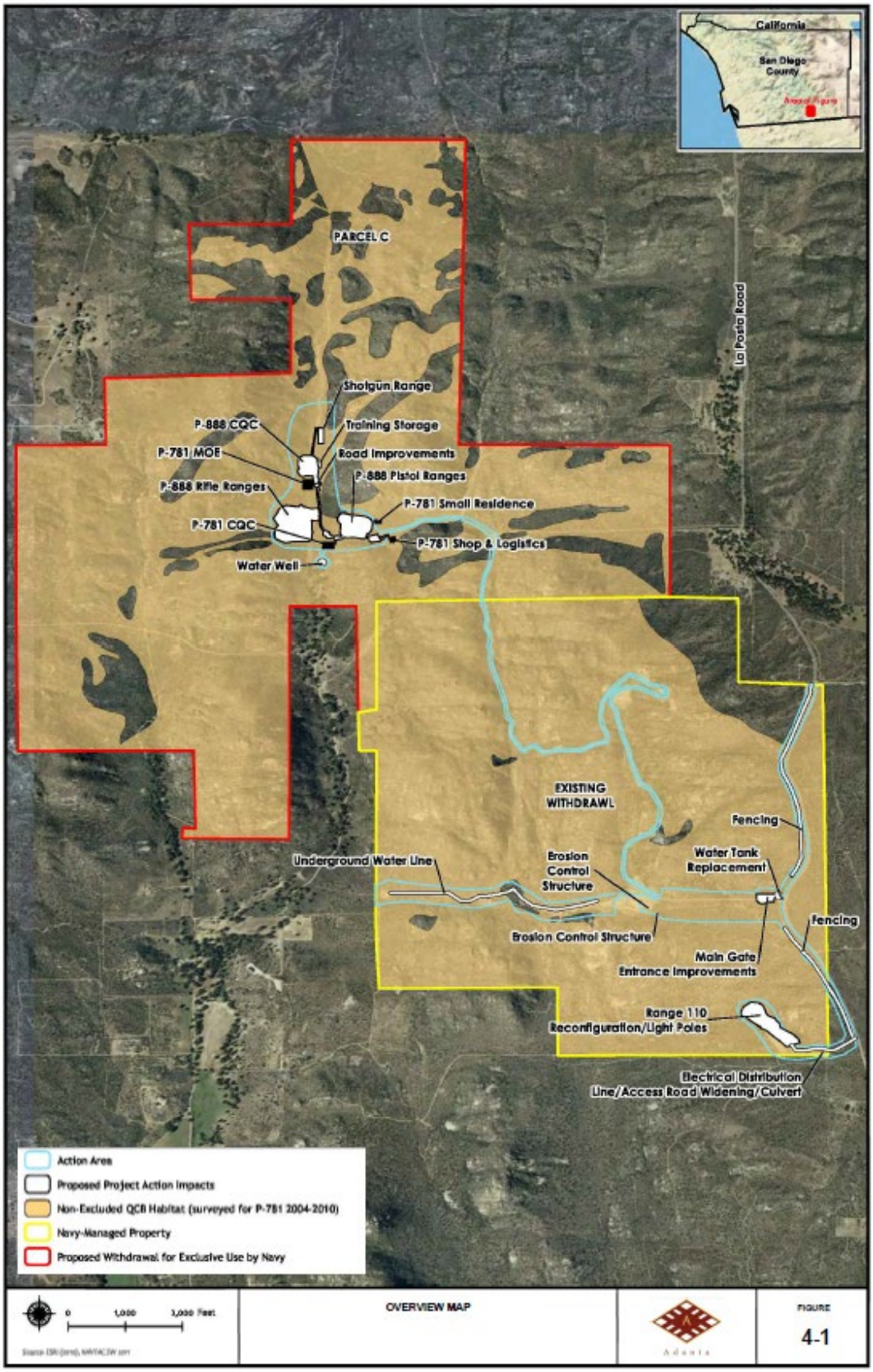

Figure 4-1 Project Overview Map – P781 and P888

4.3.1.6 Integrated Natural Resources Management Plan, Naval Base Coronado

The INRMP is a long-term planning document to guide the installation commander in the management of natural resources to support the installation mission, while protecting and enhancing installation resources for multiple use, sustainable yield, and biological integrity (Navy, 2013b).

4.3.2 Present and Reasonably Foreseeable Actions

The Navy has not identified any present or reasonably foreseeable actions within the cumulative effects region.

4.4 Cumulative Impact Analysis

The resources considered in this cumulative impact analysis were determined by analyzing the types of environmental resources in the vicinity of the project area; the most prevalent, sensitive, and threatened resources; and the resources most substantially impacted by the Proposed Action (taking into account both direct and indirect impacts). Resources that were not adversely or permanently affected by the Proposed Action are not considered in this cumulative impact analysis.

