DRAFT

Environmental Assessment for the Expansion of Range and Training Facilities and Training Support Operations at Naval Base Coronado, Camp Michael Monsoor La Posta, California

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U.S. Department of the Navy
Naval Base Coronado, Camp Michael Monsoor
La Posta, California

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DRAFT
Environmental Assessment

Lead Agency for the EA:	U.S. Department of the Navy
Title of the Proposed Action:	Expansion of Range and Training Facilities and Training Support Operations at Naval Base Coronado, Camp Michael Monsoor
Affected Jurisdiction:	San Diego County
Designation:	Draft Environmental Assessment

Abstract

The U.S. Department of the Navy (Navy) proposes to expand and improve existing facilities and construct new facilities at Camp Michael Monsoor, located in eastern San Diego County, California, within Parcel C and the Previously Withdrawn Parcel[1] . Currently, land at Camp Michael Monsoor is administered by the Commanding Officer for Naval Base Coronado and is primarily used for Naval Special Warfare Group One (NSWG-1) training activities. Camp Michael Monsoor does not currently contain the infrastructure that is necessary to provide adequate military training to NSWG-1 personnel. The majority of assaults training is currently conducted at private facilities that are not controlled by NSWG-1 and do not offer privacy of training, primacy of facility use, and proximity to NSWG-1 personnel's home station, Naval Base Coronado. The use of private facilities results in excessive travel time and expenses, and requires NSWG-1 personnel to compete with other armed services and federal, state, and local agencies for training time at private facilities. Implementation of the Proposed Action would provide a suitable alternative to training at private facilities and would provide a location that offers security, privacy, primacy, and proximity of training for NSWG-1. Implementation of the Proposed Action would also minimize the Navy's travel time and training expenses.

[1] Parcel C and the Previously Withdrawn Parcel are both public lands (United States Department of the Interior, Bureau of Land Management [BLM]) withdrawn from public access for exclusive military use by the Navy; therefore, it should be noted that the acquisition of public lands is not part of the Proposed Action and is not analyzed in this Environmental Assessment (EA). The acquisition of Parcel C was analyzed under the La Posta Mountain Warfare Training Facility Final EA which was completed in 2008 and addressed potential environmental impacts associated with implementation of a separate Military Construction [MILCON] Project, known as "MILCON P-781."

This Draft Environmental Assessment (EA) addresses the potential environmental impacts associated with the construction, operation, and maintenance of the proposed facilities at Camp Michael Monsoor. This EA evaluates the environmental consequences of the two action alternatives and a No Action Alternative. Both action alternatives would expand and improve the Camp Michael Monsoor training ranges to meet Navy and joint training requirements. Alternative 1 is the Proposed Action/Preferred Alternative. Potential environmental impacts have been analyzed for air quality, biological resources, cultural resources, geology and soils, land use, noise, public health and safety, public services and utilities, socioeconomics, transportation and traffic, visual resources, and water resources and hydrology. There would be no significant impacts to any of the above listed resources from implementation of the Proposed Action.

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) addresses the potential environmental impacts associated with the improvement of existing facilities (Range 110) and construction of new facilities (e.g., rifle and pistol ranges) on U.S. Department of the Interior, Bureau of Land Management (BLM) Withdrawn Lands administered by the Commanding Officer for Naval Base Coronado at Camp Michael Monsoor. This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] Section 4321 et seq.), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulation [CFR] Parts 1500-1508 [1997]), U.S. Department of the Navy (Navy) Procedures Implementing NEPA (32 CFR Part 775 [2004]), and the Navy Environmental and Natural Resources Program Manual (Operational Navy Instruction 5090.1C Change 1 [2011]). The NEPA process ensures that the environmental impacts of proposed major federal actions, such as this project, are considered in the decision making process.

The Proposed Action would take place within Camp Michael Monsoor's Parcel C and the Previously Withdrawn Parcel[2]. Both Parcel C and the Previously Withdrawn Parcel consist of BLM land withdrawn from public use by the Navy (refer to Section 1.1.1 for a discussion of land jurisdiction at Camp Michael Monsoor).

Under the Proposed Action, the Navy would expand and improve existing facilities and construct new facilities at Camp Michael Monsoor to provide a local, Navy-controlled, dedicated Assaults Training Center of Excellence to support pre-deployment training of Naval Special Warfare Group One (NSWG-1) personnel and Naval Special Warfare Center Sea Air and Land (SEAL) Qualification Training.

CONSTRUCTION ACTIVITIES INCLUDED UNDER MILITARY CONSTRUCTION PROJECT P-888

- A fully enclosed Close Quarters Combat (CQC) two-story structure with ballistic walls and an elevated roof for cross-flow ventilation;
- Extending the existing access road from the Military Construction (MILCON) P-781 Method of Entry structure to the MILCON P-888 CQC structure;

[2] The Previously Withdrawn Parcel includes the Range Complex and Range 110.

- One fully baffled rifle range[3] (baffles keep rounds contained within the range) with adjacent assaults and sight-in rifle ranges;
- Four outdoor pistol ranges[4] (linear, sight-in/fundamental, steel, and instinctive);
- Installing three water wells (two temporary exploratory wells and one permanent well) and associated water lines in Parcel C to provide for increased flow rates. A 12-foot (3.7-meter) wide by 100-foot (30.5-meter) long road would be added to access the permanent well. All connections for the water line would be buried within the roadways at Parcel C; and,
- Installing an electrical line in the existing roadway at Parcel C. The electrical line would be collocated underground within the same trench as the proposed water line at Parcel C.

CONSTRUCTION ACTIVITIES NOT INCLUDED UNDER MILITARY CONSTRUCTION PROJECT P-888:

- A new shotgun range[5] in Parcel C, including extending the access road from the MILCON P-888 CQC structure to the proposed shotgun range;
- An approximately 7,200-square-foot (669-square-meter) training storage building will be constructed near the P-888 CQC structure to house all of the doors and targets needed for use in the CQC structure. The storage building will include lighting and a service vehicle parking and drop-off area. Approximately 50 feet (15.2 meters) of land surrounding the building will be covered with gravel for fire protection. In addition, a 50-foot-wide (15.2-meter-wide) fuel modification zone will be established around the building.
- New security facilities at the Main Gate, which would include:
    - A new Range Control Building west of the Main Gate, near the entrance on the main access road;
    - A new water tank to replace an existing water tank at the Main Gate entrance6;
    - Two 10-foot (3-meter) high block walls installed to 50 feet (15 meters) on either side of the Main Gate entrance;
- A small, concrete-paved visitor parking area adjacent to the Main Gate;
- A second security gate west of the proposed Range Control Building; and,

[3] Includes all associated Surface Danger Zones for these ranges.
[4] Includes all associated Surface Danger Zones for these ranges.
[5] Includes all associated Surface Danger Zones for these ranges.
[6] This replacement tank would store water for use at the proposed Range Control Building.

- A reconfigured Main Gate entrance that would reduce traffic queuing from La Posta Road.
- Replacement of an existing fence[7] along La Posta Road, which would include:
  - Extending the 10-foot (3-meter) high fence line approximately 0.6 mile (1.0 kilometer) north and 0.5 mile (0.75 kilometer) south of the existing fence on La Posta Road; and,
  - Installing access gates at the north and south ends of the new fence along La Posta Road for emergency fire access.
- Improvement and realignment of Range 110, which would include:
  - Installing a new aboveground electrical distribution line from La Posta Road to Range 110 along the northern side of the existing access road;
  - Installing a 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels on Range 110 in an area previously disturbed during construction of projects prior to P-781.
  - Realigning Range 110 and shifting the aspect of Range 110 approximately 10 to 15 feet (3 to 4.5 meters) farther west so that the Surface Danger Zone would no longer cover the Hilltop Complex;
  - Widening the existing Range 110 access road and installing erosion control features along the Range 110 frontage road;
  - Installing a wall for noise attenuation to be installed behind the firing line on an existing pad, and where no vegetation clearing would be required. The wall would be approximately 10 to 12 feet (3 to 4 meters) high; and,
  - Installing up to 10 lights on new poles for night shooting at Range 110.
- Upgrades to existing utilities and erosion control structures at the Range Complex, which would include:
  - Constructing a new underground water line and power line to pump water from the existing water well near the installation's western boundary to a holding tank at the Range Complex, to be used for both potable water and fire suppression; and,

A Surface Danger Zone delineates the area designated within a training complex for vertical and lateral containment of debris, projectiles, fragments, and components resulting from the firing, launching, or detonation of weapons systems including ammunition, explosives, and demolition explosives.

A Surface Danger Zone must be designed to be completely within Navy parcels and cannot fall into non-Navy lands.

[7] To be constructed in coordination with Naval Base Coronado Physical Security Department and NSWG-1.

- Installing a 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels at the Range Complex in an area previously disturbed during construction of projects prior to P-781.
- Installing erosion control structures for controlling channel incision, rill erosion, and uncontrolled discharge at the Range Complex, including the lower Range Complex, the sniper target area, and the "grand canyon" area downhill from the complex.

In accordance with NEPA, the Navy performed a focused analysis of the resource areas potentially affected by implementation of the Proposed Action and alternatives. These resource areas include:

- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology and Soils;
- Land Use;
- Noise;
- Public Health and Safety (including hazardous materials and waste);
- Public Services and Utilities;
- Socioeconomics (including Environmental Justice);
- Transportation and Traffic;
- Visual Resources; and,
- Water Resources and Hydrology.

Alternatives for improving and expanding training areas at Camp Michael Monsoor that meet the evaluation criteria for detailed analysis include:

- **Alternative 1 (Proposed Action/Preferred Alternative):** Ranges, training facilities, and operations at Camp Michael Monsoor would be improved and expanded at Parcel C and the Previously Withdrawn Parcel[8];
- **Alternative 2**: This alternative is the same as Alternative 1, except for the following: the pistol range that is part of MILCON P-888 would be sited in an easterly firing

[8] The Previously Withdrawn Parcel includes the Range Complex and Range 110.

direction, resulting in a reduced Surface Danger Zone; the shotgun range would not be constructed; and the Range Control Building and Gate Sentry House would be constructed to the south of the main entrance road rather than to the north of this road; and,

- **No Action Alternative**: Under this alternative, the Proposed Action would not be constructed; however, this alternative provides a description of the baseline conditions against which the impacts of the Proposed Action can be compared.

Table ES-1 presents a comparison of the potential impacts for each resource area that could result from the two action alternatives carried forward in this EA and the No Action Alternative. Informed by the analysis presented, the Navy has identified Alternative 1 as the Proposed Action/Preferred Alternative.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Air Quality	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Construction activities would generate temporary (short-term) emissions such as fugitive dust emissions (suspended particulate matter [PM_{10}] and fine particulate matter [$PM_{2.5}$]) from grading activities and exhaust emissions (nitrogen oxides [NO_X], sulfur dioxide [SO_2], carbon monoxide [CO], volatile organic compounds [VOCs], $PM_{2.5}$, and PM_{10}) from construction equipment and vehicles. Similar types of fugitive dust and exhaust emissions would be generated by the operation of ground vehicles and weapons firing. These would be long-term emissions. Incremental emissions of criteria pollutants associated with construction and operation of Alternative 1 would primarily occur on a localized basis within Camp Michael Monsoor, subject to dispersion due to wind mixing and other dissipation factors. Additionally, no sensitive receptors would be located within the proximity of areas of major localized impacts, and the Navy would implement recommended construction measures described in Section 2.6.2. With implementation of these measures, potential impacts to air quality from the implementation of Alternative 1 would be short-term, localized, and not significant.	Alternative 2 would result in the same types of air quality impacts as those described for Alternative 1, except emissions of criteria pollutants generated during the construction of Alternative 2 would be slightly lower than those estimated for Alternative 1 since construction of the shotgun range would not occur. Impacts from implementation of Alternative 2 would still be within the same localized area, order of magnitude, and timeframe of impacts to air quality as those described for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to air quality.	With the No Action Alternative, existing conditions for air quality would remain unchanged. Therefore, impacts related to air quality would not be significant.
Biological Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	With implementation of Alternative 1, direct permanent impacts to vegetation may include loss of vegetation due to construction. Additional direct permanent impacts to vegetation may occur from foot and possible vehicle traffic associated with training activities, periodic maintenance, and the repair of project facilities. However, none of the potentially affected plant species are rare plant species or	Under Alternative 2, the permanent and temporary impacts to vegetation and wildlife communities that would occur from construction of the new shotgun range would not occur. All other impacts would be the same	With the No Action Alternative, existing conditions for biological resources would remain unchanged. Therefore, Impacts to

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	are federally listed as threatened or endangered. All avian species found within the project area are protected under the Migratory Bird Treaty Act. With implementation of the avoidance and minimization measures described in Section 2.6.3.2, the construction phase of the project would have no direct impacts to nesting birds that are protected by the Migratory Bird Treaty Act. With implementation of the proposed conservation measures, no significant direct or indirect operation impacts would occur to plant communities or wildlife species with implementation of Alternative 1. The Quino checkerspot butterfly (QCB) is the only federally listed rare wildlife species potentially affected by Alternative 1. With implementation of pre-construction QCB surveys and the special conservation and construction measures agreed upon with U.S. Fish and Wildlife Service (USFWS) and described in Section 2.6.3, there would be no significant impacts to QCB during the construction phase of Alternative 1. Implementation of the Proposed Action would result in vegetation impacts to 39.28 acres (15.89 hectares) of QCB habitat. Based on the minimal amount of habitat removal when compared to available habitat for this species, no significant impacts would occur to QCB during operation of Alternative 1.	as those described for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to plant communities or wildlife species.	biological resources would not be significant.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Cultural Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	There are previously recorded cultural resources in the project area; however, with the application of the avoidance and minimization measures described in Section 2.6.4, implementation of Alternative 1 would have "no adverse effect" on the known listed, contributing, or eligible cultural resources in the area of potential effect.	The same effects to cultural resources that could occur under Alternative 1 could also occur under Alternative 2; however, application of the avoidance and minimization measures would ensure that implementation of Alternative 2 would have "no adverse effect" on the known cultural resources in the area of potential effect.	With the No Action Alternative, existing conditions for cultural resources would remain unchanged. Therefore, impacts to cultural resources would not be significant.
Geology and Soils	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	With implementation of the recommended avoidance and minimization measures described in Section 2.6.3.4 and Section 2.6.5, Alternative 1 would not have significant impacts to geological resources. Implementation of the erosion control improvements at Range 110 and the Range Complex would be a beneficial impact to the existing erosion problems at Camp Michael Monsoor.	With the implementation of the recommended avoidance and minimization measures described in Section 2.6.3.4 and Section 2.6.5, Alternative 2 would not have significant impacts to geological resources.	With the No Action Alternative, existing conditions for geology and soils would remain unchanged. Therefore, no significant impacts to geology or soils would occur.
Land Use	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would involve the installation and use of new small arms firing ranges at Parcel C. Public Land Order No. 7807 was issued by the U.S. Department of the Interior, Bureau of Land Management (BLM) on January 17, 2013 and withdrew BLM land at Parcel C from public use, transferring administrative jurisdiction to the U.S. Department of the Navy (Navy) for exclusive military use. Unmaintained trails exist in the area; however, recreationists would be prohibited from entering Surface Danger Zones at	The same impacts to land use that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to land use.	With the No Action Alternative, existing conditions for land use would remain unchanged. Therefore, no significant impacts to land use would occur.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	Parcel C during controlled live-fire activities. The loss of recreational use at Parcel C was previously analyzed under the La Posta Mountain Warfare Training Facility Final Environmental Assessment (EA). Additionally, while military use would limit recreationist use within this area, other local public lands would be available within the vicinity of Camp Michael Monsoor and other forms of recreation in the area would remain unaffected. Implementation of Alternative 1 would not have a significant impact on recreational uses, or any other land uses, in the area of Camp Michael Monsoor.		
Noise	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Alternative 1 would generate temporary construction noise. Due to the distance and terrain, construction noise levels at the nearest residences would be below the daytime ambient noise level and would not result in significant noise impacts. Alternative 1 would involve the use of noise-generating sources, including operational vehicles and firearms. Use of vehicles during operations would increase noise levels along La Posta Road by less than 1 dBA Leq (A-weighted decibel sound level equivalent) and would not represent an adverse increase in traffic noise in the project area. Further, the actual noise level from weapons firing activities would be approximately 30 dBA Leq, which would not adversely increase nighttime or daytime ambient noise levels at the nearest residences. Therefore, implementation of Alternative 1 would not result in significant noise impacts.	Alternative 2 would differ from Alternative 1 in three ways: (1) the orientation of the pistol ranges would be different; (2) the shotgun range would not be constructed; and (3) the Range Control Building and Gate Sentry House would be constructed at an alternate location; however, noise impacts associated with development and operation of Alternative 2 would be equivalent to the impacts discussed for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant noise impacts.	With the No Action Alternative, existing conditions for noise would remain unchanged. Therefore, there would not be any significant impacts related to noise.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Public Health and Safety	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would not result in significant impacts to public health and safety from the improper use, handling, or disposal of hazardous materials or unexploded ordnance The construction contractor would strictly follow measures in the project's Environmental Protection Plan to prevent or control releases of contaminants into the air, soil, and water during construction. All disturbed soils would remain on site and any lead and metals found would be recycled, where feasible. The Range Maintenance Standard Operating Procedure guidelines would be strictly followed during project construction and operations to ensure that lead encountered onsite would be properly characterized and contained and would not migrate off the range site. Any hazardous materials that are encountered during Alternative 1 construction or operations would be removed from the site and disposed of at a landfill that is authorized to receive hazardous waste. Implementation of Alternative 1 would involve weapons firing at Parcel C, including the use of firearms at the proposed Close Quarters Combat (CQC) facility and small arms ranges. To ensure public safety, all proposed ranges would be constructed in accordance with Naval Facilities Engineering Command (NAVFAC) 1027/3B guidance on construction of firing ranges and rules regarding Surface Danger Zones. Additionally, range management practices (i.e., use of warning signs and flags) would continue to be implemented at Camp Michael Monsoor to ensure the ranges are properly maintained. Based on the continued implementation of established range management practices and proper hazardous waste management practices, no adverse environmental health	The same impacts to public health and safety that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to public health and safety.	With the No Action Alternative, existing conditions for public health and safety would remain unchanged. Therefore, there would be no significant impacts to public health and safety.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	and safety impacts would occur. Therefore, implementation of Alternative 1 would not have a significant impact related to public health and safety.		
Public Services and Utilities	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Alternative 1 would not result in an increased need for police or fire services, and natural gas is currently unavailable and not required for project construction or operation. Solid waste from construction would be transported offsite and solid waste facilities in the area would have availability and adequate capacity to accept this waste. The installation of lights at Range 110 and the installation of an aboveground electrical distribution line along the existing access road between La Posta Road and Range 110 would have positive impacts on the mission at Camp Michael Monsoor by allowing night training, while also upgrading the electrical system as a whole. Alternative 1 would generate a small volume of wastewater during construction due to worker use of onsite portable toilets; this waste would be removed from the site and disposed of at a wastewater treatment facility that is available and has capacity to receive such waste. During operations, Alternative 1 would generate a small amount of liquid waste, resulting from use of the toilet room and kitchen in the proposed Range Control Facility; this facility would be equipped with a septic system, and a leach field would be installed across the street to receive and filter waste from the septic tank. None of the Alternative 1 facilities would contain toilet rooms or showers that would require a new connection to a wastewater treatment facility. The existing septic systems at Camp Michael Monsoor would remain	The impacts to fire or police services, water, wastewater, solid waste services, and natural gas/petroleum from Alternative 2 would be the same as those under Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to public services and utilities.	With the No Action Alternative, existing conditions for public services and utilities would remain unchanged. Therefore, there would be no significant impacts to public services and utilities.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	unchanged. Consequently, Alternative 1 would not impact existing wastewater treatment facilities. Water used during construction of Alternative 1 for slope dampening and for dust control at the pistol and rifle ranges would not significantly increase the amount of water used at Camp Michael Monsoor, and the increase would only be temporary. During operations, water for the bathroom and kitchen at Range Control Building would be supplied via an existing water line. Small quantities of water would also be used during Alternative 1 operations for landscaping maintenance purposes to water drought-tolerant native species. Therefore, there would be minimal water use related to implementation of Alternative 1, and significant adverse impacts to the potable water system would not occur. Additionally, the proposed P-888 water well located in Parcel C and the proposed water line from the existing well along the western boundary of the installation to the Range Complex would have positive impacts on water supply and availability. Groundwater usage would be minimal. Implementation of Alternative 1 would result in an improvement to the existing power delivery system and water supply system at Camp Michael Monsoor. No significant adverse impacts to public services and utilities would occur.		

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Socioeconomics (including Environmental Justice)	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would not result in significant impacts to population, employment, or housing in the project area. Furthermore, there would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.	The impacts to population, employment, housing, environmental justice, and environmental justice to children from Alternative 2 would be the same as those under Alternative 1. Therefore, no significant impacts to population, employment, and housing would occur under this alternative. There would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.	With the No Action Alternative, existing conditions for socioeconomics would remain unchanged. Therefore, no significant impacts related to socioeconomics would occur. In addition, there would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.
Traffic and Circulation	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Construction of Alternative 1 would last one to six months and would not substantially affect the existing traffic on La Posta Road or the La Posta Truck Trail. Operation of Alternative 1 would result in a slight increase in vehicle traffic going to and from Camp Michael Monsoor via La Posta Road. However, implementation of Alternative 1 would not result in significant impacts to traffic and circulation.	The same impacts to traffic and circulation that would occur under Alternative 1 would also occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to traffic and circulation.	With the No Action Alternative, existing conditions for traffic and circulation would remain unchanged. Therefore, no significant impacts related to traffic and circulation would occur.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Visual Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would require installation of some permanent project features that would be seen by a low number of sensitive viewers. The project area and surrounding public lands 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. Implementation of Alternative 1 would result in an overall level of visual contrast to the surrounding landscape that is minimal to moderate; this would conform to the Visual Management Objective set for the area. Therefore, implementation of Alternative 1 would not result in significant impacts to visual resources.	Under Alternative 2, less development would occur at Parcel C (e.g., the shotgun range would not be constructed) relative to the Alternative 1. In addition, the new Range Control Building and Gate Sentry House would be constructed to the south of the main road rather than to the north of this road. Impacts from Alternative 2 would be the same or similar to impacts from implementation of Alternative 1 since there is a low number of sensitive viewers in the area that would be affected by development at this location. Implementation of Alternative 2 would result in an overall level of visual contrast to the surrounding landscape that is minimal to moderate; this is consistent with the Visual Management Objective set for the area. Therefore, implementation of Alternative 2 would not result in significant impacts to visual resources.	With the No Action Alternative, existing conditions for visual resources would remain unchanged. Therefore, no significant impacts related to visual resources would occur.

Table ES-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Water Resources and Hydrology	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Surface-disturbing activities associated with implementation of Alternative 1 could potentially increase sedimentation in some surface water resources; however, the Navy would implement recommended avoidance and minimization measures (described under Section 2.6.5) to minimize soil erosion, and the desert conditions limit the potential for significant surface water runoff. The implementation of the erosion control improvements under Alternative 1 would correct many of the erosion problems currently occurring at Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help to minimize erosion from construction since they would already be in place. Compliance with the Range Maintenance Standard Operating Procedure guidelines would ensure that lead does not migrate off the range site and into the groundwater. Therefore, implementation of Alternative 1 would not result in significant impacts to water resources and hydrology.	The same impacts to water resources and hydrology that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to water resources and hydrology.	With the No Action Alternative, existing conditions for water resources and hydrology would remain unchanged. Therefore, no significant impacts related to water resources and hydrology would occur.

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
APCD	Air Pollution Control District
BLM	U.S. Department of the Interior, Bureau of Land Management
Caltrans	California Department of Transportation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRSW	Commander, Navy Region Southwest
CO	carbon monoxide
CO_2	carbon dioxide
CQC	Close Quarters Combat
dB	decibel
dBA	A-weighted decibel
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FONSI	Finding of No Significant Impact
INRMP	Integrated Natural Resources Management Plan
kph	kilometers per hour
kV	kilovolt
kVA	kilovolt ampere
Leq	sound level equivalent
MILCON	Military Construction
mm	millimeter
mph	miles per hour
MS	Measurement Site

MSA	Major Statistical Area
NAAQS	National Ambient Air Quality Standards
NAVFAC	Naval Facilities Engineering Command
Navy	U.S. Department of the Navy
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NSW	Naval Special Warfare
NSWG-1	Naval Special Warfare Group One
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 (*Euphydryas editha quino*)
Range Complex	Ranges 111, 112, 113a and b, and 115a, b, and c
SANDAG	San Diego Association of Governments
SARNAM	Small Arms Noise Assessment Model
SDG&E	San Diego Gas and Electric
SEAL	Sea Air and Land
SIP	State Implementation Plan
SO_2	sulfur dioxide
SOF	Special Operation Forces
SPCC	Spill Prevention Control and Countermeasures
SRA	Subregional Area
SWPPP	Storm Water Pollution Prevention Plan
ULT	unit-level training
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
VRM	Visual Resource Management

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1 INTRODUCTION

This Draft Environmental Assessment (EA) has been prepared by the U.S. Department of the Navy (Navy) in accordance with the following applicable law and regulations:

- National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] Section 4321 et seq.);
- Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508 [1997]);
- Navy Procedures Implementing NEPA (32 CFR Part 775 [2004]); and,
- Navy Environmental and Natural Resources Program Manual (Operational Navy Instruction 5090.1C Change 1 [2011]).

1.1 PROJECT LOCATION

Camp Michael Monsoor is a special planning area of Naval Base Coronado, located south of Interstate 8, near Campo, California (Figure 1-1). The installation is bordered on the north by the Cleveland National Forest (U.S. Forest Service), and to the south, east, and west by U.S. Department of the Interior, Bureau of Land Management (BLM) lands. Camp Michael Monsoor borders several privately-owned parcels to the southwest, southeast, and northeast.

The project would take place entirely within Camp Michael Monsoor's Parcel C, and the Previously Withdrawn Parcel, which includes the Range Complex (Ranges 111, 112, 113a and b, and 115a, b, and c) and Range 110 (Figure 1-2). On January 17, 2013, the BLM issued Public Land Order No. 7807, which withdrew these lands from public use for exclusive use by the Navy for a period of 20 years (refer to Section 1.1.1 for a discussion of land jurisdiction at Camp Michael Monsoor).

1.1.1 LAND JURISDICTION AT CAMP MICHAEL MONSOOR

This section describes the administrative rights of all lands in use by the Navy at Camp Michael Monsoor. 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. All components of the Proposed Action and alternatives would be located on lands administered by the Commanding Officer for Naval Base Coronado.

Withdrawn Lands (Previously Withdrawn Parcel, Parcels C, E and G)

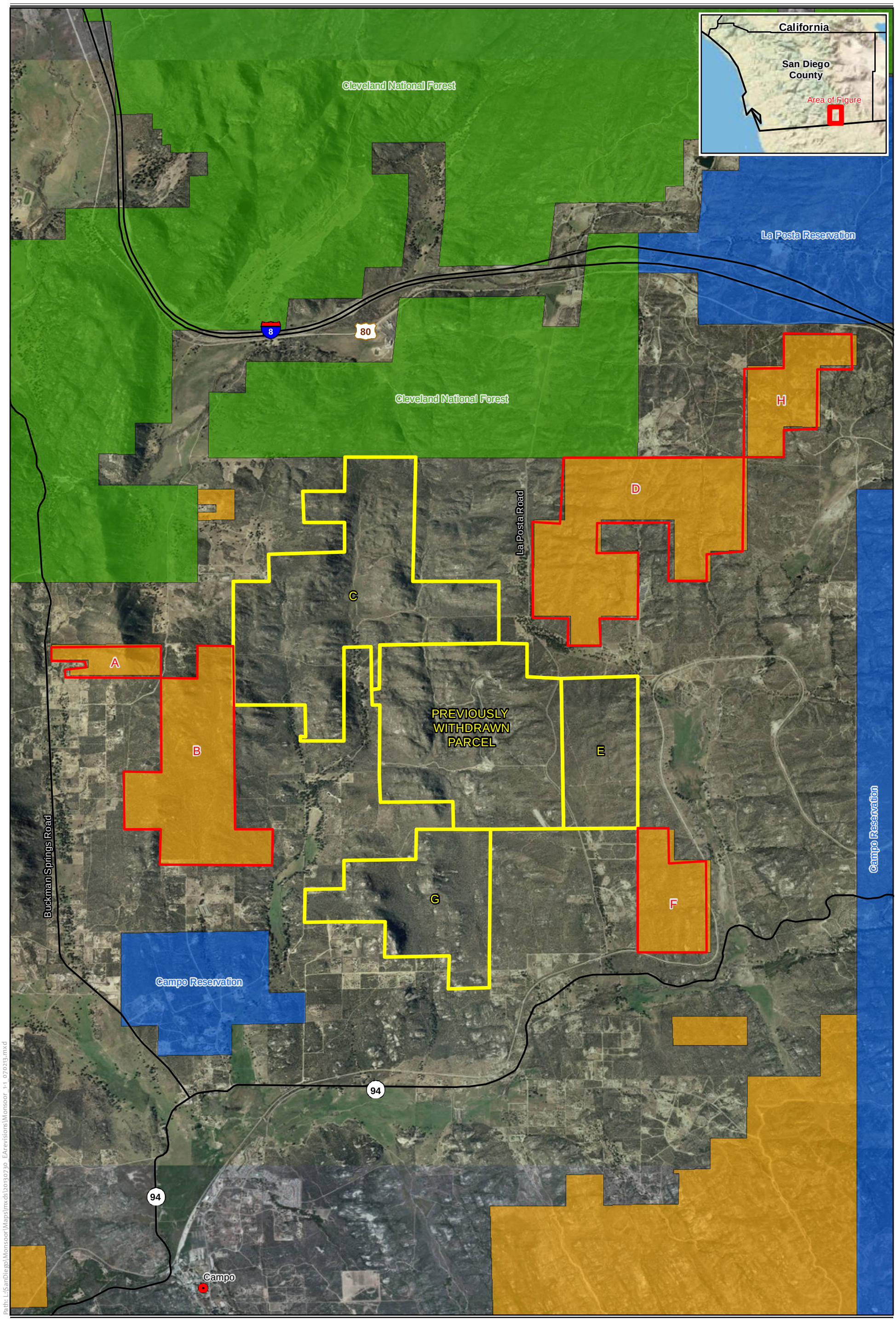
On September 30, 1964, the BLM issued Public Land Order No. 3457, which withdrew a 1,079-acre (437-hectare) parcel of land (hereafter referred to as the "Previously Withdrawn Parcel") from public use at Camp Michael Monsoor for use by the Navy as a Microwave Space Relay Station. Beginning in 1998, the Naval Special Warfare (NSW) community began use of the parcel as a Mountain Warfare Training Facility (as opposed to its formally designated use as a Microwave Space Relay Station). In 2008, the Navy proposed that the designated use of the Previously Withdrawn Parcel be changed from Microwave Space Relay Station use to Mountain Warfare Training Facility use, and that the administrative jurisdiction of this parcel be transferred from BLM to the Navy to properly reflect NSW's current use of the public land.

The acquisition of the BLM lands at Camp Michael Monsoor and the associated Military Construction (MILCON) Project P-781 impacts were analyzed under the La Posta Mountain Warfare Training Facility Final EA, which was completed in 2008. Public Land Order No. 7807 was issued by the BLM on January 17, 2013 and superseded Public Land Order No. 3457 which was issued in 1964. Under Public Land Order No. 7807, a total of 3,385 acres (1,370 hectares) of land (encompassing the Previously Withdrawn Parcel and Parcels C, E, and G) were withdrawn from public use[9] for exclusive use by the Navy as a Mountain Warfare Training Facility for a period of 20 years (BLM 2013a). For this 20-year period, administrative jurisdiction of lands at the Existing Withdrawal and Parcels C, E, G have been transferred from the BLM to the Navy, and the land is managed by Commanding Officer for Naval Base Coronado.

Lands under Existing Right-of-Way Grant (Parcels A, B, D, F and H)

In March 2013, the BLM issued a separate right-of-way grant/temporary use permit (CACA-53611) allowing for Navy training activities on 2,169 acres (878 hectares) of land encompassing five parcels (Parcels A, B, D, F and H) at Camp Michael Monsoor near the project area (Figure 1-1). Navy use of these lands under right-of-way authorization is nonexclusive, meaning that other compatible public uses of the land are allowed through coordination with the BLM (which has retained administrative jurisdiction over these lands). The right-of-way grant was issued contiguous to the transferred lands at Camp Michael Monsoor, and this action was also considered in the La Posta Mountain Warfare Training Facility Final EA. The right-of-way grant is valid for a 30-year period and is due to expire on December 31, 2043 (BLM 2013b). No improvements to these lands are proposed under the Proposed Action or alternatives. Future proposals for improvements, if any, on these parcels by the Navy or any other users would require authorization by the BLM.

[9] Public uses including settlement, sale, location, and entry under the general land laws and United States mining laws.



0 0.5 1 Miles

Navy-Managed Property
Existing ROW for Nonexclusive Use by Navy
City/Town
Bureau of Indian Affairs
Bureau of Land Management
US Forest Service

Source- ESRI (2010), NAVFAC SW 2011

Figure 1-1
Camp Michael Monsoor - Regional Map

San Diego County, California

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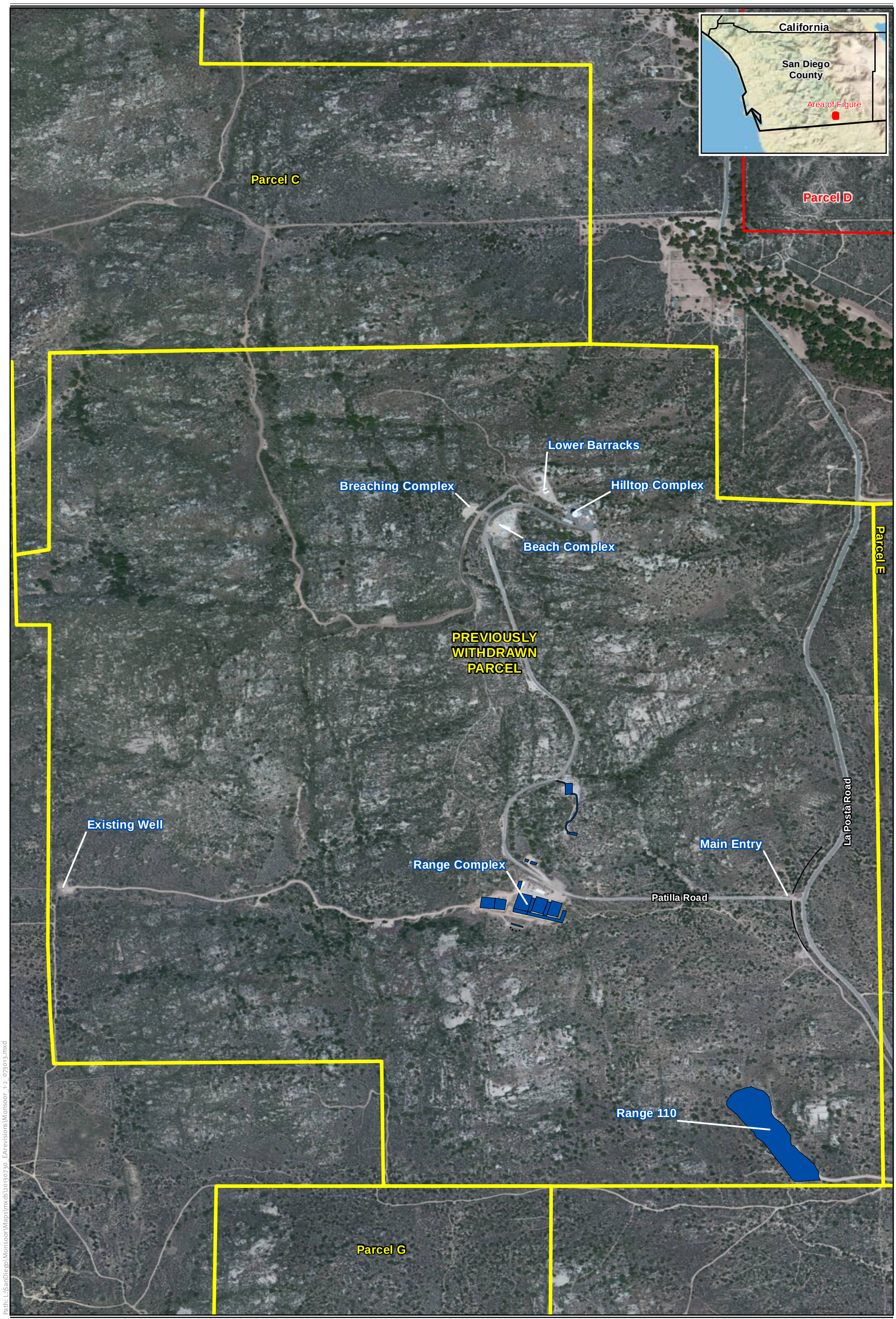

0 1,000 2,000 Feet

Existing Built Features
Navy-Managed Property
Existing ROW for Nonexclusive Use by Navy

Source- ESRI (2010), NAVFAC SW 2011

Figure 1-2
Camp Michael Monsoor - Existing Facilities

San Diego County, California

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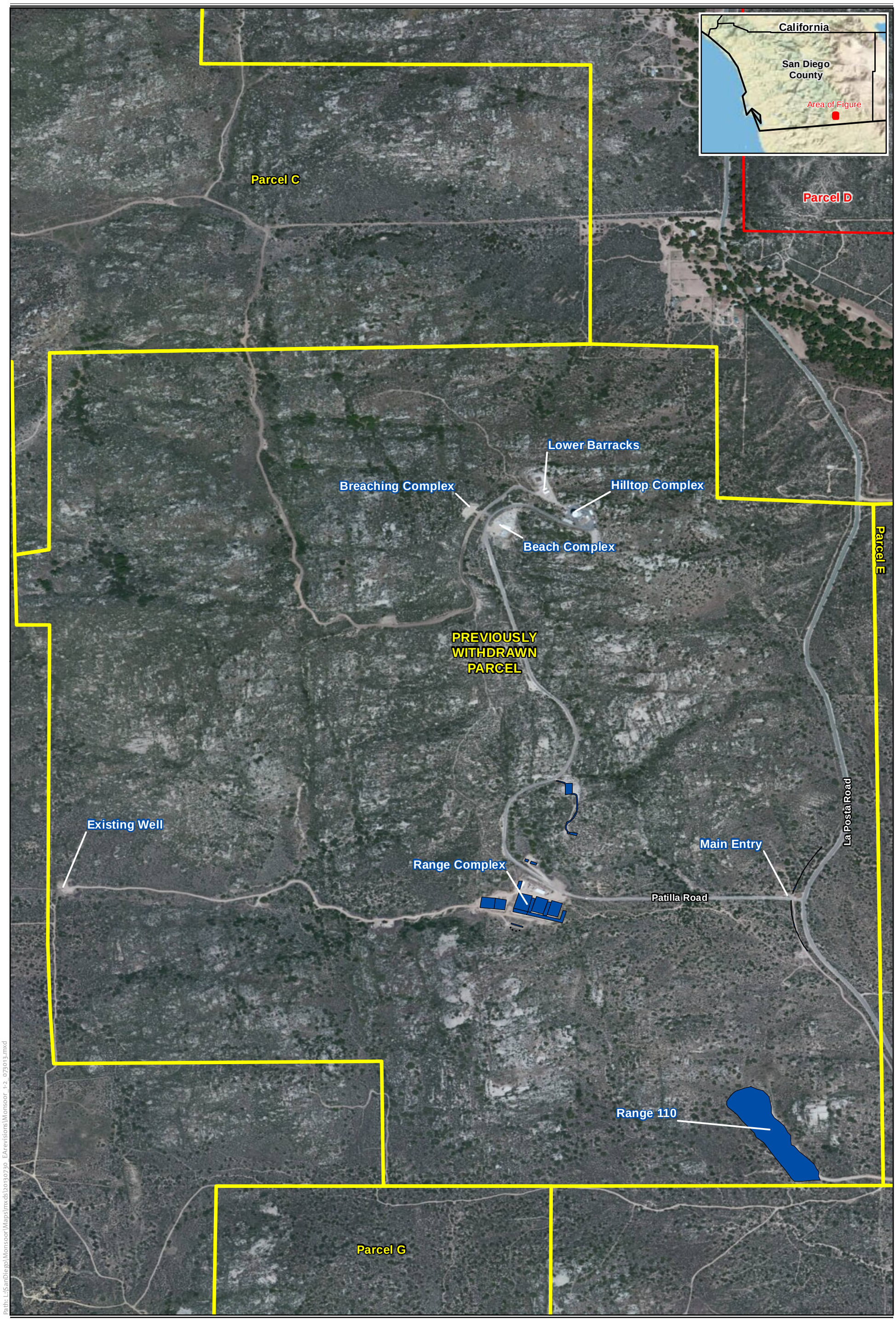

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Existing Built Features
Navy-Managed Property
Existing ROW for Nonexclusive Use by Navy

Source- ESRI (2010), NAVFAC SW 2011

Figure 1-2
Camp Michael Monsoor - Existing Facilities

San Diego County, California

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The legal descriptions of parcels at Camp Michael Monsoor are provided in Table 1-1. The locations of these parcels are shown on Figure 1-1.

Table 1-1 Camp Michael Monsoor Parcel Description and Size

Parcel	Legal Description	Parcel Size acres (hectares)
Lands Withdrawn from Public Use for Exclusive Navy Use by Public Land Order No. 7807		
Existing Withdrawal	Township 17 South, Range 5 East, San Bernardino Meridian Section 23, lot 2, E1/2SW1/4, SE1/4 Section 24, lots 20, 22, SW1/4SW1/4 Section 25, W1/2 Section 26, lots 1, 2, NE1/4, E1/2NW1/4, NE1/4SW1/4, N1/2SE1/4, SE1/4SE1/4.	1,079 (437)
C	Township 17 South, Range 5 East, San Bernardino Meridian Section 14, W1/2 Section 15, SE1/4NE1/4, S1/2SE1/4 Section 22, lots 1 (37.8 acres [15.3 hectares]) & 2 (37.4 acres [15.1 hectares]), NE1/4, E1/2NW1/4, E1/2SW1/4, W1/2SE1/4, Section 23, lot 1 (8.3 acres [3.4 hectares]), N1/2 Section 24, lots 4 (6.0 acres [2.4 hectares]) & 5 (6.3 acres [2.6 hectares]) Section 27, lots 1 (37.4 acres [15.1 hectares]), 9 (0.6 acre [0.2 hectare]) & 10 (6.6 acres [2.7 hectares]).	1,300 (526)
E	Township 17 South, Range 5 East, San Bernardino Meridian Section 24, lots 24 (35.67 acres [14.44 hectares]) & 26 (35.65 acres [14.42 hectares]), Section 25, E1/2.	391 (158)
G	Township 17 South, Range 5 East, San Bernardino Meridian Section 34, lot 7, NE1/4SE1/4 Section 35, lots 2, 3 & 4, NE1/4 S1/2NW1/4, N1/2SW1/4, N1/2SE1/4. Township 18 South, Range 5 East, San Bernardino Meridian Section 2, NE1/4NE1/4.	615 (249)
Subtotal – Exclusive Use Withdrawal Lands		**3,385 (1,370)**

Table 1-1 Camp Michael Monsoor Parcel Description and Size

Parcel	Legal Description	Parcel Size acres (hectares)
Lands used by the Navy Use under an Existing BLM ROW Grant (CACA-53611)		
A	Township 17 South, Range 5 East, San Bernardino Meridian Section 21, NE1/4SW1/4, N1/2NW1/4SW1/4, S1/2SE1/4NW1/4SW1/4, NW1/4SE1/4.	105 (43)
B	Township 17 South, Range 5 East, San Bernardino Meridian Section 21, SE1/4SE1/4. Section 22, W1/2SW1/4. Section 27, W1/2SW1/4, W1/2NW1/4, Section 28, E1/2NE1/4, SE1/4, Section 33, NE1/4NE1/4, Section 34, lot 3, NW1/4NW1/4.	638 (258)
D	Township 17 South, Range 5 East, San Bernardino Meridian Section 13, lots 5 (33.3 acres [13.4 hectares]) & 14 (33.42 acres [13.5 hectares]), NE1/4, NW1/4SE1/4, S1/2SE1/4 Section 24, lots 1 (33.6 acres [13.6 hectares]), 7 (3.6 acres [1.5 hectares]), 10 (34.3 acres [13.9 hectares]), 11 (4.4 acres 1.8 hectares]) & 14 (3.6 acres [1.5 hectares]), N1/2NE1/4. Township 17 South, Range 6 East, San Bernardino Meridian, Section 18, W1/2NE1/4, NW1/4, E1/2SW1/4, NW1/4SE1/4.	866 (351)
F	Township 17 South, Range 6 East, San Bernardino Meridian Section 31, NW1/4NW1/4, S1/2NW1/4, SW1/4.	280 (113)
H	Township 17 South, Range 6 East, San Bernardino Meridian Section 7, SE1/4NE1/4, E1/2SE1/4, Section 8, NW1/4SW1/4, N1/2NW1/4, SW1/4NW1/4.	280 (113)
Subtotal – ROW Lands		**878** **(2,169)**
Grand Total Withdrawal and ROW Lands		**5,554** **(2,248)**

1.2 CURRENT OPERATIONS AND EXISTING FACILITIES

In 1998, the NSW community began using Camp Michael Monsoor for pre-deployment, readiness, sustainment, basic marksmanship, and assaults training. Since then, the secluded location and mountainous terrain have become critical in supporting Camp Michael Monsoor's mission of providing assaults training and other specialized warfare training for NSW. Camp Michael Monsoor is unique for NSW training because the physical characteristics found at Camp Michael Monsoor are similar to the terrains of many foreign countries, thereby providing realism during training exercises. In addition, Camp Michael Monsoor's proximity to military concentration areas in San Diego County allows for maximum training time, with limited associated travel time and expense (Navy 2012e).

Ranges and facilities at Camp Michael Monsoor are administered by the Commanding Officer for Naval Base Coronado and operated by Naval Special Warfare Group One (NSWG-1) Training Detachment Range Department. The ranges and facilities are maintained by Naval Base Coronado Public Works and the NSWG-1 facilities department.

Currently, land at Camp Michael Monsoor is primarily used for NSWG-1 and NSW Training Center training activities. NSW provides a multi-mission force with a comprehensive set of specialized capabilities that focus on neutralizing emerging or potential long-term threats of a scale and type that can be handled more effectively by small, highly trained, and sophisticated forces. NSW forces must be organized, trained, and equipped to respond to seven principal mission areas:

1. Combating Terrorism;
2. Counter Proliferation;
3. Special Reconnaissance Direct Action;
4. Direct Action;
5. Unconventional Warfare;
6. Psychological/Information Operations; and,
7. Foreign Internal Defense and Civil Affairs.

1.2.1 TRAINING EVENTS SUPPORTED AT CAMP MICHAEL MONSOOR

Camp Michael Monsoor is comprised of existing range and training areas that are integral to NSW pre-deployment training, including unit-level training (ULT). Other training that regularly occurs at Camp Michael Monsoor includes Sea Air and Land (SEAL) Qualification Training and some other U.S. Special Operations Forces (SOF) training. During peak ULT and SEAL Qualification Training periods, there may be as many as 250 personnel training onsite at the same time.

Typical NSW operational training events that are supported at Camp Michael Monsoor are described below (Penwell 2012):

- **Land Navigation**. These events require multiple courses across a variety of terrain to include, as required, lake and riverine obstacles in an area greater than 50 square miles (130 square kilometers). Land navigation can be accomplished on non-range locations, when suitable, and the currently available areas satisfy training requirements;
- **Weapons Training**. Shooting and weapons skills are perishable and must be constantly honed. Basic qualification requirements and weapons proficiency training are required to maintain adequate combat skills. Weapons training is required for all NSW weapons, but personal weapons proficiency training with 9-millimeter (mm) pistols, shotguns, 7.62-mm assault rifles, and M-4 rifles require the greatest training frequency;
- **Demolition Training**. This specialized training requires infrastructure, a construction capability, and explosion-resistant facilities to accommodate breaching training with a variety of demolition weapons;
- **Tactical Fire and Maneuver Training**. This type of training is required to integrate basic weapons and combat skills that are learned as individuals and practiced at the unit level. This training couples combat stress with the ability to conduct coordinated target assaults, tactical ambushes, inserts/extracts, and patrolling exercises;
- **Sniper Training**. Sniper training is complex and requires a sequence of maneuver areas for land navigation and target observation, known distance ranges for sighting weapons and qualification, and unknown distance and elevation ranges, including elevated urban structures, to simulate a combat environment. These ranges require distances of both 3,280 and 6,562 feet (1,000 and 2,000 meters);
- **Reactive Plate Ranges**. These ranges react with pop-up steel targets that provide instant feedback to the shooter. Automatic scoring is required;
- **Close Quarters Combat (CQC)**. CQC facilities should be multi-story, have the ability to be reconfigured on the interior, and have ballistic walls and entry points, which allow full use of weapons and breaching materials. For optimal training, the CQC house should be adjacent to a tactical fire and maneuver area to train NSW units in ingress and egress from the objective;
- **Air Operations Training**. Air operations training should be conducted on or adjacent to the tactical training ranges. These air operations areas require an integrated battlespace of air, ground, and surface for extensive maneuver for helicopter landings and fast rope;
- **Night Training**. The nature of the NSW mission mandates a night training capability, including night capable instrumentation; and,
- **Reconnaissance**. Reconnaissance includes land, maritime, and riverine mounted or dismounted information gathering operations. This training may include military working dogs.

1.2.1.1 Sea Air and Land and Unit-Level Training Periods

SEAL and ULT training events at Camp Michael Monsoor typically occur in three 6-month long training blocks. The first 6-month training block (professional development training) for deploying SEAL teams includes basic and advanced individual skills training. The second 6-month training block (ULT) includes land warfare, close combat, special reconnaissance, and airborne infiltration. The third 6-month training block (interoperability training) combines a NSW squadron with deploying forces for scenario-based exercises and theater-specific focused training. Interoperability training also includes environmentally-specific training in, for example, cold weather, mountain warfare, and jungle and riverine warfare.

The ULT focus at Camp Michael Monsoor is assault training. A portion of the assaults training can now be conducted at Camp Michael Monsoor, but the majority is conducted at a private training facility. The typical range of troop training is 45 to 60 personnel, but can be as high as 80. A Supertroop can be up to 120 personnel. Assaults training currently involves up to 60 people, eight times a year, for 21 days. One week of assaults training is currently performed at Camp Michael Monsoor. In addition, SEAL Qualification Training is currently conducted at Camp Michael Monsoor while the CQC facility at Marine Corps Base Camp Pendleton is under repair. SEAL Qualification Training occurs up to six times per year for a duration of four weeks, with 67 personnel (including 12 instructors). This equates to 3,780 person days per year for ULT and 11,256 person days per year for SEAL Qualification Training. According to the La Posta Mountain Warfare Training Facility Final EA, Camp Michael Monsoor is used for 15,653 person days per year (1 person day equals an 8-hour training day).

1.2.2 EXISTING FACILITIES AND OPERATIONS AREAS

Facilities used to support the critical mission of Camp Michael Monsoor are generally included in the following three base components:

1. Training ranges inclusive of all live-fire areas, range support buildings, and the breaching instructional area;
2. Training classrooms; and,
3. Training areas used for field exercises that do not involve live-fire.

Existing facilities at Camp Michael Monsoor are primarily located in three concentrated areas: the Hilltop Complex, the Beach Complex, and the Range Complex area (see Sections 1.2.2.1 through 1.2.2.3 and Figure 1-2). The only existing facilities located outside of these areas include one sniper structure and three water wells.

1.2.2.1 Operations at the Hilltop Complex

Operations at the Hilltop Complex include general management functions, ready space, and some academic classroom support. The non-operational satellite dish is located north of the ready space and is currently off-limits for safety reasons. A small landing pad located near the satellite dish is used for air operations (i.e., emergency response and County Sheriff's

operations). Ordnance and weapons are stored adjacent to the parking areas at the Hilltop Complex.