Additionally, for any resources where the Proposed Action would result in temporary impacts from construction activities (e.g., air quality), those temporary impacts are not expected to result in significant, cumulative impacts due to the short-term, insignificant nature of the temporary impacts identified, and the mitigation measures that would be implemented. The variation in the timing of construction activities associated with the Proposed Action in addition to past, present, and reasonably foreseeable projects and actions would moderate impacts over space and time, such that significant, cumulative impacts from construction activities are not anticipated.

Therefore, this cumulative impact analysis includes analysis of water, geological, and biological resources.

4.4.1 Water Resources

The geographic extent for cumulative impacts on water resources is the CMM valley. Relevant cumulative actions include P-781, P-888, the WFMP, and the INRMP. Construction of buildings as part of the Proposed Action and other building and pavement construction projects would result in an overall increase in impervious surfaces in the surrounding areas. Impervious surfaces have the potential to increase the volume and velocity of stormwater runoff, which can indirectly result in soil erosion and sedimentation. In addition, ground-disturbing activities (e.g., earthwork, grading, vegetation removal) associated with the Proposed Action and other nearby projects could indirectly result in erosion and transport of sediment during stormwater flow events.

The moderate to high erosion hazard coupled with steep topography, new infrastructure, recent above-average precipitation, and recurring disturbances from construction (particularly from P-781 and P-888) has caused persistent erosion issues at CMM and downstream areas. New construction associated with the Proposed Action could contribute cumulatively to overall erosion at CMM. However, the engineering plan for the berthing facility identifies robust erosion control measures during and upon completion of construction (see also ***Table 3-9*** in ***Section 3.5***). The Navy intends to prepare and implement an erosion control plan to address cumulative erosion issues within the CMM valley.

The Proposed Action would not significantly contribute to cumulative water resource impacts from other past, present, and future actions within the ROI, because construction and operational erosion control measures would minimize erosion and sedimentation-related impacts to water resources. In addition, the constructed permanent stormwater infrastructure would be complementary to the downgradient features constructed as part of P-888. The WFMP and INRMP identify measures to minimize impacts to water resources that the Navy implements in the cumulative effects region. The Navy will continue to implement project- and site-specific erosion control measures to reduce impacts to receiving waters, coordinate with regulatory agencies to identify appropriate erosion control measures, and evaluate implementing long-term effective solutions to on-going erosion issues at CMM. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant, cumulative impacts within the ROI.

4.4.2 Geological Resources

The geographic extent for cumulative impacts on geological resources is the CMM valley. Relevant cumulative actions include P-781, P-888, the WFMP, and the INRMP. Potential impacts to geological resources from the Proposed Action would be limited to ground disturbance in areas of construction and areas down-stream/down-gradient of the project area subject to impacts from erosion.

The moderate to high erosion hazard coupled with steep topography, new infrastructure, recent above-average precipitation, and recurring disturbances from construction (particularly from P-781 and P-888) has caused persistent erosion issues at CMM and downstream areas. New construction associated with the Proposed Action could contribute cumulatively to overall erosion at CMM. However, the engineering plan for the berthing facility identifies robust erosion control measures during and upon completion of construction (see also ***Table 3-9*** in ***Section 3.5***). The Navy intends to prepare and implement an erosion control plan to address cumulative erosion issues within the CMM valley.

The Proposed Action would not significantly contribute to cumulative geological resource impacts from other past, present, and future actions within the ROI, because construction and operational erosion control measures would minimize erosion-related impacts. The WFMP and INRMP identify measures to minimize erosion that the Navy implements and will continue to implement throughout the cumulative effects region. The Navy will continue to implement project- and site-specific erosion control measures, coordinate with regulatory agencies to identify appropriate erosion control measures, and evaluate implementing long-term effective solutions to on-going erosion issues at CMM. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant, cumulative impacts within the ROI.

4.4.3 Biological Resources

The geographic scope for the assessment of cumulative impacts on biological resources is all of CMM; however, the presence of suitable habitat and known occurrences of specific resources within the vicinity of the project area and CMM valley are the focus of this cumulative analysis. Relevant cumulative actions include P-888, the WFMP, the Quino Checkerspot Butterfly Enhancement Plan, and the INRMP.

The Proposed Action would result in the loss of up to 4.54 acres (1.84 ha) of QCB habitat consisting of 3.58 acres (1.45 ha) within the limits of construction and 0.96 acres (0.39 ha) of habitat within the 100-foot FMZ that would be maintained in perpetuity.

The spatial and temporal extent of impacts on biological resources from P-888 were avoided or minimized through the application of impact mitigation, avoidance, and minimization measures and conservation measures of the USFWS BO FWS-13BO318-13F0323 dated August 14, 2013.

The Navy continues to comply with impact avoidance and minimization measures described in the 2016 WFMP EA. These measures are intended to minimize or eliminate impacts to general biological resources, as well as sensitive species, including state and federally listed threatened and endangered species. The Navy also continues to comply with conservation measures set forth in the WFMP associated USFWS BO FWS-SDG-170007-17F0008, dated June 1, 2017, which focuses minimizing or offsetting direct and indirect adverse effects on federally listed endangered species including QCB.

The Quino Checkerspot Butterfly Enhancement Plan (Navy, 2011) outlines a strategy to improve habitat for the QCB on portions of CMM with the goal to provide a complex of enhanced habitat patches that will become self-perpetuating with diminishing management over time. The plan also discusses current land use at CMM, planned expansion and facilities construction, and the anticipated effects on QCB, QCB biology and conservation, and QCB history and ecology in the La Posta region.

The Final Quino Checkerspot Butterfly Management Plan for Naval Base Coronado, Camp Michael Monsoor, CA (Navy, 2019) updates the 2011 QCB Enhancement Plan, which was prepared for the Navy to comply with the USFWS BO on land withdrawal, facilities construction, and operations at NSW FWS-SDG-4452 issued on 20 April 2007 (USFWS, 2007a). In 2017, two additional BOs were issued. The management goal for QCB at CMM is to ensure long-term sustainability of native ecosystem function and to avoid, minimize, or compensate for intense disturbances, while sustaining the Navy's training mission. Consequently, to sustain the Navy's training mission while ensuring the long-term sustainability of QCB, the Navy has requested ESA Section 7 consultation with the USFWS several times since 2007, thereby ensuring no cumulative adverse effects to federally listed species occur. The 2019 Final QCB Management Plan will be incorporated into the INRMP when the INRMP is updated.

The INRMP (Navy, 2013b) provides an implementable framework for managing natural resources. The INRMP provides goals and objectives for the use and conservation of natural resources at CMM, which integrate regional ecosystem, military, social (i.e., community), and economic concerns. The QCB Plan and the Proposed Action include measures to reduce the potential for persons and equipment to inadvertently transport invasive species to CMM. The construction of P-781 and P-888 has resulted in the establishment of invasive species in the project area.

The Navy is committed to avoiding or minimizing project-related environmental effects to the greatest extent practicable, including the introduction and establishment of invasive species. As part of this commitment, avoidance and minimization measures have been identified in the INRMP to ensure that potential adverse impacts are avoided when possible or minimized to acceptable levels when required. Avoidance, minimization, and mitigation measures applicable to the Proposed Action (see ***Table 3-9*** in ***Section 3.5***) and identified cumulative projects are and would continue to be implemented as applicable.

The Navy would continue to manage and balance the protection of sensitive natural resources with the needs of the military mission of CMM through planning and consultation. Therefore, implementation of the Proposed Action combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts within the ROI.

5 Other Considerations Required by NEPA

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

In accordance with 40 CFR section 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 5-1*** 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.

5.2 Irreversible or Irretrievable Commitments of Resources

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. 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.

Implementation of the Proposed Action would involve human labor; the consumption of fuel, oil, and lubricants for construction vehicles; and loss of natural resources (vegetation and immobile or slow-moving species). The Proposed Action would require construction materials and energy. The total amount of construction materials (e.g., concrete and steel) required for the Proposed Action would be relatively small when compared to the resources available in the region. The construction materials and energy required for construction are not in short supply. Moreover, the use of construction materials and energy would not have an adverse impact on the continued availability of these resources. The commitment of energy resources to implement the Proposed Action would not be excessive in terms of region-wide usage. The Navy would implement mitigation to offset unavoidable impacts to natural resources. Implementation of the Proposed Action would not result in significant irreversible or irretrievable commitment of resources.

5.3 Unavoidable Adverse Impacts

This EA has determined that the Proposed Action would not result in any significant impacts. No resource area would be subject to significant adverse impacts that would require mitigation. ***Table 3-9*** in ***Section 3.5*** presents the resource area impact avoidance and minimization measures.

5.4 Relationship between Short-Term Use of the Environment and Long-Term Productivity

NEPA requires an analysis of the relationship between a project's short-term impacts on the environment and the effects that these impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development site reduces future flexibility in pursuing other options, or that using a parcel of land or other resources often eliminates the possibility of other uses at that site.