1.2.2.2 Operations at the Beach Complex

Operations at the Beach Complex include ready space and academic classroom instruction to support on-base training activities. An explosives breaching mock-up trainer is located northwest of the Beach Complex area. To the northeast of the Beach Complex is an area known as the Breaching Complex; this area is used to instruct Methods of Entry.

Three Methods of Entry breaching techniques are taught at Camp Michael Monsoor: mechanical, explosive, and shotgun. Mechanical breaching techniques include the use of brute force, such as sledgehammers, to break through doors and windows. Explosive breaching techniques and shotgun breaching techniques include the application of explosives or the use of a shotgun to break the hinges off of a door, enabling forced entry into a building.

1.2.2.3 Operations at the Range Complex

Ranges located at Camp Michael Monsoor support developing, maintaining, and improving operators' shooting proficiency and other skillsets. The Range Complex and Range 110 focus on live-fire small arms training. Ranges 115a, b, and c and Range 112 (Sniper Range) employ horizontal ricochet reduction platforms, commonly called eyebrow bullet traps, which are installed over the tops of the targets. The eyebrow bullet traps allow for zero distance Surface Danger Zones behind the bullet traps. Ranges 113a and 113b are one-story live-fire shoothouses. Range maintenance and storage facilities are also located at the Range Complex.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

The Navy's mission is to organize, train, equip, and maintain combat-ready naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas. This mission is mandated by federal law (10 U.S.C. Section 5062) and ensures the readiness of the nation's naval forces. The Chief of Naval Operations meets this directive, in part, by establishing and executing training programs, including at-sea training and exercises, and ensuring naval forces have access to the ranges, operational areas, and airspace needed to develop and maintain skills for conducting naval operations.

With anticipated Congressionally mandated growth of 25 percent in NSW within the next two years (Navy 2011), there is an increased demand for upgrades to range and training facilities to support Camp Michael Monsoor's training mission and, thereby, support the growth of the NSW community. The preferred alternative (MILCON P-888 and other components) would expand the range, training facilities, and operations associated with Camp Michael Monsoor, specifically within Parcel C and the Previously Withdrawn Parcel, which includes the Range Complex and Range 110 (Figure 1-2).

The purpose of the Proposed Action is to develop a local Assaults Training Center of Excellence with NSWG-1 as the primary user, meet the training requirements of Fleet Exercise Publication 6, and minimize the Navy's travel time and training costs.

The Proposed Action is needed to provide a local, Navy-controlled, dedicated assault training center to support pre-deployment training of NSWG-1 personnel. Assault training is a requirement of Fleet Exercise Publication 6, which requires NSWG-1 personnel to be proficient in conducting assaults using the M-4 rifle and Special Operations Forces Combat Assault Rifle Heavy.

Assault training is currently conducted at private facilities that are not controlled by NSWG-1 and do not offer privacy of training, primacy of facility use, and proximity to NSWG-1 personnel's home station, Naval Base Coronado. The use of these facilities entail the transportation of up to 120 personnel and their equipment and ordnance approximately 1,800 miles (2,900 kilometers) eight times per year for a 21-day training evolution, and results in travel expenses for NSWG-1. Because the private training facilities do not offer primacy of use, NSWG-1 has to compete with other armed services and federal, state, and local agencies for training time. Local (i.e., less than a 1-hour drive from NSWG-1 located at Naval Base Coronado) Navy-controlled facilities are needed to minimize travel time and associated travel costs, and would provide locations that offers a safe and secure training environment, and privacy, primacy, and proximity of training for NSWG-1.

The use of local facilities is related to keeping SEALs at an adequate personnel tempo that does not require them to be away from their homes and families for extended periods to train and maintain their combat skills. The creation of the Navy's Individual Personnel Tempo Program, in accordance with the congressionally mandated National Defense Authorization Act of 2000, limits the number of days in which training can be conducted away from home to 400 days in the previous 2 years. This practice of keeping personnel tempo below an excessive level is a major factor driving training requirements. Thus, training must be conducted as much as possible at local facilities in the immediate area. Previously, the NSW community has had the benefit of conducting training at various locations and in a variety of environments. This diversified training has helped to shape the skills, fitness, and degree of readiness now exhibited by NSWG-1 forces.

SEALs encounter this personnel tempo constraint due to their long-term deployments and shortened training cycles. Providing local training facilities helps keep personnel tempo down while still training SEALs for deployment. Facilities that allow for training to occur year-round, independent of season, are necessary to meet this need.

The Proposed Action must be sited at a facility that has the capacity to support the development of small arms ranges and other training mockups in a safe and secure training environment, and must provide a semi-remote/undeveloped location to support required Surface Danger Zones associated with live-fire ranges. It is essential that the Proposed Action is protected from encroachment by other uses. The Proposed Action also must be sited at a

facility that replicates rugged, mountainous terrain and extreme environmental conditions (i.e., diverse weather conditions).

1.4 DECISION TO BE MADE

The decision to be made as a result of the analysis in this EA is whether there will be a significant impact, and therefore, whether an Environmental Impact Statement (EIS) will need to be prepared. An EIS will need to be prepared if the Proposed Action would have significant impacts on the human or natural environment. If the analysis reveals that there would be no significant impacts on the human or natural environment, an EIS will not be required and this EA may result in a Finding of No Significant Impact (FONSI). The alternative action that is selected for implementation from this EA will be documented in the FONSI.

1.5 INTERGOVERNMENTAL COORDINATION

The preparation of this EA is based on requirements including, but not limited to, the environmental requirements and guidance documents listed in Table 1-2.

Table 1-2 Applicable Guidance, Laws, and Regulations Considered

Law	Agency	Requirement	Regulated Activity
National Environmental Policy Act of 1969 (42 U.S.C. Section 4321 et seq.)	Navy	FONSI or preparation of an EIS	Federal action
National Historic Preservation Act of 1966, as amended (16 U.S.C. Section 470 et seq. and amendments)	Advisory Council on Historic Preservation California State Historic Preservation Officer	Section 106 Consultation	Federal undertakings that affect properties listed in or eligible for listing in the National Register of Historic Places
Clean Air Act (42 U.S.C. Section 7401 et seq.)	U.S. Environmental Protection Agency	Conformity Determination or Record of Non-Applicability	Federal implementation of a proposed action may result in air quality impacts that could exceed the levels noted in 40 CFR Part 93.153
Endangered Species Act (1973, as amended)	U.S. Fish and Wildlife Service	Section 7 Consultation Biological Opinion	Federal action may affect a threatened or endangered species
Clean Water Act	U.S. Army Corps of Engineers	Section 404 Permit	Fill or discharge into wetlands or Waters of the U.S.

Key:
CFR = Code of Federal Regulations
EIS = Environmental Impact Statement
FONSI = Finding of No Significant Impact
U.S.C. = United States Code

1.6 SCOPE OF THE ANALYSIS

As described in Section 1.1.1, the La Posta Mountain Warfare Training Facility Final EA was completed in 2008 and analyzed the environmental impacts of the withdrawal of several parcels at Camp Michael Monsoor and the construction of MILCON P-781 facilities (including several facilities in Parcel C) (Navy 2008). Surveys for the Quino checkerspot butterfly (*Euphydryas editha quino*) (QCB) were conducted most recently in accordance with the 2003 U.S. Fish and Wildlife Service (USFWS) Quino Checkerspot Butterfly Recovery Plan. QCB were discovered at Camp Michael Monsoor in 2004 and 2010. Surveys for the QCB's host plant (white snapdragon [*Antirrhinum coulterianum*]) were conducted in the spring of 2012.

Several facilities that support training at Camp Michael Monsoor, including a CQC structure, a simulated residence for training, logistics and support facilities, and a Method of Entry structure, were included in MILCON P-781 and are already under construction. Construction of MILCON P-888 facilities and other components covered under the Proposed Action would further develop Camp Michael Monsoor (Figure 1-3). All proposed ranges at Parcel C would be constructed in accordance with Naval Facilities Engineering Command (NAVFAC) 1027/3B guidance on construction of firing ranges and rules regarding Surface Danger Zones.

The pre-planning studies and documents listed above helped determine the resource areas to be evaluated in this EA, which include:

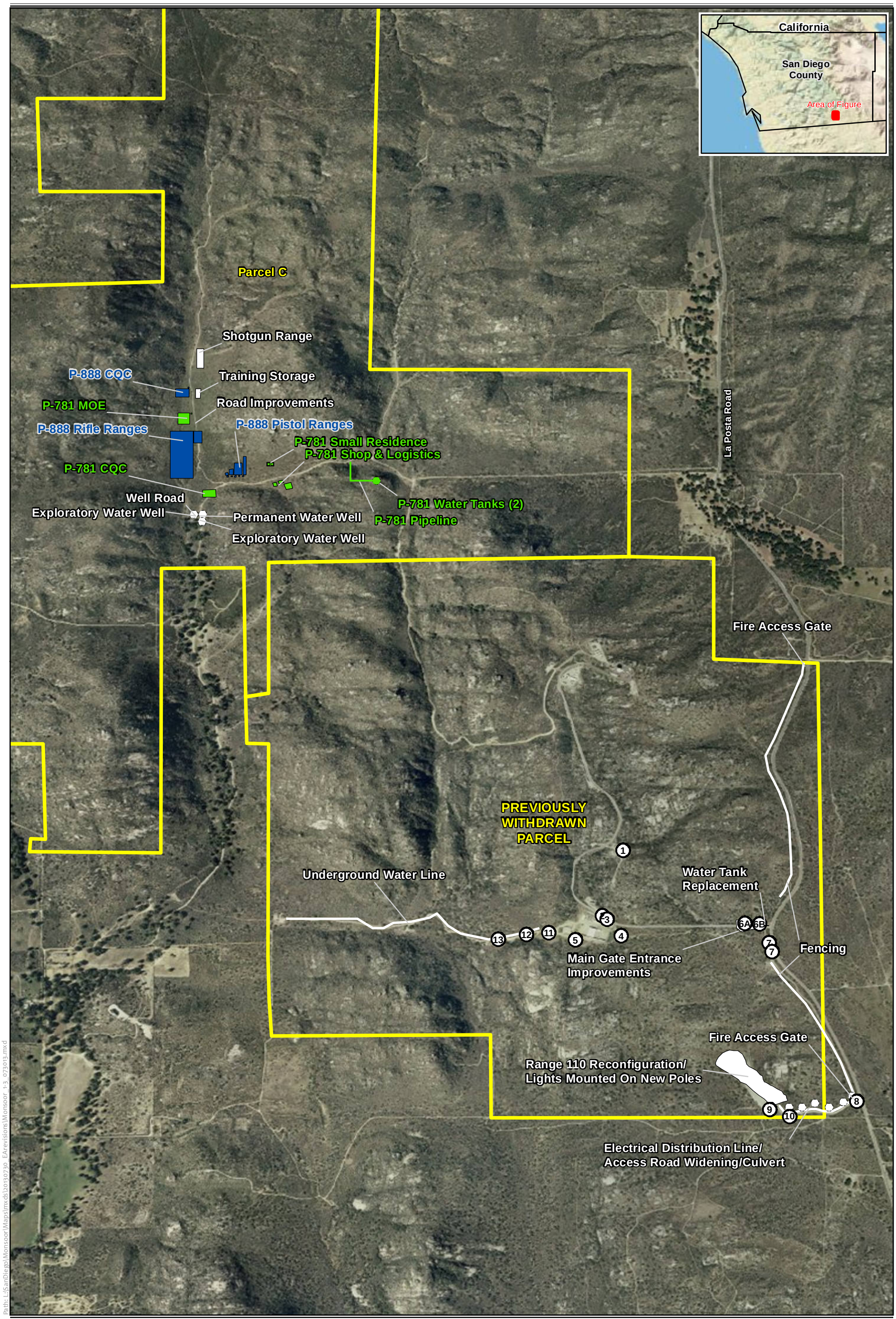
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology and Soils;
- Land Use;
- Noise;
- Public Health and Safety (including hazardous materials and waste);
- Public Services and Utilities;
- Socioeconomics (including Environmental Justice);
- Traffic and Circulation;
- Visual Resources; and,
- Water Resources and Hydrology.

1.7 PUBLIC/AGENCY INVOLVEMENT

The public participation process will be initiated by publishing a Notice of Availability of the EA in the *San Diego Union Tribune* (Appendix A) for three consecutive days over a Friday, Saturday, and Sunday time period. Copies of the EA will be placed in the Campo Library for review and comment. In addition, the EA will be posted to the Commander, Navy Region Southwest (CNRSW) for public review. The public review comment period will last 15 calendar days.

All applicable comments submitted during the comment period will be considered during the development of the Final EA. Appendix A of the Final EA will include a summary of the comments received and the Navy's responses to comments.

A Notice of Availability of the Final EA and FONSI, if applicable, will be published in the *San Diego Union Tribune*. The final documents will also be made available for public review at the Campo Library and on the CNRSW website.



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Source- ESRI (2010), NAVFAC SW 2011

- Navy-Managed Property
- MILCON P-888 Project Component
- Other Proposed Action Features Not Covered Under MILCON P-888
- MILCON P-781 Project Component
- Erosion Improvement Area

Figure 1-3
Construction Proposed Under MILCON P-781 and P-888

San Diego County, California

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2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This chapter presents the reasonable range of alternatives for the expansion of range and training facilities and operations on lands maintained and operated by NSWG-1 at Camp Michael Monsoor, including a description of the Proposed Action and the alternatives carried forward for analysis. This chapter also includes a summary of alternatives that were considered but eliminated from further analysis and a summary of potential environmental consequences, organized by resource area, for the analyzed alternatives. In addition, this chapter provides special conservation and construction measures.

2.1 CRITERIA

To be considered reasonable, an alternative must meet the purpose and need as described in Section 1.3, and must be consistent with the following siting criteria:

- A facility that has the capacity to support the development of small arms ranges and other training mockups and provide a semi-remote/undeveloped location to support required safety zones associated with live-fire ranges that is protected from encroachment by other uses;
- A facility that provides rugged, mountainous terrain and extreme environmental conditions (i.e., diverse weather conditions);
- A facility that is located within 1 hour of NSWG-1, at Naval Base Coronado; and,
- A Navy-controlled area that allows for security, NSW primacy of use and Navy-controlled scheduling of training to meet the needs of units.

2.2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The Proposed Action and alternatives that meet the evaluation criteria for detailed analysis are described below:

- **Alternative 1 (Proposed Action/Preferred Alternative):** Ranges, training facilities, and operations at Camp Michael Monsoor would be improved and expanded at Parcel C and the Previously Withdrawn Parcel[10];
- **Alternative 2:** This alternative is the same as Alternative 1, except for the following: the pistol range that is part of MILCON P-888 would be sited in an easterly firing direction, resulting in a reduced Surface Danger Zone; the shotgun range would not be constructed; and the Range Control Building and Gate Sentry House would be constructed to the south of the main entrance road rather than to the north of this road; and,
- **No Action Alternative:** Under this alternative, the Proposed Action would not be constructed; however, this alternative provides a description of the baseline conditions against which the impacts of the Proposed Action can be compared.

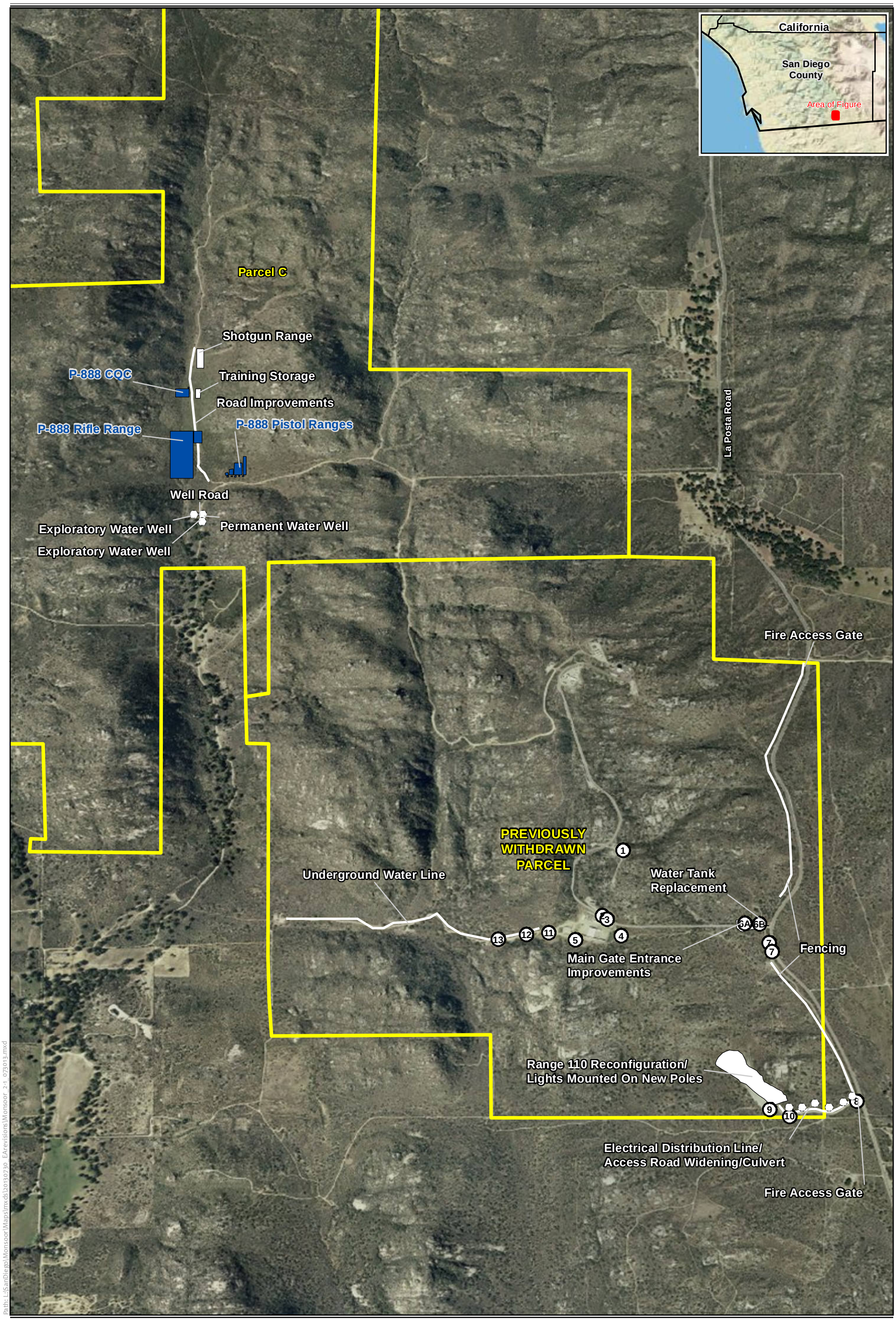
2.2.1 ALTERNATIVE 1 (PROPOSED ACTION/PREFERRED ALTERNATIVE)

Alternative 1 comprises the expansion of ranges, training facilities, and operations associated with Camp Michael Monsoor (Figure 2-1). More specifically, the Proposed Action would include the following:

CONSTRUCTION ACTIVITIES INCLUDED UNDER MILITARY CONSTRUCTION PROJECT P-888

- A fully enclosed Close Quarters Combat (CQC) two-story structure with ballistic walls and an elevated roof for cross-flow ventilation;
- Extending the existing access road from the Military Construction (MILCON) P-781 Method of Entry structure to the MILCON P-888 CQC structure;
- One fully baffled rifle range[11] (baffles keep rounds contained within the range) with adjacent assaults and sight-in rifle ranges;

[10] The Previously Withdrawn Parcel includes the Range Complex and Range 110.
[11] Includes all associated Surface Danger Zones for these ranges.



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MILCON P-888 Project Component

Other Proposed Action Features Not Covered Under MILCON P-888

1 Erosion Improvement Area

Source- ESRI (2010), NAVFAC SW 2011

Figure 2-1
Alternative 1

San Diego County, California

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- Four outdoor pistol ranges[12] (linear, sight-in/fundamental, steel, and instinctive);
- Installing three water wells (two temporary exploratory wells and one permanent well) and associated water lines in Parcel C to provide for increased flow rates. A 12-foot (3.7-meter) wide by 100-foot (30.5-meter) long road would be added to access the permanent well. All connections for the water line would be buried within the roadways at Parcel C; and,
- Installing an electrical line in the existing roadway at Parcel C. The electrical line would be collocated underground within the same trench as the proposed water line at Parcel C.

CONSTRUCTION ACTIVITIES NOT INCLUDED UNDER MILITARY CONSTRUCTION PROJECT P-888:

- A new shotgun range[13] in Parcel C, including extending the access road from the MILCON P-888 CQC structure to the proposed shotgun range;
- An approximately 7,200-square-foot (669-square-meter) training storage building will be constructed near the P-888 CQC structure to house all of the doors and targets needed for use in the CQC structure. The storage building will include lighting and a service vehicle parking and drop-off area. Approximately 50 feet (15.2 meters) of land surrounding the building will be covered with gravel for fire protection. In addition, a 50-foot-wide (15.2-meter-wide) fuel modification zone will be established around the building.
- New security facilities at the Main Gate, which would include:
    - A new Range Control Building west of the Main Gate, near the entrance on the main access road;
    - A new water tank to replace an existing water tank at the Main Gate entrance14;
    - Two 10-foot (3-meter) high block walls installed to 50 feet (15 meters) on either side of the Main Gate entrance;
- A small, concrete-paved visitor parking area adjacent to the Main Gate;
- A second security gate west of the proposed Range Control Building; and,
- A reconfigured Main Gate entrance that would reduce traffic queuing from La Posta Road.

[12] Includes all associated Surface Danger Zones for these ranges.
[13] Includes all associated Surface Danger Zones for these ranges.
[14] This replacement tank would store water for use at the proposed Range Control Building.

- Replacement of an existing fence[15] along La Posta Road, which would include:
  - Extending the 10-foot (3-meter) high fence line approximately 0.6 mile (1.0 kilometer) north and 0.5 mile (0.75 kilometer) south of the existing fence on La Posta Road; and,
  - Installing access gates at the north and south ends of the new fence along La Posta Road for emergency fire access.
- Improvement and realignment of Range 110, which would include:
  - Installing a new aboveground electrical distribution line from La Posta Road to Range 110 along the northern side of the existing access road;
  - Realigning Range 110 and shifting the aspect of Range 110 approximately 10 to 15 feet (3 to 4.5 meters) farther west so that the Surface Danger Zone would no longer cover the Hilltop Complex;
  - Installing a 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels on Range 110 in an area previously disturbed during construction of projects prior to P-781.
  - Widening the existing Range 110 access road and installing erosion control features along the Range 110 frontage road;
  - Installing a wall for noise attenuation to be installed behind the firing line on an existing pad, and where no vegetation clearing would be required. The wall would be approximately 10 to 12 feet (3 to 4 meters) high; and,
  - Installing up to 10 lights on new poles for night shooting at Range 110.
- Upgrades to existing utilities and erosion control structures at the Range Complex, which would include:
  - Constructing a new underground water line and power line to pump water from the existing water well near the installation's western boundary to a holding tank at the Range Complex, to be used for both potable water and fire suppression; and,

A Surface Danger Zone delineates the area designated within a training complex for vertical and lateral containment of debris, projectiles, fragments, and components resulting from the firing, launching, or detonation of weapons systems including ammunition, explosives, and demolition explosives.

A Surface Danger Zone must be designed to be completely within Navy parcels and cannot fall into non-Navy lands.

[15] To be constructed in coordination with Naval Base Coronado Physical Security Department and NSWG-1.

- Installing a 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels at the Range Complex in an area previously disturbed during construction of projects prior to P-781.
- Installing erosion control structures for controlling channel incision, rill erosion, and uncontrolled discharge at the Range Complex, including the lower Range Complex, the sniper target area, and the "grand canyon" area downhill from the complex.

Upon implementation of Alternative 1, Camp Michael Monsoor would be able to accommodate the anticipated congressionally mandated growth of the NSW community by 25 percent. Alternative 1 would result in an increase by three weeks in the amount of time ULT is conducted at Camp Michael Monsoor over the current duration (one week). This increase would occur up to six times per year. SEAL Qualification Training would decrease from four weeks to one week, six times per year. Other new training conducted by SOF and non-SOF units is shown in Table 2-1. This represents an increase in use of 9,125.5 person days annually.

Table 2-1 Current and Proposed Level of Use

Training	CURRENT				PROPOSED			
	# of Personnel	# of Weeks	# of times per Year	Other information	# of Personnel	# of Weeks	# of Times per Year	Other information
ULT	90[1]	1	6	3,780 person days	90[1]	4	6	15,120 person days
SEAL Qualification Training	67[2]	4	6	1 year period only 11,256 person days	67[2]	1	6	2,814 person days
SEAL Team Usage					30	1	15	3,150 person days
Non-SEAL Team Usage					35	1	6	1,470 person days
Non-NSW Usage					45	0.5	10	225 person days
Foreign Use					30	1	2	420 person days
ATC					35	0.25	6	52.5 person days
FBP					65	1	2	910 person days
Total (person days)				**15,036**				**24,161.5**

Notes:
[1] Includes 15 instructors.
[2] Includes 12 instructors.

Key:
ATC = Advanced Training Command
FBP = Final Battle Problem
NSW = Naval Special Warfare
ULT = Unit-Level Training

2.2.1.1 Proposed Facilities

Military Construction Project P-888

Under MILCON P-888, new facilities would be constructed, as described below (see Table 2-2 and Figure 2-2, presented at the conclusion of Subsection 2.2).

Military Construction Project P-888 Close Quarters Combat Structure

A new approximately 15,005-square-foot (1,394-square-meter) P-888 live-fire CQC structure would be constructed for use in conjunction with the proposed pistol and rifle live-fire ranges. The CQC structure would be constructed directly adjacent to the proposed training storage building which would house all of the doors and targets needed for use in the CQC structure. The MILCON P-888 CQC structure would be located north of the Method of Entry structure (part of MILCON P-781) and south of the proposed shotgun range (Figure 2-2). The MILCON P-888 CQC structure would have ballistic walls and an elevated roof for cross-flow ventilation, lighting, and an emergency vehicle access and service vehicle parking and drop-off area. Approximately 50 feet (15 meters) of land surrounding the MILCON P-888 CQC structure would be covered with gravel for fire protection. In addition, a Fuel Modification Zone would be established and maintained up to an additional 50 feet (15 meters) around the perimeter of the facility. Mechanical and explosive breaching would be conducted to gain entry to and to move throughout the inside of the facility. The road from the MILCON P-781 Method of Entry structure would be extended to the MILCON P-888 CQC structure.

Military Construction Project P-888 7.62-mm Rifle Range (Fully Baffled)

As part of MILCON P-888, the Navy would construct a rifle range, including contiguous assault rifle and sight-in rifle lanes with 7.62-mm ammunition capabilities. The new ranges would be constructed south of the MILCON P-781 Method of Entry structure and northwest of the proposed pistol ranges at Parcel C. The rifle ranges would have a total of 30 lanes that would be 9 feet (2.75 meters) wide. The ranges would be fully baffled, limiting the associated Surface Danger Zone to only 150 feet (45 meters) in every direction extending out from the firing line towards the intended target. Range capabilities would include pneumatic resetting for dynamic targets that would be built into temporary building facades set at varying distances not to exceed 656 feet (200 meters). The firing positions would be constructed to simulate building facades with typical door, window, hatch, and porthole openings (Figure 2-2). An emergency vehicle access and service vehicle parking and drop-off area, ammunition preparation areas, and lighting would be included in the range design. Approximately 50 feet (15 meters) of land surrounding the rifle ranges would be covered with gravel for fire protection.

Military Construction Project P-888 Pistol Range Complex

A new Pistol Range Complex would be constructed as part of MILCON P-888, east of the proposed rifle range and CQC structure, in the valley of Parcel C. The Pistol Range Complex would consist of four separate ranges, each with a different purpose and capability. The pistol ranges would be unbaffled, requiring a full Surface Danger Zone. The firing line would face north, allowing the Surface Danger Zone to fall inside the boundaries of Parcel C (Figure 2-2). The four pistol ranges would include the following:

- Sight-in/fundamental range;
- Steel range;
- Instinctive range; and,
- Linear range.

Approximately 50 feet (15 meters) of land surrounding the pistol range would be covered with gravel. Lighting and an emergency vehicle access and service vehicle parking and drop-off area would also be provided.

Military Construction Project P-888 Water Wells

Three MILCON P-888 water wells (two temporary exploratory wells and one permanent well) would be drilled in Parcel C to provide for increased flow rates. A 12-foot (3.7-meter) wide by 100-foot (30.5-meter) long road would be added to access the permanent well. An underground water line, 4 to 6 inches (10 to 15 centimeters) in diameter, would be installed to transport water from the MILCON P-888 permanent well to an existing 10,000-gallon (37,900-liter) water storage tank, which is also located at Parcel C (refer to Figure 1-3). The proposed wells would not have power or pipe connectivity; therefore, a 36-inch (0.9-meter) deep and 5-foot (1.5-meter) wide trench would be required for installation of the water line and a collocated power line, and all connections for the water line and electrical power line would be buried within the roadways at Parcel C.

Military Construction Project P-888 Underground Electrical Line at Parcel C

As described above, an electrical power line would be collated underground within the same trench as the proposed MILCON P-888 water line in an existing roadway at Parcel C.

Other Facilities Included Under the Proposed Action, but Not Part of Military Construction Project P-888

The following new facilities would be constructed under the Proposed Action, but are not included as part of MILCON P-888 (see Table 2-2 and Figures 2-2, 2-3, and 2-4, presented at the conclusion of Subsection 2.2).

Shotgun Range

A new unbaffled shotgun range would be constructed in the valley of Parcel C, north of the MILCON P-888 CQC structure, and oriented to the east. The range would have 30 firing points and provide multiple firing line options, as well as lighting and emergency vehicle access and a service vehicle parking and drop-off area. The location of the new shotgun range would provide immediate adjacency to the planned MILCON P-888 CQC structure, the training storage building, and the MILCON P-781 Method of Entry structure (Figure 2-2). Approximately 50 feet (15 meters) of land surrounding the shotgun range would be covered with gravel for fire protection. A new access road would be constructed, extending from the P-888 CQC structure to the proposed shotgun range to provide access.

Training Storage Building

An approximately 7,200-square-foot (669-square-meter) training storage building will be constructed near the P-888 CQC structure to house all of the doors and targets needed for use in the CQC structure. The storage building will include lighting and a service vehicle parking and drop-off area. Approximately 50 feet (15.2 meters) of land surrounding the building will be covered with gravel for fire protection. In addition, a 50-foot-wide (15.2-meter-wide) fuel modification zone will be established around the building.

Main Gate

Range Control Building and Gate Sentry House

A new 1,904-square-foot (177-square-meter) Range Control Building and Gate Sentry House would be constructed west of the Main Gate (Figure 2-3). The new building would oversee incoming traffic to the compound to monitor personnel entering the installation. The building would serve as the command center for all ranges for the coordination and oversight of all training activities and would enhance safety and security on the range. All ranges would require direct-connect phone service to the Range Control Building.

The new Range Control Building would include a bathroom and a kitchen. A small concrete-paved visitor parking area with 10 parking spaces would be constructed adjacent to the Main Gate to support the building. A leach field would be located across the street to receive and filter waste from the septic tank. Water for the bathroom and kitchen at the Range Control Building would be supplied via an existing water line, and the water would be stored in a water tank that would be constructed as part of the Proposed Action[16]. Electrical power would be obtained from an existing electrical distribution line already located on Camp Michael Monsoor. A Fuel Modification Zone would be established and maintained up to 50 feet (15 meters) around

[16] The Proposed Action would require replacement of the existing water tank at the Main Gate entrance.

the perimeter of the Range Control Building. Landscaping at the Main Gate would use native vegetation and employ xeriscaping techniques.

Redesigned Main Gate Entry

To further enhance base security and safety, the Main Gate would be reconfigured to remove traffic queuing from La Posta Road, and to provide a rejection turn-around lane for unauthorized vehicles and a holding area for vehicles to be inspected before proceeding through a proposed second security gate (Figure 2-3). The entry design would feature a double-gated “corral” ingress which would provide incoming delivery trucks a safe traffic queuing area off of La Posta Road while the drivers request access to the compound. The existing first gate would remain open during regular business hours, while the proposed second gate would only be opened for approved visitors. The entry would have a roundabout prior to the second gate for easy egress in the event access to the compound is denied. In addition, a proposed block wall would extend 50 feet (15 meters) to the north and south of the Main Gate entrance. All proposed landscaping improvements (Figure 2-3) would include only native plants pre-approved by the Naval Base Coronado botanist and wildlife biologist.

Fence and Fire Access Gates

As part of MILCON P-781, a fence was constructed to replace a three-strand cattle fence on La Posta Road, extending 500 feet (150 meters) north and 500 feet (150 meters) south of the Main Gate entrance. The MILCON P-781 fence would be extended along La Posta Road, 0.6 mile (1.0 kilometer) north to Parcel E and 0.5 mile (0.75 kilometer) south towards Range 110. Gates would be installed at the north and south ends of the extended fence for emergency fire access. Per NAVFAC requirements, signs will be posted on the fence near the entrance to Range 110 to warn of hazards near the Surface Danger Zone.

Realignment of Range 110

The current orientation of Range 110 puts the Hilltop Complex within its Surface Danger Zone. Range 110 would be realigned, and the aspect of Range 110 would be shifted 10 to 15 feet (3 to 4.5 meters) farther west so that the Surface Danger Zone would no longer cover the Hilltop Complex. Currently, only the firing line at Range 110 has been reoriented within the existing range pad. To reorient the range pad per regulations, the Navy would move existing earth to the northeast to level-out the area and fill in the valley. A maximum Surface Danger Zone that would be based on one-half the maximum range of a 7.62-mm ball round (i.e., one-half of 13,450 feet [4,100 meters], or 6,725 feet [2,050 meters]) would be used for Range 110 (Figure 2-4). After the range has been reoriented, training at Range 110 would resume and would generally occur between 8:00 a.m. and 8:00 p.m.

Aboveground Electrical Distribution Line

Currently, there is no electrical power supply to provide electronic targeting at Range 110. A new aboveground electrical distribution line, including up to six San Diego Gas and Electric (SDG&E) 40-foot (12-meter) tall tubular steel poles, would be installed along the existing access road between La Posta Road and Range 110. The poles would be located within 5 feet (1.5 meters) north or south of the access road, but outside of the road right-of-way. SDG&E would interconnect the line to the SDG&E transmission line.

Solar Panels

A 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels will be installed on Range 110 in an area previously disturbed during construction of projects prior to P-781.

Access Road Widening

The existing access road from La Posta Road to Range 110 would be reoriented to accommodate the rotated range and widened (Figure 2-4). The access road improvement area would be primarily covered with decomposed granite or gravel.

Range 110 Lighting

Up to ten lights would be installed on new telephone poles at Range 110 as close to the roadway as possible to illuminate the range at night. The lights would be oriented towards the range and would not be used at all times. A transformer would provide power for the lighting.

Sound Wall

A sound wall would be installed for noise attenuation. The wall would be installed on an existing pad behind the firing line, and no vegetation clearing would be required. The wall would be approximately 10 to 12 feet (3 to 4 meters) high.

Drainage Improvements

To improve the drainage at Range 110, several improvements would be made. To correct cross drainage blow outs and rill erosion along the Range 110 Frontage Road, riprap would be installed at two locations along the westerly side of the road to reduce the velocity of the runoff. Several improvements would be made at Range 110, itself, and along the Range 110 road. First, a natural release point for ponding runoff would be graded at the foot of Range 110, and the spillway would be lined with riprap, including a riprap apron at the toe of the slope. This solution would prevent runoff from ponding along the top of the slope (southerly end on Range 110). A riprap lined spillway would allow runoff to drain without further erosion. The spillway would discharge runoff southerly towards the heavily vegetated, undeveloped area, as opposed to easterly (proposed roadside swale). Based on the proposed riprap, existing vegetation, and undeveloped nature of the southerly land, the proposed redirection of runoff would not adversely impact downstream areas.

Stormwater Improvements

Stormwater improvements, including grading a roadside swale along Range 110 Road, would also be made. The roadside swale would be lined with a rolled erosion control product (jute matting or similar) and include check dams (sand bags or equivalent). Four turn-outs would be installed along Range 110 Road to alleviate the sediment deposition occurring at the fire access point along La Posta Road. Each turn-out would be fitted with a riprap apron to prevent further downstream erosion south of Range 110 Road. Installation of the turn-outs would reduce the total flow at La Posta Road. Minimizing the amount of runoff at the fire access gate would significantly reduce sediment deposition along La Posta Road. The existing riprap and the fire access gate would be protected. Additional riprap would be placed at the downstream end of the proposed roadside swale.

Upgrades at the Range Complex

Water Pipeline and Electrical Line

An underground water pipeline and electrical line would be constructed to transport water from an existing well located west of the Range Complex to a 10,000-gallon (37,900-liter) holding tank, used for potable water and fire suppression, on the west side of the block yard at the Range Complex. The water pipeline would be 4 to 6 inches (10 to 15 centimeters) in diameter, and the pipeline route would begin on the north side of the road, running parallel to the road, and would cross the road two times. Currently, the well does not have power or pipe connectivity. A 36-inch (0.9-meter) deep and 5-foot (1.5-meter) wide trench would be required for installation of the pipeline and power line.

Erosion Control Measures

To address the saturated subgrade along the sniper access road, the subgrade would be stabilized through installation of new Class II aggregate base material and raising the access road approximately 12 inches (0.3 meter) for a distance of approximately 140 feet (43 meters) within the lowest portion of the existing road.

To address pavement failure and sediment deposition along Patilla Road, the existing Patilla Road would be repaired and the dirt parking lot and the dirt access road parallel to Patilla Road would be paved.

To address the hydromodification and channel incision (known locally as the “grand canyon”), a concrete slope would be installed between the existing 18-inch (46-centimeter) pipe and the natural channel below. This new concrete slope would replace the existing concrete apron and prevent runoff from free-falling approximately 10 feet (3 meters) prior to reaching the natural channel below. Riprap would be required to reduce exit velocities at the toe of the concrete sloped channel.

To address the rill erosion along the sniper target access road, a roadside swale would be graded along the road and immediately downstream. The swale would be lined with a rolled

erosion control product (jute matting or similar) and include check dams (sand bags or equivalent). New rip rap stabilization would be required at the downstream end of the swale. Check dams would be installed every 10 feet (3 meters) along the sniper access road due to the steepness of the road.

To address rill erosion, sediment deposition, and saturated subgrade along the lower road of the Range Complex, the natural release point for ponding runoff would be graded and the spillway would be lined with riprap, including a riprap apron at the toe of the slope. This solution would prevent runoff from ponding and the subsequent potential for a vector problem. A riprap lined spillway would allow runoff to drain without further erosion. The spillway is meant to discharge runoff southerly towards the heavily vegetated, undeveloped area, as opposed to westerly (proposed roadside swale).

Solar Panels

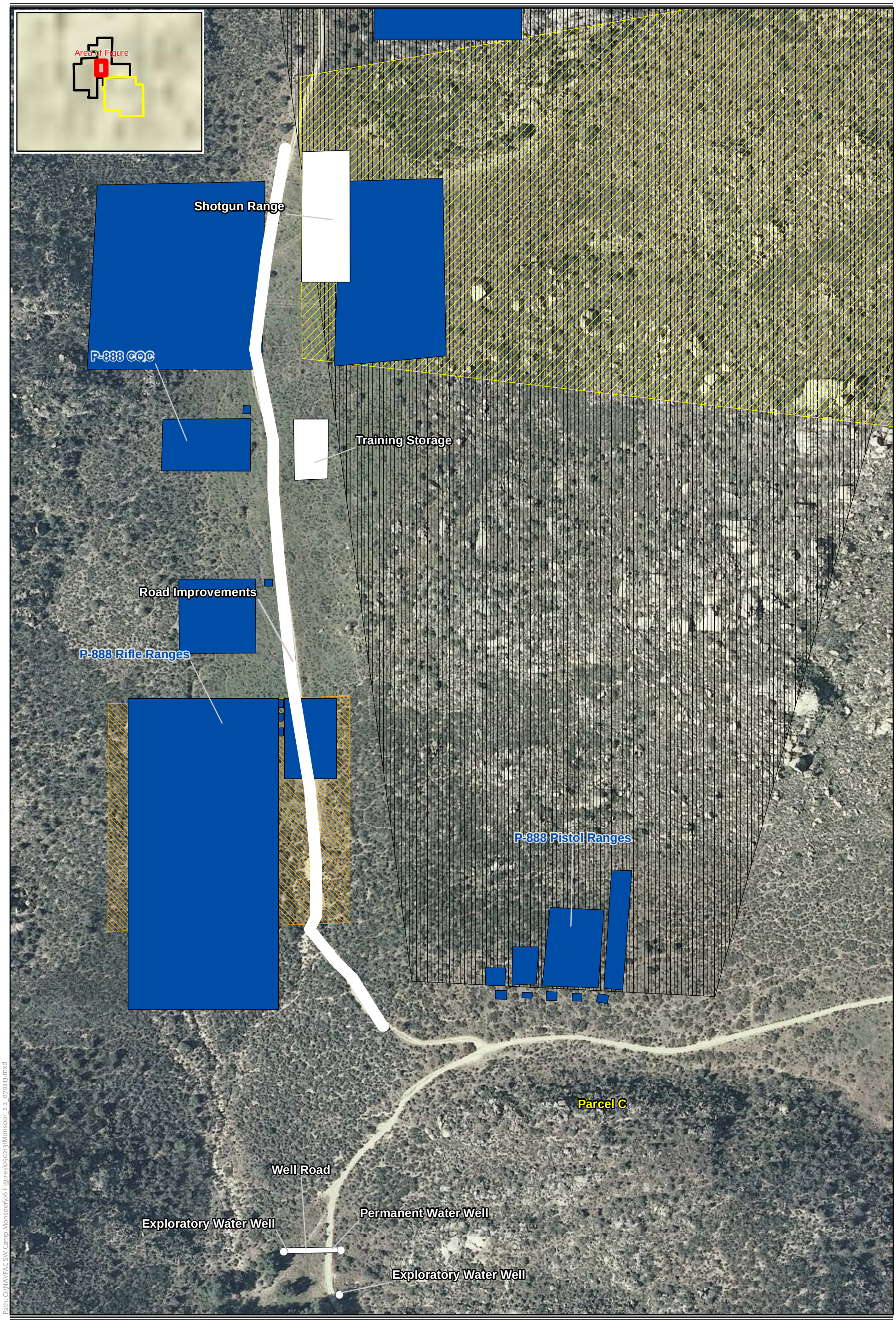
A 6-foot × 6-foot (2-meter x 2-meter) steel pole containing elevated solar panels will be installed at the Range Complex in an area previously disturbed during construction of projects prior to P-781.

2.2.2 ALTERNATIVE 2

Alternative 2 is the same as Alternative 1, with the exception that the pistol ranges, which are part of MILCON P-888, would be sited in an easterly firing direction (see Table 2-2 and Figure 2-5, presented at the conclusion of Subsection 2.2). This would generate a reduced 150-foot (45-meter) Surface Danger Zone that does not overlay operational facilities and roadways. To achieve this reduced Surface Danger Zone, the pistol ranges must be fully baffled to retain the Surface Danger Zone on property under the exclusive use of the Navy. Under Alternative 2, the shotgun range would not be constructed. The new 1,904-square-foot (177-square-meter) Range Control Building and Gate Sentry House would be constructed within the fence line west of the Main Gate entrance, to the south of the main road rather than to the north of this road.

2.2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, there would be no expansion of the existing range, training facilities, or operations on lands maintained and operated by NSWG-1 at Camp Michael Monsoor, specifically within Parcel C and the Previously Withdrawn Parcel, which includes the Range Complex and Range 110 (Table 2-2). Training would continue to be conducted using current methods and locations. Assault training would continue to be conducted at a private facility that is not controlled by NSWG-1 and does not offer security, privacy, primacy, and proximity for training. NSWG-1 would continue to transport up to 120 personnel and their equipment and ordnance approximately 1,800 miles (2,900 kilometers) eight times per year for a 21-day training evolution. Because the private training facility does not offer primacy of use, NSWG-1 would continue to compete with other armed services and federal, state, and local agencies for training time.



0 200 400 Feet

MILCON P-888 Project Component

Other Proposed Action Features Not Covered Under MILCON P-888

Shotgun SDZ

Rifle SDZ

Pistol SDZ

Source- ESRI (2010), NAVFAC SW 2011

Figure 2-2
MILCON P-888 & Other Proposed Actions Within Parcel C

San Diego County, California

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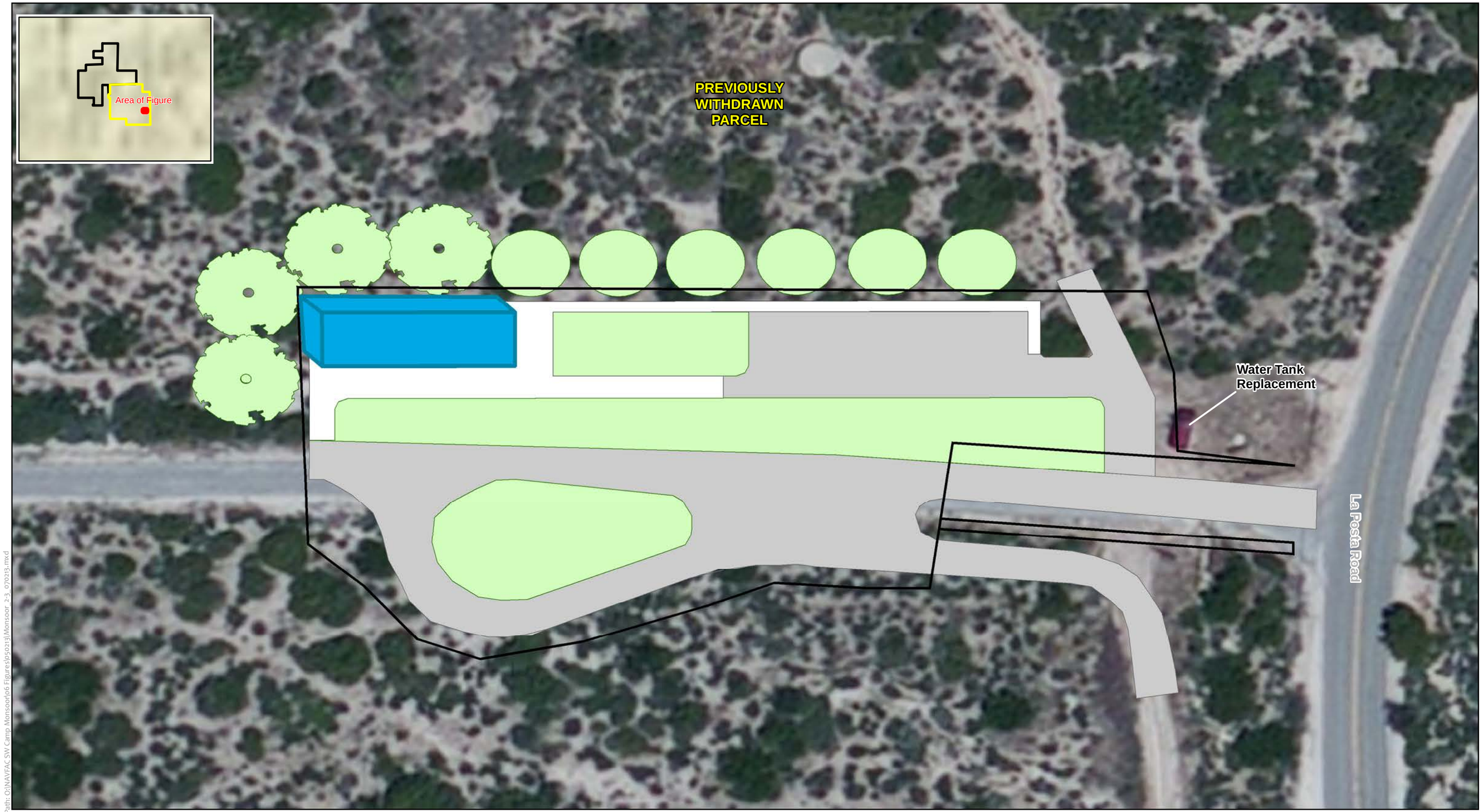

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0 50 100 Feet

Source- ESRI (2010), NAVFAC SW 2011

Proposed Landscape
Proposed Sidewalk
Proposed Asphalt Pavement
Proposed Fence; Fencing (500x5')
Proposed Range Control Building

Figure 2-3
Range Operations Building & Gate Sentry House

San Diego County, California

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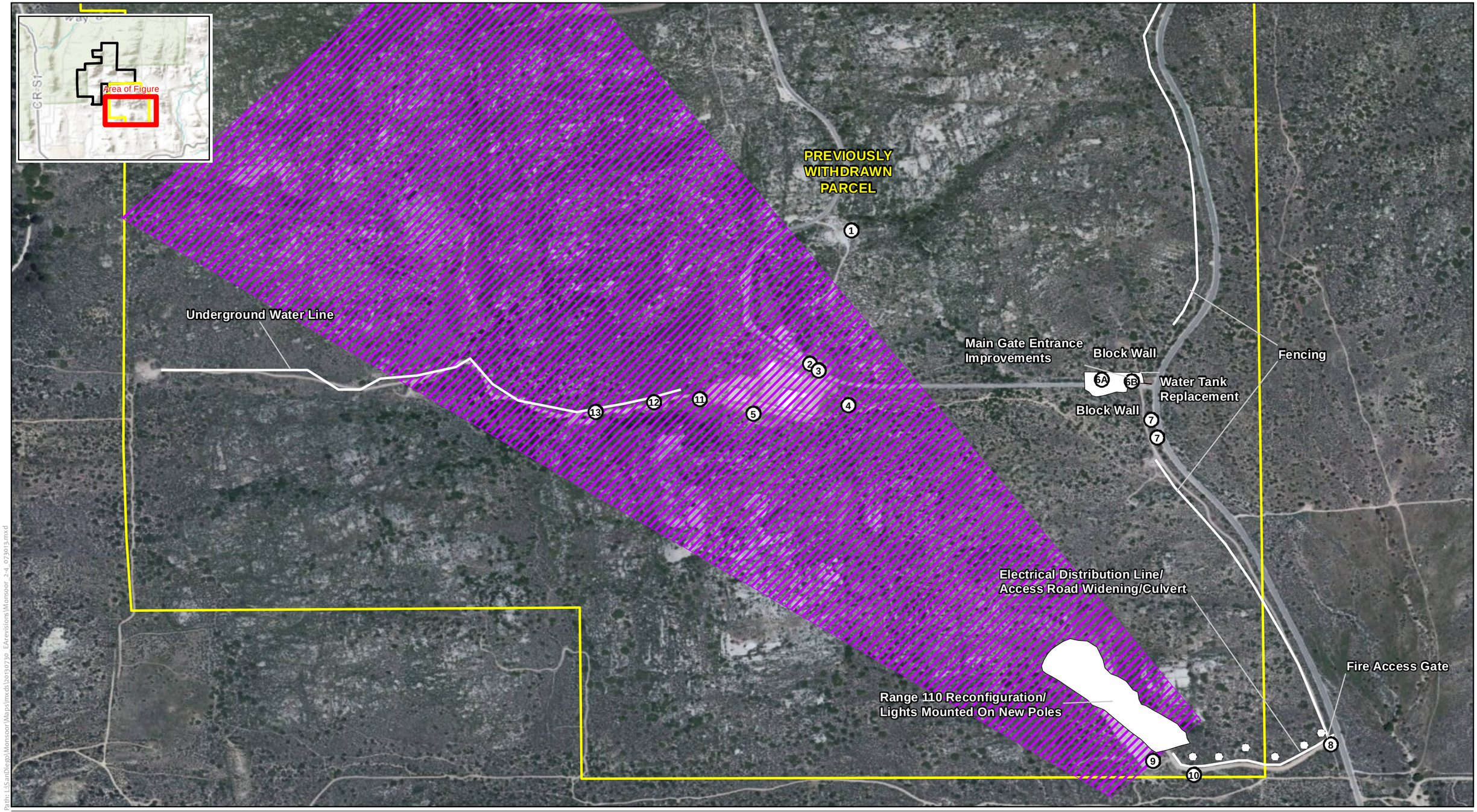