Table 5-1 Principle Federal and State Laws Applicable to the Proposed Action

Federal, State, Local, and Regional Land Use Plans, Policies, and Controls	***Status of Compliance***
NEPA; CEQ NEPA implementing regulations; Navy procedures for Implementing NEPA	This EA has been prepared in accordance with NEPA, CEQ regulations implementing NEPA, and Navy NEPA procedures.
Clean Air Act	Implementation of the Proposed Action would generate emissions below *de minimis* levels and not exceed air quality standards. As such, the Navy has prepared a Record of Non-Applicability demonstrating Clean Air Act conformity (Appendix A).
Clean Water Act	The Navy would implement the Proposed Action in compliance with California's General Construction Permit. Proposed construction activities would follow BMPs to limit potential water quality impacts.
National Historic Preservation Act	The Navy has determined that implementation of the Proposed Action would result in no effect to historic resources because no resources are present.
Endangered Species Act	The Navy will initiate consultation with the USFWS and will update this section after completing consultation.
Migratory Bird Treaty Act	The Proposed Action would comply with the MBTA by avoiding activities such as vegetation clearing that could affect breeding birds.
Bald and Golden Eagle Protection Act	The Proposed Action would comply with the Bald and Golden Eagle Protection Act by avoiding impacts to eagle habitat.
Executive Order 11988, Floodplain Management	There are no mapped floodplains on CMM; therefore, the Proposed Action would not impact floodplains.
Executive Order 12088, Federal Compliance with Pollution Control Standards	The Proposed Action would include standard measures to reduce the potential for an accidental spill and comply with federal pollution control standards.
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations	The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations because no such populations are in the area and impacts would be negligible.
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 because children are not located in the area and impacts would be negligible.
Executive Order 13807, Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects.	The Navy has demonstrated rigor and accountability through the NEPA process for this infrastructure project, to include making the EA publicly available.
Executive Order 13990, Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis	This EA is guided by best science and the Proposed Action avoids or minimizes potential impacts to all resource areas to ensure compliance with this order.
Executive Order 14008, Tackling the Climate Crisis at Home and Abroad	This EA considers the impact to the Proposed Action on climate change.

BMPs= Best Management Practices

As discussed in ***Chapter 3***, the Proposed Action would result in both short- and long-term environmental effects. However, no element of the Proposed Action is expected to result in the types of impacts that would reduce environmental productivity, have long-term impacts on sustainability, affect biodiversity, or narrow the range of long-term beneficial uses of the environment. In summary, implementation of the Proposed Action would not result in any impacts that would significantly reduce environmental productivity or permanently narrow the range of beneficial uses of the environment.

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7 List of Preparers

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Appendix A
Air Quality Methodology and Calculations

RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY

ENVIRONMENTAL ASSESSMENT FOR A BERTHING FACILITY AT NAVAL BASE CORONADO, CAMP MICHAEL MONSOOR, LA POSTA, CALIFORNIA

SAN DIEGO AIR BASIN

INTRODUCTION

The U.S. Environmental Protection Agency (USEPA) published *Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* in the 30 November 1993, Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). The U.S. Department of the Navy (Navy) published *Clean Air Act (CAA) General Conformity Guidance* in OPNAVINST 5090.1E, dated 3 September 2019 and the Navy guidance for compliance with the CAA General Conformity Rule, dated 30 July 2013. These publications provide implementing guidance to document CAA Conformity Determination requirements.

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 to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan, before the action is taken (40 CFR Part 1, Section 51.850[a]).

The General Conformity rule applies to federal actions proposed within areas which are designated as either nonattainment or maintenance areas for a National Ambient Air Quality Standard (NAAQS) for any of the criteria pollutants. Former nonattainment areas that have attained a NAAQS are designated as maintenance areas. Emissions of pollutants for which an area is in attainment are exempt from conformity analyses.

The project would occur within the San Diego Air Basin (SDAB). This portion of the SDAB is currently in severe nonattainment of the 2015 8-hour ozone (O_3) NAAQS and is a maintenance area for carbon monoxide (CO) NAAQS. The SDAB attains the NAAQS for all other criteria pollutants. Therefore, only project emissions of CO and O_3 (or its precursors, volatile organic compounds [VOCs] and oxides of nitrogen [NOx]) are analyzed for conformity rule applicability.

The annual *de minimis* levels for this region are 25 tons of VOC, NOx, and 100 tons of CO, as listed in Table 1. Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* levels (40 CFR Part 1, Section 51.853[b]) and are not regionally significant (totals less than 10 percent of projected regional emissions for that pollutant) (40 CFR Part 1, Section 93.153[b]).

Table 1. Conformity *de minimum* Levels for Criteria Pollutants in the San Diego Air Basin

Criteria Pollutant	*de minimis* Level (tons/year)
Carbon Monoxide (CO)	100
Volatile Organic Compounds (VOC)	25
Oxides of Nitrogen (NO_x)	25

PROPOSED ACTION

Action Proponent: U.S. Navy

Location: Camp Michael Monsoor, La Posta, California.

Proposed Action Name: Berthing Facility at Naval Base Coronado, Camp Michael Monsoor.

Proposed Action & Emissions Summary: The Proposed Action involves construction of a berthing facility for 120 personnel. The Navy proposes a 12,960 SF facility with associated utilities, a septic system, trash enclosure, unpaved parking, a 2,400 SF warehouse, and AT/FP features. The total improved area would be 90,403 SF. There are no planned changes to operational characteristics of Camp Michael Monsoor as a result of the Proposed Action. The Navy identified three courses of action (COAs) under the Proposed Action: a single building for all 120-personnel (COA 1), a two-phase construction of the berthing facility starting with an 80-person berthing facility followed by a 40-person berthing facility (COA 2), or a different two-phase construction of the berthing facility starting with a 60-person berthing facility followed by a 60-person berthing facility (COA 3).

Project Emissions:

This air quality analysis assumes that all construction emissions would occur within one year and models estimated emissions for COA 1. These emissions represent estimated emissions of all COAs because the COAs are very similar in size and scope. COAs 2 and 3 would both be built in two phases and have less emissions per year than COA 1. Therefore, estimated emissions for COA 1 reflect the potential impact from COAs 2 or 3.

Table 2 presents the estimated demolition and construction emissions due to implementation of the Proposed Action (COA 1). Maximum estimated emissions would be below conformity *de minimis* levels. If the project emissions are considered over a two-year period, the emissions would be even further below the applicable *de minimis* levels.

Table 2. Estimated Emissions Resulting from Implementation of the Proposed Action – COA 1

Component	Emissions (tons/year)		
	CO[1]	VOC	NOx
Construction Emissions			
Construction of Berthing Facility and associated features	0.99	0.29	0.92
de minimis Threshold for GCR (tons/year)	100	25	25

Notes: [1] SDAB is considered a maintenance area for the federal CO standard and is in attainment of the federal SO_2, NO_2, Lead, PM_{10}, and $PM_{2.5}$ standards.
[2] SDAB is a severe nonattainment area for the 8-hour federal Ozone (O_3) standard as of June 1, 2021 (84 FR 29522); VOCs and NO_x are precursors to the formation of ozone.

PROPOSED ACTION EXEMPTION(S)

The Proposed Action is located within a nonattainment and maintenance area; therefore, the Proposed Action is not exempt from General Conformity Rule Requirements.

ATTAINMENT AREA STATUS AND EMISSIONS EVALUATION CONCLUSION

The SDAB is a severe nonattainment area for the 8-hour federal O_3 standard; VOCs and NO_x are precursors to the formation of O_3. The SDAB is considered a maintenance area for the federal CO standard.

Emissions associated with COA 1 were calculated using data presented in Chapter 2 of the EA, general air quality assumptions, and emission factors compiled from the following sources: *CalEEMod 2020.4.0.*

The U.S. Navy concludes that *de minimis* thresholds for applicable criteria pollutants would not be exceeded nor would the project be regionally significant (i.e., greater than 10 percent of the air basins' emission budgets) as a result of implementation of the Proposed Action. Therefore, the Navy concludes that further Conformity Determination procedures are not required, resulting in this Record of Non-Applicability.

RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that implementation of the berthing facility proposed action does not require a formal CAA Conformity Determination.

Signature: _____ Date: _____

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CMM Berthing Facility - San Diego Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

CMM Berthing Facility

San Diego Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Motel	120.00	Room	2.00	13,000.00	0
Unrefrigerated Warehouse-No Rail	2.40	1000sqft	0.06	2,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company					
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Modified for total square footage of 13,000 for berthing and 2,400 for warehouse.

Construction Phase - Modified for unpaved parking and no demolition.

Trips and VMT - Adusted for no demolition, no paving.

Vehicle Trips - Adjusted to conditions of the alternatives, no increased operations.

Road Dust - Adjusted for unpaved but maintained parking areas.