0 1,000 2,000 Feet

Other Proposed Action Features Not Covered Under MILCON P-888

Proposed Range 110 SDZ

1 Erosion Improvement Area

Source: ESRI (2010), NAVFAC SW 2011

Figure 2-4
Other Proposed Actions Within the Existing Withdrawal

San Diego County, California

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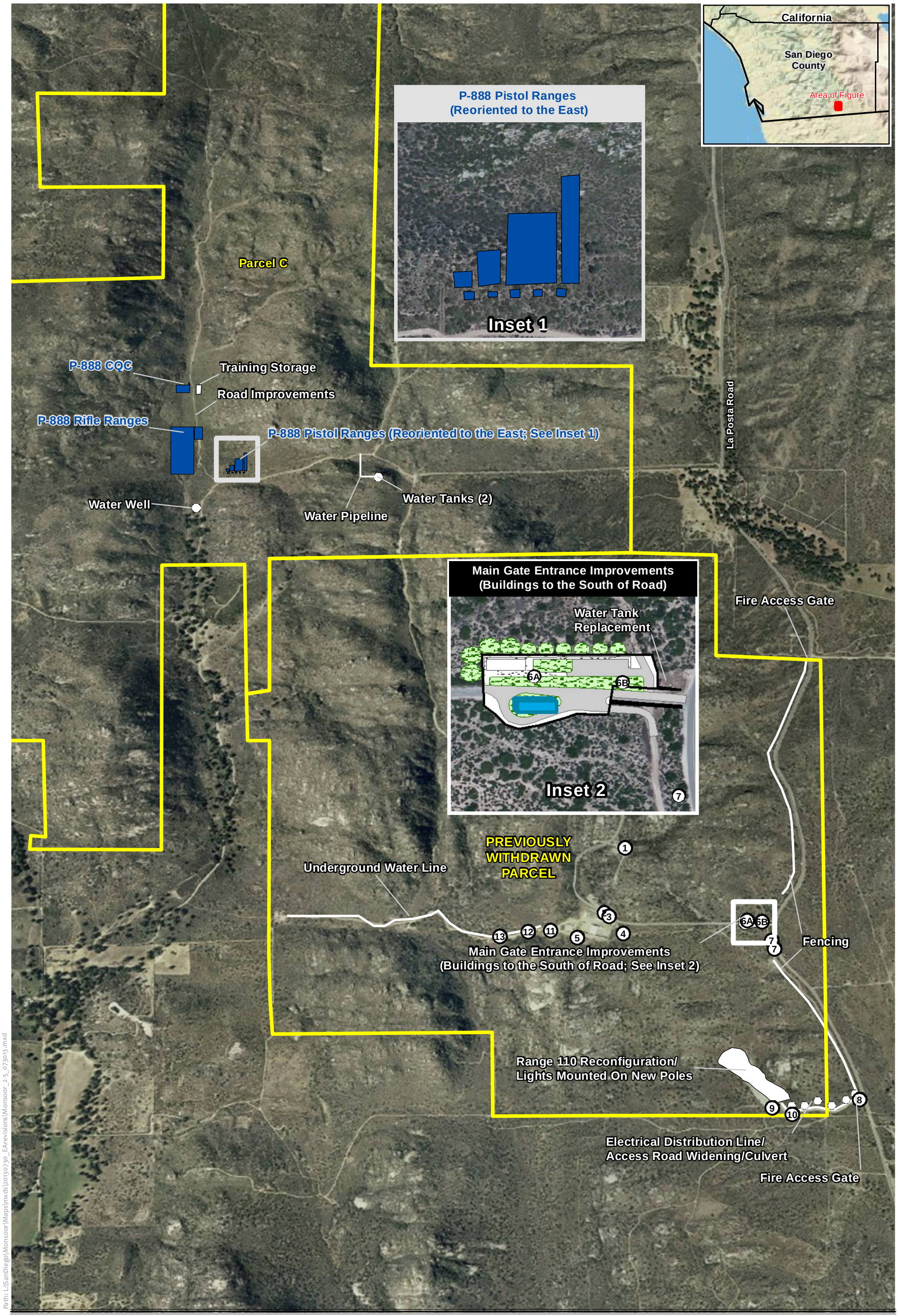

Figure 2-5
Alternative 2

San Diego County, California

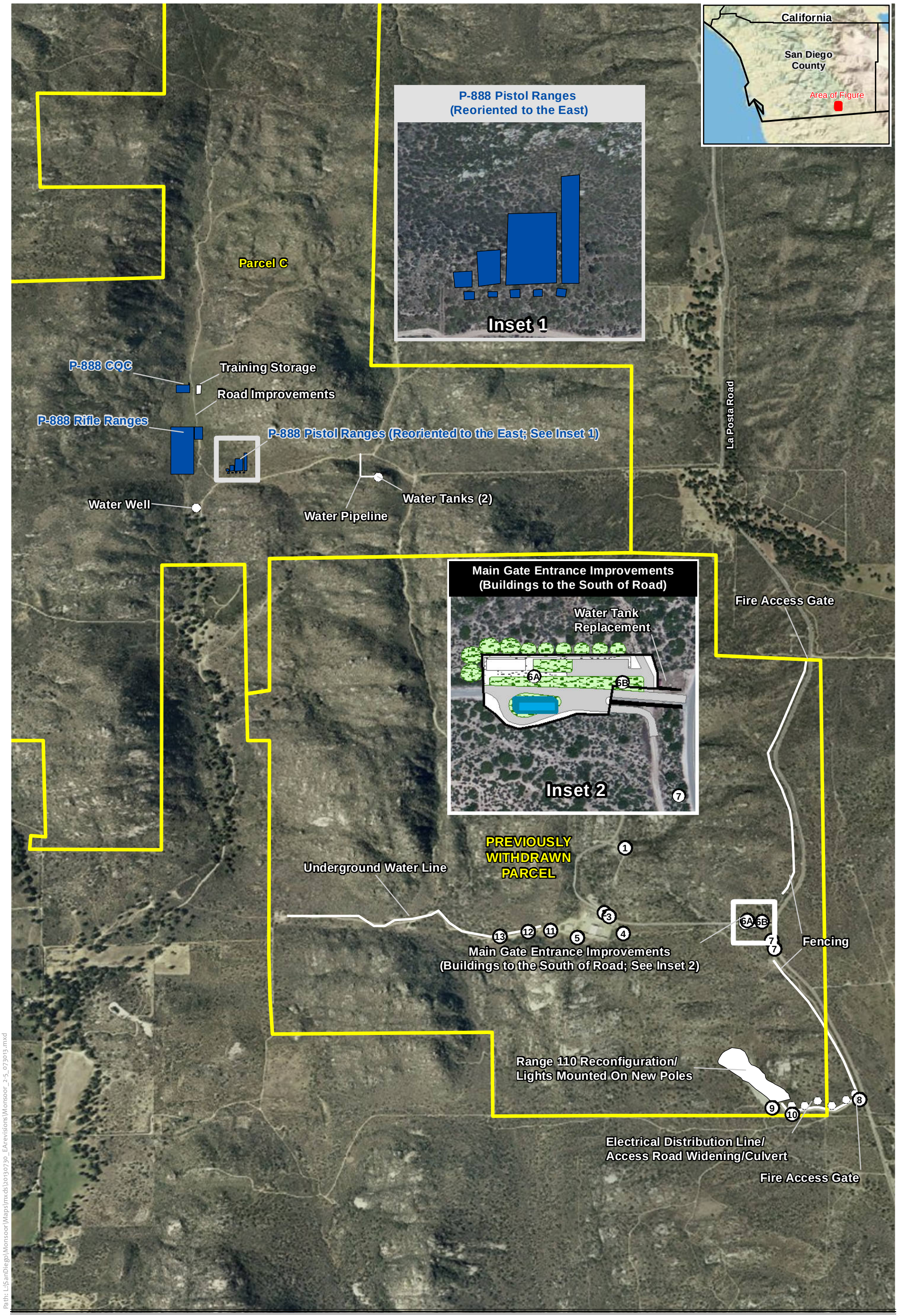

Figure 2-5
Alternative 2

San Diego County, California

Table 2-2 Components of the Alternatives

Component	Alternative 1 (Proposed Action/ Preferred Alternative)	Alternative 2
Parcel C Warfare Training Facility		
P-888 CQC Structure	**Permanent Impact** 2.40 acres (0.97 hectare) **Temporary Impact** 0.50 acre (0.20 hectare)	**Permanent Impact** 2.40 acres (0.97 hectare) **Temporary Impact** 0.63 acre (0.25 hectare)
MILCON P-888 Rifle Range (fully baffled)[1]	**Permanent Impact** 9.00 acres (3.64 hectares) **Temporary Impact** 1.00 acre (0.4 hectare)	**Permanent Impact** 9.00 acres (3.64 hectares) **Temporary Impact** 1.00 acre (0.4 hectare)
MILCON P-888 Pistol Ranges[2]	**Permanent Impact** 3.70 acres (1.50 hectares) **Temporary Impact** 0.30 acre 0.12 hectare	**Permanent Impact** 3.70 acres (1.50 hectares) **Temporary Impact** 0.30 acre 0.12 hectare
Shotgun Range[3]	**Permanent Impact** 1.55 acres (0.63 hectare) **Temporary Impact** 0.50 acre 0.20 hectare	**Permanent Impact** None **Temporary Impact** None
MILCON P-888 Permanent Water Well **MILCON P-888 Test Wells** (includes road to wells)[4]	**Permanent Impacts** 0.39 acre (0.16 hectare) **Temporary Impact** 0.61 acre (0.25 hectare)	**Permanent Impacts** 0.39 acre (0.16 hectare) **Temporary Impact** 0.61 acre (0.25 hectare)
Training Storage	**Permanent Impacts** 0.8 acres (0.32 hectare) **Temporary Impact** None	**Permanent Impacts** 0.8 acres (0.32 hectare) **Temporary Impact** None

Table 2-2 Components of the Alternatives

Component	Alternative 1 (Proposed Action/ Preferred Alternative)	Alternative 2
Parcel C Road	**Permanent Impacts** 4.02 acres (1.63 hectare) **Temporary Impact** 1.92 acres (0.78 hectare)	**Permanent Impacts** 0.18 acre (1.63 hectare) **Temporary Impact** 1.92 acres (0.78 hectare)
Construction at the Main Gate		
Structures at the Main Gate Entrance[5]	**Permanent Impact** 4.57 acres (1.85 hectare) **Temporary Impact** None	**Permanent Impact** 4.57 acres (1.85 hectare) **Temporary Impact** None
Replace Existing Water Tank	**Permanent Impact** None **Temporary Impact** 0.01 acre (0.01 hectare)	**Permanent Impact** None **Temporary Impact** 0.01 acre (0.01 hectare)
Extension of Fence on La Posta Road	**Permanent Impact** 0.17 acre (0.06 hectare) **Temporary Impact** 1.28 acres (0.52 hectare)	**Permanent Impact** 0.17 acre (0.06 hectare) **Temporary Impact** 1.28 acres (0.52 hectare)
Realignment of Range 110 and Range 110 Structures		
New Aboveground Electrical Distribution Line[6] Tubular Steel Poles (x6)	**Permanent Impact** 0.0006 acre (0.0002 hectare) **Temporary Impact** None	**Permanent Impact** 0.0006 acre (0.0002 hectare) **Temporary Impact** None
Range 110 Access Road Widening[7]	**Permanent Impact** 2.78 acres (1.13 hectares) **Temporary Impact** None	**Permanent Impact** 2.78 acres (1.13 hectares) **Temporary Impact** None
Range 110 Lights[8] (x10)	**Permanent Impact** N/A **Temporary Impact** N/A	**Permanent Impact** N/A **Temporary Impact** N/A

Table 2-2 Components of the Alternatives

Component	Alternative 1 (Proposed Action/ Preferred Alternative)	Alternative 2
Range 110 Structure Realignment	**Permanent Impact** 0.74 acre (0.30 hectare) **Temporary Impact** 0.54 acre (0.22 hectare)	**Permanent Impact** 0.74 acre (0.30 hectare) **Temporary Impact** 0.54 acre (0.22 hectare)
Upgrades at the Range Complex		
New Underground Water Pipeline and Electrical Lines	**Permanent Impact** None **Temporary Impact** 0.5 acre (0.2 hectare)	**Permanent Impact** None **Temporary Impact** 0.5 acre (0.2 hectare)
Erosion Control Structures (e.g., revetment area)	**Permanent Impact** 1.5 acres (0.61 hectare) **Temporary Impact** 0.61 acres (0.25 hectare)	**Permanent Impact** 1.5 acres (0.61 hectare) **Temporary Impact** 0.61 acres (0.2.5 hectare)
Total	**Permanent Impact** **31.62 acres** **(12.8 hectares)** **Temporary Impact** **7.66 acres** **3.09 hectares)**	**Permanent Impact** **30.07 acres** **(12.17 hectares)** **Temporary Impact** **7.16 acres** **(2.89 hectares)**

Notes:

[1] This includes adjacent 7.62-millimeter Rifle (Sight-In) Range and Rifle (Assaults) Ranges. Assumes there is a 50-foot (15-meter) buffer around both. Assumes 5.55 acres (2.25 hectares) for the Sight-In Range and 0.85 acre (0.34 hectare) for the Assaults Range.

[2] This includes Linear, Sight-In, Steel, Instinctive and Tactical pistol ranges. Assumes the pistol ranges are adjacent to each other with 10 feet (3 meters) between the ranges and a 50-foot (15-meter) buffer area around this area.

[3] This includes a 50-foot (15-meter) graveled buffer area around the shotgun range.

[4] Assumes that the water line connections located in Parcel C will be primarily within the existing road.

[5] This includes the entire paved area at Main Gate entrance (i.e., Range Control Building, paved Visitor Parking Lot, paved entrance, and security gate system). This includes a 50-foot (15-meter) Fuel Modification area around the Range Control Building and Gate Sentry House.

[6] Assumes the tubular steel poles would be located within 5 feet 1.5 meters) of the Range 110 access road. The permanent disturbance acreage would be approximately 0.0001 acre (5.57×10^{-5} hectare) for all six poles.

[7] Assumes that culverts would be installed as needed under the roadway and would be approximately 30 feet (9 meters) in length.

[8] Assumes the lights would be installed on new telephone poles at Range 110 within the already disturbed footprint.

2.3 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

2.3.1 MARINE CORPS BASE CAMP PENDLETON

The use of range and facilities for training and operations at Marine Corps Base Camp Pendleton, California was considered; however, this alternative was not carried forward for further analysis for the following reasons:

- While Marine Corps Base Camp Pendleton is located within a 1-hour drive of Naval Base Coronado, it does not have all the facilities required by NSWG-1 collocated. SEALs could not seamlessly move from one training evolution to another with minimal transit time. SEALs and NSWG-1 staff would have to travel to different parts of the base to accomplish training; and,
- While Marine Corps Base Camp Pendleton would offer privacy of training, NSWG-1 does not have primacy of use at Marine Corps Base Camp Pendleton. Scheduling at Marine Corps Base Camp Pendleton uses a priority system, which allows for 180 days of U.S. Marine Corps unit training and 90 days of Navy unit training. For this reason, NSWG-1 would not be able to control scheduling to meet the training needs of deploying units, and would not be guaranteed adequate range space to train at this installation prior to critical deployment dates.

For these reasons, Marine Corps Base Camp Pendleton would not fulfill the purpose and need for the Proposed Action and this alternative was not carried forward for further analysis.

2.3.2 CAMP BILLY MACHEN

The use of Camp Billy Machen in Niland, California for training and operations was considered; however, it is not carried forward for further analysis for the following reason:

- Camp Billy Machen is approximately 154 miles (248 kilometers), or an approximately 2.5-hour drive, from Naval Base Coronado. This distance would not allow NSWG-1 to meet their ITEMPO requirements;
- The current focus of training at Camp Billy Machen is predominantly Land Warfare training. Camp Billy Machen is already used by NSWG-1 units conducting up to eight 21-day training evolutions per year. The redesign of the SWAT 4 and 5 areas at Camp Billy Machen will include some areas for "refresher tactical ground mobility training;" however, there is not enough physical space for an additional eight 21-day training evolutions per year; and,
- Camp Billy Machen is located within the Chocolate Mountain Aerial Gunnery Range, a U.S. Marine Corps facility. NSW does not have primacy of use on the Chocolate Mountain Aerial Gunnery Range and does not have the ability to construct ranges or facilities.

Camp Billy Machen does not have all the facilities required by NSWG-1 collocated. SEALs could not seamlessly move from one training evolution to another with minimal transit time. SEALs and NSWG-1 staff would have to travel to different parts of the base to accomplish training. In addition, the distance from Naval Base Coronado to Camp Billy Machen would not meet ITEMPO requirements.

For these reasons, Camp Billy Machen would not fulfill the purpose and need for the Proposed Action and this alternative is not carried forward for further analysis.

2.3.3 SILVER STRAND TRAINING COMPLEX

The use of the Silver Strand Training Complex in Coronado, California for training and operations was considered; however, it is not carried forward for further analysis for the following reasons:

- The Proposed Action must be sited at a facility that has the capacity to support the development of multiple, collocated small arms ranges and other training mockups which would allow SEALs to seamlessly progress from one evolution to another. While the Silver Strand Training Complex does have the space for some small arms ranges, it does not have enough space for all the ranges required for assaults training to be collocated. In addition, firing ranges are incompatible with the location of the coastal campus due to the noise generated by the operation of the ranges and the proximity to sensitive receptors (i.e., residences, schools, and federally-listed nesting birds on the beach). Ranges would also need Surface Danger Zones which would either restrict the public's access to the beach and coastal waters near to the range sites or require the ranges to be relocated indoors, which would be cost prohibitive.

- The Silver Strand Training Complex does not provide rugged, mountainous terrain and extreme environmental conditions (i.e., diverse weather conditions). The Silver Strand Training Complex is a coastal installation where weather conditions are very similar throughout the year; therefore, this installation is better suited for amphibious operations.

For these reasons, the Silver Strand Training Complex would not fulfill the purpose and need for the Proposed Action and this alternative is not carried forward for further analysis.

2.4 RESOURCE AREAS CONSIDERED BUT NOT CARRIED FORWARD FOR DETAILED ANALYSIS

2.4.1 AIRSPACE

None of the proposed alternatives presented would affect the use of airspace. Therefore, impacts on airspace do not warrant detailed analysis in this EA.

2.5 RESOURCES ANALYZED IN DETAIL

For a detailed description of potential environmental consequences, refer to Chapter 3, Affected Environment and Environmental Consequences. The potential environmental consequences associated with implementation of the Proposed Action or Alternative 2 are presented and compared in Chapter 3, Table 3-1.

2.6 SPECIAL CONSERVATION AND CONSTRUCTION MEASURES

This section presents proposed measures designed to avoid and/or minimize potential significant impacts to air quality, natural resources including special-status plants and rare natural communities, common and rare wildlife, and other threatened and endangered species, cultural and geologic resources, and public health and safety. These conservation measures would be implemented as part of the selected alternative and would be implemented during the design, construction, and operation stages of the selected alternative to minimize and avoid potential significant impacts. These measures are presented in this portion of the document to allow them to be included as part of the impact analysis in Chapter 3.

2.6.1 ENVIRONMENTAL PROTECTION PLAN

The construction contractor will submit an Environmental Protection Plan for approval by the Naval Base Coronado Environmental Department and the Contracting Officer prior to commencement of construction. Prior to submittal of the Environmental Protection Plan, the construction contractor will meet with the Naval Base Coronado Environmental Department and the Contracting Officer for the purpose of discussing the implementation of the initial Environmental Protection Plan, possible subsequent revisions and additions to the plan, including reporting requirements, and methods for administration of the plan.

The plan will discuss measures the contractor will take to prevent or control releases of contaminants into the air, soil, and water during construction. Specifically, the plan will address:

- Weed control;
- Management and removal of trash and rubbish;
- Human waste management;
- Air pollution controls on equipment and operations;
- Dust control;
- Application of paints and coatings;
- Recycling of project waste or demolition debris;
- Contractor parking and laydown;
- Temporary utility services;

- Smoking plan;
- Limits on construction due to wildlife or habitat;
- Procedures if site contamination is discovered;
- Historical, archaeological, and paleontological preservation procedures;
- Clearing and grubbing;
- Equipment maintenance and fueling;
- Hazardous materials use;
- Hazardous waste storage and disposal; and,
- Fire prevention precautions.

2.6.2 AIR QUALITY

Particulate matter emissions from construction and operations activities would be minimized through dust abatement measures, including:

- Applying soil stabilizers to disturbed, inactive portions of the project area which will help bind soil together and make it less susceptible to erosion;
- Replacing ground cover in disturbed areas with appropriate native plant species;
- Watering exposed soil in disturbed areas with adequate frequency for continued moist soil;
- Suspending excavation and grading activities during periods of high wind activity; and,
- Cleaning (washing) all vehicles before they leave the project area.

Additionally, construction contractors will be required to obtain their own air quality permits for generators from the San Diego Air Pollution Control District (APCD).

2.6.3 BIOLOGICAL RESOURCES

The following avoidance and impact minimization measures are included in the selected alternative to reduce the potential for significant impacts to sensitive biological resources, including Endangered Species Act protected species (e.g., QCB). These measures were developed from existing plans, regulations, and coordination between the Navy and USFWS.

2.6.3.1 Biological Monitor

At the onset of construction, a Navy-approved biological monitor will conduct a site visit to ensure that designated work areas are clearly marked and to brief construction crews on sensitive resources and the prevention of wildfires. A biological monitor will be present during the initial phases of clearing for construction projects to ensure that construction sites are appropriately marked and to ensure adequate communication regarding conservation measures

and the location of QCB habitat. The biological monitor shall review and approve all vegetation clearing for temporary off-road access. The biological monitor will be onsite, as needed, for the duration of construction. The biological monitor will be responsible for reporting all known takes of threatened or endangered species that occur as a result of implementation of the Proposed Action. Designated work area flagging and erosion control best management practices shall be checked regularly, including within 24 hours of any storm event, and maintained throughout the construction phase.

All contractors or Navy construction personnel will be briefed regarding the presence of QCB and QCB habitat at Camp Michael Monsoor and the need to minimize the effective size of project footprints (including fire prevention). Briefings or range manuals distributed to Camp Michael Monsoor trainees will include material regarding QCB appearance and biology. The construction crew will be required to immediately report any suspected QCB take to the biological monitor; any dead butterfly specimens that are suspected to be QCB will be collected and provided to the biological monitor.

2.6.3.2 Minimize Impacts to Quino Checkerspot Butterfly and its Habitat

Because the QCB is known to exist within the Previously Withdrawn Parcel and Parcel C, avoidance and impact minimization measures will be required to avoid/minimize direct impacts to the QCB and occupied QCB habitat. The Navy will be responsible for funding and implementing these requirements; however, additional requirements for Endangered Species Act compliance may be applicable once the USFWS issues the Biological Opinion for the proposed project:

- 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 Camp Michael Monsoor trainees will include material regarding QCB appearance and biology.

In addition to the measure listed above, direct impacts to QCB and QCB habitat associated with the construction and expansion of project facilities will be specifically avoided/minimized as follows:

- Larval clusters that occur within the proposed construction area in Parcel C, and in all other areas where facilities development or expansion is proposed, will be avoided, to the extent practicable. Specifically, the following actions will be followed:
    - Construction personnel will use existing roads or existing parking lots for staging areas whenever possible;
    - Botanical surveys will be conducted as close as possible to the flowering period of white snapdragon and Chinese houses (*Collinsia concolor*) 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;

- Construction personnel will avoid host plants, when possible. This may be accomplished by slight modifications in construction boundaries, where possible, or by marking a buffer area around host plants. The USFWS acknowledges that, due to host plant distribution within the proposed construction footprint, in many instances, avoiding host plants will not be possible; and,
- Existing host plant surveys in and around the MILCON P-888 area will provide the expected locations for host plants; however, the biological monitor should be able to identify host plants in the field;

- Vegetation clearing will occur outside of flight season. Vegetation clearing outside of the project area shall be reported to the Navy Project Manager within 24 hours of discovery.

In addition to the above-listed avoidance/minimization measures, 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 in order to track takes, and associated conservation measures. The USFWS Division of Law Enforcement, San Diego, California (619-557-5063) and the USFWS Carlsbad 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.

2.6.3.3 Non-Native Species Introduction Prevention

The Navy will continue to monitor and address invasive species on Camp Michael Monsoor, as appropriate. The construction team will implement the following measures to prevent or minimize the spread of invasive plant species:

- 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;
- To prevent invasive plant seeds, roots, or other propagules from being transported off Camp Michael Monsoor to the project area as well as from the project area to other parts of Camp Michael Monsoor, 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;
- 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;

- All project personnel will ensure that their boots and equipment are free of visible soil and debris before entering or leaving the project area; and,
- Any 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.

2.6.3.4 Erosion Control during Construction

A grading plan will be prepared and approved by NAVFAC and the Naval Base Coronado 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 Naval Base Coronado botanist.

2.6.3.5 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 Migratory Bird Treaty Act. 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 Naval Base Coronado wildlife biologist) and avoided. No nighttime construction (including the use of lighting) will occur during the nesting season (March through August).

2.6.3.6 General Biological Minimization Measures

1. 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 best management practices 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. Seed collection will be conducted two years prior to start of construction. Plant surveys shall include *Collinsia*.

2. 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;

3. 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);
4. 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;
5. To avoid attracting predators, the project area will be kept as clean of debris as possible;
6. No pets, specifically cats and dogs (except military working dogs), will be allowed at Camp Michael Monsoor or in the field as they may result in an increased level of predation or injury to sensitive natural resources;
7. All vehicle traffic will be restricted to construction areas and currently established dirt or paved roads. No off-road vehicle use will be permitted; and,
8. All expended training material generated during the course of training, such as blank ammunition cartridges, shall be policed, picked up, and removed after each training event to the greatest extent possible.

2.6.3.7 Biological Opinion Compliance

All measures provided in the USFWS Biological Opinion that address potential impacts to the QCB will be complied with.

2.6.4 CULTURAL RESOURCES

Should potential subsurface archaeological deposits be detected in the course of construction, all work in the discovery area will cease until an archaeologist can provide input regarding the significance of the resource.

All known cultural resources located within the area of potential effect will be protected with temporary fencing installed under the direction of the Naval Base Coronado Cultural Resources Program Manager. The fenced areas will be recognized as work exclusion zones, and no personnel or equipment will encroach on these areas. Once the work for the Proposed Action is complete, the fencing will be removed.

2.6.5 GEOLOGY

2.6.5.1 Storm Water Pollution Prevention Plan

The construction contractor will develop a Storm Water Pollution Prevention Plan (SWPPP), along with an erosion control plan, in accordance with applicable regulations and

standards. The SWPPP will incorporate best management practices and will be submitted to the Contracting Officer and made available to state and local agencies, as required.

Since the disturbed area would exceed 1.0 acre (0.4 hectare), the construction contractor will be required to prepare the Notice of Intent for the SWPPP and pay appropriate National Pollutant Discharge Elimination System (NPDES) fees and surcharges to the state Regional Water Quality Control Board in order to obtain a waste discharge number for the selected alternative. At the completion of work, the construction contractor will prepare and file a Notice of Termination.

2.6.5.2 Erosion Control

Camp Michael Monsoor and its associated ranges are managed as federal property; therefore, operations are required to comply with the Federal Soil Conservation Act. Federal land owners are required to control and prevent erosion by conducting surveys and implementing conservation measures (Soil Conservation Act, 16 U.S.C. Section 5901).

The Navy is in the process of identifying areas prone to erosion at Camp Michael Monsoor, and is completing a feasibility study on certain locations of concern. Erosion control practices, as outlined in the SWPPP, will be inspected and reviewed frequently and revised as required to accommodate current construction phasing and conditions. The construction contractor will submit Erosion and Sediment Control Inspection Reports (on a form provided at the preconstruction conference or included within the SWPPP) to the Contracting Officer once every 7 days and within 24 hours of a storm event producing 0.5 inch (1.3 centimeters) or more of rain. During construction, erosion and sediment in stormwater runoff will be controlled by utilization of best management practices by the construction contractor. The construction contractor will be required to prepare and implement a soil erosion and sedimentation control plan prior to commencement of land disturbance activities. The soil erosion and sedimentation control plan will incorporate structural erosion control measures such as silt fence, fiber rolls, and temporary construction entrances.

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 (e.g., 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 Naval Base Coronado botanist. Top soil will be retained and re-used in re-vegetation of temporary disturbance areas. Seed collection will occur two years prior to re-vegetation. The Quino Checkerspot Butterfly Habitat Enhancement Plan for Camp Michael Monsoor, Campo, California will be consulted during work plan development.

To minimize erosion potential during project construction, parking and driving will be restricted to designated areas, and no off-road vehicular traffic, including parking or driving in undisturbed areas, will be allowed.

2.6.5.3 Spill Prevention Control and Countermeasures Plan

The construction contractor will develop a Spill Prevention Control and Countermeasures (SPCC) Plan in accordance with applicable regulations and standards. The SPCC Plan will incorporate best management practices and will be submitted to the Contracting Officer and made available to state and local agencies, as required. The SPCC Plan will be prepared and maintained to prevent, control, and mitigate potential oil spills from diesel tanks at Camp Michael Monsoor (if tanks are used to store diesel onsite during construction of the project).

2.6.6 PUBLIC HEALTH AND SAFETY

2.6.6.1 Hazardous Waste Management Plan

The construction contractor will submit a Hazardous Waste Management Plan for approval by the Contracting Officer prior to commencement of construction activity. This plan may be included as part of the overall Environmental Protection Plan. Management and disposal of hazardous waste will comply with applicable federal, state, and local regulations.

Prior to shipment of any material offsite, the construction contractor, in consultation with the Contracting Officer, will evaluate whether the material is regulated as a hazardous waste in addition to being regulated as a hazardous material; this evaluation will be conducted for the purpose of determining proper shipping descriptions, labeling requirements, etc.

The construction contractor will minimize the generation of hazardous waste to the maximum extent practicable. The construction contractor will take all necessary precautions to avoid mixing clean and contaminated wastes. The construction contractor will identify and evaluate recycling and reclamation options as alternatives to land disposal. All transportation related shipping documents will be provided to the Contracting Officer, including draft hazardous waste manifests, draft land disposal restriction notifications, draft asbestos waste shipment records, draft manifests for polychlorinated biphenyls, draft bills of lading for hazardous materials, waste profiles, and supporting waste analysis documents for review, a minimum of 14 days prior to anticipated pickup.

Packaging assurances will be furnished prior to transporting hazardous materials. “Generator copies” of hazardous waste manifests, land disposal restriction notifications, asbestos waste shipment records, “generator copies” of manifests used for initiating shipments of polychlorinated biphenyls, bills of lading, and supporting waste analysis documents will be furnished when shipments are originated. “Receipt copies” of hazardous waste manifests, polychlorinated biphenyls manifests, and asbestos waste shipment records at the designated disposal facility will be furnished no later than 35 days after acceptance of the shipment.

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3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

RESOURCES ANALYZED IN DETAIL

The potential environmental impacts associated with implementation of the Proposed Action and alternatives are presented and compared in Table 3-1. Detailed descriptions of potential environmental consequences for each resource area are provided in the sections that follow:

- Air Quality (Section 3.1);
- Biological Resources (Section 3.2);
- Cultural Resources (Section 3.3);
- Geology and Soils (Section 3.4);
- Land Use (Section 3.5);
- Noise (Section 3.6);
- Public Health and Safety (Section 3.7) (including hazardous materials and waste);
- Public Services and Utilities (Section 3.8);
- Socioeconomics (Section 3.9);
- Traffic and Circulation (Section 3.10);
- Visual Resources (Section 3.11); and,
- Water Quality and Hydrology (Section 3.12).

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Air Quality	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Construction activities would generate temporary (short-term) emissions such as fugitive dust emissions (suspended particulate matter [PM_{10}] and fine particulate matter [$PM_{2.5}$]) from grading activities and exhaust emissions (nitrogen oxides [NO_X], sulfur dioxide [SO_2], carbon monoxide [CO], volatile organic compounds [VOCs], $PM_{2.5}$, and PM_{10}) from construction equipment and vehicles. Similar types of fugitive dust and exhaust emissions would be generated by the operation of ground vehicles and weapons firing. These would be long-term emissions. Incremental emissions of criteria pollutants associated with construction and operation of Alternative 1 would primarily occur on a localized basis within Camp Michael Monsoor, subject to dispersion due to wind mixing and other dissipation factors. Additionally, no sensitive receptors would be located within the proximity of areas of major localized impacts, and the Navy would implement recommended construction measures described in Section 2.6.2. With implementation of these measures, potential impacts to air quality from the implementation of Alternative 1 would be short-term, localized, and not significant.	Alternative 2 would result in the same types of air quality impacts as those described for Alternative 1, except emissions of criteria pollutants generated during the construction of Alternative 2 would be slightly lower than those estimated for Alternative 1 since construction of the shotgun range would not occur. Impacts from implementation of Alternative 2 would still be within the same localized area, order of magnitude, and timeframe of impacts to air quality as those described for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to air quality.	With the No Action Alternative, existing conditions for air quality would remain unchanged. Therefore, impacts related to air quality would not be significant.
Biological Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	With implementation of Alternative 1, direct permanent impacts to vegetation may include loss of vegetation due to construction. Additional direct permanent impacts to vegetation may occur from foot and possible vehicle traffic associated with training activities, periodic maintenance, and the repair of project facilities. However, none of the potentially affected plant species are rare plant species or	Under Alternative 2, the permanent and temporary impacts to vegetation and wildlife communities that would occur from construction of the new shotgun range would not occur. All other impacts would be the same	With the No Action Alternative, existing conditions for biological resources would remain unchanged. Therefore, Impacts to

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	are federally listed as threatened or endangered. All avian species found within the project area are protected under the Migratory Bird Treaty Act. With implementation of the avoidance and minimization measures described in Section 2.6.3.2, the construction phase of the project would have no direct impacts to nesting birds that are protected by the Migratory Bird Treaty Act. With implementation of the proposed conservation measures, no significant direct or indirect operation impacts would occur to plant communities or wildlife species with implementation of Alternative 1. The Quino checkerspot butterfly (QCB) is the only federally listed rare wildlife species potentially affected by Alternative 1. With implementation of pre-construction QCB surveys and the special conservation and construction measures agreed upon with U.S. Fish and Wildlife Service (USFWS) and described in Section 2.6.3, there would be no significant impacts to QCB during the construction phase of Alternative 1. Implementation of the Proposed Action would result in vegetation impacts to 39.28 acres (15.89 hectares) of QCB habitat. Based on the minimal amount of habitat removal when compared to available habitat for this species, no significant impacts would occur to QCB during operation of Alternative 1.	as those described for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to plant communities or wildlife species.	biological resources would not be significant.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Cultural Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	There are previously recorded cultural resources in the project area; however, with the application of the avoidance and minimization measures described in Section 2.6.4, implementation of Alternative 1 would have "no adverse effect" on the known listed, contributing, or eligible cultural resources in the area of potential effect.	The same effects to cultural resources that could occur under Alternative 1 could also occur under Alternative 2; however, application of the avoidance and minimization measures would ensure that implementation of Alternative 2 would have "no adverse effect" on the known cultural resources in the area of potential effect.	With the No Action Alternative, existing conditions for cultural resources would remain unchanged. Therefore, impacts to cultural resources would not be significant.
Geology and Soils	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	With implementation of the recommended avoidance and minimization measures described in Section 2.6.3.4 and Section 2.6.5, Alternative 1 would not have significant impacts to geological resources. Implementation of the erosion control improvements at Range 110 and the Range Complex would be a beneficial impact to the existing erosion problems at Camp Michael Monsoor.	With the implementation of the recommended avoidance and minimization measures described in Section 2.6.3.4 and Section 2.6.5, Alternative 2 would not have significant impacts to geological resources.	With the No Action Alternative, existing conditions for geology and soils would remain unchanged. Therefore, no significant impacts to geology or soils would occur.
Land Use	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would involve the installation and use of new small arms firing ranges at Parcel C. Public Land Order No. 7807 was issued by the U.S. Department of the Interior, Bureau of Land Management (BLM) on January 17, 2013 and withdrew BLM land at Parcel C from public use, transferring administrative jurisdiction to the U.S. Department of the Navy (Navy) for exclusive military use. Unmaintained trails exist in the area; however, recreationists would be prohibited from entering Surface Danger Zones at	The same impacts to land use that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to land use.	With the No Action Alternative, existing conditions for land use would remain unchanged. Therefore, no significant impacts to land use would occur.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	Parcel C during controlled live-fire activities. The loss of recreational use at Parcel C was previously analyzed under the La Posta Mountain Warfare Training Facility Final Environmental Assessment (EA). Additionally, while military use would limit recreationist use within this area, other local public lands would be available within the vicinity of Camp Michael Monsoor and other forms of recreation in the area would remain unaffected. Implementation of Alternative 1 would not have a significant impact on recreational uses, or any other land uses, in the area of Camp Michael Monsoor.		
Noise	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Alternative 1 would generate temporary construction noise. Due to the distance and terrain, construction noise levels at the nearest residences would be below the daytime ambient noise level and would not result in significant noise impacts. Alternative 1 would involve the use of noise-generating sources, including operational vehicles and firearms. Use of vehicles during operations would increase noise levels along La Posta Road by less than 1 dBA Leq (A-weighted decibel sound level equivalent) and would not represent an adverse increase in traffic noise in the project area. Further, the actual noise level from weapons firing activities would be approximately 30 dBA Leq, which would not adversely increase nighttime or daytime ambient noise levels at the nearest residences. Therefore, implementation of Alternative 1 would not result in significant noise impacts.	Alternative 2 would differ from Alternative 1 in three ways: (1) the orientation of the pistol ranges would be different; (2) the shotgun range would not be constructed; and (3) the Range Control Building and Gate Sentry House would be constructed at an alternate location; however, noise impacts associated with development and operation of Alternative 2 would be equivalent to the impacts discussed for Alternative 1. Therefore, implementation of Alternative 2 would not result in significant noise impacts.	With the No Action Alternative, existing conditions for noise would remain unchanged. Therefore, there would not be any significant impacts related to noise.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Public Health and Safety	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would not result in significant impacts to public health and safety from the improper use, handling, or disposal of hazardous materials or unexploded ordnance The construction contractor would strictly follow measures in the project's Environmental Protection Plan to prevent or control releases of contaminants into the air, soil, and water during construction. All disturbed soils would remain on site and any lead and metals found would be recycled, where feasible. The Range Maintenance Standard Operating Procedure guidelines would be strictly followed during project construction and operations to ensure that lead encountered onsite would be properly characterized and contained and would not migrate off the range site. Any hazardous materials that are encountered during Alternative 1 construction or operations would be removed from the site and disposed of at a landfill that is authorized to receive hazardous waste. Implementation of Alternative 1 would involve weapons firing at Parcel C, including the use of firearms at the proposed Close Quarters Combat (CQC) facility and small arms ranges. To ensure public safety, all proposed ranges would be constructed in accordance with Naval Facilities Engineering Command (NAVFAC) 1027/3B guidance on construction of firing ranges and rules regarding Surface Danger Zones. Additionally, range management practices (i.e., use of warning signs and flags) would continue to be implemented at Camp Michael Monsoor to ensure the ranges are properly maintained. Based on the continued implementation of established range management practices and proper hazardous waste management practices, no adverse environmental health	The same impacts to public health and safety that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to public health and safety.	With the No Action Alternative, existing conditions for public health and safety would remain unchanged. Therefore, there would be no significant impacts to public health and safety.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	and safety impacts would occur. Therefore, implementation of Alternative 1 would not have a significant impact related to public health and safety.		
Public Services and Utilities	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Alternative 1 would not result in an increased need for police or fire services, and natural gas is currently unavailable and not required for project construction or operation. Solid waste from construction would be transported offsite and solid waste facilities in the area would have availability and adequate capacity to accept this waste. The installation of lights at Range 110 and the installation of an aboveground electrical distribution line along the existing access road between La Posta Road and Range 110 would have positive impacts on the mission at Camp Michael Monsoor by allowing night training, while also upgrading the electrical system as a whole. Alternative 1 would generate a small volume of wastewater during construction due to worker use of onsite portable toilets; this waste would be removed from the site and disposed of at a wastewater treatment facility that is available and has capacity to receive such waste. During operations, Alternative 1 would generate a small amount of liquid waste, resulting from use of the toilet room and kitchen in the proposed Range Control Facility; this facility would be equipped with a septic system, and a leach field would be installed across the street to receive and filter waste from the septic tank. None of the Alternative 1 facilities would contain toilet rooms or showers that would require a new connection to a wastewater treatment facility. The existing septic systems at Camp Michael Monsoor would remain	The impacts to fire or police services, water, wastewater, solid waste services, and natural gas/petroleum from Alternative 2 would be the same as those under Alternative 1. Therefore, implementation of Alternative 2 would not result in significant impacts to public services and utilities.	With the No Action Alternative, existing conditions for public services and utilities would remain unchanged. Therefore, there would be no significant impacts to public services and utilities.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
	unchanged. Consequently, Alternative 1 would not impact existing wastewater treatment facilities. Water used during construction of Alternative 1 for slope dampening and for dust control at the pistol and rifle ranges would not significantly increase the amount of water used at Camp Michael Monsoor, and the increase would only be temporary. During operations, water for the bathroom and kitchen at Range Control Building would be supplied via an existing water line. Small quantities of water would also be used during Alternative 1 operations for landscaping maintenance purposes to water drought-tolerant native species. Therefore, there would be minimal water use related to implementation of Alternative 1, and significant adverse impacts to the potable water system would not occur. Additionally, the proposed P-888 water well located in Parcel C and the proposed water line from the existing well along the western boundary of the installation to the Range Complex would have positive impacts on water supply and availability. Groundwater usage would be minimal. Implementation of Alternative 1 would result in an improvement to the existing power delivery system and water supply system at Camp Michael Monsoor. No significant adverse impacts to public services and utilities would occur.		

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Socioeconomics (including Environmental Justice)	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would not result in significant impacts to population, employment, or housing in the project area. Furthermore, there would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.	The impacts to population, employment, housing, environmental justice, and environmental justice to children from Alternative 2 would be the same as those under Alternative 1. Therefore, no significant impacts to population, employment, and housing would occur under this alternative. There would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.	With the No Action Alternative, existing conditions for socioeconomics would remain unchanged. Therefore, no significant impacts related to socioeconomics would occur. In addition, there would not be any disproportionately high environmental or health impacts on low-income or minority populations or children.
Traffic and Circulation	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Construction of Alternative 1 would last one to six months and would not substantially affect the existing traffic on La Posta Road or the La Posta Truck Trail. Operation of Alternative 1 would result in a slight increase in vehicle traffic going to and from Camp Michael Monsoor via La Posta Road. However, implementation of Alternative 1 would not result in significant impacts to traffic and circulation.	The same impacts to traffic and circulation that would occur under Alternative 1 would also occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to traffic and circulation.	With the No Action Alternative, existing conditions for traffic and circulation would remain unchanged. Therefore, no significant impacts related to traffic and circulation would occur.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Visual Resources	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Implementation of Alternative 1 would require installation of some permanent project features that would be seen by a low number of sensitive viewers. The project area and surrounding public lands 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. Implementation of Alternative 1 would result in an overall level of visual contrast to the surrounding landscape that is minimal to moderate; this would conform to the Visual Management Objective set for the area. Therefore, implementation of Alternative 1 would not result in significant impacts to visual resources.	Under Alternative 2, less development would occur at Parcel C (e.g., the shotgun range would not be constructed) relative to the Alternative 1. In addition, the new Range Control Building and Gate Sentry House would be constructed to the south of the main road rather than to the north of this road. Impacts from Alternative 2 would be the same or similar to impacts from implementation of Alternative 1 since there is a low number of sensitive viewers in the area that would be affected by development at this location. Implementation of Alternative 2 would result in an overall level of visual contrast to the surrounding landscape that is minimal to moderate; this is consistent with the Visual Management Objective set for the area. Therefore, implementation of Alternative 2 would not result in significant impacts to visual resources.	With the No Action Alternative, existing conditions for visual resources would remain unchanged. Therefore, no significant impacts related to visual resources would occur.

Table 3-1 Summary of Potential Environmental Impacts

Resource Area	Alternative 1 (Proposed Action/Preferred Alternative)	Alternative 2	No Action Alternative
Water Resources and Hydrology	**No Significant Impacts**	**No Significant Impacts**	**No Significant Impacts**
	Surface-disturbing activities associated with implementation of Alternative 1 could potentially increase sedimentation in some surface water resources; however, the Navy would implement recommended avoidance and minimization measures (described under Section 2.6.5) to minimize soil erosion, and the desert conditions limit the potential for significant surface water runoff. The implementation of the erosion control improvements under Alternative 1 would correct many of the erosion problems currently occurring at Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help to minimize erosion from construction since they would already be in place. Compliance with the Range Maintenance Standard Operating Procedure guidelines would ensure that lead does not migrate off the range site and into the groundwater. Therefore, implementation of Alternative 1 would not result in significant impacts to water resources and hydrology.	The same impacts to water resources and hydrology that would occur under Alternative 1 would occur under Alternative 2. Therefore, implementation of Alternative 2 would not result in significant impacts to water resources and hydrology.	With the No Action Alternative, existing conditions for water resources and hydrology would remain unchanged. Therefore, no significant impacts related to water resources and hydrology would occur.

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TERMINOLOGY USED IN THE ENVIRONMENTAL IMPACT ANALYSIS TO DEFINE IMPACTS

The Council on Environmental Quality (CEQ) NEPA regulations define the impacts and effects that must be addressed and considered by federal agencies in satisfying the requirements of the NEPA process. The potential environmental consequences of an action can either be direct or indirect. Further, direct and indirect impacts can be either permanent or temporary in duration. Terminology used in the environmental impact analysis relative to impact types are briefly described below:

Direct Impacts: Direct effects or impacts are caused by the action and occur at the same time and place as the action (40 CFR Part 1508.8). For example, any alteration, disturbance, or destruction of biological resources that would result from project-related activities would be considered a direct impact. Examples include clearing vegetation and loss of individual species and/or their habitats.

Indirect Impacts: Indirect effects or impacts occur later in time or are farther removed in distance but are still reasonably foreseeable and attributed to project-related activities (40 CFR Part 1508.8). Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40 CFR Part 1508.8). Indirect effects and secondary effects are used interchangeably. Examples include elevated noise and dust levels, increased human activity, increased runoff and erosion, and the introduction of invasive wildlife and plant species.

Permanent Impacts: Permanent impacts result in irreversible actions that modify the affected environment. Permanent impacts may include, but are not limited to, the removal or permanent modification of habitat, such as the replacement of natural habitat with an impervious surface (e.g., paved road), or the grading of an area, which would permanently alter the drainage, slope, and aspect of an area and, therefore, the type of habitat that could be supported.

Temporary Impacts: Temporary impacts have reversible effects to the existing environment. Temporary impacts may include, but are not limited to, the generation of fugitive dust during construction activities, or the temporary damage, modification, or removal of existing habitat where the existing habitat can be replaced or rehabilitated successfully.

3.1 AIR QUALITY

3.1.1 AFFECTED ENVIRONMENT

The project area is located in the San Diego Air Basin, which covers the same area as San Diego County. In San Diego County, the San Diego APCD is the agency responsible for protecting public health and welfare through the administration of federal and state air quality laws and policies. Included in San Diego APCD's tasks are the monitoring of air pollution, the preparation of the San Diego County portion of the State Implementation Plan (SIP), and promulgation of rules and regulations. The SIP includes strategies and tactics to be used to attain and maintain acceptable air quality in San Diego County; this list of strategies is called the Regional Air Quality Strategy. The rules and regulations include procedures and requirements to control the emission of pollutants and prevent significant impacts. Table 3.1-1 provides the National and California ambient air quality standards.

Table 3.1-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]
Ozone (O_3)[6]	1-Hour	---	---	0.09 ppm (180 µg/m^3)
	8-Hour	0.075 ppm (147 µg/m^3)	Same as Primary Standard	0.07 ppm (137 µg/m^3)[9]
Carbon Monoxide (CO)	1-Hour	35 ppm (40 mg/m^3)	---	20 ppm (23 mg/m^3)
	8-Hour	9.0 ppm (10 mg/m^3)	---	9.0 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1-Hour	0.1 ppm (188 µg/m^3)	---	0.18 ppm (338 µg/m^3)
	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard	0.03 ppm (56 µg/m^3)
Sulfur Dioxide (SO_2)[7]	1-Hour	0.075 ppm (196 µg/m^3)	---	0.25 ppm (715 µg/m^3)
	3-Hour	---	0.5 ppm (1,300 µg/m^3)	---
	24-Hour	---	---	0.04 ppm (114 µg/m^3)
Suspended Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual Arithmetic Mean	---	---	20 µg/m^3[8]
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	35 µg/m^3	Same as Primary Standard	---
	Annual Arithmetic Mean	15 µg/m^3	Same as Primary Standard	12 µg/m^3[8]
Lead (Pb)[9]	Calendar Quarter	0.15 µg/m^3	Same as Primary Standard	1.5 µg/m^3

Table 3.1-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]
Hydrogen Sulfide (H_2S)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m^3)
Sulfates (SO_4)	24-Hour			25 µg/m^3
Visibility Reducing Particles	8-Hour (10:00 a.m. to 6:00 p.m. PST)			In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.
Vinyl chloride[9]	24-Hour			0.01 ppm (26 µg/m^3)

Sources: U.S. Environmental Protection Agency 2012b; California Environmental Protection Agency Air Resources Board 2009.

Notes:
1. NAAQS (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is not to be exceeded more than once per year on average over 3 years. The 24-hour standard is attained when the 3-year average of the weighted annual mean at each monitor within an area does not exceed 150 µg/m^3. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, do not exceed 35 µg/m^3. The annual standard is attained when the 3-year average of the weighted annual mean at single or multiple community-oriented monitors does not exceed 15 µg/m^3.
2. California Ambient Air Quality Standards for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10} and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.
3. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.
4. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or
5. Anticipated adverse impacts of a pollutant.
6. Concentration expressed first in units in which it was promulgated. In this table, ppm refers to ppm by volume or micromoles of pollutant per mole of gas.
7. The federal 1-hour O_3 standard was revoked for most areas of the United States, including all of California on June 15, 2005.
8. Final rule signed June 2, 2010. The 1971 annual and 24-hour SO_2 standards were revoked in that same rulemaking.
9. On June 5, 2003, the Office of Administrative Law approved the amendments to the regulations for the state ambient air quality standards for particulate matter and sulfates. Those amendments established a new annual average standard for $PM_{2.5}$ of 12 µg/m^3 and reduced the level of the annual average standard for PM_{10} to 20 µg/m^3. The approved amendments were filed with the Secretary of State on June 5, 2003. The regulations became effective on July 5, 2003.
10. The CARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health impacts determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Key:
µg/m^3 = micrograms per cubic meter
CAAQS = California Ambient Air Quality Standards
mg/m^3 = milligrams per cubic meter
NAAQS = National Ambient Air Quality Standards
ppm = parts per million
PST = Pacific Standard Time

1

3.1.1.1 Climate and Meteorology

Southern California is classified as having a semi-arid climate, although it contains three distinct zones of rainfall with coinciding floristic patterns. The climatic zones may be roughly defined as being coincident with the broad geographic regions composed of coast, mountains, and desert. Subregions exist within these regions and consist of coastal valleys lying below the mountains, separated from the ocean shore by plateaus and low hills immediately behind the coastline. The main features that characterize the project area are inland mountains.

The project area is best characterized by climatological data taken at Campo, California, which is located less than 3 miles (5 kilometers) from the project area. These data indicate a monthly average temperature range of 33 to 94 degrees Fahrenheit (°F) (1 to 34 degrees Celsius [°C]). Annual average rainfall in this area is 14.8 inches (37.6 centimeters), with the greatest rainfall occurring between the months of November and April where average monthly rainfall exceeds 1 inch (2.5 centimeters) (Western Regional Climate Center 2012).