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	133.00
tblConstructionPhase	NumDays	20.00	0.00

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tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	2/15/2024	10/3/2024
tblConstructionPhase	PhaseEndDate	1/18/2024	9/18/2024
tblConstructionPhase	PhaseEndDate	3/3/2023	2/5/2023
tblConstructionPhase	PhaseEndDate	3/16/2023	3/18/2024
tblConstructionPhase	PhaseEndDate	2/1/2024	9/18/2024
tblConstructionPhase	PhaseEndDate	3/8/2023	3/6/2024
tblConstructionPhase	PhaseStartDate	2/2/2024	9/20/2024
tblConstructionPhase	PhaseStartDate	3/17/2023	3/17/2024
tblConstructionPhase	PhaseStartDate	3/9/2023	3/9/2024
tblConstructionPhase	PhaseStartDate	1/19/2024	9/19/2024
tblConstructionPhase	PhaseStartDate	3/4/2023	3/4/2024
tblLandUse	LandUseSquareFeet	235,224.00	13,000.00
tblLandUse	LotAcreage	5.40	2.00
tblRoadDust	RoadPercentPave	100	40
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblVehicleTrips	ST_TR	3.35	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	3.35	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	3.35	0.00
tblVehicleTrips	WD_TR	1.74	0.00

2.0 Emissions Summary

CMM Berthing Facility - San Diego Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.2927	0.9295	0.9998	1.8500e-003	0.0285	0.0386	0.0672	0.0119	0.0369	0.0488	0.0000	154.7945	154.7945	0.0288	6.4000e-004	155.7063
Maximum	**0.2927**	**0.9295**	**0.9998**	**1.8500e-003**	**0.0285**	**0.0386**	**0.0672**	**0.0119**	**0.0369**	**0.0488**	**0.0000**	**154.7945**	**154.7945**	**0.0288**	**6.4000e-004**	**155.7063**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.2927	0.9295	0.9998	1.8500e-003	0.0285	0.0386	0.0672	0.0119	0.0369	0.0488	0.0000	154.7943	154.7943	0.0288	6.4000e-004	155.7061
Maximum	**0.2927**	**0.9295**	**0.9998**	**1.8500e-003**	**0.0285**	**0.0386**	**0.0672**	**0.0119**	**0.0369**	**0.0488**	**0.0000**	**154.7943**	**154.7943**	**0.0288**	**6.4000e-004**	**155.7061**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
5	2-6-2024	5-5-2024	0.3299	0.3299
6	5-6-2024	8-5-2024	0.4789	0.4789
7	8-6-2024	9-30-2024	0.3748	0.3748
		Highest	0.4789	0.4789

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0781	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003
Energy	4.0800e-003	0.0371	0.0312	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.3783	40.3783	7.7000e-004	7.4000e-004	40.6182
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	13.7953	0.0000	13.7953	0.8153	0.0000	34.1772
Water						0.0000	0.0000		0.0000	0.0000	1.1418	0.0000	1.1418	0.1173	2.7700e-003	4.8968
Total	**0.0822**	**0.0371**	**0.0323**	**2.2000e-004**	**0.0000**	**2.8200e-003**	**2.8200e-003**	**0.0000**	**2.8200e-003**	**2.8200e-003**	**14.9371**	**40.3805**	**55.3175**	**0.9333**	**3.5100e-003**	**79.6966**

CMM Berthing Facility - San Diego Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0736	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003
Energy	4.0800e-003	0.0371	0.0312	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.3783	40.3783	7.7000e-004	7.4000e-004	40.6182
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	13.7953	0.0000	13.7953	0.8153	0.0000	34.1772
Water						0.0000	0.0000		0.0000	0.0000	1.1418	0.0000	1.1418	0.1173	2.7700e-003	4.8968
Total	**0.0777**	**0.0371**	**0.0323**	**2.2000e-004**	**0.0000**	**2.8200e-003**	**2.8200e-003**	**0.0000**	**2.8200e-003**	**2.8200e-003**	**14.9371**	**40.3805**	**55.3175**	**0.9333**	**3.5100e-003**	**79.6966**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	5.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	2/6/2023	2/5/2023	5	0	No Demolition needed.
2	Site Preparation	Site Preparation	3/4/2024	3/6/2024	5	3	
3	Grading	Grading	3/9/2024	3/18/2024	5	6	

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4	Building Construction	Building Construction	3/17/2024	9/18/2024	5	133	
5	Paving	Paving	9/19/2024	9/18/2024	5	0	Unpaved parking area.
6	Architectural Coating	Architectural Coating	9/20/2024	10/3/2024	5	10	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 23,100; Non-Residential Outdoor: 7,700; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Site Preparation	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Scrapers	1	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

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Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	8	6.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8600e-003	0.0197	0.0144	4.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	3.2300	3.2300	1.0400e-003	0.0000	3.2561
Total	**1.8600e-003**	**0.0197**	**0.0144**	**4.0000e-005**	**2.3900e-003**	**7.5000e-004**	**3.1400e-003**	**2.6000e-004**	**6.9000e-004**	**9.5000e-004**	**0.0000**	**3.2300**	**3.2300**	**1.0400e-003**	**0.0000**	**3.2561**

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3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0752	0.0752	0.0000	0.0000	0.0758
Total	**3.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0758**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	2.6000e-004	0.0000	2.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8600e-003	0.0197	0.0144	4.0000e-005		7.5000e-004	7.5000e-004		6.9000e-004	6.9000e-004	0.0000	3.2300	3.2300	1.0400e-003	0.0000	3.2561
Total	**1.8600e-003**	**0.0197**	**0.0144**	**4.0000e-005**	**2.3900e-003**	**7.5000e-004**	**3.1400e-003**	**2.6000e-004**	**6.9000e-004**	**9.5000e-004**	**0.0000**	**3.2300**	**3.2300**	**1.0400e-003**	**0.0000**	**3.2561**

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3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.6000e-004	0.0000	1.0000e-004	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0752	0.0752	0.0000	0.0000	0.0758
Total	**3.0000e-005**	**2.0000e-005**	**2.6000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.0752**	**0.0752**	**0.0000**	**0.0000**	**0.0758**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-003	0.0415	0.0261	6.0000e-005		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	5.4311	5.4311	1.7600e-003	0.0000	5.4750
Total	**3.9000e-003**	**0.0415**	**0.0261**	**6.0000e-005**	**0.0213**	**1.7200e-003**	**0.0230**	**0.0103**	**1.5800e-003**	**0.0119**	**0.0000**	**5.4311**	**5.4311**	**1.7600e-003**	**0.0000**	**5.4750**

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3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.4000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1895
Total	**8.0000e-005**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1879**	**0.1879**	**1.0000e-005**	**0.0000**	**0.1895**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0213	0.0000	0.0213	0.0103	0.0000	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9000e-003	0.0415	0.0261	6.0000e-005		1.7200e-003	1.7200e-003		1.5800e-003	1.5800e-003	0.0000	5.4311	5.4311	1.7600e-003	0.0000	5.4750
Total	**3.9000e-003**	**0.0415**	**0.0261**	**6.0000e-005**	**0.0213**	**1.7200e-003**	**0.0230**	**0.0103**	**1.5800e-003**	**0.0119**	**0.0000**	**5.4311**	**5.4311**	**1.7600e-003**	**0.0000**	**5.4750**

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3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	5.0000e-005	6.4000e-004	0.0000	2.4000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	7.0000e-005	0.0000	0.1879	0.1879	1.0000e-005	0.0000	0.1895
Total	**8.0000e-005**	**5.0000e-005**	**6.4000e-004**	**0.0000**	**2.4000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**7.0000e-005**	**0.0000**	**0.1879**	**0.1879**	**1.0000e-005**	**0.0000**	**0.1895**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1062	0.8528	0.9377	1.6600e-003		0.0358	0.0358		0.0343	0.0343	0.0000	138.1298	138.1298	0.0257	0.0000	138.7729
Total	**0.1062**	**0.8528**	**0.9377**	**1.6600e-003**		**0.0358**	**0.0358**		**0.0343**	**0.0343**	**0.0000**	**138.1298**	**138.1298**	**0.0257**	**0.0000**	**138.7729**

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3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3000e-004	8.8000e-003	3.0500e-003	4.0000e-005	1.3200e-003	5.0000e-005	1.3800e-003	3.8000e-004	5.0000e-005	4.3000e-004	0.0000	3.9333	3.9333	1.2000e-004	5.7000e-004	4.1062
Worker	1.0100e-003	6.7000e-004	8.5300e-003	3.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.4994	2.4994	7.0000e-005	7.0000e-005	2.5207
Total	**1.2400e-003**	**9.4700e-003**	**0.0116**	**7.0000e-005**	**4.5200e-003**	**7.0000e-005**	**4.6000e-003**	**1.2300e-003**	**7.0000e-005**	**1.3000e-003**	**0.0000**	**6.4326**	**6.4326**	**1.9000e-004**	**6.4000e-004**	**6.6269**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1062	0.8528	0.9377	1.6600e-003		0.0358	0.0358		0.0343	0.0343	0.0000	138.1296	138.1296	0.0257	0.0000	138.7728
Total	**0.1062**	**0.8528**	**0.9377**	**1.6600e-003**		**0.0358**	**0.0358**		**0.0343**	**0.0343**	**0.0000**	**138.1296**	**138.1296**	**0.0257**	**0.0000**	**138.7728**

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3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3000e-004	8.8000e-003	3.0500e-003	4.0000e-005	1.3200e-003	5.0000e-005	1.3800e-003	3.8000e-004	5.0000e-005	4.3000e-004	0.0000	3.9333	3.9333	1.2000e-004	5.7000e-004	4.1062
Worker	1.0100e-003	6.7000e-004	8.5300e-003	3.0000e-005	3.2000e-003	2.0000e-005	3.2200e-003	8.5000e-004	2.0000e-005	8.7000e-004	0.0000	2.4994	2.4994	7.0000e-005	7.0000e-005	2.5207
Total	**1.2400e-003**	**9.4700e-003**	**0.0116**	**7.0000e-005**	**4.5200e-003**	**7.0000e-005**	**4.6000e-003**	**1.2300e-003**	**7.0000e-005**	**1.3000e-003**	**0.0000**	**6.4326**	**6.4326**	**1.9000e-004**	**6.4000e-004**	**6.6269**