3.1.1.2 Compliance with Air Quality Standards/Regional and Local Air Quality

Specific geographic areas are classified as either “attainment” or “nonattainment” based on measured data compared with NAAQS and state standards. The San Diego Air Basin currently meets the federal standards for all criteria pollutants except ozone (O_3) for the 8-hour standard, and meets state standards for all criteria pollutants except O_3, fine particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and suspended particulate matter less than or equal to 10 microns in diameter (PM_{10}). The San Diego Air Basin is classified as a “marginal” nonattainment area for O_3. Marginal is the least severe of the five degrees of O_3 nonattainment. The San Diego APCD submitted the 8-Hour Ozone Attainment Plan to the U.S. Environmental Protection Agency (EPA) in 2007. The San Diego Air Basin is currently classified as a state nonattainment area for PM_{10}. For $PM_{2.5}$, the San Diego Air Basin is currently classified as a state nonattainment area.

The closest San Diego APCD air quality monitoring station for O_3 and nitrogen dioxide (NO_2) in the San Diego Air Basin is the Alpine monitoring station, located at 2300 Victoria Drive, Alpine, California, approximately 23 miles (37 kilometers) northwest of the project area. The El Cajon-Redwood Avenue monitoring station, located at 1155 Redwood Avenue, El Cajon, California, approximately 44 miles (71 kilometers) southwest of the project area, has the observed data of $PM_{2.5}$ and PM_{10}. Table 3.1-2 summarizes the exceedances of standards and the highest pollutant levels recorded at these two stations for the years 2007 to 2011.

Table 3.1-2 Ambient Air Quality Summary, San Diego Air Basin

Pollutant	Averaging Time	California Air Quality Standards	Federal Primary Standards	Maximum Concentrations[1]					Number of Days Exceeding Federal Standard[2]					Number of Days Exceeding State Standard[2]				
				2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
O_3	1-hour	0.09 ppm	---	0.134	0.139	0.119	0.105	0.114	1	2	0	0	0	18	13	6	4	4
	8-hour (Federal)	---	0.75 ppm	0.92	0.109	0.097	0.88	0.093	23	31	22	12	10	---	---	---	---	---
	8-hour (State)	0.07 ppm	---	0.092	0.11	0.098	0.088	0.093	---	---	---	---	---	46	61	43	20	30
NO_2	1-hour	0.18 ppm	0.10 ppm	0.057	0.047	0.056	0.052	0.04	---	---	---	---	---	---	---	---	---	---
PM_{10}	24-hour	50 µg/m^3	150 µg/m^3	0.061	0.040	0.055	0.041	0.042	---	---	---	---	---	---	---	---	---	---
$PM_{2.5}$	24-hour	---	35 µg/m^3	0.0427	0.0307	0.0565	0.0277	0.0297	---	---	---	---	---	---	---	---	---	---

Sources: California Air Resources Board for O_3. U.S. Environmental Protection Agency Monitor Values Report for NO_2 and PM.

Notes:
[1] Concentration units are in ppm.
[2] For federal and state standards, a value of 1 indicates that the standard has been exceeded.

Key:
"–" = data not available or applicable
µg/m^3 = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
NO_2 = nitrogen dioxide
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
ppm = parts per million

1

3.1.1.3 Local Sources of Pollutants

Regional Sources

The largest sources of O_3, NO_2, and carbon monoxide (CO) are automobiles and other on-road vehicles. O_3 is formed by the atmospheric reaction, in sunlight, of volatile organic compounds (VOCs) and oxides of nitrogen (NO_X), which are combustion products from gas and diesel engines. Other sources of VOCs are paints, coatings, and process solvents. Combustion sources such as vehicles, diesel engines, and industrial facilities also emit fine particulate matter.

Sources of PM_{10} are construction, demolition, and dust from paved and unpaved roads. Coarser particles are directly emitted from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include wind-blown dust, pollen, salts, brake dust, and tire-wear. Although $PM_{2.5}$ is a subset of PM_{10}, it differs from PM_{10}. While the majority of ambient PM_{10} results from direct emissions of the pollutant, ambient $PM_{2.5}$ results not only from direct emissions but also from transformation of precursors and condensing of gaseous pollutants in the atmosphere. Other than direct $PM_{2.5}$ emissions, the key pollutants contributing to $PM_{2.5}$ concentrations in the atmosphere are sulfur dioxide (SO_2), NO_X, VOCs, and ammonia (EPA 2006).

Odors

In the previous La Posta Mountain Warfare Training Facility EA, odors were noticed in the project area during visits on March 3, 2004 and March 16, 2004, when firing weapons generated small amounts of sulfurous smells. These odors were not detectable beyond 200 feet (61 meters) from the weapons. No other odors were detected in the project area or at nearby properties.

Sensitive Air Quality Receptors

Sensitive receptors are those populations that are more susceptible to the effects of air pollution than the population at large. Sensitive receptors in proximity to localized sources of air emission and CO are defined as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, child care centers, and athletic facilities. For air quality analysis, sensitive receptors within 0.25 mile (400 meters) of the project area have been identified.

The nearest sensitive receptors to the project would be the single-family homes adjacent to and west of La Posta Road, approximately 400 feet (122 meters) south of the existing property boundaries and approximately 600 feet (183 meters) east of the boundary of Parcel C.

3.1.1.4 Clean Air Act Conformity

The following subsections address the application of the General Conformity Rule.

Location in a Nonattainment Area

Specific geographic areas are classified under the federal Clean Air Act as either "attainment" or "nonattainment" based on conformance with or violation of National Ambient Air Quality Standards (NAAQS). The General Conformity Rule applies to actions that generate emissions in nonattainment or maintenance areas. The project area is located within the San Diego Air Basin, which has been classified as a former Subpart 1 area for 8-hour O_3. As of March 30, 2012, San Diego County is listed as a maintenance area in the EPA Green Book (EPA 2012). Therefore, the General Conformity Rule is applicable for the Proposed Action.

Emission of Criteria Pollutants

The General Conformity Rule requires analysis of emissions of criteria pollutants and their precursors for which an area is designated nonattainment or that are covered by a maintenance plan. The Proposed Action would include construction equipment and mobile sources that would emit VOCs, NO_X, and CO. VOCs and NO_X are the precursors of O_3. Therefore, the General Conformity Rule is applicable to the Proposed Action emissions of CO, VOCs, and NO_X.

de minimis Exemption

Per 40 CFR Parts 51.853(c)(1), 91.153(c)(1), 51.853(i), and 91.153(j) of the General Conformity Rule, conformity requirements shall not apply to an action where the total of all reasonably foreseeable direct and indirect emissions: (1) does not equal or exceed prescribed threshold levels, called "*de minimis* levels," that trigger a formal conformity determination; and (2) would be less than 10 percent of the area's annual emission budget. The *de minimis* thresholds applicable to the San Diego Air Basin are shown in Table 3.1-3.

Table 3.1-3 *de minimis* Emissions for Nonattainment and Attainment/Maintenance Criteria Pollutants in the San Diego Air Basin

Criteria Pollutant – Precursor	*de minimis* Emissions tons/year[1]
Ozone (O_3) – Volatile Organic Compounds (VOCs)	100
Ozone (O_3) – Oxides of Nitrogen (NO_X)	100
Carbon Monoxide (CO)	100

Note:
[1] 40 CFR Part 93. The affected air basin is classified as former Subpart 1 Area for ozone (O_3) (8-hour) and maintenance for carbon monoxide (CO).

3.1.1.5 National Environmental Policy Act Air Quality Analysis

A NEPA analysis of potential air quality impacts may be broader than a General Conformity analysis in that the NEPA analysis should evaluate the potential impacts of attainment pollutants, as well as nonattainment pollutants, and whether emissions of such attainment pollutants might significantly impact the human environment. The attainment pollutants for the San Diego Air Basin are $PM_{2.5}$, PM_{10}, SO_2, NO_2, and lead. $PM_{2.5}$ and PM_{10} are nonattainment pollutants by state standards. For the NEPA analysis, the General Conformity *de minimis* threshold is used to evaluate $PM_{2.5}$, $PM_{2.5}$ precursors (SO_2, NO_X, and VOCs), and PM_{10} impacts. This air quality analysis does not directly evaluate SO_2 and lead because little to no quantifiable and foreseeable emissions of these substances would be generated by the Proposed Action. The typical stationary sources of SO_2 and lead emissions, such as fossil fuel-burning electrical utilities, industrial processes, and municipal solid waste incinerators, are not involved in this action. For the mobile sources associated with the Proposed Action, emissions of lead are virtually nonexistent due to regulations that banned lead as a gasoline additive in the 1980s. NO_2 emissions are analyzed within a broader category. NO_X emissions indirectly include NO_2, as the subscript "x" represents the sum of the NO_X (NO, NO_2, NO_3, etc.). For the federal maintenance area pollutants, conclusions based on the evaluation of pollutants for General Conformity are applicable for the analysis of NEPA impacts.

3.1.2 ENVIRONMENTAL CONSEQUENCES

3.1.2.1 Alternative 1

Air quality impacts associated with Alternative 1 are related to emissions that would occur during construction and subsequent operation of the proposed facilities. The principal sources of pollutants during construction would be construction equipment, construction crew commuting vehicles, weapons firing, and earth-moving activities. The sources of pollutants during operations would be the additional vehicles that would use the facility, as compared to the present use.

Construction Activities

Construction of Alternative 1 facilities could take one to six months to complete. Construction and improvement of the existing and proposed facilities would require grading and site preparation at previously disturbed areas as well as undisturbed areas for target sites, firing positions, and facility locations. For purposes of emissions calculations, it is assumed that a maximum area of 31 acres (12.6 hectares) would be disturbed and potentially graded during construction of the proposed facilities. Grading would result in the generation of fugitive dust, $PM_{2.5}$, and PM_{10} from ground disturbance. Emissions have been estimated by use of an air emission modeling software package, URBEMIS 2007. The California state-wide data in the model is used for the San Diego Air Basin. For construction emission sources and operational (motor vehicle) emission sources, URBEMIS 2007 uses EMFAC 2007 California state-wide emission factors.

Grading would require four crawler dozers, two rubber tired loaders, four back hoes, one off-highway truck, and two additional miscellaneous pieces of heavy equipment, such as generators or ground tampers. Grading would disturb an area of approximately 3.14 acres (1.27 hectares) per day with a worst-case dust generation factor of 20 pounds (9.08 kilograms) per acre per day. Construction of the training and operations facilities would require four rough-terrain forklifts, four tractors, one crane, two dumpers, one welder, and eight miscellaneous pieces of diesel engine-driven equipment, such as concrete mixers, air compressors, and generators. Paving would be limited to paving of existing roadways. Paving would require one backhoe, one roller, one paver, two off-highway trucks, and four cement and mortar mixers. Grading would not occur simultaneously with construction of the facilities and, therefore, is analyzed separately from building and facilities construction. Table 3.1-4 compares the estimated annual construction emissions with the General Conformity thresholds. Emission calculations are included in Appendix B. As shown in Table 3.1-4, the total estimated construction emissions subject to General Conformity applicability would be less than the applicable *de minimis* thresholds for CO, VOCs, and NO_X, and less than 10 percent of the regional emissions budget for these pollutants.

Table 3.1-4 Estimated Construction Emissions

Sources	Pollutant (tons per year)					
	VOCs	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$[1]
Paving - 12 months						
Paving Off-Road Diesel	0.5	3.7	1.6	0	0.2	0.2
Paving Worker Trips	0.01	0.03	0.2	0	0	0
Total Paving Emissions	***0.5***	***3.7***	***1.8***	***0***	***0.2***	***0.2***
Building Construction - 12 months						
Building Off-Road Diesel, Vendor and Worker trips	1.5	12.5	12.3	0	0.7	0.6
Total Building Construction Emissions	***1.5***	***12.5***	***12.3***	***0***	***0.7***	***0.6***
Coating - 12 months						
Architectural Coating	5.7	0	0	0	0	0
Coating Worker Trips	0	0	0.06	0	0	0
Total Coating Emissions	***5.7***	***0***	***0.06***	***0***	***0***	***0***
Fine Grading - 12 months						
Fine Grading Dust	0	0	0	0	15.9	3.3
Fine Grading Off-Road Diesel	1.2	9.6	5.1	0	0.5	0.4
Fine Grading Worker Trips	0.01	0.02	0.4	0	0.01	0
Total Fine Grading Emissions	***1.27***	***9.6***	***5.5***	***0***	***16.4***	***3.7***
Total 2013 Emissions	**8.9**	**25.8**	**19.7**	**0**	**17.3**	**4.5**
General Conformity *de minimis* Thresholds[1]	100	100	100	100	100	100

Table 3.1-4 Estimated Construction Emissions

Sources	Pollutant (tons per year)					
	VOCs	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$[1]
Exceed threshold?	No	No	No	No	No	No
San Diego Air Basin forecast emissions for 2015[2]	51,064	228,454	47,779	2,044	44,603	11,936
Exceed ten percent of San Diego Air Basin emissions?	No	No	No	N/A	N/A	N/A

Notes:
[1] *de minimis* thresholds for San Diego Air Basin: Former Subpart 1 Area O_3 (8-hour) precursors VOC and NO_X, and maintenance for CO. The basin is in federal attainment for $PM_{2.5}$ and PM_{10}; *de minimis* threshold for $PM_{2.5}$, $PM_{2.5}$ precursors, and PM_{10} nonattainment is used for NEPA significance determinations.
[2] Forecast emission from 2009 Almanac Emission Projection Data, http://www.arb.ca.gov/app/emsinv/emssumcat.php.

Key:
CO = carbon monoxide
N/A = not applicable
NO_X = oxides of nitrogen
$PM_{2.5}$ 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
SO_2 = sulfur dioxide
VOCs = volatile organic compound

As previously indicated, for the NEPA analysis, the General Conformity *de minimis* thresholds are used to evaluate air quality impacts. As shown in Table 3.1-4, estimated construction emissions for Alternative 1 would be less than the applicable *de minimis* thresholds for VOCs, NO_X, CO, SO_2, $PM_{2.5}$, and PM_{10} and, thus, would not result in a significant impact to air quality under NEPA.

For the Alternative 1, there would be a total direct emission of approximately 2,838 tons of carbon dioxide (CO_2) from construction. This is below the reference value of 25,000 metric tons of direct CO_2-equivalent greenhouse gas emissions from CEQ guidance. Thus, no mitigation measures to reduce this emission are needed, and the emission would not generate a significant impact to air quality under NEPA. The emission calculation is included in Appendix B.

Operational Activities

Although operational schedules have not been defined for the proposed facilities, the increase in emissions associated with Alternative 1 has been estimated using the following assumptions, which are considered to be conservative:

- Increased operations at the new range would generate a maximum of 20 new vehicle trips daily;
- Increased operations for the Range Control Building and Gate Sentry House would generate a maximum of 10 new vehicle trips daily, as well as the Visitor Parking Lot;

- Each support vehicle would travel an average of 30 miles (48.3 kilometers) per day at an average speed of 35 miles per hour (mph) (56.3 kilometers per hour [kph]);
- The majority (98 percent) of travel would be conducted on paved roadways; and,
- Operations of all the above vehicles would occur 250 days per year.

Operations emissions were calculated using a vehicle mix of 20 percent light autos, 5 percent light trucks less than 3,750 pounds (1,701 kilograms), 25 percent medium trucks within the weight range of 5,751 to 8,500 pounds (2,609 to 3,856 kilograms), and 50 percent light-heavy trucks within the weight range of 10,001 to 14,000 pounds (4,536 to 6,350 kilograms). Emission calculations are included in Appendix B. The results of the calculations are shown in Table 3.1-5; the total estimated operations emissions subject to General Conformity applicability would be less than the applicable *de minimis* thresholds for VOCs, NO_X, and CO, and less than 10 percent of the regional emission budget for those pollutants. These would be long-term emissions.

Table 3.1-5 Estimated Operations Emissions

	Pollutant – tons per year					
	VOCs	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Total Operations Emissions	**3.82**	**16.59**	**38.74**	**0.06**	**9.99**	**1.95**
General Conformity *de minimis* thresholds[1]	100	100	100	100	100	100
Exceed threshold?	No	No	No	No	No	No
San Diego Air Basin forecast emissions for 2015[2]	51,064	228,454	47,779	2,044	44,603	11,936
Exceed 10 percent of San Diego Air Basin emissions?	No	No	No	N/A	N/A	N/A

Notes:
[1] *de minimis* thresholds for San Diego Air Basin: Former Subpart 1 Area O_3 (8-hour) precursors VOC and NO_X, and moderate nonattainment for CO. The basin is in federal attainment for $PM_{2.5}$ and PM_{10}; *de minimis* threshold for $PM_{2.5}$, $PM_{2.5}$ precursors, and PM_{10} nonattainment is used for NEPA significance determinations.
[2] California Environmental Protection Agency Air Resources Board, n.d. (Forecast emission from 2009).

Key:
CO = carbon monoxide
N/A = not applicable
NO_X = oxides of nitrogen
$PM_{2.5}$ 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
SO_X = sulfur oxides
VOCs = volatile organic compound

With forecast construction and operations emissions less than the General Conformity *de minimis* levels and less than 10 percent of the forecast area emissions, Alternative 1 is presumed to conform to the SIP, and a formal conformity determination is not required. A Record of Non-Applicability (i.e., a memorandum required by Navy policy that sets out the facts and circumstances establishing that an action is exempt from a formal conformity determination) is included in Appendix C.

As previously indicated, for the NEPA analysis, the General Conformity *de minimis* thresholds are used to evaluate air quality impacts. As shown in Table 3.1-5, estimated operational emissions for Alternative 1 would be less than the applicable *de minimis* thresholds for CO, VOCs, NO_X, $PM_{2.5}$, and PM_{10} and, thus, would not result in significant impacts to air quality under NEPA.

The CO_2 emissions from operations would be 6,432 tons (5,835 metric tons) per year under the worst-case estimate (see Appendix B for emission calculations). This is far less than the reference level proposed by the CEQ. Thus, Alternative 1 would not generate a significant impact to air quality under NEPA.

3.1.2.2 Alternative 2

Alternative 2 would construct the same improvements as those discussed for Alternative 1; however, the shotgun range would not be constructed. As a result, permanent disturbance in Parcel C would be 1.55 acres (0.63 hectare) less under Alternative 2, and construction emissions under Alternative 2 would be slightly less since there would be less ground disturbance. Operational emissions under Alternative 2 would be the same as those for Alternative 1. Therefore, air emissions associated with Alternative 2 would have no significant impacts to air quality.

3.1.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. There would be no change in existing air quality conditions; therefore, the No Action Alternative would have no significant impacts on air quality.

3.2 BIOLOGICAL RESOURCES

The following discussion is based on a review of available literature, existing natural resources background data, and the results of project-specific biological resources surveys. These resources include the following:

- Naval Base Coronado Integrated Natural Resources Management Plan (Navy 2002a);
- DD Form 1391 Fiscal Year 2019 Military Construction Project 8 (Navy 2012g);
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008);
- Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) (USFWS 2003);
- 2002 Designation of Critical Habitat for the Quino Checkerspot Butterfly (*Euphydryas editha quino*) (USFWS 2002);
- Quino Checkerspot Butterfly Survey Report, Camp Michael Monsoor, California (ICF International 2010);
- 2007 Quino Checkerspot Butterfly Post-Survey Report for La Posta Mountain Warfare Training Facility, Campo, California (RECON 2007); and,
- Post-Survey Report for Quino Checkerspot Butterfly Surveys on La Posta Mountain Warfare Training Facility, Campo, California (RECON 2006).

The following biological resources surveys were conducted specifically for the Proposed Action:

- Avian surveys, conducted in February, April, and June 2012 (Navy 2012b, Navy 2012c, Navy 2012d); and,
- Rare plant surveys, conducted in April and May 2012 (Navy 2012c).

3.2.1 AFFECTED ENVIRONMENT

This section describes the existing biological resources that occur within and adjacent to the project area. For purposes of biological resources, the project area is defined as the area where permanent and temporary impacts could occur from implementation of Alternative 1 or Alternative 2. This section also analyzes potential impacts to biological resources that occur with implementation of the alternatives, and discusses measures to reduce potential impacts, where necessary.

3.2.1.2 Vegetation Communities

Section 3.2.1.2 has been based on the Final La Posta Mountain Warfare Training Facility EA (Navy 2008).

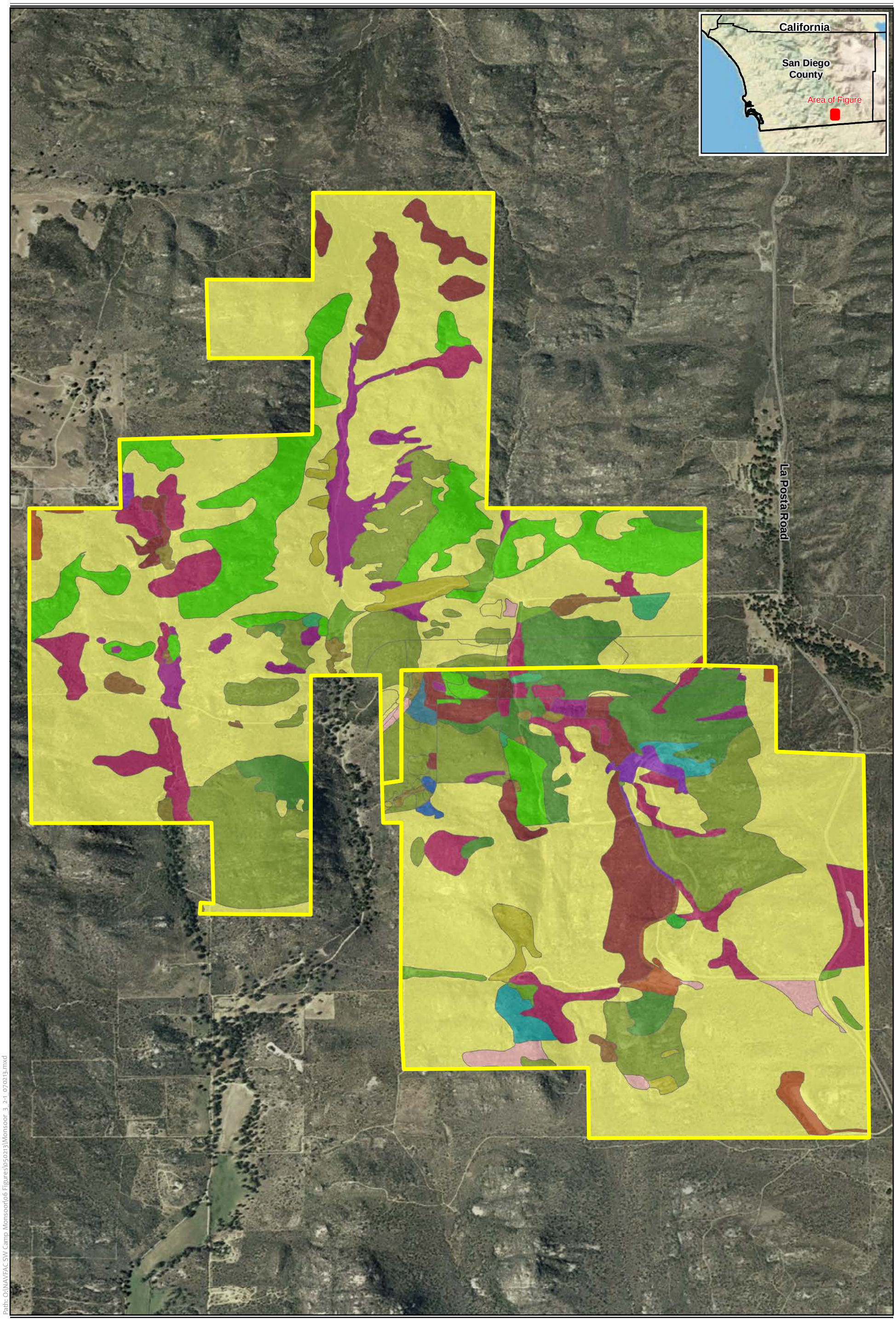
Based on the plant community classifications described by Sawyer and Keeler-Wolf (1995), the vegetation alliances best matching those occurring in the project area include Birchleaf mountain-mahogany, California annual grassland, California buckwheat, California buckwheat-white sage, Chamise, Chamise-bigberry manzanita, Chaparral whitethorn, Holly-leaf cherry, Scrub oak, and Scrub oak-chamise.

Figure 3.2-1 shows the 18 vegetation series and land cover types within the project area. Table 3.2-1 provides the acreage for the 18 vegetation series and land cover types within the project area.

Table 3.2-1 Vegetation Series and Land Cover Types within the Project Area (acres [hectares])

Vegetation	Existing Withdrawal	Parcel C	Total
Big sagebrush series	7.74 (3.13)	10.45 (4.23)	18.19 (7.36)
Birchleaf mountain-mahogany series	89.55 (36.24)	44.39 (17.96)	133.94 (54.20)
California annual grassland series	7.95 (3.22)	45.27 (18.32)	53.22 (21.54)
California buckwheat series	17.19 (6.96)	2.39 (0.97)	19.58 (7.92)
California buckwheat-white sage series	12.68 (5.13)	15.08 (6.10)	27.76 (11.23)
Chamise series	615.36 (249.03)	743.15 (300.74)	1358.51 (549.77)
Chamise-bigberry manzanita series	73.95 (29.93)	47.52 (19.23)	121.47 (49.16)
Chamise-Eastwood manzanita series	0	5.01 (2.03)	5.01 (2.03)
Chaparral whitethorn series	17.36 (7.03)	150.99 (61.10)	168.35 (66.11)
Coast live oak series	4.09 (1.66)	6.25 (2.53)	10.34 (4.18)
Holly-leaf cherry series	122.57 (49.60)	150.93 (61.08)	273.5 (110.68)
Mixed scrub oak series	1.91 (0.77)	0	1.91 (0.77)
Native Grassland series	1.09 (0.44)	0	1.09 (0.44)
Scrub oak series	2.22 (0.90)	7.91 (3.20)	10.13 (4.10)
Scrub oak-chamise series	65.62 (26.56)	63.79 (25.81)	129.41 (52.27)
Scrub oak-birchleaf mountain-mahogany series	16.00 (6.47)	0	16.00 (6.47)
Scrub oak-chaparral whitethorn series	2.74 (1.11)	0	2.74 (1.11)
Developed/disturbed habitat	25.58 (10.35)	6.39 (2.59)	31.97 (12.94)
TOTALS	**1,083.60 (438.52)**	**1,299.52 (525.90)**	**2,383. 12 (964.42)**

Source: Navy 2008



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0 1,000 2,000 Feet

Source- ESRI (2010), NAVFAC SW 2011

- Navy-Managed Property
- California Annual Grassland Series*
- Birchleaf Mountain-Mahogany Series
- Big Sagebrush Series*
- Chamise Series*
- Chamise-Bigberry Manzanita Series
- Chamise-Eastwood Manzanita Series
- California Buckwheat Series*
- California Buckwheat-White Sage Series*
- Coast Live Oak Series
- Chaparral Whitethorn Series
- Developed Area
- Holly-Leaf Cherry Series
- Mixed Scrub Oak Series
- Native Grassland Series
- Scrub Oak Series
- Scrub Oak-Chamise Series
- Scrub Oak-Birchleaf Mt. Mahogany Series
- Scrub Oak-Chaparral Whitethorn Series
- Disturbed Habitat

Figure 3.2-1
Existing Vegetation Communities

San Diego County, California

**Suitable Quino Checkerspot butterfly habitat.*

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Big Sagebrush Series

This series occurs along the upper edges of the valley floor, typically in areas of prior disturbance. Big sagebrush (*Artemisia tridentata*) is the dominant species, but other species such as chamise (*Adenostoma fasciculatum*), white sage (*Salvia apiana*), and California buckwheat (*Eriogonum fasciculatum* var. *foliolosum*) may also be present (Navy 2008).

Birchleaf Mountain-Mahogany Series

This series occurs on some of the lower and upper slopes within the project area. This series is relatively open and dominated by birchleaf mountain-mahogany (*Cercocarpus betuloides*), though scattered chamise, chaparral whitethorn (*Ceanothus leucodermis*), and holly-leaf cherry (*Prunus ilicifolia*) are also present. Because this series is so open, ripgut brome (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*) are present in high numbers (Navy 2008).

California Annual Grassland Series

Annual grasses and herbs are dominant in the ground layer of this series. Within the project area, this series is present in the valleys and some of the slopes of adjacent hillsides. Ripgut brome and red brome are the two dominant species within this series. Cheat grass (*Bromus tectorum*), filaree (*Erodium* sp.), fiddleneck (*Amsinkia* sp.), and popcorn flower (*Plagiobothrys* sp.) are also present. California buckwheat is scattered throughout the areas of this series suggesting that, in the absence of disturbance, these areas may develop into scrub or chaparral communities (Navy 2008).

California Buckwheat Series

This series appears to be another disturbance-mediated community. Within the project area, California buckwheat is the dominant species along dirt roads. Other areas occur on some of the higher slopes that may be periodically burned. Ripgut brome and red brome are also present (Navy 2008).

California Buckwheat-White Sage Series

California buckwheat and white sage are the two dominant species within this series. This series occurs on lower slopes and is relatively open, allowing for the occurrence of annual grasses and herbs such as ripgut brome, red brome, popcorn flower, and white pincushion-flower (*Chaenactis artemisiaefolia*) (Navy 2008).

Chamise Series

Chamise is the most common shrub within the project area and occurs on a variety of topographic features from the flat valleys to steep slopes. Generally, California peony (*Paeonia californica*) is the primary component of the understory. On the valley floors, big sagebrush, scrub oak, and sugar bush (*Rhus ovata*) may be associates. On the adjacent slopes, Eastwood manzanita (*Arctostaphylos glandulosa*), bigberry manzanita (*Arctostaphylos glauca*), holly-leaf cherry, and chaparral whitethorn are associates. Openings in this series may support such

species as chia (*Salvia columbariae*), white pincushion-flower, and several spineflower species (*Chorizanthe* spp.) (Navy 2008).

Chamise-Bigberry Manzanita Series

This series is similar to the chamise series; the difference is that bigberry manzanita is much more conspicuous in these stands. This series appears to be more prevalent in areas of decomposing granite. Undisturbed stands of this series are usually very dense and have low plant species diversity, supporting very little understory species. Disturbed areas have a higher component of introduced grasses and forbs (Navy 2008).

Chamise-Eastwood Manzanita Series

This series is very similar in appearance to the chamise-bigberry series, only Eastwood manzanita replaces the bigberry manzanita as the major associate of chamise. This series is also very dense with little understory components. Understory species are only present in sandy openings, where chia, white pincushion-flower, and several spineflower species may be present or in areas of disturbance where ripgut brome and red brome are present (Navy 2008).

Chaparral Whitethorn Series

This series occurs on the slopes within the project area. Chaparral whitethorn is the dominant species, but chamise, holly-leaf cherry, California buckwheat, and birchleaf mountain mahogany may also be present. This series intergrades with the holly-leaf cherry series in rockier areas. Open areas support a dense cover of ripgut brome 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 (*Mimulus aurianticus*), onion grass (*Melica imperfecta*), silverleaf lotus (*Lotus argophyllus* ssp. *argophyllus*), and fringed spineflower (*Chorizanthe fimbriata* var. *laciniata*) may be present (Navy 2008).

Coast Live Oak Series

This series is best represented along the major north-south oriented valleys within the project area. Smaller, isolated stands are present along some of the narrower lateral canyons. Coast live oak (*Quercus agrifolia*) is the dominant species. Arroyo willow (*Salix lasiolepis*) is a minor component in at least one of these stands. Shrub species such as chamise, big sagebrush, and poison oak (*Toxicodendron diversilobum*) are infrequent within this series, generally occurring along the outer edges of the canopy. Disturbance in this series has eliminated all but the most weedy understory species, such as ripgut grass, red brome, and horehound (*Marrubium vulgare)* (Navy 2008).

Holly-Leaf Cherry Series

This series occurs on the slopes within the project area and intergrades with the chaparral whitethorn and chamise series. Holly-leaf 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 brome 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 (Navy 2008).

Mixed Scrub Oak Series

This series describes areas where scrub oak, bigberry manzanita, chaparral whitethorn, and chamise are all very common. This dense series does not have a conspicuous understory component.

Native Grassland Series

Giant stipa (*Stipa gigantean*) is the dominant species, with deerweed (*Lotus scoparius*) and California buckwheat as the common associates of this series. This series is likely a disturbance-mediated, early seral series that will develop into one of the shrub-dominated series over time with the absence of regular disturbances. This series is only found within the Previously Withdrawn Parcel.

Scrub Oak Series

Though scrub oak is present within and co-dominant in several series, areas dominated solely by scrub oak are uncommon within the project area and are represented by relatively small stands. Scrub oak is the dominant species and its dense cover precludes the presence of many understory species, though individuals of chamise and chaparral whitethorn may be present. This series is most common along some of the washes and mesic north-facing slopes within the project area (Navy 2008).

Scrub Oak-Chamise Series

This series occurs on some of the lower slopes within the project area. Though chamise is still the most common species, scrub oak is such a co-dominant that it is much more conspicuous than the chamise. Sugar bush and California peony are fairly common; however, because this is a relatively dense community, species diversity is low (Navy 2008).

Scrub Oak-Birchleaf Mountain-Mahogany Series

This series is very similar to the scrub oak series, only birchleaf mountain-mahogany is more common within this series. Similarly, this series is represented by small stands that are uncommon within the project area. The high cover and density of the overstory shrubs in this series preclude the presence of many understory species, except for the aforementioned non-native annual grasses; thus, this series has a low diversity of species (Navy 2008).

Scrub Oak-Chaparral Whitethorn Series

This series is very similar to the scrub oak series, only chaparral whitethorn is more common within this series. Similarly, this series is represented by small stands that are uncommon within the project area. The high cover and density of the overstory shrub species of

this series preclude the presence of many understory species; thus, this series has a low diversity of species (Navy 2008).

Developed/Disturbed Habitat Areas

Areas mapped as unvegetated do not support permanent structures, but have been cleared and do not currently support vegetation. Some of the larger dirt roads have been included within the unvegetated habitat designation. Developed areas within the project area support permanent structures (Navy 2008).

3.2.1.3 Federally Listed Plant Species

No federally listed plant species were observed during the 2007 or 2012 surveys. No federally listed plants are known to occur within the vicinity of the project area. A California Natural Diversity Database search (Quick Viewer) was conducted for the United States Geological Survey (USGS) Cameron Corners quad (i.e., the project area) and the eight quads (Campo, Descanso, Live Oak Springs, Morena Reservoir, Mount Laguna, Potrero, Sombrero Peak, and Tierra Del Sol) surrounding the project area.

No federally listed plant species are reported from Cameron Corners. The San Bernardino blue grass (*Poa atropurpurea*) is the only federally listed species reported from the surrounding quads (California Department of Fish and Game 2011). San Bernardino blue grass is restricted to montane meadows within coniferous forests. Neither of these communities occurs within the project area. Therefore, San Bernardino blue grass would not be expected to occur within the project area.

3.2.1.4 Non-Federally Listed Rare Plant Species

One state listed plant species, the endangered Parish's meadowfoam (*Limnanthes gracilis* ssp. *parishii*) is not known from the Cameron Corners quad but is reported from one adjacent quad. Parish's meadowfoam occurs in montane meadows with gabbro-derived soils; however, this community does not occur within the project area.

A review of the County's soil survey indicates that there are no gabbro-derived soils mapped in the project area or the right-of-way parcels, and no gabbro-derived soils were observed during the 2007 surveys. All the mapped soils are derived from the Mesozoic granitic rocks, either from the Mottsville-Calpine association (i.e., from granite and adamellite) or from the Tollhouse-LaPosta-Rock Land association (i.e., granodiorite) (Bowman 1973; State of California Division of Mines 1962). All the soils within the project area appear to be granitic. Therefore, Parish's meadowfoam would not be expected to occur within the project area.

Four species considered sensitive by the California Native Plant Society (CNPS) were observed within the project area during the spring surveys conducted for the 2007 EA:

- Ramona spineflower (*Chorizanthe leptotheca*);
- Sticky geraea (*Geraea viscida*);
- Campo pea (*Lathyrus splendens*); and,
- Southern jewelflower (*Streptanthus campestris*).

Table 3.2-2 lists these species, their sensitivity status, and their status within the project area, along with the other non-listed sensitive species that were not observed but could potentially occur within the project area.

Table 3.2-2 Sensitive Plant Species Observed and/or Potentially Occurring within the Project Area

Species Name	Sensitivity Status	Status within the Project Area
Sensitive Plant Species Observed within the Project Area		
Ramona spineflower (*Chorizanthe leptotheca*)	CNPS List 4	A total of 15 localities totaling 1,515 individuals were observed within the project area. Ten localities of approximately 680 individuals were observed within the Previously Withdrawn Parcel. Five localities of approximately 835 individuals were observed within Parcel C.
Sticky geraea (*Geraea viscida*)	CNPS List 2	This species was the most widespread sensitive plant species observed within the project area. A total of 79 localities totaling approximately 644 individuals were observed in the project area. Twenty-eight localities totaling approximately 276 individuals were observed within the Previously Withdrawn Parcel. Fifty-one localities totaling approximately 368 individuals were observed within Parcel C.
Campo pea (*Lathyrus splendens*)	CNPS List 4	This species was observed very infrequently in the project area. A total of five individuals were observed within the Project area. One individual was observed within the Previously Withdrawn Parcel. Four individuals were observed within Parcel C.
Southern jewelflower (*Streptanthus campestris*)	CNPS List 1B	This species was extremely uncommon within the project area and, with the exception of one locality; all occurrences consisted of relatively few individuals. A total of nine localities totaling 61 individuals were observed within the project area. Five localities totaling approximately 56 individuals were observed within the Previously Withdrawn Parcel. Four localities totaling five individuals were observed within Parcel C.

Table 3.2-2 Sensitive Plant Species Observed and/or Potentially Occurring within the Project Area

Species Name	Sensitivity Status	Status within the Project Area
Sensitive Plant Species Not Observed but Potentially Occurring within the Project Area		
Payson's jewelflower (*Caulanthus simulans*)	CNPS List 4	Five localities of approximately 28 individuals of this species were observed within Parcel C. This species was not observed within the Previously Withdrawn Parcel.
Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*)	CNPS List 1B	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (April-June). Reported localities of this species occur all around the project area (i.e., Miller Valley, Cameron Corners, and Buckman Springs). The habitat (open, desert transitional chaparral) and the preferred soil type (La Posta loams) are also present within the project area. Despite the fact that this species was not observed during the surveys, it still has a moderate to high potential for occurrence within the project area due to the presence of suitable habitat and soils.
Fremont barberry (*Berberis fremontii* var. *fremontii*)	CNPS List 3	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (April-June). Reported localities of this species occur east of the project area (i.e., McCain Valley, Bankhead Springs, and Boulevard). The habitat is high desert chaparral and the species occurs on La Posta rocky loamy coarse sand, which is present within the project area. Despite the fact that this species was not observed during the surveys, it still has a moderate potential for occurrence within the project area due to the presence of suitable habitat and soils.
Delicate clarkia (*Clarkia delicate*)	CNPS List 1B	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (April-May). Most reported populations appear to be east of the project area. The closest unconfirmed report is from Potrero. This species occurs along the periphery of oak woodlands and chaparral. There is low to moderate potential for this species to occur within the project area given the presence of suitable habitat.
Tecate tarplant (*Deinandra floribunda*)	CNPS List 1B	This species was not observed within the project area during the surveys; however, the surveys did not coincide with this species' typical flowering period (September to October). This species grows in broad sandy washes in the high desert. No populations are known near the project area, but reported localities do occur to the east (i.e., Live Oak Springs, McCain Valley, Jewel Valley) and west (Potrero) of the project area. Despite the fact that the surveys did not coincide with this species' typical flowering period, this species is not expected to occur within the project area due to the lack of appropriate habitat (broad sandy washes).

Table 3.2-2 Sensitive Plant Species Observed and/or Potentially Occurring within the Project Area

Species Name	Sensitivity Status	Status within the Project Area
San Diego sunflower (*Hulsea californica*)	CNPS List 1B	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (April-August). This species is known from the vicinity of the project area, from Buckman Springs to Campo, and occurs in montane coniferous forests and disturbed chaparral habitats. This species is a known fire follower and occurs on Mottsville loamy coarse sands, which are present within the project area. Despite the fact that this species was not observed during the surveys, it still has a moderate potential for occurrence within the project area due to the presence of suitable habitat and soils.
Desert beauty (*Linanthus bellus*)	CNPS List 2	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (April-May). This species is known from the vicinity of the project area (i.e., McCain Valley, Live Oak Springs, Boulevard, and Bankhead Springs). This species occurs in sandy openings of high desert chaparral and occurs on Mottsville loamy coarse sand. Despite the fact that this species was not observed during the surveys, it still has a moderate potential for occurrence within the project area due to the presence of suitable habitat and soils.
Moreno current (*Ribes canthariforme*)	CNPS List 1B	This species was not observed within the project area during the surveys, though surveys coincided with this species' typical flowering period (February-June). A population is known from Lake Morena to the east. This species occurs in chaparral habitat on acid igneous rock land, which occurs within the project area. Despite the fact that this species was not observed during the surveys, it would still have a low to moderate potential for occurrence within the project area due to the presence of suitable habitat and soils.
Southern skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	CNPS List 1B	This species was not observed within the project area; however, the surveys did not coincide with this species' typical flowering period (June-July). A population of this species is reported from Lake Morena, just east of the project area, but this species typically occurs on the moist embankments of mountain streams and this habitat does not appear to be present within the project area. Despite the fact that the surveys did not coincide with this species' typical flowering period, this species is not expected to occur within the project area due to the lack of appropriate habitat.

Notes:
CNPS List 1B – Plants Rare, Threatened, or Endangered in California and Elsewhere
CNPS List 2 – Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
CNPS List 3 – Plants About Which We Need More Information - A Review List
CNPS List 4 – Plants of Limited Distribution - A Watch List

Key:
CNPS = California Native Plant Society

3.2.1.5 Federally Listed Wildlife Species and U.S. Fish and Wildlife Service Bird Species of Special Concern

QCB is a federally listed wildlife species and is known to occur, or has the potential to occur, within the vicinity of the project area based on historical data for the region or the presence of suitable habitat onsite. This species, its associated plant communities, and the potential to occur within the biological study area are discussed in more detail in the subsection below. There is no critical habitat designated at Camp Michael Monsoor for this species.

The arroyo toad (*Anaxyrus californicus*) is another federally listed endangered wildlife species (California Department of Fish and Wildlife 2013), known to occur in the project region. Parcel C is located within one mile of arroyo toad designated critical habitat Subunit 19a (USFWS 2011). This species has extremely specialized habitat needs, and the most favorable breeding habitat consists of slow-moving streams with shallow pools, nearby sandbars, and adjacent stream terraces (USFWS 2009). Outside of the breeding season, the species is essentially terrestrial and is known to inhabit sycamore-cottonwood woodlands, oak woodlands, coastal sage scrub, chaparral, and grassland (USFWS 2009). Based on a query of the California Natural Diversity Database, the closest recorded population of arroyo toad is located approximately 3 miles (4.8 kilometers) from the project area in Upper Cottonwood Creek, extending along and east of Buckman Springs Road, at the south end of Cottonwood Valley (Navy 2008). There was no evidence of potential arroyo toad habitat (e.g., hydrological features required for this species breeding habitat) observed within the spring 2012 survey areas (Navy 2012c); therefore, due to the lack of observed breeding habitat onsite and the large distance from recorded breeding locations, it is not expected that the arroyo toad would use the project area, and surveys for the arroyo toad were determined to be unnecessary for the project area.

There are three bird species of special concern, black-chinned sparrow (*Spizella atrogularis*), brewer's sparrow (*Spizella breweri*), and northern harrier (*Circus cyaneus*), which are known to occur within the vicinity of the project based on 2012 biological surveys (California Department of Fish and Game 2011). A single male black-chinned sparrow, a USFWS species of conservation concern, was observed within the front fence and La Posta Road survey areas during the spring 2012 survey. Multiple male vocalizations were heard within the Range 110, West Utilities Road, and Parcel C survey areas during the spring 2012 surveys. Multiple male vocalizations were also heard in the Parcel C survey area during the summer 2012 survey. A single brewer's sparrow, a USFWS species of conservation concern, was observed within the Parcel C survey area during the spring 2012 survey. A single northern harrier, a California Department of Fish and Game species of special concern, was observed within the Parcel C survey area during the spring 2012 survey. No Peregrine falcons (*Falco peregrinus*) or golden eagles (*Aquila chrysaetos*) were observed during the winter, spring, or summer 2012 surveys at any of the survey locations (Navy 2012b, Navy 2012c, Navy 2012d).

Quino Checkerspot Butterfly

Species Background

A subspecies of Edith's checkerspot butterfly (*Euphydryas editha*), QCB is a federally listed endangered species. The QCB was listed as an endangered species by the USFWS on January 16, 1997 (62 Federal Register 2322). This listing status applies to the entire population of QCB. Critical habitat has been designated (USFWS 2002) and a recovery plan has been issued (USFWS 2003) for this species.

QCB is generally 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 (BLM 2010a). QCB is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002). Figure 3.2-2 shows USFWS-designated QCB critical habitat surrounding the project area.

Adults have one flight period per year, which generally occurs between late January and mid-May, with peak activity between March and April. In the vicinity of Camp Michael Monsoor, this is typically late March to mid-May. This active period may vary depending upon weather conditions (BLM 2010a). Females lay egg masses on host plants, typically between mid-February and April. A female may lay 20 to 75 eggs at one time and may produce up to 1,200 eggs in her lifetime. Eggs hatch in about 10 days in favorable weather conditions, and the larvae begin to feed upon host plants immediately.

QCB host plants are most commonly found within the big sagebrush series, California annual grassland series, California buckwheat-white sage series, California buckwheat series, chamise series (marginal and is dependent on density of canopy cover), and needlegrass series.

One of the most common larval host plant species for QCB in the majority of San Diego County is dwarf plantain (*Plantago erecta*). Coulter's snapdragon is thought to be a primary larval host plant species for QCB in parts of Riverside County and eastern San Diego County where dwarf plantain is absent (Navy 2008). Coulter's snapdragon is a white to lavender annual that is native to California. This plant is found among shrubs in the desert and on burns, and generally flowers from April to July (Jepson Manual, n.d.[a]). Chinese houses (*Collinsia concolor*) and dark-tip bird's beak (*Cordylanthus rigidus* ssp. *setiguerus*) are also common QCB host plants. Chinese houses is a bluish purple annual herb that is native to California and found near the openings and margins of chaparral, oak, or pinyon/juniper woodland. This plant grows to a height of 6 to 16 inches (15 to 40 centimeters) (Jepson Manual, n.d.[b]). Dark-tip bird's beak is a yellow-green annual that is native to California and found in a wide range of habitats. This plant generally grows to a height of 12 to 59 inches (30 to 150 centimeters) (Jepson Manual, n.d.[c]).

In the project area, white snapdragon is the most commonly observed host plant (Navy 2012b); Chinese houses were found along West Utilities Road at the Range Complex and in Parcel C, south of the road and the MILCON P-888 pistol ranges (Figure 3.2-2). Dark-tip bird's beak was observed at the Main Gate entrance and Range 110 (Figure 3.2-2). No Plantain host plants (*Plantago* spp.) were observed in 2006 and 2012 (Navy 2008, 2012b).

QCB Field Survey Results

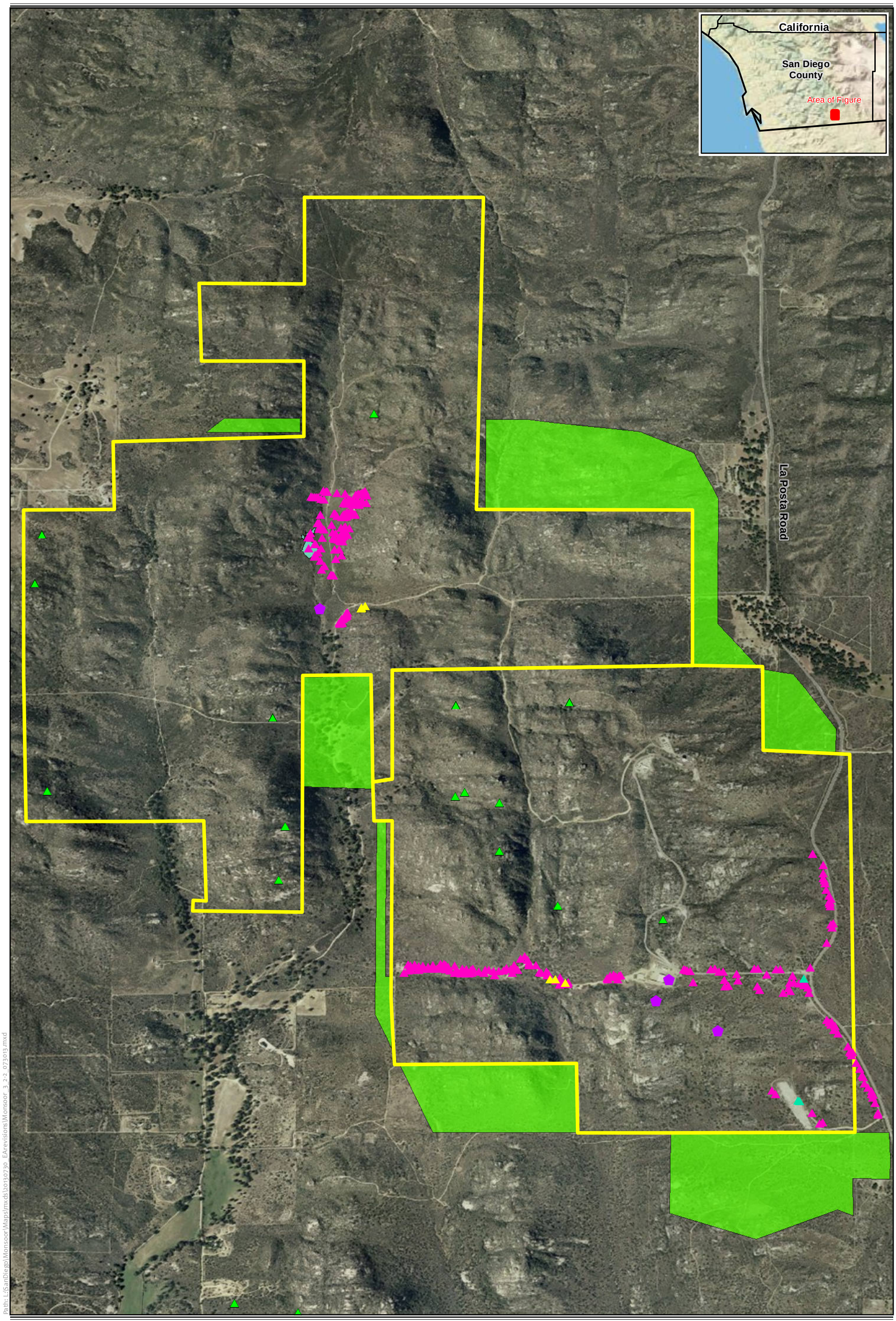
Two QCB observed in 2004 were within the project area (Figure 3.2-2). The butterflies observed within the Previously Withdrawn Parcel in April 2004 were near the edge of the existing firing range in open canopy shrub habitat in an area of gently and steeply sloping hills proximate to a relatively open hilltop area. The two individuals were observed in open canopy chamise chaparral within 1,020 feet (311 meters) and 2,040 feet (622 meters) from the nearest host plants (Navy 2005). The butterfly observed within Parcel C was in a low-lying valley in open canopy chamise shrubland lined with gently and steeply sloping hills. The chamise habitat included California buckwheat, patches of bare ground, and was proximate to unpaved roads and other areas of flat open-canopy vegetation. The nearest potential host plant detected was 1,970 feet (600 meters) away (Navy 2005).

No QCB were observed in subsequent protocol-level surveys conducted on portions of Camp Michael Monsoor during the spring 2006, 2007, 2008, and 2009 flight seasons (RECON 2006, 2007). Three QCB individuals were observed in the western portion of Parcel C during 2010 surveys, but not within the project area (ICF International 2010).

3.2.1.6 Non-Federally Listed Wildlife Species

Non-federally listed wildlife species include those listed under the California Endangered Species Act, California Species of Special Concern, and California Fully Protected species. The Migratory Bird Treaty Act 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 Migratory Bird Treaty Act, "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 Migratory Bird Treaty Act applies to migratory birds that are identified in 50 CFR Part 10.13.

The northern red diamond rattlesnake (*Crotalus ruber ruber*), a California Species of Special Concern, was observed on multiple occasions within the project area throughout the upland vegetation series of the parcels during the 2007 and 2012 field surveys. A single San Diego horned lizard (*Phrynosoma coronatum blainvillii*) was found alongside the southern edge of Parcel C during the 2012 summer bird migration survey. The lizard was found in a similar location to the San Diego horned lizards observed during the 2012 spring bird migration survey and 2004 spring surveys. San Diego horned lizard is a USFWS Species of Concern and a California Species of Special Concern (Navy 2012b, Navy 2012c, Navy 2012d).



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Navy-Managed Property
USFWS-designated QCB Critical Habitat
Coulter's Snapdragon (Concentrated Area)
QCB Sightings (2004-2010)

QCB Host Plants (2011-2012)
Coulter's Snapdragon (Antirrhinum coulterianum)
Chinese Houses (Collinsia concolor)
Dark-tip Bird's Beak (Cordylanthus rigidus ssp setigerus)
Coulter's Snapdragon (2004-2010)

Source- ESRI (2010), NAVFAC SW (2011), USFWS (2010), Rocks (2012).

Figure 3.2-2
Quino Checkerspot Butterfly (QCB) and Host Plant Survey Results

San Diego County, California

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3.2.1.7 Wetlands and Waters of the U.S.

There are two potential U.S. Army Corps of Engineers (USACE) Jurisdictional Waters of the U.S. in the project area, designated Stream 1 and Stream 2.

Stream 1 is an ephemeral stream that originated within a swale in the central region of the Parcel C in the low-lying valley west of the merging point of two north-south dirt roads. Stream 1 has an ordinary high water mark of approximately one foot (0.3 meter) and flows south for approximately 813 feet (278 meters) before dissipating. The stream channel is then discontinuous for approximately 4.31 miles (6.94 kilometers) before merging with Campo Creek. In the northern (upstream) portion of the channel, Stream 1 is mostly barren of vegetation. Where present, vegetation was composed entirely of pine goldenbush (*Ericameria pinifolia*), big sagebrush, and California buckwheat (Navy 2012a).

Stream 2 is an ephemeral stream that originates at the base of an unpaved road and flows into Stream 1. Stream 2 has an ordinary high water mark of approximately one foot (0.3 meter) and a total length of approximately 93 feet (28 meters). The channel is mostly vegetated; however, there are trace amounts of big sagebrush (Navy 2012a).

3.2.2 ENVIRONMENTAL CONSEQUENCES

The following section describes the potential impacts on biological resources that would result from the implementation of either of the alternatives. Factors relevant to determining whether impacts would be significant include the severity of any impacts on individuals or habitats of threatened and endangered species.

Impacts may result from construction or from the future use of facilities. Impacts may be either temporary (reversible) or permanent (irreversible). Temporary impacts include disturbances caused by construction. Removal of vegetation can be a temporary or permanent impact. If the vegetation is restored after construction, the impact would be temporary. If a permanent structure is built, the vegetation cannot be restored and the impact is permanent. Permanent impacts include direct mortality of species and alteration of the topography through grading.

Impacts have been evaluated based upon an understanding of the Proposed Action's configuration and components, construction methods, and equipment that would be used, and how the site would be used after it is developed. All impacts resulting from the alternatives are described as they would occur with implementation of the measures presented in Section 2.6.3.

3.2.2.1 Alternative 1

Plant Communities

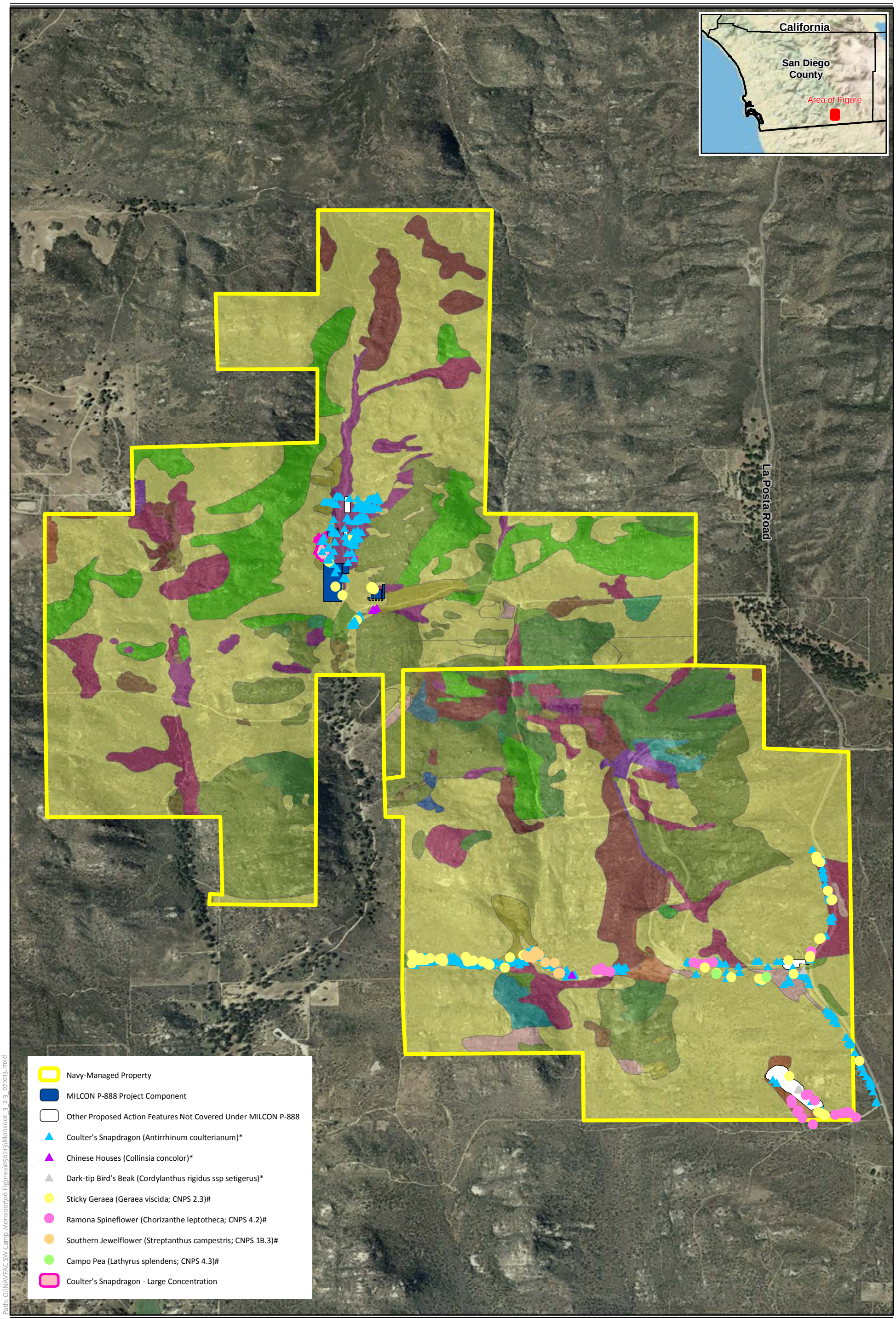
For Alternative 1, direct permanent and temporary impacts to native plant communities would occur (Table 3.2-3). Direct temporary impacts to plant communities adjacent to Alternative 1 may include impacts such as trampling and soil compaction. Indirect temporary

impacts may result from fugitive dust, sediment, and storm water pollution. Direct permanent impacts would occur from construction grading and maintenance of vegetation around the range features. Additional direct permanent impacts to vegetation may occur from foot and possible vehicle traffic associated with training activities, periodic maintenance, and the repair of project facilities. Indirect permanent impacts may include impacts such as invasive species introduction, erosion, and changes to hydrology. These impacts could result in the degradation of plant communities adjacent to the project area. Impacts to plant communities during operation would include foot and possible vehicle traffic associated with periodic maintenance and repair along the pipeline.

Table 3.2-3 Permanent and Temporary Impacts to Vegetation Communities

Vegetation Community	Impacts (acres [hectares])	
	Permanent	Temporary
Big sagebrush series	0.71 (0.287)	0.37 (0.149)
Birchleaf mountain-mahogany series	0.0	0.0
California annual grassland series	9.89 (4)	2.43 (0.983)
California buckwheat-white sage series	1.085 (0.44)	0.115 (0.05)
California buckwheat series	0.74 (0.299)	0.08 (0.032)
Chamise series	18.97 (7.67)	4.48 (1.81)
Chamise-bigberry manzanita series	0.0	0.0
Chamise-Eastwood manzanita series	0.0	0.0
Chaparral whitethorn series	0.0	0.0
Coast live oak series	0.0	0.0
Holly-leaf cherry series	0.185 (0.074)	0.015 (0.006)
Mixed scrub oak series	0.0	0.0
Native grass series	0.0	0.0
Scrub oak-chamise series	0.04 (0.016)	0.17 (0.068)
Scrub oak series	0.0	0.0
Scrub oak-birchleaf mountain-mahogany series	0.0	0.0
Scrub oak-chaparral whitethorn series	0.0	0.0
TOTALS	**31.62 (12.79)**	**7.66 (3.09)**

Figure 3.2-3 shows the vegetation communities as well as rare plants that could be impacted with the implementation of Alternative 1.



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California Annual Grassland Series*
Birchleaf Mountain-Mahogany Series
Big Sagebrush Series*
Chamise Series*
Chamise-Bigberry Manzanita Series
Chamise-Eastwood Manzanita Series
California Buckwheat Series*
California Buckwheat-White Sage Series*
Coast Live Oak Series
Chaparral Whitethorn Series
Developed Area
Holly-Leaf Cherry Series
Mixed Scrub Oak Series
Native Grassland Series
Scrub Oak Series
Scrub Oak-Chamise Series
Scrub Oak-Birchleaf Mt. Mahogany Series
Scrub Oak-Chaparral Whitethorn Series
Disturbed Habitat

Source- ESRI (2010), NAVFAC SW 2011

Figure 3.2-3
Proposed Action Vegetation Impacts

San Diego County, California

** QCB host plant/vegetation community.*
 # CNPS-designated rare plant.

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Federally Listed Plant Species

No federally listed threatened or endangered plant species are known to occur in the project area. Therefore, implementation of Alternative 1 would have no significant impact on federally listed plant species.

Non-Federally Listed Rare Plant Species

During the 2012 spring rare plant survey, four CNPS listed rare plant species (Table 3.2-2) were recorded in the project area and could be affected by construction under Alternative 1 (Navy 2012c). All four sensitive plant species were found in Parcel C of the project area; however, only sticky geraea was found in the Previously Withdrawn Parcel.

Implementation of Alternative 1 would have no significant impact on federally listed plant species. Impacts to non-federally listed plant species and rare plant communities would include removal of dark-tip bird's beak, sticky geraea, Ramona spineflower, and white snapdragon for grading and construction of Alternative 1. Additional impacts to plant communities would include potential erosion, storm water pollution, dust, and trampling due to foot and vehicle traffic. Implementation of the special conservation and construction measures described in Section 2.6.3 would help to offset impacts; therefore, there would be no significant impacts to vegetation communities as a result of the implementation of Alternative 1.

Wildlife Species

Federally Listed Wildlife Species

Due to the lack of observed arroyo toad habitat onsite (Navy 2012c) and large distance from recorded breeding locations, it is not expected that the arroyo toad would use project area; therefore, the arroyo toad does not have the potential to be affected by Alternative 1. QCB has the potential to be affected by Alternative 1, as described below.

Quino Checkerspot Butterfly

Alternative 1 could result in incidental take of QCB. Potential impacts could be temporary or permanent. Potential impacts of Alternative 1 are as follows:

- Construction-caused mortality due to individuals being crushed in the work area (permanent);
- Harm in the form of disturbance, displacement, and/or behavior disruption due to noise and vibrations from construction activities (temporary);
- Harm in the form of disturbance, displacement, and/or behavior disruption due to noise 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); and,

- Habitat loss of QCB host plants (including Chinese houses, Coulter's snapdragon, and dark-tip bird's beak) due to development of the training facilities (permanent).

It is likely that there is a stable population QCB in or near the project area because of the presence of host and nectar QCB plants and the observation of butterflies at multiple sites in 2004 and 2010. QCB can remain in the larval stage for many years if environmental conditions are unfavorable. The number of QCB subject to take would depend on the density of butterflies in the project area; however, no QCB were observed during the 2006, 2007, or 2008 surveys, and only three extremely worn adults were observed during the 2010 QCB survey (RECON 2006, RECON 2007, ICF International 2010).

The Navy will conduct formal consultation with USFWS to determine the appropriate preventative actions that need to be taken to conserve QCB. Currently, Coulter's snapdragon, Chinese houses, and dark-tip bird's beak, all QCB host plants, are found within the project footprint. These plants are discussed in greater detail in Section 3.2.1.5 and illustrated on Figures 3.2.2 and 3.2-3. Alternative 1 may affect and is likely to adversely affect QCB within the project area. Effects could be significant at the individual level, but the observance or detection of mortality is highly unlikely because of the small body size and diapause life stage. The effect on the regional population is unknown because of the lack of data. Alternative 1 would permanently remove 21.54 acres (8.7 hectares) of non-excluded QCB habitat. With implementation of pre-construction QCB surveys and the special conservation and construction measures agreed upon with USFWS and described in Section 2.6.3, there would be no significant impacts to QCB during the construction phase of Alternative 1. Implementation of the Proposed Action would result in vegetation impacts to 39.28 acres (15.89 hectares) of QCB habitat.. Based on the minimal amount of habitat removal when compared to available habitat for this species, no significant impacts would occur to QCB during operation of Alternative 1.

Non-Federally Listed Rare Wildlife Species

Non-federally listed rare wildlife species potentially affected by Alternative 1 include birds protected under the Migratory Bird Treaty Act, the San Diego horned lizard, northern red diamond rattlesnake, black-chinned sparrow, brewer's sparrow, and northern harrier. Impacts to non-federally listed rare wildlife species include the removal of habitat due to vegetation clearing and grading, the addition of predatory bird perches, and increased noise and vibration. Additional impacts to non-federally listed rare wildlife species include potential disturbance to nesting birds within and surrounding the project area due to noise and vibration and loss of habitat due to foot and vehicle trampling and compaction. With implementation of pre-construction breeding bird surveys, enforcement of speed limits, and all other special construction and conservation measures described under Section 2.6.3, there would be no significant impacts to non-federally listed rare wildlife, including avian species protected under the Migratory Bird Treaty Act, with implementation of Alternative 1.

Wetlands and Waters of the United States

Under Alternative 1, permanent impacts to potential Jurisdictional Waters of the United States could occur. The proposed rifle range would be constructed within a portion of Stream 1 and Stream 2; however, the range would be baffled, limiting the associated Surface Danger Zone to only 150 feet (45 meters) in every direction extending out from the firing line towards the intended target. Impacts to Jurisdictional Waters of the United States may include stray shot entering the streams; however, the baffling would reduce the likelihood of this occurring. Additional impacts may include soil erosion and sedimentation due to foot and vehicle traffic surrounding the shotgun range. With implementation of the avoidance and minimization measures described in Section 2.6.3, such as the preparation of a SWPPP, there would be no significant impacts to USACE Jurisdictional Waters of the United States during the design, construction, and operation stages of Alternative 1. However, Section 401 and 404 permits will be required from USACE and the Regional Water Quality Control Board, respectively, per the Clean Water Act.

3.2.2.2 Alternative 2

Under Alternative 2, the shotgun range would not be constructed, resulting in the reduction of approximately 1.55 acres (0.63 hectare) of vegetation removal. If the shotgun range is not constructed, 1.53 acres (0.62 hectare) of permanent disturbance and 0.48 acre (0.19 hectare) of temporary disturbance in the California annual grassland series and 0.02 acre (0.008 hectare) of permanent and temporary disturbance in the chamise series would not occur. Since the vegetation south of the road is generally the same as the vegetation on north of the road, constructing the Range Control Building and associated infrastructure would have a similar impact. Therefore, impacts under this alternative would be less than those described for Alternative 1. Implementation of Alternative 2 would not result in significant impacts to plant communities, wildlife species, or Jurisdictional Waters of the United States.

3.2.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. There would be no change to existing biological resources conditions; therefore, the No Action Alternative would have no significant impacts to plant communities, wildlife species, and Jurisdictional Waters of the United States.

3.3 CULTURAL RESOURCES

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including, but not limited to, the following resources:

- DD Form 1391 Fiscal Year 2019 Military Construction Project 8 (Navy 2012g); and,
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008).

3.3.1 AFFECTED ENVIRONMENT

The NEPA process and compliance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800 require an assessment of the potential effects of a proposed action (an "undertaking" under Section 106) on historic properties that are within the proposed undertaking's area of potential effect. In accordance with 36 CFR Part 800 16(d), an area of potential effect is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist."

A Programmatic Agreement has been negotiated between the Navy and the California Office of Historic Preservation which specifies how cultural resource issues are to be handled and also streamlines the process. Following the direction provided in the San Diego Metropolitan Area Programmatic Agreement, the area of potential effect for cultural resources is defined as all areas of proposed ground disturbance and a 30-meter buffer around those areas.

3.3.1.1 Pre-History and History of San Diego County and the Project Area

The prehistory of southeastern San Diego County and the project area is rich. Three major divisions in the archaeological record are recognized:

- The first is the Paleoindian period, from approximately 11,500 to 8,500 years before present. During this period, hunting appears to have been a major emphasis;
- The Archaic period begins about 8,500 years before present and lasts until approximately 1,300 years before present. People during this period were adapted to collection resources and processing hard seeds; and,
- About 1,300 years before present, the Late Prehistoric period begins. Ending shortly after the coming of the Spanish in 1769, this period marks the introduction of the bow and arrow, ceramics, and cremation in the area.

When Spanish colonists arrived in southern California in 1769, southern San Diego County was occupied by the Kumeyaay, a group of independent, territorial bands with patrilineal descent (Gifford 1918). During the Mission period, the Kumeyaay strongly resisted the Spanish (Luomala 1978). Numerous coastal Indian rancherias in the San Diego region were soon abandoned, and survivors retreated to more remote areas, such as the project area (Strong 1929).

Although the Spanish arrived in San Diego in 1769, settlement of the area by people of European descent did not begin until the 1850s. The area has a history of rural agricultural use. Ranching, mining, transportation, and military are all important themes in the local history.

3.3.1.2 Previous Cultural Resources Investigations at the Project Area

The 2004 cultural resources study for the Previously Withdrawn Parcel and Parcels C, E, and G (Underwood and Gregory 2004) forms the basis for this analysis. A records search was conducted at the South Coastal Information Center, Department of Anthropology, San Diego State University, for the Previously Withdrawn Parcel and Parcels C, E, and G, as well as a 1-mile (1.6-kilometer) buffer (Underwood and Gregory 2004). Sixteen cultural resource investigations had been conducted in the area. These investigations are listed in Table 3.3-1.

Table 3.3-1 Previous Investigations within a 1-mile (1.6-kilometer) Radius of the Project Area

Author	Title	NADB Document No.	Year
American Pacific Environmental Consultants, Inc.	Morena Lake Development TPM 15326 EAD Log #78-21-19 San Diego County, California	1120060	1979
Berryman, Stanley R.	Archaeological Survey Report: Rattlesnake Acres	1120191	1975
Berryman, Stanley R.	Archaeological Reconnaissance of the Stallings Lot Split in Campo, California	1120363	1980
Crotteau, Karen	Negative Archaeological Survey Report 11-SD-94, P.M. 54.7-54.8 - Improving Drainage by Raising the Roadbed Out of the Floodplain	1126524	1983
Culbert, Jan and Cari Verplanck	Morena Grazing Allotment Permit Renewal	1123256	1995
DeCosta, Joan M.	An Archaeological Survey Report of Route 94 from 0.5 Mile East to 1.3 Mile East of La Posta Road, 11-SD-94/P.M.56.1-56.8.(11209-194050)	1120015	1981
Fink, Gary R.	A Cultural Resource Assessment for Three Roads in the Lake Morena Area: Lake Morena Drive, Oak Drive, Buckman Springs Road Project: UJ0171	1120932	1979
Pettus, Roy E.	An Archaeological Survey for Proposed Utility Pole Relocation and Minor Roadway Realignment at Six Locations on Highway 94 in South San Diego County, California (11-SD-94 P.M. 20.85 to 54.25)	1121300	1980

Table 3.3-1 Previous Investigations within a 1-mile (1.6-kilometer) Radius of the Project Area

Author	Title	NADB Document No.	Year
Rosen, Martin	Historical Property Survey Report for Old Highway 80, San Diego County, California	1128282	2001
Smith, Brian F.	An Archaeological Survey of the 700-Acre Balian Subdivision, County of San Diego	1121419	1989
Smith, Brian F.	An Archaeological Survey of the Stiles Lot Split Project Campo County of San Diego	1122230	1991
Smith, Brian F.	Results of Archaeological Survey and the Evaluation of Cultural Resources at the Sanger Lot Split Project, Morena Village	1122576	1992a
Smith, Brian F.	Result of an Archaeological Survey of the La Posta Recycling Center Project	1125791	1992b
Taylor, Clifford	Final Report and Campo Indian Preservation-Cultural Resource Inventory	1124365	1982
U.S. Department of Navy	A Cultural Resources Inventory Survey of the La Posta Astrophysical Observatory	–	1996
Wade, Sue	Cultural Resource Survey Pacific Cove La Posta Road Property	1127564	2000

A total of 38 cultural resources have been recorded within a 1-mile (1.6-kilometer) radius of the record search area. Of these, 31 resources are prehistoric and seven are historic period resources. Of the historic period resources, one cultural resource (the La Posta Astrophysical Observatory facility, consisting of seven buildings within the boundaries of the La Posta Microwave Space Relay Station) is located within the area being considered in this EA. The remaining six resources are within or very near Parcel G; however, Parcel G is not part of the project area. These previously recorded cultural resource sites are summarized in Table 3.3-2.

Table 3.3-2 Previously Recorded Cultural Resources within a 1-mile (1.6-kilometer) Radius of the Previously Withdrawn Parcel and Parcels C, E, and G

Permanent Trinomial (CA-SDI-)	Primary Number (P-37-)	Site Description	Year Recorded
5499	–	Isolated quartz projectile point	ND
5500	–	One rock cairn and duck, possible trail	ND
6746	–	Lithic scatter with groundstone	1977
6747	–	Lithic and ceramic scatter with bedrock milling	1977
6748	–	Lithic and ceramic scatter with groundstone and hammerstone	1977
9028	–	Small lithic and ceramic scatter with bedrock milling	1977
9029	–	Small lithic and ceramic scatter with bedrock milling	1977

Table 3.3-2 Previously Recorded Cultural Resources within a 1-mile (1.6-kilometer) Radius of the Previously Withdrawn Parcel and Parcels C, E, and G

Permanent Trinomial (CA-SDI-)	Primary Number (P-37-)	Site Description	Year Recorded
10,848	–	Habitation site with bedrock milling, lithics, and ceramics	1987
12,306	–	Extensive bedrock milling, a petroglyph, a cupule, and lithics	1991
12,645	–	Lithic and ceramic scatter with bedrock milling, groundstone, and a knife fragment	1992
12,646	–	Lithic and ceramic scatter with bedrock milling	1992
15,878	019192	Small lithic scatter	2000
15,903	019248	Lithic and ceramic scatter with bedrock milling, a point tip, and a burned bone fragment	2000
15,904	019250	Ceramic scatter	2000
15,905	019251	Five loci with bedrock milling, groundstone, lithics, and a ceramic scatter	2000
15,906	019252	Three granite rock rings	2001
15,907	019253	Rock shelter with stacked cobble masonry wall	2000
15,908	019254	Four loci with lithic and ceramic scatters, bedrock milling, groundstone, small and large mammal bones, and several tools	2000
15,909	019255	Lithic and ceramic scatter	2000
15,910	019256	Ceramic scatter	2000
15,911	019259	Sparse ceramic scatter and a rock ring	2001
15,912	019260	Lithic and ceramic scatter and a groundstone fragment	2001
15,915	019263	Lithic scatter	2001
15,916	019264	Dispersed lithic and ceramic scatter	2001
15,917	019266	Small lithic and ceramic scatter	2001
15,918	019267	Moderate lithic and ceramic scatter	2001
15,919	019268	Rock ring and lithic scatter	2000
15,920	019269	Small lithic scatter	2000
–	019249	1900s cabin	1996
–	017130	Isolated bifacial mano	1999
–	019257	Foundation and tractor parts adjacent to 1920s house and historic dump	2000
–	019265	Historic trash dump with sun-altered glass and soldered seam cans; also several 6-volt batteries and a segment of stovepipe	2000
15,921	019270	Small ceramic scatter of four brownware sherds	2000
15,922	019271	One circular cupule	2000
15,923	019272	One petroglyph (fertility figure) in the form of a natural fissure	2000

Table 3.3-2 Previously Recorded Cultural Resources within a 1-mile (1.6-kilometer) Radius of the Previously Withdrawn Parcel and Parcels C, E, and G

Permanent Trinomial (CA-SDI-)	Primary Number (P-37-)	Site Description	Year Recorded
		enhanced by pecking	
–	024023	A 53-kilometer (33-mile) segment of old U.S. 80. A two-lane undivided highway with 10 associated bridges. The segment is located in the eastern part of San Diego county.	2000
–	024784	An early 20th century house with several cement foundations, two wells, cement pads, and barbed-wire fences.	2001
–	–	La Posta Astrophysical Observatory: Buildings 586, 587, 588, 589, 591, 598, and 599	1996-1997

Historic USGS maps housed at the South Coastal Information Center were examined for the 2004 survey and include an 1872 map of the Western Portion of San Diego County, a 1955 map of Historic Stagecoach Routes of San Diego, the 1959 Campo USGS 15-minute quadrangle, and a 7.5-minute Cameron Corners quadrangle. In 1959, the roads identified within the vicinity of the project area are La Posta Road, Cameron Road, and La Posta Truck Trail.

Cultural resources are found within the Previously Withdrawn Parcel and Parcels C, E, and G. The sites and isolates found in the Previously Withdrawn Parcel and Parcels C (the parcels in which the action alternatives would be located) are discussed below by parcel and are summarized in Table 3.3-3.

Table 3.3-3 Sites Documented on the 2004 Survey

Permanent Trinomial (CA-SDI-)	Primary Numbers (P-37-)	Temporary Number	Description	NRHP Eligibility[1]
Previously Withdrawn Parcel				
CA-SDI-17,223H	025894		Historic period mining cairn	Not Eligible
CA-SDI-17,224H	025895		Historic period camp	Eligible
CA-SDI-17,228	025899		Prehistoric camp	Eligible
	025900		Livestock watering tank and trough	Not Eligible
CA-SDI-17,231/H	025903		Prehistoric habitation area and historic period ranch features	Eligible
	025909		New La Posta Road	Not Eligible
		LP-JU-I-1	Two isolated flakes	Not Eligible
		LP-JU-I-2	One isolated flake	Not Eligible

Table 3.3-3 Sites Documented on the 2004 Survey

Permanent Trinomial (CA-SDI-)	Primary Numbers (P-37-)	Temporary Number	Description	NRHP Eligibility[1]
Parcel C				
CA-SDI-17,229H	025901		Historic period refuse deposit	Not Eligible
CA-SDI-17,230H	025902		Historic period refuse deposit	Not Eligible
CA-SDI-17,232H	025904		Historic period refuse deposit	Not Eligible
CA-SDI-17,233H	025905		Historic period refuse deposit	Not Eligible
	025906		Concrete quail guzzler	Not Eligible
CA-SDI-17,235H	025910		La Posta Truck Trail	Not Eligible
	025911		Drainage ditch and livestock trough	Not Eligible

Source: Underwood and Gregory 2004

Note:
[1] To be confirmed by the Navy.

Previously Withdrawn Parcel

The 2004 survey located eight previously unidentified cultural resources within the Previously Withdrawn Parcel. The resources consist of six sites and two isolates. Four of the sites are historic period resources (CA-SDI-17,223H, CA-SDI-17,224H, P-37-025900, and P-37-025909). These, along with a site containing both prehistoric and historic period material (CA-SDI-17,231/H), reflect the activities related to ranching, mining, and transportation. The prehistoric component of CA-SDI-17,231/H is a large habitation area with bedrock milling, flaked lithics, and ceramics. Site CA-SDI-17,228 is a rock ring with a scatter of prehistoric ceramics. LP-JU-I-1 consists of two isolated metavolcanic flakes. LP-JU-I-2 consists of one cryptocrystalline silicate flake.

Parcel C

This parcel contains seven previously unrecorded cultural resources. All of the sites date to the historic period. Four of these are refuse scatters (CA-SDI-17,229H, CA-SDI-17,230H, CA-SDI-17,232H, and CA-SDI-17,233H) located along the La Posta Truck Trail (CA-SDI-17,235H). The two remaining sites are associated with game/hunting (P-37-025906) and ranching (P-37-025911).

3.3.1.3 Section 106 Compliance

For the La Posta Mountain Warfare Training Facility, compliance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800 has been accomplished under the San Diego Metropolitan Area Programmatic Agreement, executed in February 2003 between CNRSW, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer. The San Diego Metropolitan Area Programmatic Agreement provides for

CNRSW determinations of an undertaking's area of potential effect, identification of potentially affected historic properties, and assessment of "no historic properties affected" and "no adverse effect" without the further consultations with State Historic Preservation Officer normally required under 36 CFR Part 800. In accordance with 36 CFR Part 800.4 and 36 CFR Part 800.16(d), and in conformance with Stipulation 6 of the Programmatic Agreement, CNRSW identified an area of potential effect as the geographic area within which the project could directly or indirectly affect historic properties, including considerations of ground disturbance, potential visible and audible effects, and possible indirect effects.

Cultural resource studies (Navy 1996; Underwood and Gregory 2004) have identified archaeological and built resources at La Posta. The La Posta Astrophysical Observatory facility (Buildings 586 to 589, 591, 598, 599) non-eligibility determinations were reviewed and concurred with by State Historic Preservation Officer in 1996 (Navy 1996). Twenty-four sites and four isolated finds were documented as a result of the 2004 survey at La Posta (Underwood and Gregory 2004). Four of these sites were preliminarily assessed as eligible for the National Register of Historic Places: CASDI-17,224H, a historic camp; CA-SDI-17,228, a Late Prehistoric camp; CA-SDI-17,231/H, a Late Prehistoric village site; and CA-SDI-15,923, a Late Prehistoric rock art. This last site is in Parcel G, which is outside of the project area.

3.3.2 ENVIRONMENTAL CONSEQUENCES

Two cultural resources—La Posta Truck Trail (CA-SDI-17,235H) and New La Posta Road (P-37-025909)—are located within the area of potential effect; however, neither of these resources is recommend to be eligible for the National Register of Historic Places.

In conformance with Stipulation 8A of the San Diego Metropolitan Area Programmatic Agreement, CNRWS has, therefore, determined that the Proposed Action at Camp Michael Monsoor would not adversely affect properties listed on or eligible for listing on the National Register of Historic Places, nor would the Proposed Action affect resources that are considered contributing properties to a listed or eligible historic district. Consistent with 36 CFR Part 800.5(d)(1), CNRSW has accordingly made a determination of "no adverse effect" for the Proposed Action. Also in accordance with Stipulation 8A of the San Diego Metropolitan Area Programmatic Agreement, no further review or conformance with Section 106 of the National Historic Preservation Act or 36 CFR Part 800 is required.

3.3.2.1 Alternative 1

Based on investigations to date, two cultural resources are within the area of potential effect—La Posta Truck Trail (CA-SDI-17,235H) and New La Posta Road (P-37-025909). The proposed fencing and redesigned entrance and Range Control Building are adjacent to New La Posta Road (P-37-025909) to the east, and are close to an isolated tin can. Neither of these resources is recommended to be eligible for the National Register of Historic Places; therefore, neither qualifies as a historic property. The pistol ranges proposed in Parcel C are adjacent to the La Posta Truck Trail (CA-SDI-17,235H). Like the New La Posta Road finding, this resource is recommended as not eligible for the National Register of Historic Places and is, therefore, not

a historic property. Since there are no historic properties impacted by the Alternative 1, this alternative would have no significant impact on cultural resources.

3.3.2.2 Alternative 2

Alternative 2 would vary from Alternative 1 in that the shotgun range would not be constructed, the pistol range would be oriented from west to east, and the Range Control Building would be constructed on the south side of Patilla Road instead of the north side of the road. These changes would not affect any historic properties, as there are no historic properties within this area. Because no historic properties would be impacted, Alternative 2 would have no significant impact on cultural resources.

3.3.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. There would be no change to existing cultural resources condition; therefore, the No Action Alternative would have no significant impacts on historic properties and would not result in a significant impact to cultural resources.

3.4 GEOLOGY AND SOILS

The following discussion was based on information from the following resources:

- La Posta Mountain Warfare Training Facility Final Environmental Assessment EA (Navy 2008);
- County of San Diego General Plan (County of San Diego 2011e);
- U.S. Department of the Interior, Bureau of Land Management LR2000 mining records (BLM 2012b); and,
- USGS Southern California Fault Map (USGS, n.d.).

3.4.1 AFFECTED ENVIRONMENT

This section describes the existing geology and soils that occur within and adjacent to the project area. For the purposes of geology and soils, the project area is defined as the area where permanent impacts could occur from implementation of the project.

3.4.1.1 Topography

The project area lies within the geologic feature known as the Peninsular Ranges Batholith. The Peninsular Ranges Batholith includes a series of north-northwest trending mountain ranges (plutons) formed during subduction of the Farallon oceanic plate beneath the western margin of North America. It is divided on the basis of age into the older western zone (greater than 100 million years old) and the younger eastern zone (less than 100 million years old). Gabbro peaks (e.g., Los Pinos Mountain) are scattered in the western zone. The

topography in the project area consists of rugged, mountainous terrain with steep slopes, sheer rock cliffs, and frequent rock outcroppings. Elevations range between 3,200 and 4,000 feet (975 and 1,220 meters) above mean sea level (Navy 2008).

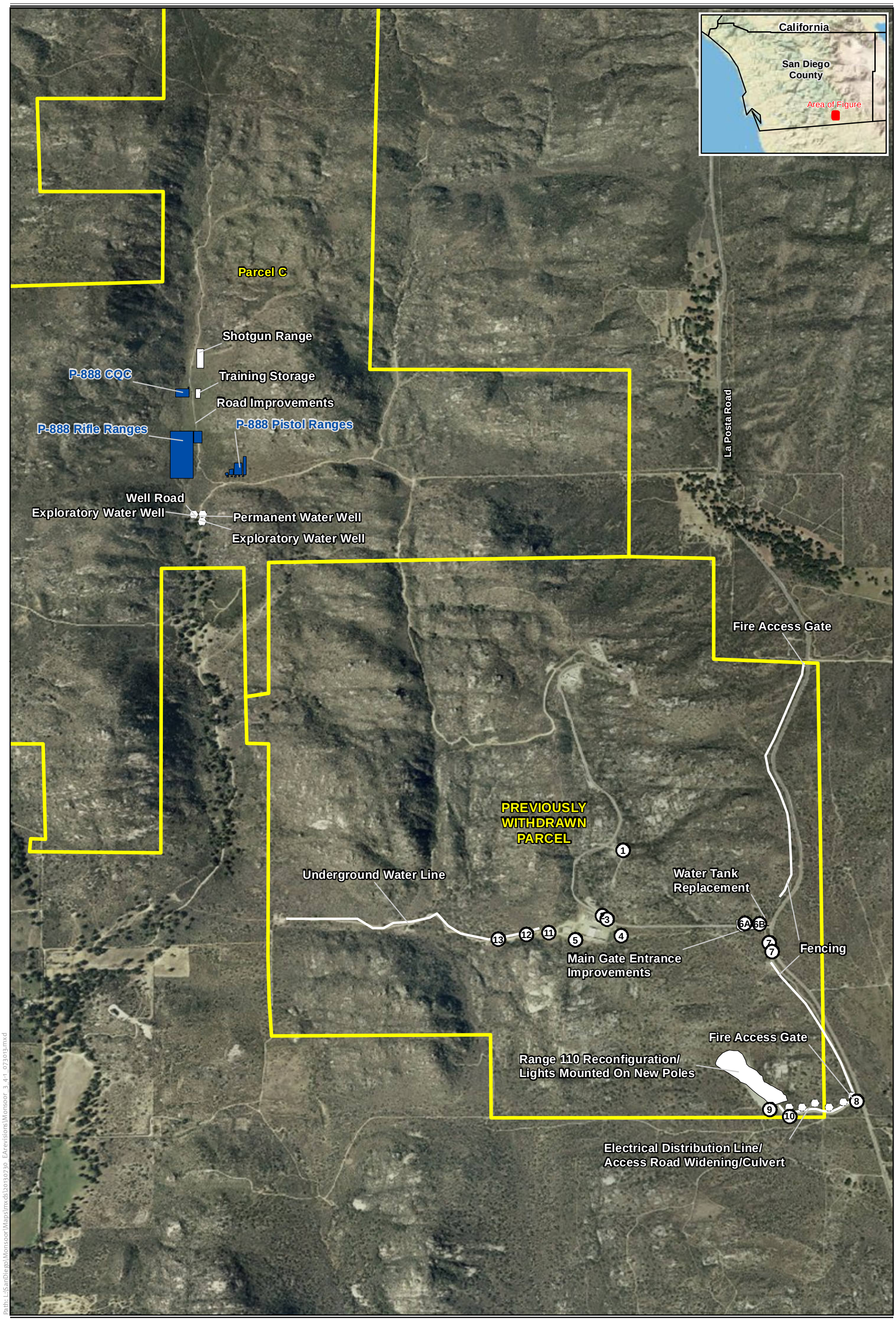
3.4.1.2 Geology

The landforms of the project area are the result of the underlying geology. The rock outcrops found in the project area are primarily decomposing granite. The Peninsula Ranges have been faulted and eroded in-place longer than other California mountain systems, have not been significantly folded, and have erosional surfaces and drainage patterns quite different from the Transverse and Coast ranges. They also have fewer landslides than the San Gabriel and San Bernardino mountains. The Laguna and Cuyamaca mountains, both part of the Peninsula Ranges, cover the east side of the U.S. Forest Service Descanso Ranger District (north of the project area), with smaller peaks and ranges to the west. This district is dominantly granitic with scattered zones of gabbro intrusive and hybrid rocks (mixed granitic metamorphic rocks). A large zone of schist extends from north of Cameron Corners to north of Julian, California. The schist is of interest because of occurrences of gold-bearing veins (Navy 2008).

3.4.1.3 Soils

Soils in the project area primarily consist of Mottsville, Calpine, Tollhouse, and La Posta land associations with acid igneous rock formations interspersed (Figure 3.4-1). The Mottsville series is a deep, loamy, coarse sand, occurring in valleys and on alluvial fans. The Calpine series is also granitic and on alluvial fans, but it is on very deep coarse sandy loams. Tollhouse soils are excessively drained, shallow, or very shallow coarse sandy loams. About 10 percent of the surface is typically covered with rock outcrops, and 20 percent is covered 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 (41 to 81 centimeters) deep. Permeability is rapid, runoff is medium, and the erosion hazard is moderate (Navy 2008).

Erosion and sediment control problems have been documented throughout Camp Michael Monsoor. A recent erosion study (Navy 2012f) evaluated erosion problems at 13 separate areas (Figure 3.4-1) related to rill erosion, ponding, and sediment control, among others. This study developed recommended solutions for each of the problem areas identified in this report. These solutions are incorporated as part of the project description. The erosion problems are identified in Table 3.4-1.



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0 1,000 2,000 Feet

Source- ESRI (2010), NAVFAC SW 2011

Navy-Managed Property

MILCON P-888 Project Component

Other Proposed Action Features Not Covered Under MILCON P-888

1 Erosion Improvement Area

Figure 3.4-1
Erosion Problems at Camp Michael Monsoor

San Diego County, California

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Table 3.4-1 Erosion and Sediment Control Problems at Camp Michael Monsoor

Location	Problem	Comments
Sniper Tower Access Road	Ponding runoff at a low point	The significance of this soggy ground is that maintenance and emergency vehicles are unable to access the Sniper Tower.
Lower Range 115 Complex	Pavement failure, rill erosion, and sediment deposition	Structural failure of the sniper targets, along with access safety are concerns associated with the driveway.
Lower Range 115 Complex	Channel incision occurring downstream of a corrugated metal pipe ("grand canyon")	Over time, the structural integrity of the culvert could be undermined due to long-term erosion. Additionally, there are potential habitat and biological impacts associated with hydromodification.
Main Gate	Sediment deposition along Patilla Road and at the Main Gate	Minor.
Range 110 Frontage Road	Cross drainage blowouts and rill erosion	Without a controlled cross drainage location, runoff will continue to erode the road, eventually leading to access issues and traffic safety concerns.
Range 110 and Range 110 Road	Erosion and sediment control at three locations	Traffic safety along La Posta Road is a significant concern at this location as sediment and rock deposited on La Posta Road has the potential to impact the public.
Lower Range Road	Erosion and sediment control at three locations	Undersized culvert.

Source: Navy 2012f

3.4.1.4 Mining Activities

All mining claims and patents in the project area are listed as forfeited or closed, according to BLM (BLM 2012b) and USGS records, with the exception of one series of claims that were subjected to a forfeiture appeal in the late 1990s. No mining is currently occurring in association with these claims (Navy 2008).

3.4.1.5 Geologic Hazards

The California Geological Survey, formerly the California Division of Mines and Geology, classifies faults as active or potentially active, according to the Alquist-Priolo Special Studies Zone Act of 1972. The California Geological Survey defines an "active fault" as a fault that has exhibited sediment displacement within the last 11,000 years (Holocene Epoch) and a "potentially active fault" as a fault that has exhibited sediment displacement during the Pleistocene Epoch (from about 1.6 million years before present to the beginning of the Holocene Epoch).

Fault activity causes damage in a variety of ways. Hazards can include landslides, ground shaking, surface displacement and rupture, and the triggering of tsunamis. Generally speaking, the type of damage caused at a particular location depends on:

- Proximity to an active fault;
- Frequency and severity of the earthquake;
- Potential for surface rupture;
- Composition of the surface and subsurface materials; and,
- Topography.

Seismic Zone ratings, as defined in NAVFAC Design Manual Two (Navy 1992), establish building requirements for an area based on the probability of a high seismic event occurring in that region. San Diego County lies within an active seismic region capable of subjecting the area to earthquakes of Seismic Zone 4 rating. 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 to southeast. There are no faults near the project area, but the Elsinore fault, which is located approximately 9.3 miles (15 kilometers) to the northeast, may cause seismic impacts. All regional faults 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 2008).

3.4.2 ENVIRONMENTAL CONSEQUENCES

3.4.2.1 Alternative 1

Potential impacts from Alternative 1 would be limited to ground disturbance in areas of construction, off-road vehicle use, or increased intensity of training activities. Construction activities can disturb soils, which could result in increased erosion. However, the implementation of the erosion control improvements at Range 110 and the Range Complex under Alternative 1 would correct many of the erosion problems currently being experienced by Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help minimize erosion that could occur from construction, since improvements would already be in place. This, coupled with the relatively low rainfall in the region, would make the rate of water erosion minimal.

The geologic impacts of Alternative 1 would not be significant because only 31.62 acres (12.79 hectares) of permanent ground surface disturbance would occur and avoidance and minimization measures would be implemented (e.g., best management practices discussed in Section 2.6.5.2). All soil excavated for the realignment of Range 110 would be used at Range 110, and no export or import of material would be required.

No significant impacts would occur from seismic hazards or other geologic hazards, as facilities and structures are small and are un- or intermittently staffed and unlikely to sustain significant damage or cause injury to the occupants. Therefore, there would be no significant impacts to geology and soil resources from implementation of Alternative 1.

3.4.2.2 Alternative 2

Under Alternative 2, the amount of soil disturbance would not differ substantially from Alternative 1. The total amount of soil disturbance would be 1.55 acres (0.63 hectare) less than Alternative 1, since the shotgun range would not be constructed. The construction of the new Range Control Building and Gate Sentry House south of the road would not result in more soil disturbance than would be experienced under Alternative 1 and would not exacerbate the existing soil deposition problem which is minor. Thus, there would be no significant impacts to geology and soil resources from implementation of Alternative 2.

3.4.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The erosion control improvements would not be implemented and the existing erosion problems on Camp Michael Monsoor would continue to occur. Safety and maintenance vehicles would continue to have difficulty accessing the Sniper Tower during wet weather, the sniper targets would eventually fail, and Patilla Road would eventually become unusable. La Posta Road would eventually be affected by erosion and soil deposition. Although these impacts would eventually occur, the workarounds and training as it currently exists would continue. Thus, the No Action Alternative would have no significant impacts on geology and soil resources.

3.5 LAND USE

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including, but not limited to, the following resources:

- DD Form 1391 Fiscal Year 2019 Military Construction Project 8 (Navy 2012g);
- Public Land Order Number 7807 (BLM 2013a);
- South Coast Resource Management Plan (BLM 1994);
- Draft South Coast Resource Management Plan Revision and Draft Environmental Impact Statement (BLM 2011);
- Mountain Empire Subregional Plan (County of San Diego 2011a);
- San Diego County General Plan (County of San Diego 2011c); and,
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008).

3.5.1 AFFECTED ENVIRONMENT

This section describes the existing and planned land uses at Camp Michael Monsoor and in the project area.

3.5.1.1 Applicable Plans and Policies

The following land use plans and policies, established by regulating authorities, are applicable to the project area.

Naval Base Coronado Integrated Natural Resources Management Plan

Two separate Integrated Natural Resources Management Plans (INRMPs) are used to manage Naval Base Coronado's complex natural resources: the 2002 Naval Base Coronado INRMP and the San Clemente Island INRMP. The INRMPs provide for natural resource conservation, rehabilitation, and management in a manner consistent with military missions at Naval Base Coronado. Camp Michael Monsoor is a facility that falls under the jurisdiction of Naval Base Coronado, and the 2002 Naval Base Coronado INRMP applies to Camp Michael Monsoor. The INRMP summarizes baseline conditions at Naval Base Coronado facilities and agreements through which compliance with regulatory and planning processes are accomplished. The INRMP provides technical guidance for the planning and preparation of installation approvals, management actions, orders, instructions, guidelines, standard operating procedures, and other plans for integrating natural resource management efforts into the decision-making process. The 2002 Naval Base Coronado INRMP is currently being revised to address the changing needs for natural resource protection at Naval Base Coronado installations.

South Coast Resource Management Plan

The 1994 South Coast Resource Management Plan provides guidance for the management of approximately 300,000 acres (121,405 hectares) of BLM-administered public lands in the South Coast Planning Area, which includes portions of five Southern California counties (San Diego, Riverside, San Bernardino, Orange, and Los Angeles) (BLM 1994); this area also includes Camp Michael Monsoor. Currently, the Palm Springs-South Coast Field Office is preparing a revised Resource Management Plan for the South Coast Planning area and an associated EIS to reflect the changed needs of the planning area. A Proposed Plan and Record of Decision are expected in 2013 or early 2014 (Hill 2012). Once adopted, the revised Resource Management Plan will replace the 1994 Plan (BLM 2011).

San Diego County General Plan

The San Diego County General Plan, adopted by the San Diego County Board of Supervisors on August 3, 2011, provides the blueprint for land use development, environmental protection, and accommodation of population growth in unincorporated areas of San Diego County (County of San Diego 2011c). The Plan designates the project area as Public Agency Lands (County of San Diego 2011d). While the County has no land use jurisdiction over federally owned public lands, including Camp Michael Monsoor, the San Diego General Plan influences land development on unincorporated lands surrounding the Proposed Action.

3.5.1.2 Onsite Land Use

Camp Michael Monsoor is primarily used for Navy SEAL training in mountain warfare sustainment and urban tactics training. Facilities at the Previously Withdrawn Parcel are generally clustered in three locations: at the Hilltop Complex, at the Beach Complex; and at the Range Complex (see Chapter 1, Figure 1-2). Facilities at these locations include:

- Eight buildings (offices, instructional classrooms, ready space, and a non-operational satellite dish);
- Helicopter landing pad;
- General purpose storage area;
- Breaching facility;
- Range Complex (three small arms ranges [Ranges 111, 112, and 115 a, b, and c]);
- Range Complex CQC structure (Ranges 113a and b);
- Range Complex paved parking lot;
- Three water wells;
- Simulated enemy missile site;
- Security fencing 500 feet (152 meters) in length along each side of the Main Gate entrance; and,
- Range 110.

Existing Recreational Uses

Recreation in the project area includes the use of an unmaintained biking trail north and west of the Previously Withdrawn Parcel near the La Posta Truck Trail (Mountain Bike Review 2012), a Class III Trail[17] along Buckman Springs Road (County of San Diego 2011b), and birding east of the Previously Withdrawn Parcel along La Posta Road (Birding San Diego County 2012). Although a BLM-maintained trail system does not exist, an informal trail network that is not authorized by the BLM or the Navy has developed in the area from regular public use.

[17] Class III Trails are bicycle trails that provide for shared use with pedestrian or motor vehicle traffic.

BLM Leases

Grazing Allotments

The Previously Withdrawn Parcel (1,067 acres [432 hectares]) and a portion of Parcel C (1,086 acres [439 hectares]) are located within the BLM-managed Clover Flat grazing allotment (Navy 2008), which is shown on Figure 3.5-1 and summarized in Table 3.5-1. Portions of the allotment have been reduced due to the Navy withdrawals at Camp Michael Monsoor and the allotment has been grazed only once in the last ten years (BLM 2011). Additionally, the current lessee has no need or desire to graze their cattle on lands in the project area (Penwell 2013).

Table 3.5-1 Clover Flat Grazing Allotment Details

Allotment Name/ Number	Season(s) of Use	Total Acres (Hectares)	Authorization Number(s)	Authorization Issuance Date(s)	Authorization Expiration Date(s)	Total Permitted AUMs[1]
Clover Flat/ 0712	Year round	2,735 hectares (6,760 acres)	0406617	03/01/2004	02/28/2014	715 (this is approximately 59 head of cattle)

Sources: BLM 2011, 2012a

Note:

[1] An animal unit month, or "AUM," is the amount of forage needed to feed one cow, one horse, or five sheep for one month.

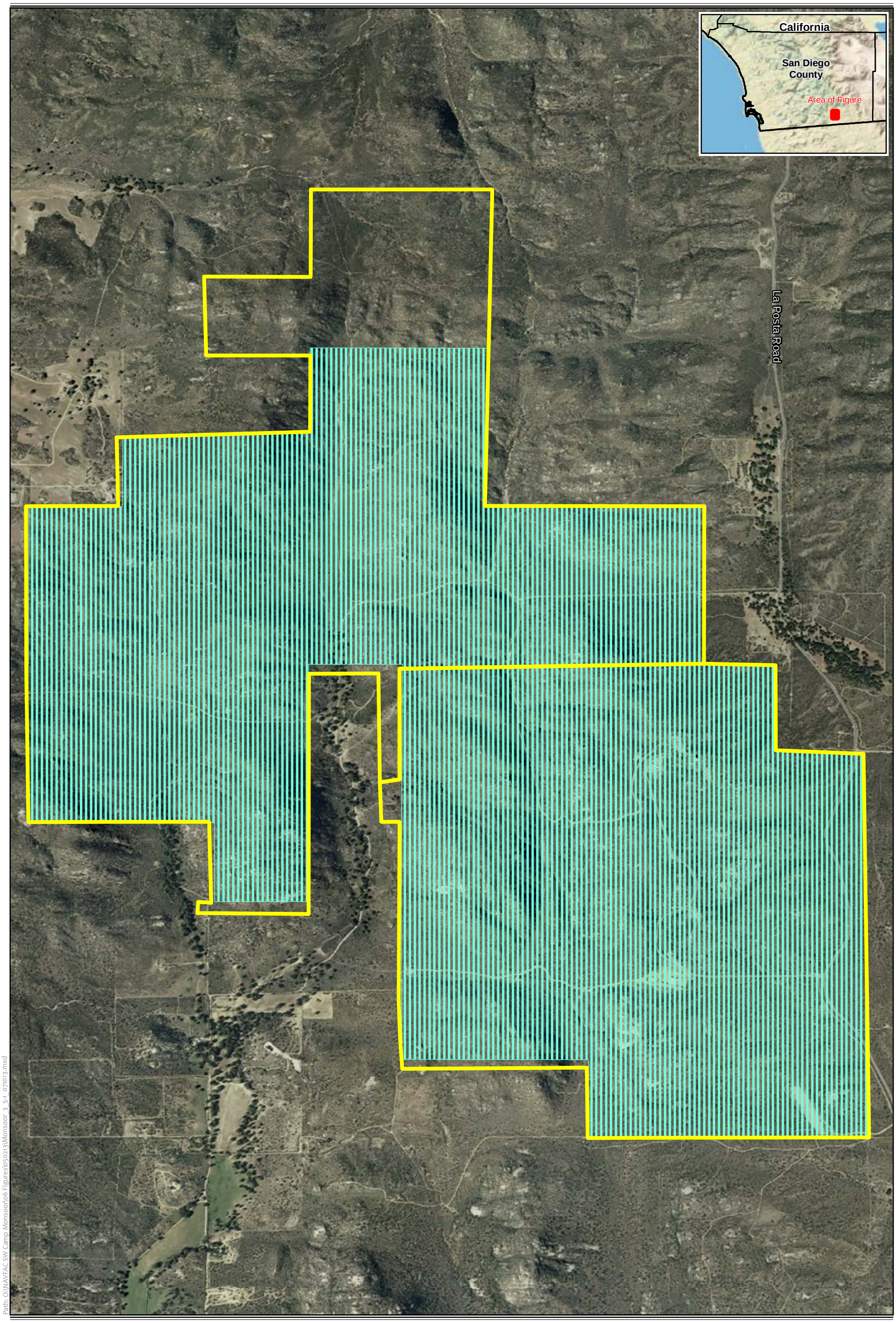
Other Existing and Planned Land Uses

A BLM Legacy Rehost System (LR2000) database search conducted on March 21, 2012 identified authorized uses and pending applications in the project area. Based on a review of the LR2000 geographic report results, the following uses are within the Previously Withdrawn Parcel or Parcel C, as shown in Table 3.5-2.

Table 3.5-2 BLM ROW Permits Issued and Pending (Previously Withdrawn Parcel and Parcel C)

Type of Permit	Project Serial No.	Owner	Parcel	Section, Township, and Range	Status
Right-of-Way for a Power Line	CARI 2477	SDG&E	Previously Withdrawn Parcel	Lot 22 of Section 24, also, within the east ½ of the northwest ¼ of Section 25, Township 17 South, Range 5 East	Authorized
Right-of-Way for a Power Line	CARI 6545	Mountain Empire Electric	Previously Withdrawn Parcel	Lot 20 and the southwest ¼ of the southwest ¼ of Section 24, Township 17 South, Range 5 East	Authorized
Right-of-Way Application	CACA 28407	San Diego County	Parcel E and the Previously Withdrawn Parcel	Sections 24 and 25, Township 17 South, Range 5 East	Pending

Source: BLM 2012b



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0 1,000 2,000 Feet

Navy-Managed Property

Clover Flat Grazing Allotment (within Proposed Action Area)

Figure 3.5-1
BLM Grazing Allotments

San Diego County, California

Source- ESRI (2010), NAVFAC SW 2011

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The BLM has no record of an authorization for the existing La Posta Road, which is a County-maintained road that extends south from Interstate 8 through the Previously Withdrawn Parcel and Parcel E, and continues south to State Route 94. This road may qualify as a statutory right-of-way under Reserved Statute 2477 (Navy 2008).

Navy Planned Land Use at Parcel C

Several facilities, including a CQC structure, a simulated residence for training, logistics, and support facilities, and a Method of Entry structure were included in MILCON P-781 and are under construction at Parcel C. These facilities would be used for base support and future Navy training activities. Additionally, the withdrawal of Parcel C for exclusive use by the Navy was previously analyzed in the La Posta Mountain Warfare Training Facility Final EA, and Public Land Order No. 7807 was issued by the BLM on January 17, 2013, giving the Navy exclusive use to conduct mountain warfare training exercises at Parcel C.

3.5.1.3 Surrounding Land Use

The land surrounding the project area primarily consists of public lands administered by the BLM and the U.S. Forest Service, private lands with a variety of owners, and portions of the Campo and La Posta Indian Reservations. A portion of the Descanso Ranger District of the Cleveland National Forest is north of the main portion of the project area (Navy 2008).

Land surrounding the installation is primarily undeveloped and consists of rugged, mountainous terrain with steep slopes, sheer rock cliffs, and frequent rock outcroppings. Land uses in the region are primarily rural residential, agricultural, and recreation (Navy 2008), with concentrated recreational activities (e.g., water sports, use of the Pacific Crest Trail) occurring approximately 1.93 miles (3.1 kilometers) west of the project area near the Morena Reservoir. The nearest community, Cameron Corners, is located approximately 3.16 miles (5.08 kilometers) southwest of the project area.

Navy Training Activities in the Cleveland National Forest

An interagency agreement between the Navy and the U.S. Forest Service allows Navy personnel to maneuver through the Cleveland National Forest, located north of the project area, to a training objective on another Navy facility on Mount Laguna. This provides Navy operators with the opportunity to train in a tactical manner for extended periods of time over large distances near Camp Michael Monsoor (Navy 2008).

Conservation Easement

A purchase of 220 acres (124 hectares) of land contiguous to the Previously Withdrawn Parcel was made by The Nature Conservancy from a private landowner using a combination of funding from the U.S. Department of Defense, the State of California, and The Nature Conservancy in accordance with an interagency agreement called the “Buffer Lands Initiative Memorandum of Understanding” (Figure 3.5-2). These parcels were purchased on February 21, 2006 to act as a buffer from incompatible land use around Camp Michael Monsoor. The

intent of these parcels is that they not be used by the public or the military. The Navy has recently (FY 2012) acquired three other parcels through other entities with assistance from the U.S. Department of Defense's Readiness and Environmental Protection Integration buffer program, which is implemented to preserve compatible land uses and sustain wildlife habitat near installations and ranges where the military trains, tests, and operates. These parcels are located immediately east and south of the Previously Withdrawn Parcel and north of Parcel C. The Buffer Lands Initiative Memorandum of Understanding precludes the use of this acquisition land as compensation for military impacts within the boundaries of the installation (Navy 2008).

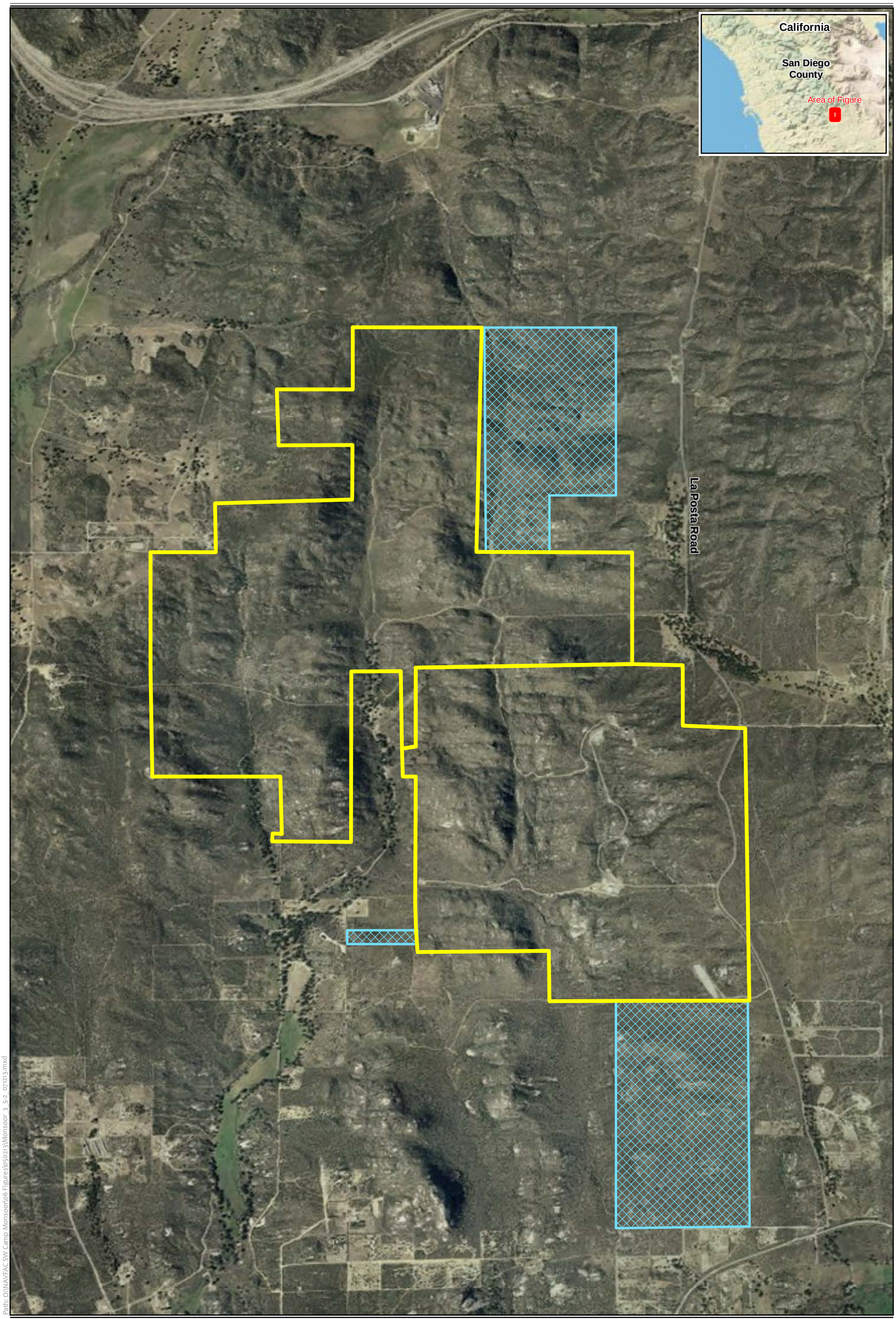
BLM Leases on Surrounding Parcels

Based on a review of the LR2000 geographic report results, the following authorized uses and pending applications are for lands surrounding the Proposed Action, as listed in Table 3.5-3.

Table 3.5-3 BLM ROW Permits Issued and Pending (Surrounding Parcels)

Type of Permit	Project Serial No.	Owner	Parcel	Section, Township, and Range	Status
Right-of-way for an access road	CACA 6804	Carl Buchheim	Parcel B	Southeast ¼ of the southeast ¼ of Section 21, Township 17 South, Range 5 East	Authorized
Right-of-way for an access road	CACA 20294	Dale Schutte	Parcel H	Northwest ¼ of Section 8, Township 17 South, Range 6 East	Authorized
Right-of-way for a power line	CACA 42361	SDG&E	Parcel H	Southwest ¼ of Section 8, Township 17 South, Range 6 East	Authorized
Right-of-way for a telephone line	CACA 44408	SBC Pacific Bell	Parcel H	Southwest ¼ of Section 8, Township 17 South, Range 6 East	Authorized
Right-of-way for a site testing and monitoring wind energy project	CACA 45248	Pacific Wind Development, LLC	Parcel H	Section 7, Township 17 South, Range 6 East	Authorized
Right-of-way application	CACA 041690	AT&T Corporation	Parcel H	Section 7, Township 17 South, Range 6 East	Authorized
Right-of-way application for the Sunrise Powerlink Project	CACA 47658	SDG&E	Parcel A	Sections 14, 15, 22, 27 and 28, Township 17 South, Range 5 East	Authorized
Right-of-way application	CACA 46885	SDG&E	Parcel D	Section 18, Township 17 South, Range 6 East	Pending
Right-of-way application	CACA 44173	Pacific Bell	Parcel H	Section 8, Township 17 South, Range 6 East	Pending
Application	CACA 53219	Debenham Energy LLC	Parcel H	Section 7, Township 17 South, Range 6 East	Pending

Source: BLM 2012b



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Navy-Managed Property
Conservation Easement

Source- ESRI (2010), NAVFAC SW (2011).

Figure 3.5-2
Conservation Easements

San Diego County, California

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3.5.2 ENVIRONMENTAL CONSEQUENCES

3.5.2.1 Alternative 1

Compatibility with Plans, Policies and Objectives

Alternative 1 is located within San Diego County, California on land that is owned by the federal government. All the ranges would be constructed in accordance with NAVFAC 1027/3B guidance on construction of firing ranges and rules regarding Surface Danger Zones. Consequently, implementation of Alternative 1 is inherently consistent with Naval Base Coronado planning policies and guidelines, and has been designed and sited to be compatible with the policies and objectives of these planning documents. Alternative 1 would not be subject to the policies and restrictions of San Diego County, and there would be no impact to the County's adopted plans, ordinances, and policies.

Compatibility with Existing and Planned Land Uses

Implementation of Alternative 1 would result in construction of new training facilities (e.g., CQC structure, small arms ranges) and upgrades of infrastructure (e.g., wells, water lines, power lines) at Camp Michael Monsoor. Alternative 1 would be compatible with the current training activities at Camp Michael Monsoor as well as new training that would occur on at the proposed ranges at Parcel C.

<u>Existing Land Uses</u>

Implementation of Alternative 1 would involve installation and use of new small arms firing ranges at Parcel C. The public currently uses land near Parcel C for dispersed recreational use (e.g., biking near the La Posta Truck Trail). However, all of the proposed ranges at Parcel C would be constructed in accordance with NAVFAC guidance on construction of firing ranges and rules regarding Surface Danger Zones. The Navy has administrative jurisdiction at Parcel C for exclusive military use and recreationists would be prohibited from entering Surface Danger Zones at Parcel C during controlled live-fire activities (refer to Section 3.7 for information on public health and safety)[18]. Further, the withdrawal of Parcel C from public use, including recreational use, was previously analyzed under the La Posta Mountain Warfare Training Facility Final EA, and other forms of recreation in the area would remain unaffected. Therefore, implementation of Alternative 1 would not have significant impacts on recreational uses in the area of Camp Michael Monsoor.

[18] At Parcel C, a warning placard would be displayed on a metal fence post north of the shotgun range. During live-fire, a red flag would be mounted on the post next to the warning placard to indicate that the range is in use, or "hot."

As stated above, the Previously Withdrawn Parcel and a portion of Parcel C overlap the Clover Flat grazing allotment on BLM lands; however, the project area is closed to grazing due to the withdrawal of these lands for exclusive use by the Navy (BLM 2013b); this was analyzed under the La Posta Mountain Warfare Training Facility Final EA. Additionally, the current lessee has no need or desire to graze their cattle on lands in the project area (Penwell 2013). Consequently, no grazing lands would need to be removed from the allotment as a result of Alternative 1, and no related significant impacts would result.

No other existing authorized uses were identified for Alternative 1 that would be incompatible with military training at Camp Michael Monsoor. The existing rights-of-way for access roads and power lines at the Previously Withdrawn Parcel (refer to Table 3.5-2) would not be affected by implementation of the Alternative 1. Therefore, implementation of Alternative 1 would have no significant impacts on recreational uses, or any other existing land uses.

Planned Land Uses

Alternative 1 was designed and sited to be compatible with Navy facilities currently being constructed under other MILCON projects (MILCON P-781) at Camp Michael Monsoor. Further, no pending applications with the BLM on lands in the vicinity of Alternative 1 were identified (refer to Table 3.5-2). Applications that are pending with the BLM on adjacent parcels (Parcels A, B, D, E, and H) (refer to Table 3.5-3) would not be affected by Alternative 1. The parcels that have been acquired by the Navy as conservation easements serve to prevent incompatible development adjacent to Camp Michael Monsoor. There would be no Navy activities on these conservation easement parcels (i.e., no Surface Danger Zones, no training); therefore, no planned land uses would be affected by implementation of the Alternative 1.

Overall Impact

Implementation of Alternative 1 would have no significant impacts on any applicable plans or policies or existing or planned land uses in the vicinity of Camp Michael Monsoor.

3.5.2.2 Alternative 2

As with Alternative 1, implementation of Alternative 2 would occur in an area that is already developed and planned for military use; therefore, no change in land use would occur and the impacts under Alternative 2 would be the same as those described for Alternative 1. Consequently, implementation of Alternative 2 would not result in significant impacts to land use.

3.5.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing environment for land use would not change; therefore, the No Action Alternative would have no significant impacts on applicable plans or polices, or planned land uses in the vicinity of Camp Michael Monsoor.

3.6 NOISE

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and that interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the individual. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are sometimes written dB(A) or dBA.

In the United States, several noise metrics have been developed to describe noise levels depending on the character of the noise. Average noise levels over a period of minutes or hours are usually expressed as dB Leq (i.e., the equivalent noise level). The period of time average may be specified (i.e., Leq(3) would be a 3-hour average). The Lmax descriptor indicates the greatest sound level, in dBA, measured during the preset measurement period. For continuous noise sources, such as roadways, noise levels are often averaged over a period of 24 hours and are normally weighted to account for greater human sensitivity to noise in the evening and nighttime hours. These 24-hour noise metrics are the Community Noise Equivalent Level (CNEL) and the Day-Night level (DNL or Ldn). However, as the firing ranges at the Previously Withdrawn Parcel only operate until 8:00 p.m., the Leq is the most appropriate method for describing noise impacts due to the Proposed Action.

In terms of human response, it is widely accepted that people are able detect sound level increases of 3 decibels (dB), while an increase in noise level of 10 dB is generally perceived as being twice as loud. However, a 5-dB change is generally considered to be a substantially noticeable change above the existing noise environment. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud). Sound level limits for San Diego County are presented in Table 3.6-1, although the Navy is not bound by them.

Table 3.6-1 San Diego County Sound Level Limits in Decibels (dBA)

Zone	Time	One-hour Average Sound Level Limits (dBA)
Rural residential use with a General Plan Land Use Designation density of less than 10.9 dwelling units per acre.	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45

3.6.1 AFFECTED ENVIRONMENT

In addition to the San Diego County limits listed in Table 3.6-1, it shall be unlawful for any person to operate, or cause the operation of, construction equipment between 7:00 p.m. and 7:00 a.m. or on a Sunday or a holiday, excluding emergency work.

3.6.1.1 Noise Sources

The dominant noise sources in the project area are the various training operations at the existing weapons ranges. Other noise sources include ongoing facilities maintenance and construction, off-road vehicular traffic, vehicular traffic to and from the Hilltop Complex, aircraft flyovers, agricultural activities, and vehicles on La Posta Road. The project area is not located near an airport or rail operations.

3.6.1.2 Sensitive Receptors

Human noise-sensitive receptors are generally considered to be persons who occupy areas where noise is an important attribute of the environment. These areas often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries. Noise-sensitive receptors may also include wildlife, such as certain songbirds.

3.6.1.3 Project Area

The project area is located in an area with primarily rural residential and agricultural land uses. The nearest noise-sensitive receptors to the project area are located approximately 500 feet (152 meters) north and 800 feet (244 meters) east of the Previously Withdrawn Parcel and consist of single-family residential land uses. Both of these receptors are approximately 5,000 feet (1,524 meters) from the existing small arms ranges. There are no sensitive noise receptors within the boundaries of the project area.

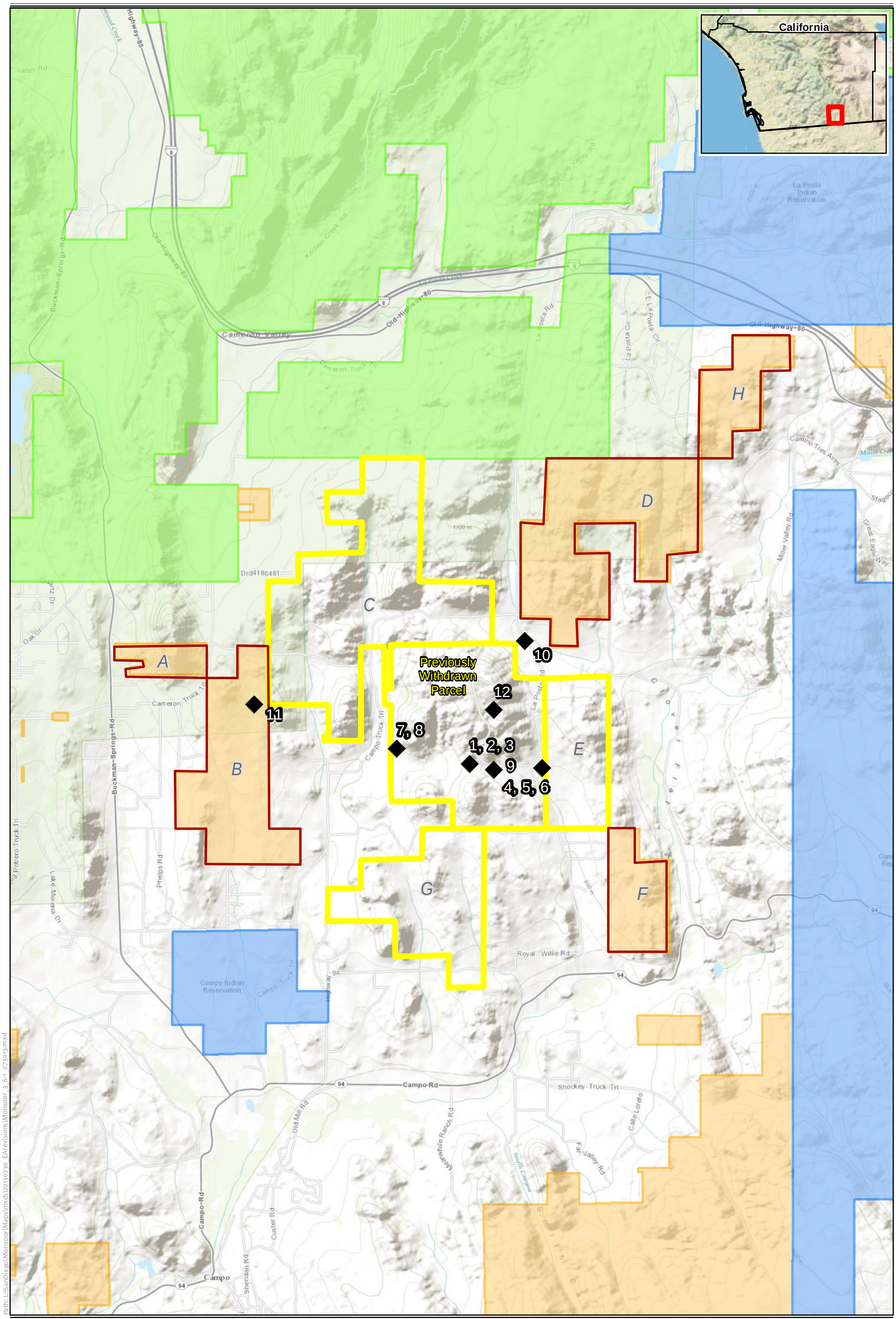
3.6.1.4 Existing Noise Levels

Existing noise level data were included in the 2008 Final La Posta Mountain Warfare Training Facility Final EA (Navy 2008). These data were collected at various locations on March 3, 16, and 19, 2004 (Figure 3.6-1).

Ambient noise measurements included the range (approximately 50 feet [15 meters] behind the firing line), existing property boundaries, and residential properties in the surrounding community. Noise meters used included two Larson-Davis Laboratories Model 712 Type 2 sound level meters and one Larson-Davis Laboratories Model 720 Type 2 sound level meter. The meters were calibrated before and after use according to the manufacturer's recommendations.

The following parameters were used with all the sound level meters:

- Filter: A-weighted;
- Response: Fast; and,
- Time History Period: 1 second.



0 0.5 1 Miles

Noise Monitoring Location

Navy-Managed Property

Existing ROW for Nonexclusive Use by the Navy

Bureau of Indian Affairs

Bureau of Land Management

US Forest Service

Source- ESRI (2010), NAVFAC SW 2011

Figure 3.6-1
Noise Measurement Locations

San Diego County, California

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During the measurement period on March 3, 2004, approximately 15 personnel were on the range firing a combination of 9-mm (M9) pistols and 5.56-mm (M-4) rifles. The temperature ranged from 49°F (9°C) in the morning to 57°F (14°C) in the afternoon, with a westerly wind constant throughout the day. Average wind speeds were 2 mph (3 kph), with gusts of up to 12 mph (19 kph). Noise measurements at Measuring Sites (MS) 1, 4, 10, 11, and 12 were taken during this measuring period:

- **MS 1** was located approximately 50 feet (15 meters) east of the firing line in a range area adjacent to the active range, with an intervening 10-foot-high (3.3-meter-high) earthen berm. Noise measurements at MS 1 represent noise levels in the range area with attenuation due to the existing berms;
- **MS 4** was located approximately 150 feet (46 meters) west of La Posta Road, inside the fenced area of the Previously Withdrawn Parcel, and represents ambient noise levels at the western edge of this area;
- **MS 10** was located 50 feet (15 meters) north of La Posta Road, across from 2460 La Posta Road, and is representative of ambient daytime noise levels in that area at the nearest residential land uses;
- **MS 11** was located at the northern terminus of Campo Truck Trail, near the entrance to Wandering Springs Ranch, and is representative of ambient daytime noise levels in that area; and,
- **MS 12** was located just south of the parking lot area for the Previously Withdrawn Parcel, and is representative of ambient noise levels at the onsite offices and facilities.

On March 16, 2004, approximately 30 personnel were on range firing 9-mm pistols. The temperature ranged from 75°F (24°C) in the morning to 80°F (27°C) in the afternoon, with westerly winds constant throughout the measurement period. Average wind speeds were 3 mph (5 kph), with gusts of up to 18 mph (29 kph). Noise measurements at MS 2, 5, and 7 were taken during this measurement period:

- **MS 2** was located directly behind the firing line, at approximately 50 feet (15 meters), and represents noise levels at the range during M9 firing;
- **MS 5** was located in the same location as MS 4 and represents noise levels at the eastern property boundary, along La Posta Road, during M9 firing; and,
- **MS 7** was taken at the western property boundary, approximately 1 mile (1.6 kilometer) south of the northern boundary of the Previously Withdrawn Parcel, and represents noise levels at the western property boundary with an active range.

On March 19, 2004, approximately 30 personnel were on range firing 5.56-mm rifles, the most commonly used round. The temperature was 73°F (23°C) with no measurable wind. Noise measurements at MS 3, 6, 8, and 9 were taken during this measurement period:

- **MS 3** was located behind the firing line, at approximately 50 feet (15 meters), and represents the noise levels at the range during M-4 firing;
- **MS 6** was at the same location as MS 4 and MS 5 and represents noise levels along the eastern property boundary during M-4 firing;
- **MS 8** was positioned in the same location as MS 7 and represents the ambient noise level along the western property line; and,
- **MS 9** was located approximately 1,000 feet (304 meters) east of the firing range and is used to calculate the noise attenuation over distance at the Previously Withdrawn Parcel.

Recorded noise level measurements for each MS are summarized in Table 3.6-2.

Table 3.6-2 Existing Noise Level Measurements for Camp Michael Monsoor and Surrounding Areas

MS No.	Location	Date	Time	Noise Level, dBA		
				Leq	Lmax	Lmin
1	Firing range, 50 feet (15 meters) north of firing line	3 March 2004[1]	10:30 – 11:29	80	96	36
2	Firing range, 50 feet (15 meters) behind firing line	16 March 2004[2]	9:16 – 11:31	90	112	36
3	Firing range, 50 feet (15 meters) behind firing line	19 March 2004[3]	7:49 – 9:00	87	112	36
4	Eastern property boundary, 150 feet (46 meters) south of entrance gate	3 March 2004	12:19 – 12:35	49	64	34
5	Eastern property boundary, 150 feet (46 meters) south of entrance gate	16 March 2004	9:22 – 10:17	54	76	34
6	Eastern property boundary, 150 feet (46 meters) south of entrance gate	19 March 2004	7:53 – 8:38	45	64	33
7	Western property boundary	16 March 2004	10:34 – 11:19	54	78	33
8	Western property boundary	19 March 2004	8:43 – 8:53	38	53	33
9	1,000 feet (304 meters) east of firing range	19 March 2004	7:56- 9:04	51	93	37
10	Residential area along La Posta Road north of existing site	3 March 2004	15:29 – 15:41	57	77	33

Table 3.6-2 Existing Noise Level Measurements for Camp Michael Monsoor and Surrounding Areas

MS	Location	Date	Time	Noise Level, dBA		
11	Residential properties along Campo Truck Trail east of existing site	3 March 2004	13:47 – 14:13	48	65	36
12	Microwave Space Relay Station parking lot	3 March 2004	16:14 – 16:19	41	54	34

Source: Navy 2008

Notes:
[1] Temperatures ranged from 49°F (9°C) in the morning to 57°F (14°C) in the afternoon. Winds were from the west at 2 mph (3 kph) gusting up to 12 mph (19 kph).
[2] Temperatures ranged from 75°F (24°C) in the morning to 80°F (27°C) in the afternoon. Winds were from the west at 3 mph (5 kph) gusting up to 18 mph (29 kph).
[3] The temperature was 73°F (23°C) with no measurable wind.

As shown in Table 3.6-2, the average noise level at the range area during firing exercises exceeds 80 dBA Leq and can vary by approximately 10 dBA Leq depending on location. Noise levels along the eastern property boundary are generally unaffected by weapons fire due to traffic noise generated by vehicles on La Posta Road. Noise levels along the western boundary show an increase of approximately 16 dBA Leq over ambient noise levels with the range active; however, during range activities, the observed Lmax increased by less than 2 dBA over ambient levels when weapons were fired. Measurements taken on March 16, 2007 for the La Posta Mountain Warfare Training Facility Final EA may have been influenced by wind gusts, as noise levels along the eastern and western property boundaries are similar for that day. Due to the similarity of noise levels recorded at MS 5 and MS 7, it can be assumed that noise levels at the eastern and western property boundaries from weapons firing at the existing ranges are of similar magnitude. As winds were calm during the March 19, 2004 measurements, it has been determined that the noise level readings taken at MS 6 are most representative of the actual influence of weapons fire at the property boundaries.

Subsequent to the March 2004 noise level measurements being taken, new military training facilities have been constructed and are in operation at Camp Michael Monsoor; however, as concluded in the La Posta Mountain Warfare Training Facility Final EA, the activities at the existing range facilities have not substantially changed as compared to the activities conducted during the 2004 noise surveys.

3.6.2 ENVIRONMENTAL CONSEQUENCES

3.6.2.1 Alternative 1

Noise impacts associated with Alternative 1 would be related to noise generated during construction and subsequent operation of the proposed facilities. The principal sources of noise during construction would result from the use of construction equipment. New noise sources during operations would be the additional vehicles that would access the proposed range facilities and weapons firing activities during use of the proposed ranges.

Construction Activities

Construction equipment noise levels vary widely as a function of the equipment used, the activity level, or the duty cycle. For a typical construction project, the loudest short-term noise levels (for a few minutes during each cycle) occur during site preparation and grading, and noise levels from earth-moving equipment under full load (on the order of 90 dBA at a distance of 50 feet [15 meters] from the source). Construction equipment noise is usually considered as a point source, with attenuation within short distances at a rate of 6 dBA per doubling of distance (e.g., a noise level of 90 dBA at 50 feet [15 meters] will be 84 dBA at 100 feet [30 meters], 78 dBA at 200 feet [60 meters], and 72 dBA at 400 feet [120 meters]). The nature of construction projects, with equipment moving from one point to another, work breaks, and idle time, is such that long-term noise averages are less than short-term noise levels. A maximum 1-hour average noise level of 80 dBA at a distance of 50 feet (15 meters) from the construction area was assumed for the site preparation phase.

After site preparation, noise would be generated by other diesel engine-driven and gas engine-driven equipment and by normal construction activities such as the use of power saws, drills, and hammers. Based on the projected construction activities, noise levels would average 60 to 70 dBA Leq at a distance of 50 feet (15 meters).

Construction of the proposed facilities would require heavy equipment operations for grading, excavating, filling, compacting, and paving. The nearest sensitive human receptors to the proposed range construction sites are residences approximately 0.87 mile (1.4 kilometers) and 0.63 mile (1 kilometer) east of the nearest point of roadway construction. At these distances, construction noise would be reduced by approximately 46 to 49 dBA. The resultant noise levels at these residences would be below the daytime ambient noise level, as measured at MS 10 on March 3, 2004 (Table 3.6-2). In addition, the line of sight between the receptors and the proposed construction site for the new CQC facilities is blocked by hills. With the distance and terrain, construction noise would not have a significant impact on ambient noise levels.

Operational Activities

Ongoing and proposed training activities would generate noise at the project area. The principal noise sources would be weapons firing, with additional noise from vehicles going to and from the existing and proposed facilities. Weapons firing noise levels were assessed in the 2008 La Posta Mountain Warfare Training Facility Final EA (Navy 2008) using the Small Arms Noise Assessment Model (SARNAM) developed by the USACE Construction Engineering Research Laboratory. Inputs to SARNAM included range location, design, and orientation; number of active firing lanes; type of weapons fired; type of rounds fired; number of rounds fired over a 24-hour period; and the percentage of total rounds fired in rapid fire mode. The model does not include topography and project noise over flat terrain.

Activities at the existing ranges would not substantially change from current conditions, as the proposed improvements to the existing facilities would provide enhanced training opportunities but would not increase operating capacity. Training operations within a CQC structure are intended to teach SEALs how to enter potentially occupied structures and clear them. These operations generally include explosive breaching, throwing flashbang grenades, and firing two short bursts from an M4 sporadically as rooms are entered and targets are engaged. The construction of the new CQC structure would not result in an increase in the number of weapons firing simultaneously; thus, use of the new CQC structure would be comparable to current conditions.

It is estimated that the open air firing ranges would generate noise due to limited shielding within the range. The CQC structure would be partially enclosed and would not provide a direct line of sight from a shooter to an exterior location. Table 3.6-3 presents the anticipated amount of rounds that would be fired by various weapons. The data presented in Table 3.6-3 were used as input for the SARNAM.

Table 3.6-3 Proposed CQC Complex Weapons and Ammunition[1]

Weapon	Ammunition	Rounds per Person	Maximum Personnel per CQC Complex	Maximum Rounds per 24-hour Period	Percent Rapid Fire Mode
M4	5.56-mm (.223 caliber)	150	50	7,500	50
12 gauge	12 gauge Magnum	100	50	5,000	0
9-mm	9-mm	50	50	2,500	0

[1] Note:
Flashbangs and other breaching charges (C2/C4 explosive compound) would be utilized as part of training at the CQC structure. For impulsive noise, the Occupational Safety and Health Administration criterion for unprotected occupational noise exposure is an unweighted peak level of 140 dB. 140 dB would be exceeded for flashbangs out to a distance of 328 feet (100 meters) and 1,148 feet (350 meters) for breaching charges (Blue Ridge Research and Consulting 2012). Flashbangs and breaching charges are infrequent single-event episodes which would lessen their impact to the noise environment.

The La Posta Mountain Warfare Training Facility Final EA determined that the overall noise levels in the local area would be greater than the noise levels occurring during the existing training activities when simultaneous training would occur at the proposed facilities being evaluated in the EA. Due to intervening topography, the noise generated at the existing ranges would not result in a combined noise increase with noise generated at the proposed ranges in Parcel C. These ranges are considered independent sources. It was assumed for the modeling that each CQC structure would accommodate a maximum of 57 personnel for training, plus five to ten instructors, and a maximum of two facilities in Parcel C would be in operation at any given time. As a worst-case scenario, the two CQC complexes closest to residences along La Posta Road were modeled at full activity (i.e., 50 personnel firing at once on each range (100 personnel total), with 50 firing M4s, 25 firing shotguns, and 25 firing 9-mm pistols).

Noise levels calculated by the SARNAM for the existing operation of the two nearest proposed CQC complexes indicated hourly average noise levels of approximately 50 dBA Leq at the nearest residence. Weapons included in the assessment were the M4 rifle, shotgun, and Ruger 9-mm pistol. While sniper weapons produce louder single events but, due to the low number of weapon discharges, these weapons have almost no effect on the hourly average noise level.

As stated previously, the modeled noise prediction of 50 dBA Leq at the nearest residence did not take into account the presence of topographic features such intervening hills. The CQC complexes are located in a valley and are surrounded by hills. The CQC complexes are at an average elevation of 3,200 feet (975 meters) above mean sea level. The nearest residence is located approximately 984 meters (3,230 feet) above mean sea level. The residences along La Posta Road and the CQC complexes are separated by hills that have a minimum elevation of 3,365 feet (1,025 meters) above mean sea level, which effectively provide a barrier over 100 feet (30 meters) high. This barrier would provide at least a 20-dBA noise reduction from range activities in Parcel C. Thus, the actual noise levels at the nearest residence from weapons firing activities would be approximately 30 dBA Leq, which would not substantially increase nighttime or daytime ambient noise levels. While these noise levels would not adversely increase the ambient noise level at nearby residences, it should be noted that, due to the distinct characteristics of weapons firing, these sounds would still be heard and may be considered annoying to local residents.

The use of Range 110 would not increase under Alternative 1, although the installation of lights at Range 110 would allow nighttime shooting until 8:00 p.m. Under Alternative 1, a noise attenuation wall, approximately 10 to 12 feet (3 to 4 meters) high, would be installed at Range 110 behind the firing line, thereby blocking the line of sight to the nearest sensitive receptor. This noise attenuation wall would serve to reduce the noise level currently being heard by the nearest receptor to Range 110 (across La Posta Road) by 5 to 10 dB. Further design details would need to be developed to achieve this reduction. It should be noted that NSW coordinates with local residents when nighttime firing is scheduled.

Alternative 1 would result in an increase by three weeks in the amount of time ULT is conducted at Camp Michael Monsoor over the current duration (one week). This increase would occur up to six times per year. SEAL Qualification Training would decrease from four weeks to one week, six times annually. Other new training conducted by SOF and non-SOF units is shown in Section 2.2, Description of the Proposed Action and Alternatives, Table 2-1. It can be assumed that each training group would arrive in a combination of light autos (vans), light trucks, medium trucks, and light heavy trucks. SEAL Qualification Training would have the most vehicles (13). During SEAL Qualification Training and all other training, it is assumed that, upon arrival, all vehicles would remain on Camp Michael Monsoor and would make one round-trip per week for arrival and departure and to pick up supplies. This would result in about 122 round-trips (about two round-trips per day), which would double the existing traffic volume from units using Camp Michael Monsoor. Additional daily traffic would be related to range management

and maintenance personnel, anticipated to be up to 20 round-trips per day. This number of vehicles would increase noise levels along La Posta Road by less than 1 dBA Leq and would not represent a significant increase in traffic noise in the project area.

Based on the preceding analysis, and given that activities at the existing ranges would not substantially change from current conditions (as the proposed improvements to the existing facilities would provide enhanced training opportunities, but would not increase operating capacity), development of the proposed ranges and proposed facilities would not have a significant impact on the existing noise environment.

3.6.2.2 Alternative 2

As with Alternative 1, implementation of Alternative 2 would occur in an area that is already used for military training operations. For Alternative 2, the easterly orientation of the pistol ranges, the elimination of the shotgun range, and the alternate location of the Range Control Building and Gate Sentry House would result in similar impacts to the existing noise environment as those discussed for Alternative 1, although impacts associated with Alternative 2 would be slightly lessened since the shotgun range would not be constructed. Therefore there would not be a significant impact from implementation of Alternative 2.

3.6.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The No Action Alternative would have no significant impacts on the existing noise environment.

3.7 PUBLIC HEALTH AND SAFETY

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including, but not limited to, the following resources:

- Draft South Coast Resource Management Plan Revision and Draft Environmental Impact Statement (BLM 2011);
- DD Form 1391 Fiscal Year 2019 Military Construction Project 8 (BLM 2013a); and,
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008).

3.7.1 AFFECTED ENVIRONMENT

This section describes the existing public health and safety issues that occur within and adjacent to the project area. For purposes of public health and safety, the project area is defined as the area where permanent impacts could occur from implementation of the action alternatives.

3.7.1.1 Hazardous Materials and Waste

Various hazardous materials and oils are used to support weapons, target, and vehicle maintenance performed at Camp Michael Monsoor. Only the minimum amount of a hazardous material is obtained for a task in order to prevent disposing excess material as hazardous waste. Hazardous materials used on Camp Michael Monsoor are ordered through Naval Base Coronado and shipped via truck. Weapons cleaning solvents and residue are properly stored and disposed of. Solvent tanks are self-contained and solvent is filtered to extend its useful life. Lead from range maintenance activities is stored and properly disposed of (Navy 2008), in accordance with Naval Base Coronado guidelines and the EPA's Best Management Practices for Lead at Outdoor Shooting Ranges. Universal wastes, a subset of hazardous wastes that includes even household types of items such as alkaline batteries, all lamps except incandescent lamps, mercury-containing devices such as thermostats, cathode ray tubes, consumer electronic devices, and aerosol containers, are also present on the site and are currently being characterized, segregated, stored, managed, and properly disposed of in accordance with the current (2006) CNRSW Environmental Waste Management Plan.

There are no active installation restoration sites on Camp Michael Monsoor (Navy 2008). There is lead in the soil berms from the continuous and extended use of firearms on the shooting ranges.

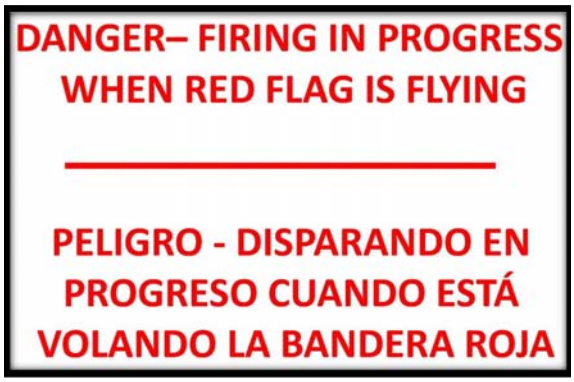
3.7.1.2 Range Safety

Depending on the weapon used at each range, a specific Safety Danger Zone is created to identify the area down range of the target where an errant round or ricochet might land. The existing Range Complex is bermed and configured to fire into a hillside. A Surface Danger Zone extending out to 2,102 yards (1,840 meters) from the firing position has been established. Range 110 is located within the Previously Withdrawn Parcel and is accessed through the Main Gate. Live firearm training also occurs on Range 110 where the Surface Danger Zone is 6,725 feet (2,050 meters). Issuance of Public Land Order No. 7807 by the BLM on January 17, 2013 withdrew BLM land at Parcel C from public use, transferring administrative jurisdiction to the Navy for exclusive military use through January 2033.

Camp Michael Monsoor has a variety of range safety procedures in place to ensure human health and safety. All military personnel and visitors are required to schedule visits in advance as well as check in with the Officer in Charge prior to entering the facility. The firing ranges and Surface Danger Zones are actively controlled by a Range Safety Officer during any firing exercises. To further ensure public safety and deter civilians from entering the firing ranges, the Navy currently has plans to use a combination of warning placards and red flags at likely entry points to warn the public. The warning placards would be posted on existing fences and gates at the Main Gate entrance and at trail entrances. Where necessary, metal fence posts would be installed on or adjacent to the trails, where they enter the installation, to prominently display the warning placards. During live-fire activities, red flags would be posted on the fence at the Main Gate entrance and at the entrance to each individual "hot" range (i.e., a range that is being used for live-fire activity). Each placard would be 20 inches long by 14

inches wide (50.8 centimeters long by 35.56 centimeters wide) and would include "anti-bird' spikes to prevent against predatory birds.

Signs similar to the one above will be posted at the entrance to Camp Michael Monsoor firing ranges. These signs will warn the public of potential dangers associated with fire arm use at these ranges.



Example of a sign notifying the public that a red flag will be present when firing ranges are in use, or "hot."

Additionally, the Navy has begun to acquire conservation easements. A purchase of 220 acres (124 hectares) of land contiguous to the Previously Withdrawn Parcel was made on February 21, 2006 to act as a buffer from incompatible land use around Camp Michael Monsoor. The Navy has recently (FY 2012) acquired three other parcels through other entities with assistance from the U.S. Department of Defense's Readiness and Environmental Protection Integration buffer program, which is implemented to preserve compatible land uses and sustain wildlife habitat near installations and ranges where the military trains, tests, and operates. The parcels are located immediately east and south of the Previously Withdrawn Parcel and north of Parcel C. These parcels would not be used by the public or the military.

Fire prevention is a concern at the Range Complex. Due to the abundance of vegetation, fires that occur during high wind conditions could quickly exceed immediate suppression capabilities. There are currently no formal firebreaks onsite, other than existing roads and trails. To minimize range related fire risks, tracer rounds, which are a common ignition source, are not allowed on the facility at any time. Although a Draft Fire Management Plan has been prepared, the plan has not yet been approved or released. Under MILCON P-781, a fire suppression system will be constructed on Parcel C, including two 50,000-gallon (189-cubic-meter) water tanks

There are three separate services that provide electricity to the Range Complex, including a 12-kilovolt (kV) service via overhead poles with three 167-kilovolt ampere (kVA) transformers, a 200-amp, 240/120-volt service, and an emergency generator. The risk of fire from these transmission lines is managed by the onsite fire protection water system. The system consists of a 5,000-gallon (18.9-cubic-meter) storage tank at the Range Complex in addition to several other storage tanks throughout Camp Michael Monsoor. All tanks and pumping systems are adequate for the present connected load.

3.7.1.3 Unexploded Ordnance

Unexploded ordnance is ordnance that fails to function as designed. This ordnance may remain capable of detonation, posing a physical risk to individuals in its vicinity. On lands controlled by the Navy, this risk is limited to military personnel who are trained in unexploded ordnance avoidance. Explosive Ordnance Disposal personnel periodically remove unexploded ordnance from the range or conduct a blow-in-place operation to render it safe. Unexploded ordnance poses a risk to the public when ordnance lands off-range and is not immediately recovered, or when Navy training activities occur in areas accessible to the public (Navy 2008). No explosive projectiles are used at Camp Michael Monsoor; therefore, there is no unexploded ordnance on Camp Michael Monsoor that could pose a safety risk (Navy 2008).

3.7.1.4 Ammunition Storage

Temporary storage of pyrotechnics, flash-bang devices, and breaching charges occurs within the Previously Withdrawn Parcel but not in the right-of-way parcels (Navy 2008). The Navy has site approval to store Hazard/Division 1.3/1.4 munitions with a total net explosive weight of 300 pounds (136 kilograms). The Method of Entry structure, which is part of the indoor ranges used at Camp Michael Monsoor, must be an enclosed compound with facilities specifically capable of withstanding 1 pound (0.45 kilogram) of net explosive weight. The explosive safety quantity distance arc (i.e., the zone of permissible exposure) is 100 feet (30 meters), which does not encumber the helicopter pad. There are no hazards of electromagnetic radiation to ordnance or unsafe munitions used at Camp Michael Monsoor (Navy 2008).

3.7.2 ENVIRONMENTAL CONSEQUENCES

3.7.2.1 Alternative 1

A portion of Alternative 1 would be on land withdrawn for military purposes. Since withdrawn land would not be open to the general public, the potential for any members of the public to encounter health and safety hazards that would exist during construction and operation activities would be minimal.

The construction of the shotgun, rifle, and pistol ranges, the CQC structure, and training storage facilities would all be in Parcel C on land that has been officially withdrawn for exclusive military use through January 2033, per Public Land Order No. 7807 (Withdrawal of Public Lands for the Camp Michael Monsoor Mountain Warfare and Training Facility, California). NEPA analysis has also been completed for the land withdrawal under the La Posta Mountain Warfare Training Facility Final EA. Construction and operational safety procedures and precautions would be implemented to prevent potential injury, such as exposure to hazardous materials or operations by workers and the public. Security fencing would be erected around the construction areas, and appropriate signage would be posted to prevent unauthorized personnel from accessing the site. Operations would be contained within the restricted construction zone and would not conflict with safe public use or military use of the surrounding areas.

Per Naval Base Coronado guidelines and the EPA's Best Management Practices for Lead at Outdoor Shooting Ranges, all disturbed soils should remain onsite and any lead or metals found should be recycled (EPA 2001). Any excavated soil removed from the site would require hazardous waste characterization prior to removal. This characterization would ensure that materials removed from the site are not hazardous.

Implementation of Alternative 1 would involve live-fire operations at the CQC structure and small arms ranges involving the use of a variety of small arms. Range management practices would continue to be implemented to ensure the ranges are properly maintained. Compliance with Range Maintenance Standard Operating Procedure guidelines would ensure that lead does not migrate off the range site. Based on the continued implementation of established range management practices, no adverse environmental health and safety impacts would occur.

Under Alternative 1, universal wastes would continue to be present onsite and would derive from materials and equipment that are employed for everyday use. As is the case under existing conditions, these wastes would continue to 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 under Alternative 1. With the implementation of standard safety practices and procedures for Alternative 1, no significant impacts to public health and safety would occur.

New Security Facilities

The new security facilities under Alternative 1 include the construction of the Range Control Building, walls, a concrete-paved parking area, and a security gate. Although the construction of these facilities would generate universal waste, the waste would be properly managed and disposed of. The reconfiguration of the Main Gate would result in a positive impact, as it would provide a convenient turn-around lane for unauthorized vehicles, thus easing any potential traffic congestion that could be generated by traffic queuing from La Posta Road. Facility construction and operation would be performed in accordance with standard health and safety procedures; therefore, Alternative 1 would not result in significant impacts to public health and safety.

Expansion of Range

Expansion of the ranges and construction of the CQC structure would be within Parcel C and would not be enclosed by a fence. The area around Parcel C is part of the Cleveland National Forest, and most of the area west and north of Parcel C has unclassified roads. Although the closest trails (Pacific Crest and Kitchen Creek) are more than 3 miles (5 kilometers) away, bikers and hikers have used the unclassified roads, such as La Posta Truck Trail and Hyde Park Lane, for recreation. A portion of these roads go through Parcel C; however, this area would be restricted from public use. A warning placard would be displayed on a metal fence post north of the shotgun range. During live-fire, a red flag would be mounted on the post next to the warning placard to indicate that the range is "hot." All proposed ranges

would be constructed in accordance with NAVFAC 1027/3B guidance on construction of firing ranges and rules regarding Surface Danger Zones. Therefore, implementation of Alternative 1 would not result in significant impacts to public health and safety from activities associated with expansion of the range.

Fence Replacement

Extending the existing fence line on La Posta Road and installing access gates would generate universal wastes during construction which will be properly managed. Since the fence and access gates are static structures that do not pose significant risks, operation of these new security facilities would not have any impacts on public health and safety. As a result, both construction and operation of the proposed fence replacement would not have significant impacts on public health and safety with implementation of Alternative 1.

Upgrades to Existing Utilities and Erosion Control Structures

Construction of a new underground water line to pump water and the installation of erosion control structures would generate universal waste that would be properly managed and disposed of. Operating these structures would actually increase safety and control erosion. This would result in a positive public safety and environmental impact. Consequently, upgrading existing utilities and establishing erosion control structures would not have significant impacts on public health and safety under Alternative 1.

Unexploded Ordnance

Implementation of the Alternative 1 would not result in the introduction of explosive or dud-producing rounds. Inert or non-dud-producing ordnance would continue to be the only types of ordnance used for training. Therefore, implementation of Alternative 1 would not result in significant impacts to public health and safety from unexploded ordnance.

3.7.2.2 Alternative 2

Implementation of Alternative 2 would result in the same impacts as those discussed for Alternative 1. Therefore, Alternative 2 would result in no significant impacts to public health and safety.

3.7.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing environment for public health and safety would not change; therefore, the No Action Alternative would have no significant impacts on public health and safety.

3.8 PUBLIC SERVICES AND UTILITIES

For this section, state and local law enforcement, fire protection, and utilities resources were consulted, including the San Diego County Sheriff, California Highway Patrol, California Department of Forestry, and SDG&E. Navy sources were consulted for specific water and wastewater related statistics.

3.8.1 AFFECTED ENVIRONMENT

This section describes the public services and utilities that are available within and adjacent to the project area and, thus, may be directly or indirectly affected by the Proposed Action.

3.8.1.1 Police Protection

Police service to the project area is provided by the San Diego County Sheriff's Department, which maintains a substation in the community of Campo, California. Additional police services are provided by the California Highway Patrol, which maintains a station in El Cajon, California, and the U.S. Border Patrol, which maintains a station in Campo and Boulevard, California.

3.8.1.2 Fire Protection

Fire service to the project area is provided by the California Department of Forestry, which maintains stations in Campo, Dulzura, and Boulevard, California. The U.S. Forest Service maintains a fire station at Cameron Corners, California. Campo Fire and Rescue Service serves San Diego County Service Area 112, which includes the project area. MILCON P-781 includes a gravity fed system with two 50,000 gallon (189-cubic-meter) water tanks that can be used for fire protection in the project area. The Navy is currently in the progress of updating a Fire Management Plan for Camp Michael Monsoor.

3.8.1.3 Water

The domestic and fire protection water system at Camp Michael Monsoor starts at a well southwest of the main entrance. There is a 5,000-gallon (18.9-cubic-meter) storage tank near the well. Water is pumped from this tank to the 5,000-gallon (18.9-cubic-meter) storage tank at the Range Complex. Pumps supply water to the Range Complex and up to the Beach Complex.

There are two storage tanks (3,000 and 5,000 gallons [11.4 and 18.9 cubic meters]) in the Beach Complex. Water is pumped to the Beach Complex facilities as well as up to the Hilltop Complex. The Hilltop Complex has two 5,000-gallon (18.9-cubic-meter) storage tanks, one 10,000-gallon (37.9-cubic-meter) storage tank, and one pump house. Additionally in the Hilltop Complex, Building 587, and Building 598 have their own 1,500-gallon (5.7-cubic-meter) storage tanks. All tankage and pumping systems are adequate for the present connected load. An additional well at Camp Michael Monsoor's western boundary has been drilled, but the well does not have power or piping connectivity, and two new 5,000-gallon (18.9-cubic-meter) tanks

and one well are proposed in Parcel C under MILCON P-781. MILCON P-781 includes a gravity-fed system with two 50,000-gallon (189-cubic-meter) water tanks in Parcel C.

3.8.1.4 Wastewater

Each area at Camp Michael Monsoor employs the use of a septic system and leach field for sewage treatment; there is no public sewage system:

- The Hilltop Complex has two septic tank systems: one is a 2,000-gallon (7.6-cubic-meter) two-compartment Jensen tank with a leach field, and the other is 1,500-gallon (5.7-cubic-meter) two-compartment Jensen tank;
- The Beach Complex employs a 1,500-gallon (5.7-cubic-meter) two-compartment Jensen tank; and,
- The Range Complex employs two 1,500-gallon (5.7-cubic-meter) two-compartment Jensen tanks.

Tanks are periodically cleaned, and the all tanks and systems in the three areas are functioning properly and are adequate for the currently connected loads. MILCON P-781 included installation of a septic system in Parcel C.

3.8.1.5 Solid Waste

Solid waste is currently taken offsite and disposed of in a solid waste landfill (Navy 2008).

3.8.1.6 Natural Gas/Petroleum Utilities

Propane gas is used at the Hilltop Complex for heating units located in Buildings 587 and 599. The system consists of two tanks for Buildings 587 and 599 (1,150 and 350 gallons [4.4 and 1.3 cubic meters], respectively) and underground piping from the tanks on the north side of Building 586 to Building 587 and Building 599. Tanks and piping are adequate for the present load. No petroleum infrastructure is currently in place.

3.8.1.7 Electricity

Electrical service is provided by SDG&E. There are three separate services provided for the facility:

- Service #1 is the main service to facility. A 12-kV service is fed via overhead poles to the main compound equipment yard with three 167-kVA transformers to step down power;
- Service #2 provides power to the Range Complex. Service is 200 amps, 240/120 volts, single phase; and,
- Service #3 provides power to a pump/well house near the gate entrance. Service is 200 amps, 240/120 volts, single phase.

There is an emergency generator outside of Building 586 that supplies emergency power to the Homeland Security communications station antenna. MILCON P-781 recently included construction of power poles from the Hilltop Complex(where the satellite dish is located) to Parcel C, and associated electrical distribution lines are routed underground at "villas" to support MILCON P-781 facilities.

3.8.2 ENVIRONMENTAL CONSEQUENCES

3.8.2.1 Alternative 1

Alternative 1 would construct additional facilities and infrastructure at Camp Michael Monsoor, create new Surface Danger Zones, and change the existing Surface Danger Zones; however, Alternative 1 would not create an increased need for police and fire protection. Therefore, Alternative 1 would not have a significant impact on police and fire protection.

The installation of ten lights, mounted on new telephone poles at Range 110 and the installation of an aboveground electrical distribution line along the existing access road between La Posta Road and Range 110 would have positive impacts on the mission at Camp Michael Monsoor by allowing night training, while also upgrading the electrical system as a whole.

None of the P-888 facilities would contain toilet rooms or showers that would require connection to a wastewater treatment facility, and Alternative 1 would not generate wastewater in quantities that would require additional wastewater treatment services.

Small quantities of water would be required for Alternative 1 construction and operations. Water used during construction of Alternative 1, for slope dampening and for dust control at the pistol and rifle ranges, would not significantly increase the amount of water used at Camp Michael Monsoor, and the increase would only be temporary. During operations, water for the bathroom and kitchen at Range Control Building would be supplied via an existing water line, and the water would be stored in a water tank that would be constructed as part of the Proposed Action[19]. Small quantities of water would also be used during Alternative 1 operations for landscaping maintenance purposes to water drought-tolerant, native species. Therefore, there would be minimal water use related to implementation of Alternative 1 and significant, adverse impacts to the potable water system would not occur. Additionally, the proposed MILCON P-888 water well located in Parcel C, and the water line from the existing well along the western boundary of the installation to the Range Complex, would have positive impacts on water supply and availability. Groundwater usage would be minimal (Payne 2012).

[19] Alternative 1 would require replacement of the existing water tank at the Main Gate entrance.

Alternative 1 would generate a small volume of wastewater during construction due to worker use of onsite portable toilets; this waste would be removed from the site and disposed of at a wastewater treatment facility that is available and has capacity to receive such waste. During operations, Alternative 1 would generate a small amount of liquid waste, resulting from use of the toilet room and kitchen in the proposed Range Control Building at the Main Gate entrance; this facility would be equipped with a septic system, and a leach field would be installed across the street to receive and filter waste from the septic tank. None of the Alternative 1 facilities would contain toilet rooms or showers that would require a new connection to a wastewater treatment facility. The existing septic systems at Camp Michael Monsoor would remain unchanged. Consequently, Alternative 1 would not impact existing wastewater treatment facilities.

Construction of Alternative 1 would generate a small quantity of solid waste; construction waste and debris would be removed from the site by a licensed hauler and disposed of at a landfill that has sufficient capacity and is authorized to receive such waste. Any hazardous solid waste encountered during Alternative 1 construction or operations would be characterized and disposed of as described in Section 3.7.2.1. Solid waste generated by Alternative 1 would not have a significant impact.

There would be no impact from Alternative 1 on natural gas/petroleum utilities.

Overall, Alternative 1 would have no significant impacts on public services and utilities.

3.8.2.2 Alternative 2

Implementation of Alternative 2 would result in the same impacts as those discussed for Alternative 1. Therefore, Alternative 2 would result in no significant impacts on public services and utilities.

3.8.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing conditions for public services and utilities would not change; therefore, the No Action Alternative would have no significant impacts on public services and utilities.

3.9 SOCIOECONOMICS

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including, but not limited to, the following resources:

- San Diego Association of Governments (SANDAG) Data Warehouse, 2010 (SANDAG 2010b);
- SANDAG Regional Forecasts (SANDAG 2008, 2011a-c);
- U.S. Census Bureau 2010 (U.S. Census Bureau 2010b); and,
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008).

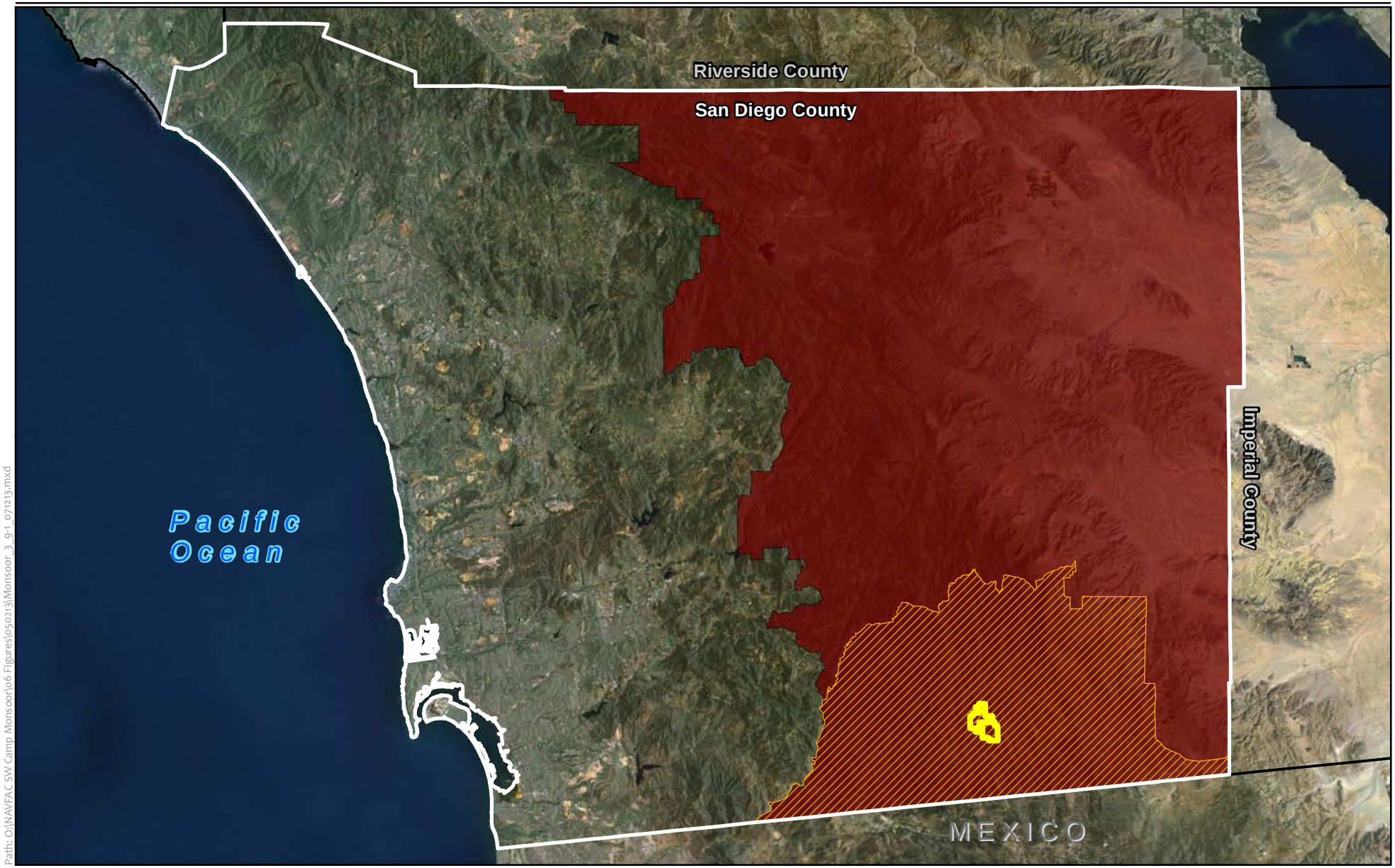
3.9.1 EXISTING CONDITIONS

This section discusses existing conditions for population, housing, employment, minority population trends, income, and environmental justice for children within the project area.

3.9.1.1 Population

The project area is located near La Posta, California, between Interstate 8 and State Route 94, which is within the southeastern unincorporated portion of San Diego County. San Diego County has been divided into six major statistical areas and 41 subregional areas. The project area is within East County Major Statistical Area (MSA) 6 and Mountain Empire Subregional Area (SRA) 62 (Figure 3.9-1).

MSA 6 has 11 different SRAs and is the second largest MSA in the county. SRAs in San Diego County are based on census tracts and approximate Health and Human Service Agency region boundaries in order to represent small, community-level geographic units. The project area is within U.S. Census Tract 211, which is the tract that was used to establish SRA 62 (U.S. Census Bureau 2010b). Table 3.9-1 presents total 2010 population statistics, as well as population projections for 2020, 2030, 2040, and 2050, and the percent change for these statistical areas. As shown in Table 3.9-1, the total county population is projected to increase 42 percent from 2010 to 2050. MSA 6 is estimated to experience a greater increase (71 percent) as is SRA 62 (59 percent).



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0 5 10 15 20 25 Miles

Navy-Managed Property
Tract 211 / SRA 62
MSA 6

Source- ESRI (2010)

Figure 3.9-1
Demographic Regions

San Diego County, California

Table 3.9-1 Population and Estimated Growth for San Diego County and Areas near the Project Area

Statistical Area	2010[1]	2020	2030	2040	2050	2010-2050 Change
San Diego County	3,095,313	3,131,552	3,870,000	4,163,688	4,384,867	42%
MSA 6	23,574	25,993	31,063	35,861	40,427	71%
SRA 62	7,589	7,122	9,012	10,657	12,079	59%

Sources: SANDAG 2011a, b, c

Note:
[1] From 2010 Census

3.9.1.2 Housing

According to the 2010 Census, the housing stock in San Diego County was 1,164,786 units. The largest portion of the total housing stock in 2010 was composed of single-family units (51 percent). In addition, multi-family units accounted for 36 percent of the housing stock in the county. As shown in Table 3.9-2, the number of housing units for the county is estimated to increase 31 percent from 2010 to 2050. A much greater increase (66 percent) is projected for MSA 6 over the same period. SRA 62 is estimated to experience an increase, as well (40 percent).

Table 3.9-2 Total Housing Units and Estimated Growth for San Diego County and Areas near the Project Area

Statistical Area	2010	2020	2030	2040	2050	2010-2050 Change
San Diego County[1]	1,164,786	1,262,488	1,369,807	1,457,545	1,529,090	31%
MSA 6	11,732	12,574	14,954	17,162	19,490	66%
SRA 62	3,376[1]	3,143	3,997	4,640	5,273	40%

Sources: SANDAG 2011a, b, c; 2010a

Note:
[1] From 2010 Census

Approximately 32 percent of the population, or 2,442 of the 7,589 people, who live in SRA 62 live in rented housing units, and 64 percent (4,841 people) of the total population live in owned housing units. Of the total 3,376 housing units available, 732 units were available for either sale or rent at the time the 2010 U.S. Census was taken.

3.9.1.3 Employment

The economy of the San Diego region is primarily based on the service, retail trade, government, and manufacturing sectors. As of January 2012, the county average unemployment rate was 9.3 percent, slightly below the state rate of 10.9 percent (State of California Economic Development Department 2012).

The estimated total employment for San Diego County, MSA 6, and SRA 62 is shown in Table 3.9-3. The estimated total employment for the county is estimated to increase 8 percent from 2008 to 2020. MSA 6, which includes the project area, has a projected increase of 2 percent. SRA 62 is projected to have an increase of 1 percent.

Table 3.9-3 Total Employment and Estimated Growth for San Diego County and Areas near the Project Area

Statistical Area	2008	2020	2008-2020 Change
San Diego County[1]	1,501,080	1,619,615	8%
MSA 6	7,725	7,909	2%
SRA 62	2,182	2,201	1%

Sources: SANDAG 2011a, b, c

Note:
[1] From 2010 Census

The unemployment rate in SRA 62 relative to the San Diego County is lower; unemployment in SRA 62 is 7 percent, and in San Diego County the unemployment rate is 7.8 percent. However, while San Diego County has a steady unemployment rate (an average of 6.4 percent for populations between 20 to 74 years), the unemployment rates vary considerably within SRA 62 (i.e., even though the average unemployment rate for those between 20 and 64 years is 5.2 percent, the unemployment rate is much lower for the 25 to 44 year age group [only 1.6 percent] and is also low for those between 65 and 74 years [2.8 percent]). In comparison, the rate increases in SRA 62 for the 55 to 64 year age group (9.6 percent), while it remains steady at 6.5 percent within San Diego County. SRA 62's young professionals (20 to 24 year age group) also have a high unemployment rate of 23.9 percent, while the county shows an 11.4 percent unemployment rate for this same group. The population within SRA 62 most likely to be looking for jobs is the 20 to 24 year age group, in addition to its 55 to 64 year age group (U.S. Census Bureau 2010a).

3.9.1.4 Environmental Justice

Executive Order 12898, 59 Federal Register 7629, Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations, signed in February 1994, directs federal agencies "…to make achieving environmental justice part of its mission by identifying and addressing…disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority population and low-income population

in the [U.S.]." The aim of the Executive Order is to prevent low-income and minority populations from being subjected to disproportionately significant environmental impacts.

The following provides information on the race and ethnicity of populations near the project area, as well as income levels. The goal is to identify whether there are minority or low-income populations in the vicinity of the project area. To provide a context for considering these data, it is appropriate to compare the same categories for the local jurisdiction and larger region. Therefore, these data provide information on ethnicity and median income for the project area compared to the local jurisdiction and San Diego County. For this EA, the environmental justice affected environment is described in terms of minority and low-income populations in MSA 6 and SRA 62.

Minority Population Trends

Table 3.9-4 presents the information on minority populations for San Diego County and the areas near the project area. As shown in this table, most of the individuals in the surrounding area are non-minority. MSA 6 and SRA 62 have lower minority population percentages than the county as a whole.

Table 3.9-4 Population and Ethnicity for San Diego County and Areas near the Project Area

Race/Ethnicity	MSA 6[1]	SRA 62	San Diego County[1]
White	15,689	4,139	1,500,047
African American	679	172	146,600
American India and Alaska Native	986	313	14,098
Asian	339	57	328,058
Native Hawaiian and Pacific Islander	54	25	13,504
Other	54	15	6,715
Identified by two or more	519	190	94,943
Hispanic[2]	6,193	2,678	991,348
Total Population	**24,513**	**7,589**	**3,095,313**
Total Minority	8,824	3,450	1,595,266
Percent Minority	36%	45%	52%

Source: U.S. Census 2010a

Notes:
1 From 2010 Census via SANDAG Data Warehouse.
2 The Hispanic category is an ethnic, rather than racial, distinction. These tables, therefore, include only non-Hispanic individuals in the black, white, and other categories to avoid double counting.

Median Household Income

Table 3.9-5 presents information on low-income populations for San Diego County and areas near the project area. As shown, most of the individuals in the surrounding area have an income less than the county median. The estimated MSA 6 median income ($47,185) and the SRA 62 median income ($55,484) according to the 2010 U.S. Census are both lower than the county's median income ($63,069) (U.S Census Bureau 2012). Additionally, in 2011 (the last year for which data are available), 14.8 percent of all individuals in San Diego County were considered below poverty level, an increase of 72,401 additional people below the poverty line from the previous year (Center for Policy Initiatives 2011).

Table 3.9-5 Median Household Income for Areas near the Project Area as Compared to San Diego County

Area	Median Income	Median Income for San Diego County	Percent of County Median
MSA 6	$47,185	$63,069	75%
SRA 62	$55,484	$63,069	88%

Sources: City Melt 2009; U.S. Census Bureau 2012

3.9.1.5 Environmental Health and Safety Risks to Children

Executive Order 13045, Environmental Health and Safety Risks to Children (62 Federal Register 1988), was signed in 1997. The policy of the Executive Order states that:

> "A growing body of scientific knowledge demonstrates that children may suffer disproportionately more environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each federal agency:
>
> (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and,
>
> (b) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

Under the definitions provided in Executive Order 13045, covered regulatory actions include those that may be "economically significant" (under Executive Order 12866) and "concern an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children." Further, Executive Order 13045 defines "environmental health risks and safety risks" [to] "mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)." To comply with the Executive Order, this section of the EA discusses child-specific environmental health risk and safety risk issues associated with the Proposed Action.

The Children's Environmental Health and Safety Inventory of Research in addition to the Task Force on Environmental Health Risks and Safety Risks to Children were formed to recommend strategies for protecting children's environmental health and safety. Informal guides are also available to implement the Executive Order. These sources help to summarize likely sources of environmental health and safety risks to children resulting from project alternatives, and to characterize the potentially impacted populations.

Census 2010 demographic profiles were obtained from SANDAG for the project area. Demographic census data are broken down by age into 5-year increments up through age 19 (Table 3.9-6). Because of this presentation of data, in this analysis, "children" are considered to be persons from the age of birth to 19 years old.

Table 3.9-6 Age Breakdown for San Diego County and Areas near the Project Area

Age	MSA 6[1]	Percent of total in MSA 6	SRA 62	Percent of total in SRA 62	San Diego County	Percentage of Total in San Diego County
Under 5	975	4%	472	6%	203,426	7%
5 to 9	930	4%	474	6%	194,029	6%
10 to 14	1,178	5%	580	8%	198,716	6%
15 to 19	1,722	7%	615	8%	225,095	7%
20 and older	19,708	80%	5,448	72%	2,274,050	73%
Total	**24,513**	**100%**	**7,589**	**100%**	**3,095,316**	**100%**

Source: U.S. Census 2010a

Note:
[1] From SANDAG Data Warehouse 2010 Estimates

The project area is located within the Mountain Empire Unified School District. The closest schools to the project area are Campo Elementary School and Preschool, Clover Flat Elementary School, Campo High Continuation School, and the Campo Band of Mission Indians. The nearest school (Campo Elementary School and Preschool) is located at 1654 Buckman Springs Road, in Campo, California, which is approximately 3 miles (4.8 kilometers) southwest of the Previously Withdrawn Parcel.

3.9.2 ENVIRONMENTAL CONSEQUENCES

This section addresses impacts related to population, housing, employment, minority population trends, income, and environmental justice for children.

3.9.2.1 Alternative 1

Population, Employment, and Housing

Due to the anticipated congressionally mandated 25 percent increase for NSW, there could be an increase in personnel requiring training at Camp Michael Monsoor. If another SOF or a non-SOF unit decides to use Camp Michael Monsoor, Alternative 1 would result in an increase of about 9,000 person days per year. The increase in personnel that would occur under Alternative 1 is presented in Section 2.2, Description of the Proposed Action and Alternatives, Table 2-1. Given the relatively small number of transient personnel and the short duration of their stay, no significant negative socioeconomic impacts would occur in the La Posta and Campo area economies as a result of implementing Alternative 1. Area populations, employment, and housing would not be affected by Alternative 1 because personnel and their families would not be permanently relocating to Camp Michael Monsoor.

Implementing construction for Alternative 1 includes building a CQC structure, a rifle and shotgun range, pistol ranges, a Range Control Building, reconfiguring and modifications to the Main Gate, replacing the existing fence along La Posta Road, and upgrades to existing utilities and erosion control. Construction would likely result in short-term positive impacts from the use of area facilities including the Golden Acorn Casino, which is owned by the Campo Band of Kumeyaay Indians, and the purchase of goods and services from the regional economy.

Environmental Justice

The population surrounding the Alternative 1 project area is not considered a minority population, and the implementation of Alternative 1 would be conducted entirely within the boundaries of SRA 62. The population in SRA 62 is primarily non-Hispanic white (Table 3.9-4), and the area has a lower median income than San Diego County as a whole, with higher poverty levels than the county. However, the location of Alternative 1 would be within areas designated for military training use and would not be in proximity to any housing areas. Therefore, there would not be any disproportionately high environmental or health impacts on low-income or minority populations under Alternative 1. No significant impacts to populations in the vicinity of the Alternative 1 project area would result from implementation of Alternative 1.

Environmental Health and Safety Risks to Children

In SRA 62, 26 percent of the population is considered to be children (i.e., age 19 or younger). This is similar to the county average of 27 percent children. The nearest school (Campo Elementary School and Preschool) is located approximately 3 miles (4.8 kilometers) southwest of the Alternative 1 site. Therefore, there would not be any disproportionate risks to children.

3.9.2.2 Alternative 2

Implementation of Alternative 2 would result in the same impacts as those discussed for Alternative 1. Therefore, Alternative 2 would result in no significant impacts to population, employment, or housing. In addition, there would not be any disproportionately high environmental or health impacts on low-income or minority populations, and no disproportionate risks to children would result from Alternative 2.

3.9.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing conditions for socioeconomics would not change, and there would be no significant changes to population, employment, housing, environmental justice, or risks to children from implementation of the No Action Alternative. In addition, there would not be any disproportionately high environmental or health impacts on low-income or minority populations, and there would be no disproportionate risks to children.

3.10 TRAFFIC AND CIRCULATION

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including, but not limited, to the following resources:

- SANDAG, San Diego Traffic Forecast 2003-2060 (SANDAG 2008); and,
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008).

3.10.1 EXISTING CONDITIONS

This section describes the traffic and circulation conditions that occur within and adjacent to the project area and, thus, may be directly or indirectly affected by the project.

3.10.1.1 Regional Roadways and Circulation

Primary Roadways

The principal east-west routes in the vicinity of the project area are Interstate 8 (the primary highway between San Diego, California and Yuma, Arizona, that passes north of the project area) and State Route 94 (the primary road between San Diego and Tecate, California, which passes south of the project area). La Posta Road, a two-lane rural connector road, connects Interstate 8 to State Route 94 and runs through the project area (Figure 3.10-1). According to SANDAG projections, La Posta Road was estimated to have an average daily traffic volume of 400 in 2010. This number is projected to increase to 700 by 2030[20] (SANDAG 2008).

Circulation Patterns

La Posta Road provides access to the project area from either Interstate 8 to the north or State Route 94 to the south. From La Posta Road, the Previously Withdrawn Parcel can be accessed through a locked gate at the Main Gate. Additional access to Parcel C is via a dirt road through property owned by the Villarino family.

Project Area Roadways and Circulation

Primary access within the Previously Withdrawn Parcel is via a one-lane paved road approximately 1.6 miles (2.4 kilometers) in length. The road extends from La Posta Road to the non-operational satellite dish (Hilltop Complex) where the majority of the facilities are located. An approximately 2.5-acre (1-hectare) paved area provides parking and controls drainage around the existing buildings. This one-lane paved road also provides access to the Range Complex. An existing access road (dirt road) throughout Parcel C was recently upgraded to install engineering features along the road, such as rock-lined swales and rip-rap. The one-lane paved access road within the Previously Withdrawn Parcel was widened to install similar engineering features. Curves were straightened and culverts and Arizona crossings[21] were also installed. Areas where excessive erosion was occurring and areas of steep grade were paved with concrete.

The La Posta Truck Trail is an unpaved road that extends from La Posta Road towards the west and provides access to the eastern edge of Parcel C. The La Posta Truck Trail also continues east through the Villarino family property.

[20] Average calculated by taking the projected average daily traffic volume for each segment of La Posta (from Interstate 8 to State Route 94) and computing an average of the three average daily traffic volumes provided in SANDAG's forecasts.
[21] An Arizona crossing is a type of road crossing that allows a waterway to run over a road. Man-made Arizona crossings include culverts that allow water to pass through a paved roadway.

Parcel C can also be accessed from Buckman Springs Road. Buckman Springs Road is approximately 7 miles (11.3 kilometers) south of Interstate 8 and 1 mile (1.6 kilometers) west of Parcel C. Buckman Springs Road is intersected by Cameron Truck Trail, which connects to La Posta Truck Trail. This portion of La Posta Truck Trail provides access to the western side of Parcel C where some of the proposed ranges and the CQC structure would be built (Figure 3.10-1).

On the southeastern boundary of the Previously Withdrawn Parcel, where Range 110 is located, there is an access gate off La Posta Road that provides access to a short, unpaved access road. This access road is north of Campo Truck Trail and leads to Range 110. The access gate to Range 110 is approximately 5 miles (8 kilometers) south of Interstate 8 and about 2,500 feet (0.76 kilometer) south of the Main Gate (Figure 3.10-1).

In addition, there are approximately 8 miles (13 kilometers) of unpaved roads and truck trails that provide access to the more remote areas of the facility. These roads are subject to severe erosion and washout during heavy rains. The traffic volume is extremely light and averages less than 10 vehicles per day (Navy 2008). In general, access to the project area is via dirt roads or trails off of Buckman Springs Road or La Posta Road.

3.10.2 ENVIRONMENTAL CONSEQUENCES

3.10.2.1 Alternative 1

Construction

For Alternative 1, access to the project area would be primarily from La Posta Road. Construction traffic would include daily construction crew commutes and trucks bringing equipment and materials to the sites. Construction under Alternative 1 would take one to six months to complete, and all workers would commute in carpools. Construction equipment could include tractors, loaders, backhoes, forklifts, off-highway trucks, and rollers. Given the short duration of the construction period and the minor amount of equipment and personnel used, construction traffic would not have a significant impact on the existing traffic and circulation on La Posta Road or La Posta Truck Trail.

Operations

Alternative 1 includes the reconfiguration of the Main Gate to remove traffic queuing from La Posta Road. Alternative 1 would ease entry to Camp Michael Monsoor and alleviate potential traffic generated on La Posta Road. The holding space created at the Main Gate would also increase security, as vehicles would be inspected before proceeding through the second security gate. This would result in positive impacts to existing traffic and would also improve security. Therefore, there would be no significant impacts to traffic and circulation from implementation of Alternative 1.

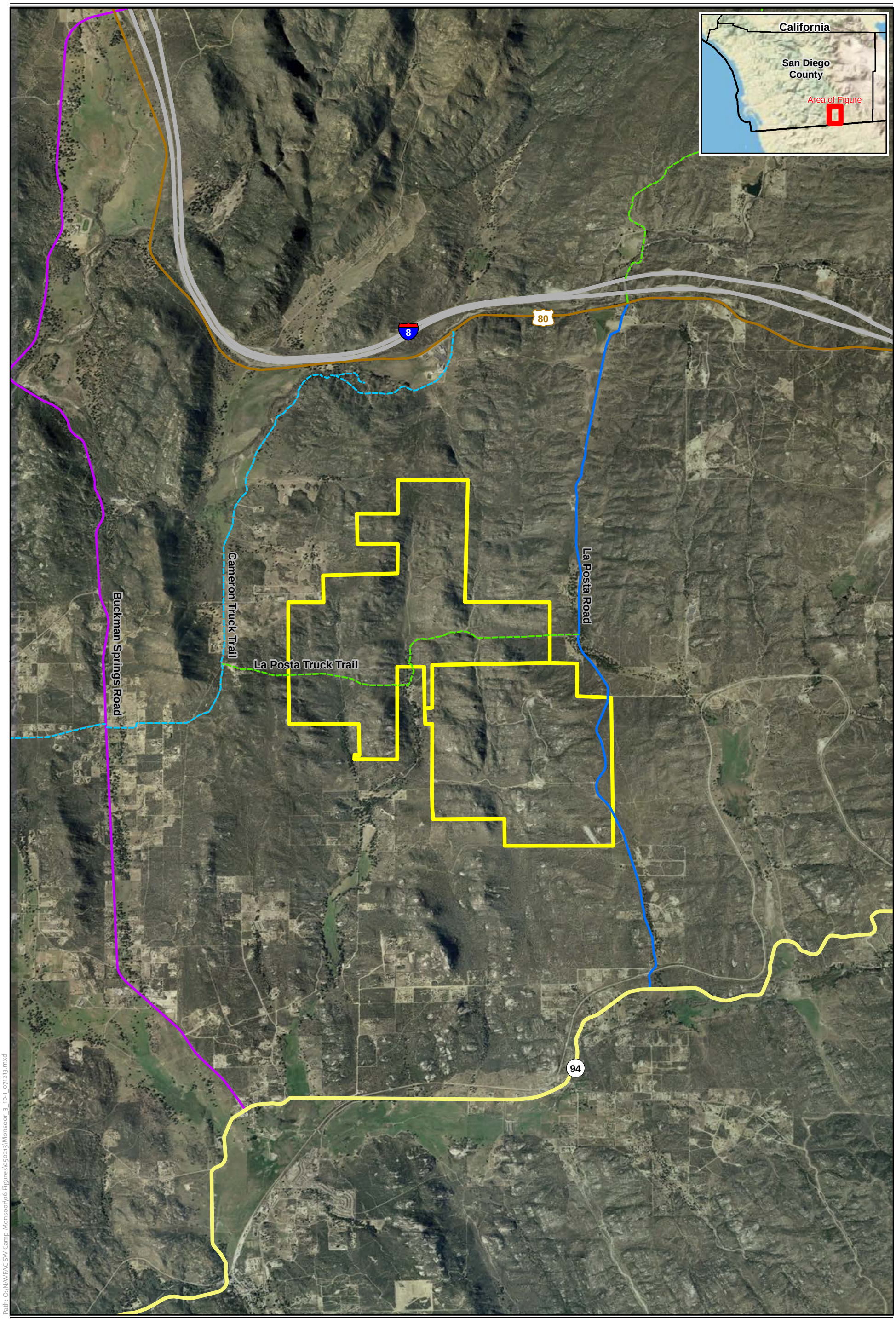
Under Alternative 1, it can be assumed that each training group would arrive in a combination of light autos (vans), light trucks, medium trucks, and light heavy trucks. SEAL Qualification Training would have the most vehicles (13). During SEAL Qualification Training and all other training, it is assumed that, upon arrival, all vehicles would remain on Camp Michael Monsoor and would make one round-trip per week for arrival and departure and to pick up supplies. This would result in about 122 round-trips (about two round-trips per day), which is a doubling of the existing traffic volume from units using Camp Michael Monsoor. Additional traffic on a daily basis would be related to range management and maintenance personnel, which can be anticipated to be up to 20 round-trips per day. Thus, An additional 20 vehicles per day could be using La Posta Road for these training events. As a result, there could be a slight increase in vehicle traffic going to and from the facility. The ranges, CQC structure, and Main Gate operations would not affect local traffic, and due to the low volume of traffic currently on roads and the rural nature of the area (low density of inhabited structures in the vicinity of the installation), implementation of Alternative 1 would not result in a significant impact to traffic and circulation.

3.10.2.2 Alternative 2

Implementation of Alternative 2 would result in the same impacts as those discussed for Alternative 1. Therefore, Alternative 2 would result in no significant impacts to traffic and circulation.

3.10.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing traffic conditions would not change; therefore, there would be no significant changes or impacts to traffic levels and circulation with implementation of the No Action Alternative.



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0 0.5 1 Miles

Navy-Managed Property
Cameron Truck Trail
La Posta Truck Trail
Interstate 8
State Highway 94
Old Highway 80
Buckman Springs Road
La Posta Road

Source- ESRI (2010), NAVFAC SW 2011

Figure 3.10-1
Transportation and Traffic

San Diego County, California

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3.11 VISUAL RESOURCES

The following discussion is based on a review of applicable land use plans and policies, available literature, and existing background data, including the following resources:

- BLM Manual 8431 – Visual Resource Contrast Rating (BLM 1986);
- Draft South Coast Resource Management Plan Revision and Draft Environmental Impact Statement (BLM 2011);
- La Posta Mountain Warfare Training Facility Final Environmental Assessment (Navy 2008);
- Mountain Empire Subregional Plan (County of San Diego 2011a);
- Mountain Empire Mobility Element Network Map (County of San Diego 2011b); and,
- California Department of Transportation (Caltrans) State Scenic Highways Program Map (Caltrans 2012).

3.11.1 AFFECTED ENVIRONMENT

Visual resources are defined as the natural and manufactured features that constitute an area's scenic qualities. This section describes the existing visual resources on Camp Michael Monsoor and in the project area.

3.11.1.1 BLM's Visual Resource Management System

Background

The Federal Land Policy Management Act requires the BLM to protect the quality of scenic values on public lands (43 U.S.C. Section1701). In order to meet these requirements, the BLM has developed and uses the Visual Resource Management (VRM) system, which is an analytical process that identifies, sets, and meets objectives for maintaining scenic values and visual quality (BLM 2011). This standard protocol is used for the inventory and analysis of visual resource values. Since the project area is located on BLM land, the BLM's VRM system is applicable to this analysis.

The VRM system functions in two ways: first, in the inventory of visual resources; and second, in their management (BLM 2011). This methodology uses three factors to define the visual resources in an area:

1. **Scenic Quality**. Based on features such as vegetation, water, topography, scenery, human modifications, and scarcity to determine the visual appeal of the area;
2. **Viewer Sensitivity**. Measures public concern for scenic quality and is determined by factors such as level of public interest, adjacent land uses, types of users, and others; and,

3. **Viewer Distance Zones**. Divided into three zones relative to observation points or travel routes:
   - Foreground-Middleground (details within 5 miles [8 kilometers]);
   - Background (object outlines seen from 15 miles [24 kilometers]); and,
   - Seldom Seen (beyond the background zone).

VRM Classes

Management objectives for visual resources on BLM land are typically identified through BLM's land use planning process and entail classification of the landscape into one of four VRM classes ranging from Class I, the most restrictive, to Class IV, the least restrictive. The VRM class objectives are defined as follows (BLM 1986):

- **Class I Objective**. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.
- **Class II Objective**. The objective to this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- **Class III Objective**. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- **Class IV Objective**. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention; however, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

When a specific project is proposed, the degree of contrast between the proposed activity and the existing landscape is measured (Contrast Rating). The Contrast Rating process compares the proposed activity with existing conditions element-by-element (form, line, color, texture) and feature-by-feature (land/water, surface, vegetation, structures). The Contrast Rating is compared to the appropriate VRM Class to determine if the level of contrast is acceptable. If the proposed project exceeds the allowable contrast level, a BLM decision is

made to (1) redesign, (2) abandon or reject, or (3) proceed, but with mitigation measures stipulated to reduce the levels of impacts.

3.11.1.2 Viewscape

The project area and surrounding public lands are designated by the BLM as VRM Class III (Hill 2012). The project area is located within eastern San Diego County, in the Mountain Empire Subregion (County of San Diego 2011a). This area is generally characterized by steep hills and slopes bisected by narrow ravines and a few broad valleys. The land is almost completely undeveloped, aside from some rural residential and agricultural land uses.

The general viewscape of the project area consists of rugged, mountainous terrain with steep slopes, sheer rock cliffs, and frequent rock outcroppings. Camp Michael Monsoor lies within a series of north-northwest trending mountain ranges, and the elevation of the area ranges between 3,200 and 4,000 feet (975 and 1,219 meters) above mean sea level. Vegetation within the project area consists largely of scattered trees (primarily scrub oak), annual grasslands, chaparral, and sagebrush scrub. No permanent surface water bodies are located on the property, and the primary form of drainage includes several small canyon ravines throughout the site that feed into local streams outside of the installation.

The most visually prominent landmark at Camp Michael Monsoor is the non-operational satellite dish, located on the Hilltop Complex, at an elevation of approximately 3,851 feet (1,174 meters) above sea level. Portions of the satellite dish are visible for many miles outside of the project area due to its height and its strong contrast in color, form, and texture relative to the surrounding landscape.

Access to the project area is from La Posta Road via a paved, single-lane road, and other limited portions of the project area are crossed by unimproved dirt roads. Other land development features within the Previously Withdrawn Parcel include a 40-acre (16-hectare) fenced area containing eight buildings (including the non-operational satellite dish) used for office, classroom, and ready space, a helicopter pad, a general purpose storage area, a paved access road with a metal gate, and the Range Complex (Navy 2008).

3.11.1.3 Designated Scenic Features

Several features within the region are either designated as scenic by state or local agencies, or are identified as eligible for designation. According to Caltrans, Interstate 8 is considered eligible for the State Scenic Highway designation (Caltrans 2012). In addition, there are three scenic corridors near the project area and identified in the County of San Diego General Plan Conservation and Open Space Element:

- Interstate 8, from State Route 79 east to the Imperial County Line;
- Buckman Springs Road, from Lake Morena Drive to State Route 94; and,

- Old Highway 80, from the Central Mountain Subregion[22] to Interstate 8 (County of San Diego 2011a).

The Pacific Crest Trail, a 2,650-mile (4,265-kilometer) national scenic trail that runs from Mexico to Canada through California, Oregon, and Washington (Pacific Crest Trail Association 2012), is also located west of the project area near the Morena Reservoir. Table 3.11-1 provides the approximate distance and direction of these designated scenic features from the project area. These features are shown on Figure 3.11-1.

Table 3.11-1 Designated Scenic Features

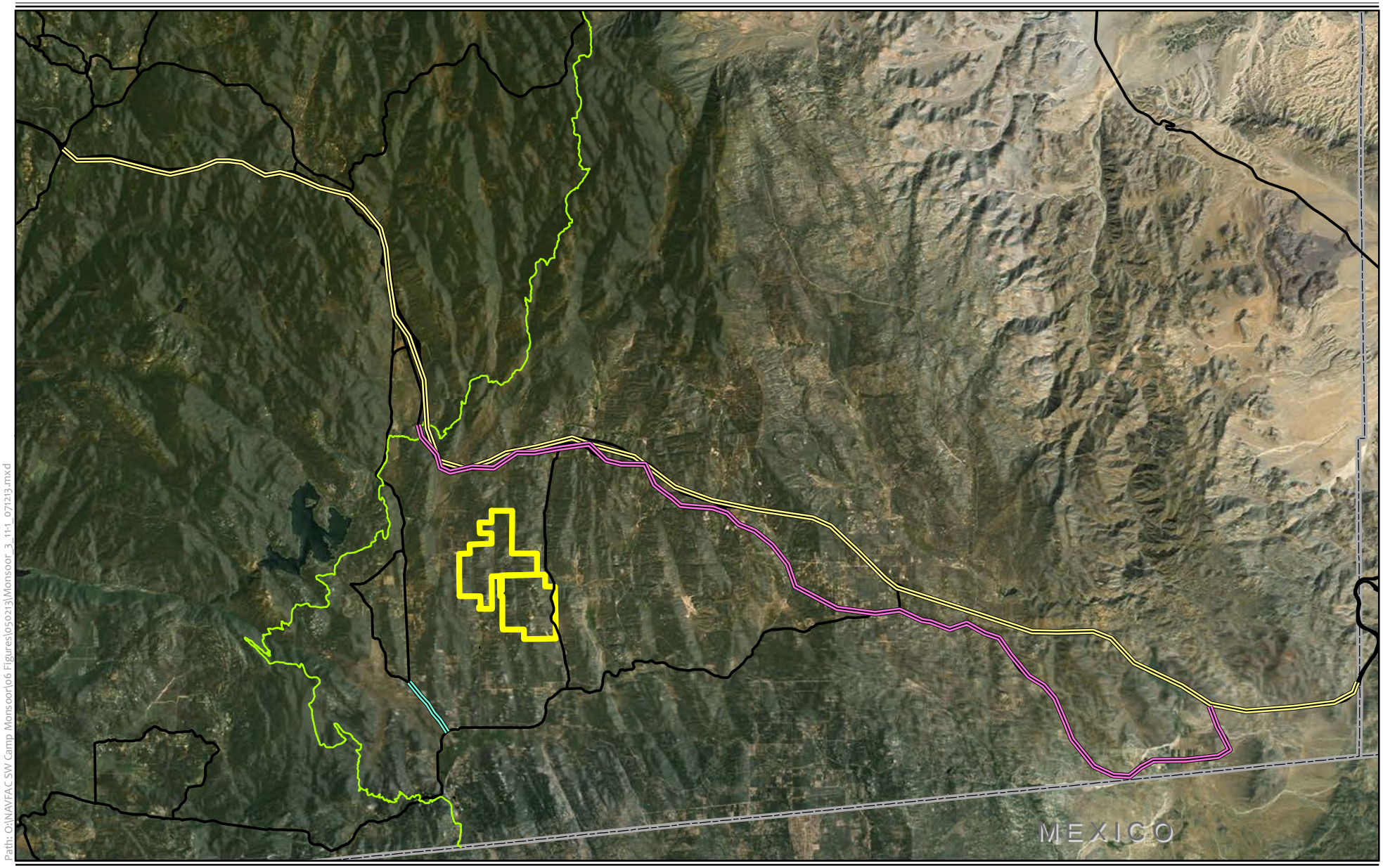
Scenic Corridor	Miles (kilometers) From Project Area	Direction From Project Action Area
Interstate 8, from State Route 79 east to the Imperial County Line[1]	2.4 miles (3.9 kilometers)	North of Parcel C
Buckman Springs Road, from Lake Morena Drive to State Route 94[1]	2.6 miles (4.2 kilometers)	Southwest of the Previously Withdrawn Parcel
Old Highway 80, from the Central Mountain Subregion to Interstate 8[1]	1.6 miles (2.5 kilometers)	North of Parcel C
Pacific Crest Trail[2]	1.9 miles (3.1 kilometers)	West of Parcel C

Sources:
[1] County of San Diego 2011a
[2] U.S. Forest Service 2011

3.11.1.4 Visibility from Land Surrounding the Project Area

Land uses surrounding the project area are primarily rural residential or agricultural with some dispersed recreation (e.g., hiking and biking trails). Due to the distance from established communities such as Cameron Corners (3.2 miles [5.1 kilometers] southwest) and Campo (5 miles [8 kilometers]), most of the project area is not visible to nearby residences. Exceptions are the Microwave Space Relay Station, including the non-operational satellite dish and lights from the 40-acre (16-hectare) fenced compound, portions of the Previously Withdrawn Parcel, including the gate, access road, and pump house for the wells, and portions of the Range Complex (Navy 2008).

[22] The Central Mountain Subregion is a geographic area of San Diego located east of Alpine and Ramona, west of the Desert Subregion, south of Julian, and north of the Mountain Empire Subregion. Communities located within the Central Mountain Subregion include Cuyamaca, Descanso, Guatay, Pine Valley, and Mount Laguna (County of San Diego 2012).



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0 1 2 3 4 5 Miles

Major Roads
Pacific Crest Trail
Navy-Managed Property
Interstate 8 (Highway 79 to Imperial County)
Old Highway 80 (Central Mountain Subregion to Interstate 8)
Buckman Springs Road (Lake Morena Drive to State Route 94)

Source- ESRI (2010), USFS (2009).

Figure 3.11-1
Visual Resource Features

San Diego County, California

Views from the Pacific Crest Trail looking north and east towards the La Posta area and from Interstate 8 looking south towards the same area would generally be dominated by moderate to steep rocky hill slopes in the foreground and middleground. The color of power line poles and shrub massing in the area attenuate visual contrast. Adjacent rural ranchlands with moderate levels of disturbance and structures lie to the east of Camp Michael Monsoor. While surface disturbances in this setting have the potential to result in high color contrast and attract attention, the project area is generally surrounded by mountainous topography that screens the site from view from the Pacific Crest Trail. Motorists traveling east-to-west on Interstate 8 may experience brief views of the satellite dish as they travel through the area.

Motorists traveling along La Posta Road between Old Highway 80 and State Route 94 may view portions of the project area, where the road parallels the eastern boundary of Camp Michael Monsoor. This two-lane light collector (County of San Diego 2011b) passes through areas dominated by chaparral and sage scrub with some oaks. Vegetation found at the Previously Withdrawn Parcel is similar, creating an appearance of uniform terrain in the foreground for motorists traveling past Camp Michael Monsoor. While a passersby may momentarily view Navy facilities, including the access road extending from La Posta Road to Range 110, the Main Gate entrance, and some structures on the Hilltop Complex (i.e., the satellite dish), very little else of the installation is visible from this roadway.

Recreation areas near the project area include an unmaintained biking trail north and west of the Previously Withdrawn Parcel near the La Posta Truck Trail (Mountain Bike Review 2012), a Class III Trail[23] along Buckman Springs Road (County of San Diego 2011b), and a birding area east of the Previously Withdrawn Parcel along La Posta Road (Birding San Diego County 2012); however, views of the project area are generally obscured from view by the terrain surrounding Camp Michael Monsoor.

3.11.1.5 Viewer Sensitivity

For this analysis, the sensitivity of viewer groups was considered to identify any important viewpoints. Scattered rural residences, recreationists (e.g., birders, bicyclists, and hikers), and motorists traveling along public roads (e.g., La Posta Road, Old Highway 80, and Interstate 8) may be able to view portions of the Previously Withdrawn Parcel and Parcel C. However, the project area is largely obstructed from public view by mountainous terrain situated between the viewers and the installation. Further, the closest location from which the project area may be viewed is La Posta Road, which is only lightly used by recreationists and motorists. For these reasons, the number of viewers would be low, the frequency of views of the proposed improvement areas (e.g., Main Gate entrance) would be low, and the duration of

[23] Class III trails are bicycle trails that provide for shared use with pedestrian or motor vehicle traffic.

views would be brief. Because of the lack of sensitive receptors, no key observation points have been identified.

3.11.1.6 Light and Glare

Light sources in the project area consist of lights associated with existing buildings (administrative) and lighting for safety and security. The lighting is concentrated around the eight administrative buildings used for office, classroom, and ready space at the Hilltop Complex. Security lights may be on at night for security or training purposes at the Range Complex and at the Hilltop Complex (Navy 2008).

Glare is reflective light that can be visually unpleasant or possibly unsafe due to the potential for temporary “blindness.” Glare is created by light (usually from the sun) bouncing off of smooth surfaces such as glass, metal, water, or polished stone. Development within the Previously Withdrawn Parcel consists of buildings and structures that were primarily designed and constructed for utility, rather than aesthetic, purposes. There is a lack of decorative surfaces, including those that could cause glare, with the exception of the non-operational satellite dish. The majority of buildings and structures have non-reflective surfaces; however, the metal siding used on some of the larger maintenance and storage buildings do have some potential for minor glare (Navy 2008).

3.11.2 ENVIRONMENTAL CONSEQUENCES

The existing visual quality and viewer sensitivity in the project area provides the baseline for determining impacts to visual resources from development of elements included in the Proposed Action. Visual impacts are assessed based on the level of contrast of these elements with existing conditions (i.e., landscape character and quality) and their visibility and proximity to sensitive receptors. Visual contrast is assessed based on a proposed action’s contrast in form, line, color, and texture with landscape features of topography, water, vegetation, and other structures. Visual sensitivity is based upon the degree of public awareness and concern for alteration of the existing visual resource.

3.11.2.1 Alternative 1

Alternative 1 would require the construction and operation of facilities in four distinct areas at Camp Michael Monsoor:

- Range Complex;
- Main Gate entrance;
- Range 110; and,
- Parcel C.

No permanent structures would be developed outside of the installation. As described in Section 3.11.1, the majority of Camp Michael Monsoor is set back from areas containing sensitive viewers, including established communities, scenic corridors, and recreation areas,

and does not attract or dominate views. The addition of conservation easements by the Navy would also serve to limit the views of Alternative 1 from the public.

Construction

Short-term impacts to the viewshed in the Alternative 1 area would result from the presence of large trucks, bulldozers, and other equipment used during project construction. Primary access to the Alternative 1 area is provided via La Posta Road through the Main Gate entrance. Drivers on these roadways would be able to see construction vehicles accessing and exiting the installation; however, construction activities are anticipated to last between one and six months, and no long-term impacts on visual resources would occur as a result of construction. Therefore, visual impacts from construction activities would be less than significant with implementation of Alternative 1.

Operations

Range Complex

Implementation of Alternative 1 would include installation of the following facilities at the Range Complex:

- A new underground water pipeline; and,
- Erosion control structures (e.g., revetment).

Because the Range Complex is located near the center of Camp Michael Monsoor and is largely concealed by the surrounding mountainous terrain, these new features would not be visible to sensitive viewers. This level of change would result in minimal visual contrast, and introduction of these elements into the landscape would not dominate the view of the casual observer. Therefore, visual impacts from operations at the Range Complex would be less than significant with implementation of Alternative 1.

Main Gate Entrance

To enhance the security of Camp Michael Monsoor, several structures would be constructed at the Main Gate entrance, including a Range Control Building, a second gate for the redesigned Main Gate entrance, two concrete block walls, a replacement water tank, and replacement fencing along La Posta Road. Inspection lights would be placed at the second gate and the replacement gate for security. Motorists traveling along La Posta Road would be able to see some of these features from the roadway, particularly the block wall and replacement fencing. However, military structures (e.g., primary gate and fencing) already at the Main Gate entrance are similar in scale and composed of similar materials (e.g., metal); this would limit the overall visual contrast introduced to the viewshed by proposed project structures. As part of Alternative 1, the area surrounding the Range Control Building would also be landscaped to blend with the surrounding vegetation. Consequently, the overall visual change in this area would be minimal to moderate, and the visual impacts from operations at the Main Gate entrance would be less than significant with implementation of Alternative 1.

Range 110

Implementation of Alternative 1 would include reconfiguration of Range 110 and the existing access road, installation of 10 lights on new poles at Range 110, and installation of six 40-foot-high (12-meter-high) galvanized steel electrical distribution line poles along the northern side of the existing access road. The distribution line poles would introduce vertical forms with straight lines and contrasting colors into the viewshed. These poles would be visible to a small number of sensitive viewers travelling on La Posta Road; however, the frequency and duration of views would be low. Additionally, the new lights that would be installed as part of Alternative 1 would be oriented towards the interior of the range and away from the roadway, and would not contribute significantly to light pollution in the area. Lights would be used only when the range is in use. Consequently, these features would not substantially degrade the existing visual character or quality of the site and its surroundings. Visual impacts from operations at Range 110 would be minimal and less than significant with implementation of Alternative 1.

Parcel C

Implementation of Alternative 1 would include the installation of a rifle range, CQC structure, shotgun range, training storage, pistol ranges, and temporary and permanent water wells at Parcel C. The Navy is currently constructing similar structures at Parcel C under MILCON P-781, including a CQC structure, a Method of Entry structure, shop and logistics structures, and a water tank; these structures are similar to Alternative 1 structures in terms of color, line, form, and texture. Additionally, this area is screened from view by mountainous terrain to the north, west, and east, and would be visible to very few sensitive viewers (e.g., trail hikers and bikers). Due to the low number of sensitive viewers and low level of contrast with existing landscape features, no significant long-term change in the visual environment would occur at Parcel C. Therefore, visual impacts from operations at Parcel C would be minimal and less than significant with implementation of Alternative 1.

Overall Impact

As noted above, the project area and surrounding public lands are designated by the BLM as VRM Class III (Hill 2012), where the Visual Management Objective is to partially retain the existing character of the landscape (BLM 1986). Implementation of Alternative 1 would result in an overall level of visual contrast to the surrounding landscape that is minimal to moderate; this would conform to the Visual Management Objective set for the area. Therefore, implementation of Alternative 1 would not result in significant impacts to visual resources.

3.11.2.2 Alternative 2

With implementation of Alternative 2, the shotgun range would not be constructed. Impacts from Alternative 2 would be the same or similar to impacts from implementation of Alternative 1 since there is a low number of sensitive viewers in the area that would be affected by development at this location. Therefore, implementation of Alternative 2 would not result in significant impacts to visual resources.

3.11.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing environment for visual resources would not change; therefore, the No Action Alternative would have no significant impacts on visual resources.

3.12 WATER RESOURCES AND HYDROLOGY

The following discussion is based on a review of available literature and existing background data, including, but not limited to, the following resources:

- La Posta Mountain Warfare Training Center Final Environmental Assessment (Navy 2008);
- San Diego Integrated Regional Water Management Plan (San Diego Integrated Regional Water Management 2007); and,
- Preliminary Jurisdictional Wetland Delineation Report for the Proposed Action Area (Merkel and Associates 2012).

3.12.1 AFFECTED ENVIRONMENT

This section describes the water resources that occur within and adjacent to the project area. For purposes of water resources, this area is defined as the area where permanent impacts could occur from implementation of the action alternatives.

3.12.1.1 Hydrology

Composed of steep, naturally erosive mountains formed by dynamic geologic forces, the watersheds surrounding the project area provide a relatively direct delivery system for precipitation and sediment to reach streams. The project area's hydrology is influenced by several factors, including those that are natural (topographic, geologic, climatic, etc.) and human influenced (land use, etc.). Proper management and stewardship of water resources are fundamental to natural resource and land use sustainability.

The project area 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 the project area is in the Campo Hydrologic Area, with a small portion of Parcel C in the Cameron Hydrologic Area.

The Previously Withdrawn Parcel is part of Naval Base Coronado and, therefore, the project area is covered by existing stormwater permits. Naval Base Coronado operates under NPDES Permit No. CA0109185 Order No. R9-2003-0008 and has submitted a Report of Waste Discharge (Navy 2002b) as part of the requirements for this permit. Stormwater discharges from

Camp Michael Monsoor are non-industrial and are not regulated pursuant to the General Industrial Storm Water Permit. There are no point source discharges at La Posta. Order No. R9-2003-0008 does not regulate any discharges from the La Posta Mountain Warfare Training Facility (Regional Water Quality Control Board 2002).

3.12.1.2 Surface Water Drainage

The project area exists within a Pacific montane environment, characterized by highland areas below the tree line, with temperatures ranging from below freezing in the winter to greater than 86°F (30°C) in the summer. Moderate amounts of snowfall are experienced in the winter, and rainfall averages 20 to 30 inches (51 to 76 centimeters) annually. Surrounding areas in the lower elevations experience a Mediterranean-type climate with moderate temperatures and rainfall amounts generally less than 10 to 12 inches (25 to 30 centimeters) per year. Urban development near and adjacent to the project area can have a dramatic effect on natural resources. Many stream channels downstream of the project area have been altered through flow management or channelization, which resulted in a break in the connectivity with natural streams that previously flowed through towns, cities, and farmland to the Pacific Ocean. Local flood peaks generally occur during major rainfall events, which threaten life and property during these periods. Large-scale and high-return-interval floods are associated with major sub-tropical events just north of the project area. Wildfire-related flood events are exacerbated by the large amounts of sediment released by the wildfires that “bulk” the flood flow volumes to double or triple their average volumes (Navy 2008).

In March 2012, field biologists conducted an assessment (USACE Jurisdictional Wetland Delineation) of streams at Camp Michael Monsoor, the purpose of which was to determine the presence of wetlands or Waters of the United States under the jurisdiction of the USACE (Appendix F). The USACE Jurisdictional Wetland Delineation identified two ephemeral streams that flow through Parcel C as potential Waters of the United States. In addition, there were five streams and four erosional drainages delineated, including the erosional drainage flowing east from the Range Complex that is set for repair under the Proposed Action (Merkel and Associates 2012). These drainages were found to be isolated after going through a culvert under a railroad track berm south of the Previously Withdrawn Parcel.

3.12.1.3 Water Quality

There are no permanent surface water resources within the project area. The property drains via ephemeral channels, primarily to the south and west, and ultimately into the Tijuana River drainage basin. Most water produced in the Cleveland National Forest (adjacent to the project area to the north) meets or exceeds federal and state water quality standards.

3.12.1.4 Floodplains

Although Federal Insurance Rate Maps for the area were not available, due to the elevation and topography, it can be assumed that there are no 100-year floodplains within the project area.

3.12.1.5 Groundwater

Groundwater, the water beneath the earth's surface, is an integral part of the biological and physical ecosystem. Groundwater depends on precipitation as its source. Together with surface water, it defines the water balance within a watershed. It is estimated that the alluvial deposits that are potential aquifers cover roughly 2 to 3 percent of the Cleveland National Forest directly adjacent to the project area to the north. The quantity of groundwater available in the project area is unknown. Groundwater is extracted through springs, horizontal wells, and vertical wells. In California, the subsurface flow of a stream is considered surface water by the state and governed by the California State Water Resources Control Board with permitting and regulatory and statutory adjudicative authority. The right to use groundwater belongs to the overlying landowner, subject to the right of other landowners to use the same groundwater aquifer (Navy 2008). Numerous wells and springs within the Cleveland National Forest have declining well levels or have gone dry in recent years, including Palomar horizontal well (spring development), Japatul Fire Station well, Oasis Spring, Cuyapaipe well, and Alpine Ranger Station well (Navy 2008). Groundwater quality in the project area is generally good.

3.12.2 ENVIRONMENTAL CONSEQUENCES

3.12.2.1 Alternative 1

Surface-disturbing activities could increase sedimentation in some surface water resources; however, the Navy contractor would be required to prepare a SWPPP, as described in Section 2.6.5.2, to minimize soil erosion. In addition, the implementation of the erosion control improvements under Alternative 1 would correct many of the erosion problems currently occurring at Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help to minimize erosion from construction since they would already be in place. Alternative 1 would not significantly increase existing groundwater demand or restrict the development of water sources.

Alternative 1 would include the installation of a water line and well in Parcel C which would increase the water supply available at Camp Michael Monsoor. Construction of the rifle range would occur within a portion of Stream 1 and Stream 2. As a result, Section 401 and 404 permits will be required from USACE and the Regional Water Quality Control Board, respectively, per the Clean Water Act. No other streams would be affected during construction or operation of the Alternative 1. Erosion controls would be implemented on the erosional feature near the Range Complex; however, the natural flow of the stream would not be interrupted in such a way that would alter the surficial hydrologic regime. Therefore, no significant impacts to water resources would be anticipated from implementation of Alternative 1.

Implementation of Alternative 1 would involve live-fire operations at the CQC structure and small arms ranges involving the use of a variety of small arms. Range management practices would continue to be implemented to ensure the ranges are properly maintained. Compliance with Range Maintenance Standard Operating Procedure guidelines would ensure

that lead does not migrate off the range site. Based on the continued implementation of established range management practices, no adverse water resource impacts would occur.

Alternative 1 would not place any restrictions on the development of water sources and would not contribute to significant impacts to water resources. The Navy would continue to manage water resources in a manner consistent with state and federal laws and regulations. Therefore, there would be no significant impacts to water resources and hydrology from implementation of Alternative 1.

3.12.2.2 Alternative 2

Under Alternative 2, impacts to surface hydrology, water quality, groundwater, and water supply would not differ from those discussed under Alternative 1; therefore, no significant impacts to water resources and hydrology would occur with implementation of this alternative.

3.12.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented and improvements and expansion to Camp Michael Monsoor would not take place. The existing environment for water resources and hydrology would not change. The No Action Alternative would have no significant impacts on water resources and hydrology.

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4 CUMULATIVE IMPACTS ANALYSIS

4.1 DEFINITION OF CUMULATIVE IMPACTS

The approach taken for this cumulative impacts analysis follows the objectives of NEPA and CEQ regulations. CEQ regulations require that the analysis of cumulative impacts in an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR Part 1508.7).

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

4.2 GEOGRAPHIC BOUNDARIES FOR CUMULATIVE IMPACTS ANALYSIS

Geographic boundaries for analysis of cumulative impacts in this EA vary for different environmental resources. For example, the affected air basin may be the appropriate geographic extent for cumulative impacts on air quality, whereas the project area may be the appropriate boundary for other resources. The cumulative impacts analysis focuses on projects that directly overlap with the proposed alternatives (i.e., occur in similar locations and potentially impact similar resources).

4.3 PAST, ONGOING, AND REASONABLY FORESEEABLE ACTIONS

Personal communications with NAVFAC Southwest, NSWG-1, and BLM staff assisted in identifying past, present, and reasonably foreseeable actions near Camp Michael Monsoor. Projects within or in proximity to the project area that could directly or indirectly interact with Alternatives 1 and 2 are presented in Table 4-1 and are shown on Figure 4-1. These actions, which are in proximity to Camp Michael Monsoor, are not part of the Proposed Action described in this EA, nor are they dependent on it. Where applicable, environmental analyses of the other actions addressed in this section have been, or would be, conducted separately, with the results of those analyses incorporated into documents prepared specifically for those actions. Past, present, and reasonably foreseeable actions listed in Table 4-1 are described in further detail below (refer to Sections 4.3.1 through 4.3.8).

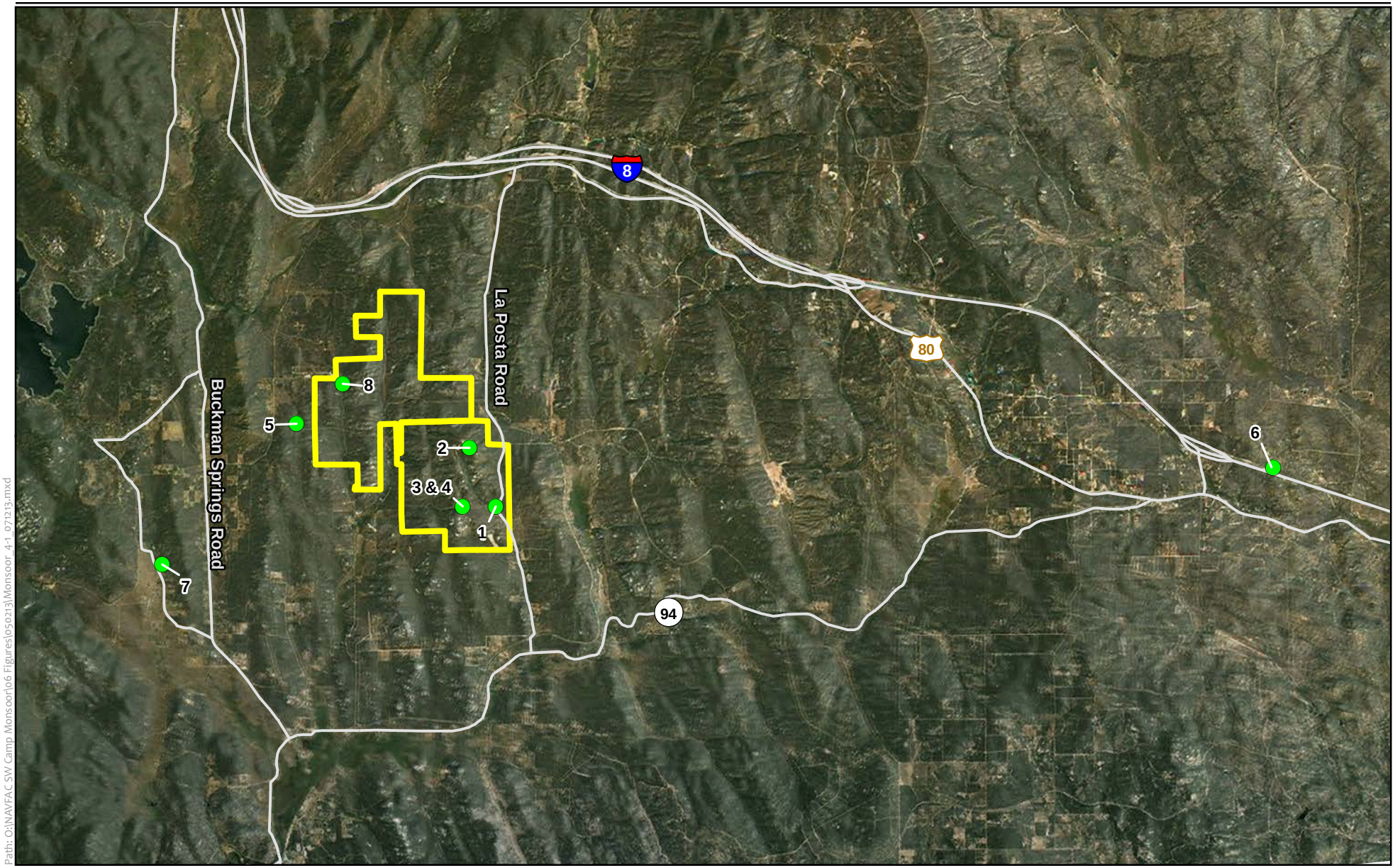
Table 4-1 Projects Evaluated for Cumulative Impacts

Project Name	Location	Status	Project Description	Distance/Direction from Camp Michael Monsoor
1. Military Construction Project P-781	Camp Michael Monsoor San Diego County, California	An EA was completed in 2008. Currently under construction.	See Section 4.3.1	Includes project area
2. Demolition of the Existing Satellite Dish and Construction of a New Antenna Facility at Camp Michael Monsoor	Camp Michael Monsoor San Diego County, California	Environmental Review Status: TBD Demolition: TBD	See Section 4.3.2	Includes project area
3. Update of the 2002 Naval Base Coronado Integrated Natural Resources Management Plan	Naval Base Coronado facilities, including Camp Michael Monsoor San Diego County, California	An update to the current 2002 Naval Base Coronado Integrated Natural Resources Management Plan is currently in progress.	See Section 4.3.3	Includes project area
4. Update of the Naval Base Coronado Fire Management Plan	Naval Base Coronado facilities, including Camp Michael Monsoor San Diego County, California	A Draft Fire Management Plan is currently being developed. Final Fire Management Plan should be available in 2013 or early 2014.	See Section 4.3.4	Includes project area
5. Update of the South Coast Resource Management Plan	South Coast Planning Area, including portions of five Southern California counties	Draft Resource Management Plan/Draft Environmental Impact Statement was completed in 2011. Record of Decision and approved Resource Management Plan should be available in 2013.	See Section 4.3.5	Includes project area (Bureau of Land Management land only)

Table 4-1 Projects Evaluated for Cumulative Impacts

Project Name	Location	Status	Project Description	Distance/Direction from Camp Michael Monsoor
6. Border Patrol Range in Boulevard	North of I-8 in San Diego County, California	Final Environmental Assessment was completed by the U.S. Army Corps of Engineers in February 2010. Construction: To be completed depending on available funding.	See Section 4.3.6	9 miles (14.5 kilometers) east
7. Old Flying A Ranch/Vincent de Paul's Boys Town (Children's Village)	San Diego County, California	Project approved by the County of San Diego in February 2008.	See Section 4.3.7	2 miles (3.2 kilometers) west-southwest
8. Sunrise Powerlink Transmission Line Project	San Diego and Imperial counties	Construction began in 2010 and the line went live in June 2012.	See Section 4.3.8	Includes project area at Parcel C

Key:
TBD = to be determined



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0 1 2 3 Miles

Cumulative Project

Navy-Managed Property

Major Road

Source- ESRI (2010)

Figure 4-1
Cumulative Projects

San Diego County, California

4.3.1 CONSTRUCTION OF MILITARY CONSTRUCTION PROJECT P-781 FACILITIES AT CAMP MICHAEL MONSOOR

The Navy is currently constructing and plans to operate the La Posta Mountain Warfare Training Facility project under MILCON P-781 at Camp Michael Monsoor. For this project, Public Land Order No. 7807 was issued by the BLM on January 17, 2013; this transferred 3,385 acres (1,370 hectares) of public land (encompassing the Previously Withdrawn Parcel and Parcels C, E, and G) to the Navy for exclusive military use through year 2033 (BLM 2013a). The project is needed to support military training activities at Camp Michael Monsoor, and allows for construction and operation of the following training facilities within the transferred lands:

- MILCON P-781 CQC structure;
- Simulated residence for training;
- Logistics and support facilities; and,
- Method of Entry structure.

The La Posta Mountain Warfare Training Facility Final EA was completed by the Navy for this project in 2008; the BLM issued a Record of Decision for this project in February of 2010 (BLM 2010b). The Navy issued a memo to file in September 2011 covering changes to the project description. Construction of the project will be completed by 2013.

MILCON P-781 facilities will be located at Camp Michael Monsoor within Parcel C and the Previously Withdrawn Parcel (Figure 4-1).

4.3.2 INSTALLATION OF A NEW ANTENNA FACILITY AT CAMP MICHAEL MONSOOR

The non-operational satellite dish, which is located at the Hilltop Complex north of the ready space at Camp Michael Monsoor, is currently off-limits for safety reasons. Consequently, demolition of the old satellite dish is under discussions, and the Navy may construct and operate a new antenna tower in the existing border patrol parking area at Camp Michael Monsoor. The new tower would be constructed as an interim step prior to the Navy's demolition of the satellite dish for use by the Army and National Guard. The footprint of the new tower would occupy an approximately 100-square-foot (9-square-meter) area and would be located on previously disturbed land (Figure 4-1).

4.3.3 UPDATE OF THE 2002 NAVAL BASE CORONADO INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Two separate INRMPs are used to manage Naval Base Coronado's complex natural resources: the 2002 Naval Base Coronado INRMP, and the San Clemente Island INRMP. The INRMPs provide for natural resource conservation, rehabilitation, and management in a manner consistent with military missions at Naval Base Coronado. Camp Michael Monsoor is a facility

that falls under the jurisdiction of Naval Base Coronado, and the 2002 Naval Base Coronado INRMP applies to Camp Michael Monsoor. The INRMP summarizes baseline conditions at Naval Base Coronado and agreements through which compliance with regulatory and planning processes are accomplished. The INRMP provides technical guidance for the planning and preparation of installation approvals, management actions, orders, instructions, guidelines, standard operating procedures, and other plans for integrating natural resource management efforts into the decision-making process. The 2002 Naval Base Coronado INRMP is currently being revised and updated to address the changing needs for natural resources protection at Naval Base Coronado installations.

4.3.4 UPDATE OF THE NAVAL BASE CORONADO FIRE MANAGEMENT PLAN

The Naval Base Coronado Fire Management Plan, which shapes fire-related policy, management, and related decisions at Naval Base Coronado facilities, including Camp Michael Monsoor, is being updated. The core elements of the Fire Management Plan include a Fire Danger Rating System, which is the first line of defense to prevent ignitions in conditions where suppression is difficult. Suppression assets are staged at increasing states of readiness as fire danger increases. The use of incendiary ordnance is conditioned upon appropriately staged suppression response teams. Other elements of the core strategy include prevention, fuels management, rapid-attack suppression, and burned habitat re-evaluation thresholds. These thresholds are proposed to manage the risks of extreme fire scenarios, which may be catastrophic to individual species, and NAVFAC's overall goals of fire protection and natural resource protection at Naval Base Coronado facilities, including Camp Michael Monsoor. The Fire Management Protection Plan's primary purpose is to provide for a full and complete range of training opportunities for military users, while complying with environmental laws and achieving sustainable ecosystem management.

4.3.5 UPDATE OF THE SOUTH COAST RESOURCE MANAGEMENT PLAN

The 1994 South Coast Resource Management Plan provides guidance for the management of approximately 300,000 acres (121,405 hectares) of BLM-administered public lands in the South Coast Planning Area, which include portions of five Southern California counties: San Diego, Riverside, San Bernardino, Orange, and Los Angeles (BLM 1994); this area also includes Camp Michael Monsoor. Currently, the Palm Springs-South Coast Field Office is preparing a revised Resource Management Plan for the South Coast Planning Area and an associated EIS to reflect the changed needs of the planning area. A Proposed Plan and Record of Decision is expected in 2013 (Hill 2012). Once adopted, the revised Resource Management Plan will replace the 1994 plan (BLM 2011).

4.3.6 BORDER PATROL RANGE IN BOULEVARD

A new border patrol facility is proposed on the east side of Ribbonwood Road, just north of Interstate 8, in San Diego County, California. The project proposes construction, operation, and maintenance of an administration building, educational facility, detention center,

maintenance garage, dog kennels, equine facilities, emergency helipad, a 160-foot (49-meter) communications tower, an indoor shooting range, and security fencing and lighting on a 32-acre (29-hectare) site (U.S. Customs and Border Protection 2009). A Final EA was prepared for this project by the USACE in February 2010, and construction is dependent on funding availability.

The proposed project will be located approximately 9 miles (14.5 kilometers) east of Camp Michael Monsoor (Figure 4-1).

4.3.7 OLD FLYING A RANCH/VINCENT DE PAUL'S BOYS TOWN (CHILDREN'S VILLAGE)

The Children's Village project will convert a former working cattle ranch in Campo (the Flying A Ranch) into a foster home for boys and girls. The project will be built on 118 acres (48 hectares) off Lake Morena Drive in the East County backcountry. The Children's Village will house 200 children in kindergarten through 12th grade, as well as staff members and their families. The project will include 25 residences, a school, a dining hall, a gymnasium, and a 540-seat chapel. About two-thirds of the property will remain open space and ranch land to keep the area's rural character intact, and geese, horses, and livestock will remain on the property. The project was approved by San Diego County in February 2008.

The project will be located 2 miles (3.2 kilometers) west-southwest of Camp Michael Monsoor (Figure 4-1).

4.3.8 SUNRISE POWERLINK TRANSMISSION LINE PROJECT

SDG&E has recently constructed a new, 90-mile (145-kilometer), 500-kV transmission line from Imperial Valley Substation (in Imperial County, near the City of El Centro) to a new Suncrest Substation (near Alpine, California), and a new 27-mile (43-kilometer) 230-kV transmission line that includes both overhead and underground segments from the new Suncrest Substation to the existing Sycamore Canyon Substation (near Marine Corps Air Station Miramar). A Final Environmental Impact Report/EIS was prepared by the California Public Utilities Commission and the BLM, and was released to the public on October 13, 2008. The Commission voted on December 18, 2008 to approve the Final Environmentally Superior Southern Route, and the BLM issued a Record of Decision approving the same route in January 2009 (BLM 2012c). Construction activities began in September 2010 and were completed in June 2012.

The project is located in Parcel C north and west of the project area facilities at Camp Michael Monsoor (Figure 4-1).

4.4 CUMULATIVE IMPACTS ANALYSIS

This section addresses the potential impacts of implementing the action alternatives in combination with other past, present, and reasonably foreseeable actions. The potential impacts resulting from implementation of the alternatives are associated with construction, rather than the operational phase; therefore, potential impacts would be localized and short-term in duration. Cumulative impacts for all resources presented in Chapter 3 are discussed in the following subsections.

4.4.1 AIR QUALITY

Implementation of Alternative 1 or Alternative 2 would result in minor, local and regional increased emissions of criteria air pollutants and greenhouse gases.

The geographic extent for cumulative impacts on air quality is defined as the San Diego Air Basin, which covers the same area as San Diego County, California, and is under the jurisdiction of the San Diego APCD. The San Diego Air Basin currently meets the federal standards for all criteria pollutants except O_3 for the 8-hour standard, and meets state standards for all criteria pollutants except O_3, $PM_{2.5}$, and PM_{10}. The San Diego Air Basin is classified as a "marginal" nonattainment area for O_3. Construction would result in emissions of O_3, $PM_{2.5}$, and PM_{10}. However, as shown in Table 3.1-4, the total estimated construction emissions subject to General Conformity applicability would be less than the applicable *de minimis* thresholds for CO, VOCs, and NO_X, and less than 10 percent of the regional emissions budget for those pollutants. In addition, construction emissions would be short-term.

Operational emissions would also result in emissions of O_3, $PM_{2.5}$, and PM_{10}. While these emissions would be long-term, the total estimated operation emissions subject to General Conformity applicability would be less than the applicable *de minimis* thresholds for CO, VOCs, and NO_X, and less than 10 percent of the regional emissions budget for those pollutants as shown in Table 3.1-5.

Implementation of the projects listed in Table 4-1 would require compliance with Clean Air Act and state air quality permitting requirements. Construction of several cumulative projects (e.g., MILCON P-781, the Sunrise Powerlink Transmission Line Project, and the Border Patrol Range in Boulevard) would be completed by the time construction of Alternative 1 or Alternative 2 would begin, and only minor air emissions from vehicle use would occur during operation and maintenance of related facilities. Construction of the New Antenna Facility at Camp Michael Monsoor would occur in a previously disturbed area sometime after Alternative 1 or Alternative 2 is constructed and would generate minor air emissions. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in new air emissions.

Implementation of mitigation measures by the Navy, as part of its comprehensive air quality management program (e.g., fugitive dust control measures and maintenance, and

compliance with state and federal requirements for combustion engines), would ensure that air emissions from Alternatives 1 and 2 would be minor. Therefore, since emissions from the identified cumulative projects in Table 4-1 would also comply with applicable federal and state requirements, there would be no significant cumulative impacts to air quality resulting from implementation of any of the alternatives.

In response to U.S. Department of Defense directives, such as Executive Order 13221, Energy Efficient Standby Power Devices, and Executive Order 13423, Strengthening Federal Environment, Energy, and Transportation Management, the Navy has taken a number of steps to reduce greenhouse gas emissions. These actions include developing technologies and improving weapons systems, improving military and civilian truck efficiency, utilizing alternative fuel vehicles and electric vehicles, improving energy efficiency at Navy facilities, and installing solar panels and other renewable energy sources at Navy facilities.

The potential impacts of greenhouse gas emissions are, by nature, global and cumulative, as individual sources of greenhouse gas emissions are not large enough to have an appreciable impact on global climate change. An impact on global climate change would only occur when greenhouse gas emissions associated with the project alternatives are combined with greenhouse gas emissions from other man-made activities on a global scale.

As described in Section 3.1.2, climate change reported for the State of California are approximately 427 million metric tons, and the project's emissions would be less than 0.01 percent of the statewide total. Therefore, when added to the minor impacts from the identified cumulative projects, no significant cumulative impacts to climate change would result from implementation of any of the alternatives.

4.4.2 BIOLOGICAL RESOURCES

The geographic extent for cumulative impacts on biological resources is defined as the project area and adjacent parcels at Camp Michael Monsoor (Parcels A, B, F, E, and G). Implementation of Alternative 1 or 2 would result in localized disturbances at Camp Michael Monsoor, including permanent impacts during construction from grading to 31.62 acres (12.79 hectares) and temporary impacts to 7.66 acres (3.09 hectares) of habitat that would result from the removal of vegetation and the construction of proposed facilities at the Previously Withdrawn Parcel and Parcel C. Implementation of Alternative 1 or 2 would have no impact on federally listed plant species. Impacts to non-federally listed plant species and rare plant communities would include removal of dark-tip bird's beak, sticky geraea, Ramona spineflower, and white snapdragon for the grading and construction of Alternative 1 or 2.

During operations, impacts to plant communities would include potential erosion, storm water pollution, dust, and trampling due to foot and vehicle traffic. The project area, however, is already used by the Navy for training activities.

Implementation of Alternative 1 or Alternative 2 could result in incidental take of QCB. Potential impacts could be temporary or permanent. It is likely that there is a stable population QCB in or near the project area because of the presence of QCB host and nectar plants and the observation of butterflies at multiple sites in 2004 and 2010. The number of QCB subject to take would depend on the density of butterflies in the project area; however, no QCB were observed during the 2006, 2007, or 2008 surveys, and only three extremely worn adults were observed during the 2010 QCB survey (RECON 2006, RECON 2007, ICF International 2010).

Implementation of Alternatives 1 and 2 may result in effects to QCB at the individual level, but the observance or detection of mortality is highly unlikely because of the small body size and diapause life stage. The effect on the QCB's regional population is unknown because of the lack of data. Implementation of Alternative 1 or 2 would permanently remove 21.54 acres (8.7 hectares) of non-excluded QCB habitat. With implementation of pre-construction QCB surveys and the special conservation and construction measures agreed upon with USFWS and described in Section 2.6.3, there would be no adverse impacts to QCB during the construction phase. Implementation of Alternative 1 or Alternative 2 would result in vegetation impacts to 39.28 acres (15.89 hectares) of QCB habitat. Based on the minimal amount of habitat removal when compared to available habitat for this species, no significant impacts would occur to QCB during operation of the Alternative 1 or Alternative 2.

Implementation of the avoidance and minimization measures for biological resources, as described in Section 2.6, would minimize potential impacts to nesting birds that are protected by the Migratory Bird Treaty Act or listed under the Endangered Species Act. Furthermore, the update and implementation of regional resource management plans, including the Naval Base Coronado INRMP and Fire Management Plan and the BLM's South Coast Resource Management Plan, would have beneficial impacts on the QCB and its habitat and would partially offset cumulative impacts in the region. The projects listed in Table 4-1 have undergone or are undergoing separate environmental reviews under NEPA and the Endangered Species Act which will ensure that consultation with USFWS has occurred/would occur and that impacts to sensitive biological resources (i.e., the QCB and its occupied habitat) would be avoided, minimized, and/or compensated, to the extent practicable. Additionally, the acquisition of conservation easements around Parcel C and the Previously Withdrawn Parcel would serve to protect QCB habitat in the surrounding areas.

In addition, construction of the New Antenna Facility at Camp Michael Monsoor would occur in a previously disturbed area and would not affect biological resources. Updates to the 2002 Naval Base Coronado INRMP and BLM's South Coast Resource Management Plan would not result in impacts to any biological resources. However, updates to the Fire Management Plan would likely result in some vegetation removal. This may actually be a benefit to QCB habitat. QCB habitat generally consists of low growing habitat, such as sub-shrubs and annuals, which may benefit from some minor, designed vegetation disturbance. Also, the Fire

Management Plan would reduce the potential for large, catastrophic fires, which would result in far more damage to biological resources.

When added to the minor impacts from the identified cumulative projects, no significant cumulative impacts to biological resources would result from implementation of any of the alternatives.

4.4.3 CULTURAL RESOURCES

The geographic extent for cumulative impacts on cultural resources is defined as the Previously Withdrawn Parcel and Parcel C. None of the cultural resources within the area of potential effect are recommended to be eligible for the National Register of Historic Places; therefore, these resources do not qualify as historic properties. There would be no impacts to cultural resources and no cumulative impact to cultural resources from implementation of any of the alternatives.

4.4.4 GEOLOGY AND SOILS

The geographic extent for cumulative impacts on geology and soils is defined as the Previously Withdrawn Parcel and Parcel C. Potential impacts to geology and soils from the alternatives would be limited to ground disturbance in areas of construction, off-road vehicle use, or increased intensity of training activities during operations. Construction activities can disturb soils, which could result in increased erosion. However, the geologic impacts would not be significant because only 31.62 acres (12.79 hectares) of permanent ground surface disturbance would occur and avoidance and minimization measures would be implemented (e.g., best management practices discussed in Section 2.6.5.2). All soil excavated for the realignment of Range 110 would be used at Range 110, and no export or import of material would be required. Construction of the New Antenna Facility at Camp Michael Monsoor would occur in a previously disturbed area would not affect geology and soils. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in impacts to geology and soils. In addition, the implementation of the erosion control improvements at Range 110 and the Range Complex would correct many of the erosion problems currently being experienced by Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help to minimize erosion that could occur from construction, since the improvements would already be in place. This, coupled with the relatively low rainfall in the region, would make the rate of water erosion minimal. Therefore, there would be no cumulative impact to geology and soils from implementation of any of the alternatives.

Under Alternatives 1 and 2, no impacts would occur from seismic hazards or other geologic hazards, as facilities and structures are small and are un- or intermittently staffed and unlikely to sustain significant damage or cause injury to the occupants. Therefore, there would be no cumulative impact from seismic or geologic hazards from implementation of any of the alternatives.

4.4.5 LAND USE

The geographic extent for cumulative impacts on land use is defined as the Previously Withdrawn Parcel and Parcel C. The project alternatives would be compatible with existing and planned land uses in the area; therefore, there would be no significant cumulative impacts to land use from implementation of any of the alternatives.

4.4.6 NOISE

The geographic extent for cumulative impacts on noise is defined as the project area and adjacent parcels at Camp Michael Monsoor (Parcels A, B, F, E, and G). Projects listed in Table 4-1 would not occur in the same geographic area. Temporary construction noise associated with Alternatives 1 and 2 would not result in any permanent increase over existing ambient noise levels at Camp Michael Monsoor. Construction of several cumulative projects (e.g., MILCON P-781, the Sunrise Powerlink Transmission Line Project, and the Border Patrol Range in Boulevard) would be completed by the time construction would begin. Construction of the New Antenna Facility at Camp Michael Monsoor would occur sometime after the chosen alternative is constructed and would result in minor noise impacts. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in new noise impacts.

Operations would result in minimal noise. Cumulative noise sources in this area would, therefore, include intermittent weapons firing at Camp Michael Monsoor, traffic noise generated by vehicles traveling on La Posta Road, aircraft flyover (non-Navy aircraft), and agricultural operations. Operations would require weapons firing at Camp Michael Monsoor, which would generate noise on the site; however, the actual noise levels at the nearest residence from weapons firing activities would be approximately 30 dBA Leq, which would not substantially increase nighttime or daytime ambient noise levels over current conditions. Therefore, implementation of any of the alternatives, in conjunction with other past, present, and reasonably foreseeable projects in the area, would not result in significant cumulative noise impacts.

4.4.7 PUBLIC HEALTH AND SAFETY

The geographic extent for cumulative impacts on public health and safety is defined as the Previously Withdrawn Parcel and Parcel C. No impacts to public health and safety were identified; therefore, there would be no cumulative impacts to public health and safety from implementation of any of the alternatives.

4.4.8 PUBLIC SERVICES AND UTILITIES

The geographic extent for cumulative impacts on public services and utilities is defined as the Previously Withdrawn Parcel and Parcel C. Small quantities of water would be required during construction of Alternative 1 or Alternative 2 for slope dampening and for dust control at the pistol and rifle ranges. Small quantities of water would also be used during Alternative 1 or

Alternative 2 operations for landscaping maintenance purposes (to water drought-tolerant native species). Groundwater usage would be minimal (Payne 2012).

There would be no impact from the alternatives on natural gas/petroleum utilities or solid waste services.

Overall, the potentially cumulative projects and Alternatives 1 and 2 would each have only minor impacts to public services and utilities. Therefore, implementation of the alternatives would not have significant cumulative impacts to public services and utilities.

4.4.9 SOCIOECONOMICS

The geographic extent for cumulative impacts on socioeconomics is defined as the East County MSA 6 and Mountain Empire SRA 62. No adverse socioeconomic impacts from the alternatives were identified. There would not be any disproportionately high environmental or health impacts on low-income or minority populations under the alternatives. No significant impacts to populations in the nearby area would result from implementation of the alternatives; therefore, there would be no cumulative impacts to socioeconomics from implementation of any of the alternatives.

4.4.10 TRAFFIC AND CIRCULATION

The geographic extent for cumulative impacts on traffic and circulation is defined as Interstate 8 (the primary highway between San Diego, California and Yuma, Arizona, that passes north of the project area) and State Route 94 (the primary road between San Diego and Tecate, California, which passes south of the project area). La Posta Road, a two-lane rural connector road, connects Interstate 8 to State Route 94 and runs through the project area. Construction under Alternatives 1 and 2 would take one to six months to complete, and all workers would commute in carpools. Construction equipment could include tractors, loaders, backhoes, forklifts, off-highway trucks, and rollers. Given the short duration of the construction period and the minor amount of equipment and personnel used, construction traffic would not have a significant impact on the existing traffic on La Posta Road or La Posta Truck Trail. Additionally, construction of several cumulative projects (e.g., MILCON P-781, the Sunrise Powerlink Transmission Line Project, and the Border Patrol Range in Boulevard) would be completed by the time construction of Alternative 1 or Alternative 2 would begin. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in impacts to traffic and circulation.

Alternatives 1 and 2 would allow SOF or non-SOF units to use the rifle, shotgun, and pistol ranges and the CQC structure for training. This could result in an additional 120 personnel conducting training at Camp Michael Monsoor up to four times per year, or up to 12 additional days per year. An additional 20 vehicles per day could be using La Posta Road for these training events. As a result, there could be a slight increase in vehicle traffic going to and from

the facility. However, construction of several cumulative projects (e.g., MILCON P-781, the Sunrise Powerlink Transmission Line Project, and the Border Patrol Range in Boulevard) would be completed by the time project operations would begin. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in impacts to traffic and circulation. Therefore, there would be no cumulative impact to traffic and circulation from implementation of any of the alternatives.

4.4.11 VISUAL RESOURCES

The geographic extent for cumulative impacts on visual resources is defined as the Previously Withdrawn Area and Parcel C as well as surrounding public lands. Short-term impacts to the viewshed in the Alternative 1 or Alternative 2 area would result from the presence of large trucks, bulldozers, and other equipment used during project construction. Construction of several cumulative projects (e.g., MILCON P-781, the Sunrise Powerlink Transmission Line Project, and the Border Patrol Range in Boulevard) would be completed by the time construction of Alternative 1 or Alternative 2 would begin. Construction of the New Antenna Facility at Camp Michael Monsoor would occur in a previously disturbed area sometime after Alternative 1 or Alternative 2 is constructed. Updates to the 2002 Naval Base Coronado INRMP and Fire Management Plan and BLM's South Coast Resource Management Plan would not result in visual impacts. Therefore, there would be no cumulative impacts to visual resources from implementation of any of the alternatives.

4.4.12 WATER RESOURCES AND HYDROLOGY

The geographic extent for cumulative impacts on water resources and hydrology is the Tijuana Hydrologic Unit. Under Alternatives 1 and 2, surface-disturbing activities could increase sedimentation in some surface water resources; however, the Navy contractor would be required to prepare a SWPPP, as described in Section 2.6.5.2, to minimize soil erosion. In addition, the implementation of the erosion control improvements under Alternatives 1 and 2 would correct many of the erosion problems currently occurring at Camp Michael Monsoor and would be a beneficial impact. These erosion control improvements would also help minimize erosion from construction since the improvements would already be in place. Alternatives 1 and 2 would not significantly increase existing groundwater demand or restrict the development of water sources. These alternatives would include the installation of a water line and well in Parcel C which would increase the water supply available at Camp Michael Monsoor. Construction of the rifle range would occur within a portion of Stream 1 and Stream 2. As a result, Section 401 and 404 permits would be required from USACE and the Regional Water Quality Control Board, respectively, per the Clean Water Act. No other streams would be affected during construction or operation of the Proposed Action. Erosion controls would be implemented on the erosional feature near the Range Complex; however, the natural flow of the stream would not be interrupted in such a way that would alter the surficial hydrologic regime. Only minor impacts to water resources would result from the potentially cumulative projects and

Alternatives 1 and 2; therefore, there would be no significant cumulative impacts to surface water resources and hydrology from implementation of any of the alternatives.

4.5 CONCLUSION

The projects listed in Table 4-1 would only result in minor impacts to the environment. Appropriate regulatory requirements and conservation measures would be applied during proposed construction activities and would partially offset impacts. Not all of the projects would occur simultaneously or in the same geographic boundary. When viewed collectively, there is nothing inherently incompatible between these projects and the alternatives proposed for Camp Michael Monsoor, nor is there anything to indicate that the alternatives proposed for Camp Michael Monsoor would exacerbate or otherwise collectively increase the potential for impacts to the environment. Therefore, based on current information, implementation any of the alternatives for Camp Michael Monsoor would not contribute to significant cumulative impacts.

5 OTHER NEPA CONSIDERATIONS

This chapter addresses additional considerations required by NEPA, including:

- Possible conflicts between the alternatives and the objectives of federal, regional, state, and local plans, policies, and controls;
- Energy requirements and conservation potential of alternatives;
- Irreversible and irretrievable commitment of natural or depletable resources;
- Short-term vs. long-term productivity; and,
- Any probable significant environmental impacts that cannot be avoided and are not amenable to mitigation.

5.1 POSSIBLE CONFLICTS BETWEEN THE ACTION AND THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL PLANS, POLICIES, AND CONTROLS

There are several land use plans, policies, and programs that address and guide land use for the project area and surrounding areas, including:

- 2002 Naval Base Coronado INRMP (Navy 2002a);
- South Coast Resource Management Plan (BLM 1994);
- Mountain Empire Subregional Plan (County of San Diego 2011a); and,
- San Diego County General Plan (County of San Diego 2011c).

There are no potential conflicts between the project and the land use plans and policies that address and guide uses within the project area. Since the site will continue to remain under federal ownership, it is not subject to the San Diego County General Plan or Mountain Empire Subregional Plan mentioned above. No off-base land uses would be affected by implementation of the project. The project would be completed in accordance with the Migratory Bird Treaty Act, the Endangered Species Act, the National Historic Preservation Act, and the Clean Air Act.

As described in Chapter 2, the Proposed Action would expand the existing range, training facilities, and operations associated with Camp Michael Monsoor, specifically within the Previously Withdrawn Parcel and Parcel C. Long-term military use of the site by the Navy does

not pose any conflict between the Proposed Action and federal, state, regional, or local land uses.

5.2 ENERGY REQUIREMENTS, CONSERVATION POTENTIAL OF ALTERNATIVES

Energy required to successfully implement the Proposed Action would include fossil fuels and electricity to power construction and demolition activities and, once constructed, fuel would be used by military vehicles and equipment onsite. Fuel for construction vehicles is currently available and in adequate supply from Navy-owned sources. The Proposed Action would include installation of a new above-ground electrical distribution line that would extend along the northern side of the existing access road between La Posta Road and Range 110; this new line would supply needed electricity to Range 110. Energy use between the alternatives would not differ substantially, and the No Action Alternative would not result in an increase of energy usage over existing usage.

Direct energy requirements under the Proposed Action would include those necessary to operate vehicles and equipment as well as the electricity needs for operations at Range 110. No superfluous use of energy related to the Proposed Action has been identified, and proposed energy uses would be minimized to the greatest extent possible without compromising the integrity of the proposed facilities to be constructed. This would include carpooling to the ranges from the ready space. Proposed new construction would comply with applicable local, state, and federal codes that are designed to promote energy efficiency and the use of renewable energy resources. There are no conservation measures related to direct energy.

5.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL OR DEPLETABLE RESOURCES

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. These include non-renewable resources, such as metal and fuel, and other natural or cultural resources. These resources are irretrievable in that they would be used for a project when they could have been used for other purposes or conserved. 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 alternatives would involve an irreversible or irretrievable commitment of materials and environmental resources. Non-renewable resources, such as fuel, oil, and lubricants, would be consumed by vehicles and equipment during construction and by military vehicles and aircraft during operations. A small amount of building materials, such as metal (i.e., steel), wood, and concrete, would be irretrievably committed to construct the alternatives. Human labor would be required for project construction and engineering purposes.

Implementation of the alternatives may also result in irreversible impacts on biological resources, including the removal of vegetation at Camp Michael Monsoor. When considered at the regional level, the quantities of the resources expended for construction and operation of the action alternatives would be relatively inconsequential. Therefore, implementation of the alternatives would not result in a significant commitment of irreversible or irretrievable resources.

5.4 RELATIONSHIP BETWEEN SHORT-TERM ENVIRONMENTAL IMPACTS AND LONG-TERM PRODUCTIVITY

NEPA requires an EA to address the relationship between short-term uses of the environment and the impact that such uses may have on the maintenance and enhancement of the long-term productivity of the environment. Impacts that would narrow the range of beneficial uses of the environment are of particular concern. This refers to the possibility that choosing one development option would lessen future flexibility in pursuing other options or that committing a parcel of land or other resource to a certain use would eliminate the possibility of other uses being implemented at that site.

Implementation of the action alternatives would irreversibly dedicate equipment and other resources to a particular use during an extended period of time. However, these impacts are considered negligible, as the geographic areas associated with them have historically accommodated the types of military uses associated with the Proposed Action.

The alternatives would include the construction of new training facilities (i.e., CQC structure, small arms ranges) and upgrades of infrastructure (i.e., wells, water lines, power lines) at the Previously Withdrawn Parcel and Parcel C. Permanent land uses at Camp Michael Monsoor would be located in an area already used by the Navy for training purposes. The short-term impacts of the proposed improvements at Camp Michael Monsoor would include minor impacts to fauna and vegetation. The selected alternative would strive to reduce the amount of vegetation removed by using existing infrastructure and cleared areas as staging and lay-down areas. No other permanent land uses would be introduced or excluded as a result of the alternatives. Therefore, the alternatives would not result in any impacts that would permanently narrow the range of beneficial uses of the environment. Further, the alternatives would not affect the long-term productivity of these resources at a regional level.

5.5 PROBABLE SIGNIFICANT ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED AND ARE NOT AMENABLE TO MITIGATION

This Draft EA has determined that the alternatives would not result in any significant impacts; therefore, there are no probable significant environmental impacts that cannot be avoided or reduced by mitigation.

6 LIST OF AGENCIES CONSULTED

As part of the EA processing, NSWG-1 and NAVFAC Southwest coordinated and consulted with several state and federal agencies. Details on the coordination and consultation are described below.

6.1 FEDERAL AGENCIES

6.1.1 U.S. FISH AND WILDLIFE SERVICE

Consultation was conducted with the USFWS under Section 7 of the Endangered Species Act regarding potential impacts to the federally listed endangered QCB and USFWS-designated QCB critical habitat. A Biological Assessment was prepared, and the USFWS issued a Biological Opinion (Appendix D). A list of USFWS persons consulted for this project is provided below.

Name	Title	USFWS Office
Tannika Engelhard	Fish and Wildlife Biologist	Carlsbad Fish and Wildlife Office 2177 Salk Avenue, Suite 250 Carlsbad, CA 92008
Sandy Vissman	Wildlife Biologist	Carlsbad Fish and Wildlife Office 2177 Salk Avenue, Suite 250 Carlsbad, CA 92008

6.2 STATE AGENCIES

6.2.1 STATE HISTORIC PRESERVATION OFFICER

Compliance with Section 106 of the National Historic Preservation Act and conformance with 36 CFR Part 800 for this Draft EA has been previously accomplished under the San Diego Metropolitan Area Programmatic Agreement (Appendix E). Executed in February 2003 between the Commanding Officer, Naval Base Coronado, the Advisory Council on Historic Preservation, and the California State Historic Preservation Officer, the San Diego Metropolitan Area Programmatic Agreement provides for the CNRSW to make the determination of an undertaking's area of potential effect, to identify potentially affected historic properties, and to make assessments of "no historic properties affected" and "no adverse effect" without further

consultations with the California State Historic Preservation Officer normally required under 36 CFR Part 800.

7 LIST OF NAMES, EXPERTISE, AND EXPERIENCE OF EA PREPARERS

7.1 LEAD AGENCY - U.S. DEPARTMENT OF THE NAVY

Kari Coler, Project Manager, NAVFAC Southwest Coastal Integrated Project Team

Arlene Arnold, Biologist, Naval Base Coronado

Scott Penwell, Environmental Engineer, NSWG-1

Robbie Robinson, Senior Chief, NSWG-1

Connie Moen, NEPA Coordinator, CNRSW, N40

Suzanne Smith, NEPA Coordinator, CNRSW, N40

John Wooton, Planning and Real Estate Program Manager, NSWG-1

Barry Francis, Range Director, NSWG-1

Dennis Gilbert, Range Supervisor, NSWG-1

Vicki Ngo, NEPA Coordinator, Naval Base Coronado

Bryan Munson, Botanist, Naval Base Coronado

Jose Navara, Construction Planner, Naval Base Coronado

Brad Clark, Facilities Manager, NSWG-1

LCDR Henderson Environmental Attorney, CNRSW

7.2 PRIME CONTRACTOR RESPONSIBLE FOR PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT

Ecology and Environment, Inc.
401 West A Street, Suite 775
San Diego, California 92101

Team Member and Contribution	Office	Professional Degree	Area of Professional Expertise	Years of Experience
David McIntyre Project Manager	Tucson, AZ	M.A., Geography M.S., Environmental Management B.S., History	Environmental Management	22
Roya Compani-Tabrizi Executive Summary Abstract Land Use Visual Resources Cumulative Impacts	San Diego, CA	B.S., Environmental Systems	Environmental Planner	8
Bruce Wattle Air Quality	Buffalo, NY	B.S., Atmospheric Science	Air Quality	33
Matthew Alexander Biological Resources	Portland, OR	M.S. Biology B.S. Biology	Biology	15
Katie Duffield Biological Resources	San Diego, CA	B.S., Biology	Biology	2
Tim Gross Cultural Resources	San Diego, CA	Ph.D., Anthropology M.A., Anthropology B.A., Anthropology	Cultural Resources	30
Travis Whitney Geology and Soils Public Services and Utilities Water Quality and Hydrology GIS	San Diego, CA	B.A., Geography	Environmental Planner/GIS Specialist	6
Tom Siener Noise	Buffalo, NY	B.S., Biological Science Board Certified Industrial Hygienist	Noise	40

Team Member and Contribution	Office	Professional Degree	Area of Professional Expertise	Years of Experience
Andrea Castillo Public Health and Safety Traffic and Circulation Socioeconomics	San Diego, CA	M.A., Pacific International Affairs B.A., Business Administration	Environmental Planner	6
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Chrissy Ringo Document Editing	San Diego, CA	B.A., English	Technical Editing	19