3.6 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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3.6 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Paving	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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3.6 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1785					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.1794**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

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3.7 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0316
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0316**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1785					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.1794**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

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3.7 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-005	1.0000e-005	1.1000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0313	0.0313	0.0000	0.0000	0.0316
Total	**1.0000e-005**	**1.0000e-005**	**1.1000e-004**	**0.0000**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0313**	**0.0313**	**0.0000**	**0.0000**	**0.0316**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Motel	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Motel	9.50	7.30	7.30	19.00	62.00	19.00	58	38	4
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Motel	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Unrefrigerated Warehouse-No Rail	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	4.0800e-003	0.0371	0.0312	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.3783	40.3783	7.7000e-004	7.4000e-004	40.6182
NaturalGas Unmitigated	4.0800e-003	0.0371	0.0312	2.2000e-004		2.8200e-003	2.8200e-003		2.8200e-003	2.8200e-003	0.0000	40.3783	40.3783	7.7000e-004	7.4000e-004	40.6182

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Motel	752700	4.0600e-003	0.0369	0.0310	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	40.1669	40.1669	7.7000e-004	7.4000e-004	40.4056
Unrefrigerated Warehouse-No Rail	3960	2.0000e-005	1.9000e-004	1.6000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2113	0.2113	0.0000	0.0000	0.2126
Total		**4.0800e-003**	**0.0371**	**0.0312**	**2.2000e-004**		**2.8100e-003**	**2.8100e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**40.3783**	**40.3783**	**7.7000e-004**	**7.4000e-004**	**40.6182**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Motel	752700	4.0600e-003	0.0369	0.0310	2.2000e-004		2.8000e-003	2.8000e-003		2.8000e-003	2.8000e-003	0.0000	40.1669	40.1669	7.7000e-004	7.4000e-004	40.4056
Unrefrigerated Warehouse-No Rail	3960	2.0000e-005	1.9000e-004	1.6000e-004	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.2113	0.2113	0.0000	0.0000	0.2126
Total		**4.0800e-003**	**0.0371**	**0.0312**	**2.2000e-004**		**2.8100e-003**	**2.8100e-003**		**2.8100e-003**	**2.8100e-003**	**0.0000**	**40.3783**	**40.3783**	**7.7000e-004**	**7.4000e-004**	**40.6182**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Motel	161720	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	8520	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Motel	161720	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	8520	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0736	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003
Unmitigated	0.0781	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0178					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0601					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003
Total	**0.0781**	**1.0000e-005**	**1.1200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3300e-003**

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6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0178					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0557					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1200e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1900e-003	2.1900e-003	1.0000e-005	0.0000	2.3300e-003
Total	**0.0736**	**1.0000e-005**	**1.1200e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.1900e-003**	**2.1900e-003**	**1.0000e-005**	**0.0000**	**2.3300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

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	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.1418	0.1173	2.7700e-003	4.8988
Unmitigated	1.1418	0.1173	2.7700e-003	4.8988

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Motel	3.04401 / 0.338224	0.9657	0.0992	2.3400e-003	4.1434
Unrefrigerated Warehouse-No Rail	0.555 / 0	0.1761	0.0181	4.3000e-004	0.7554
Total		**1.1418**	**0.1173**	**2.7700e-003**	**4.8988**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Motel	3.04401 / 0.338224	0.9657	0.0992	2.3400e-003	4.1434
Unrefrigerated Warehouse-No Rail	0.555 / 0	0.1761	0.0181	4.3000e-004	0.7554
Total		**1.1418**	**0.1173**	**2.7700e-003**	**4.8988**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.7953	0.8153	0.0000	34.1772
Unmitigated	13.7953	0.8153	0.0000	34.1772

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Motel	65.7	13.3365	0.7882	0.0000	33.0406
Unrefrigerated Warehouse-No Rail	2.26	0.4588	0.0271	0.0000	1.1366
Total		**13.7953**	**0.8153**	**0.0000**	**34.1772**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Motel	65.7	13.3365	0.7882	0.0000	33.0406
Unrefrigerated Warehouse-No Rail	2.26	0.4588	0.0271	0.0000	1.1366
Total		**13.7953**	**0.8153**	**0.0000**	**34.1772**

9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation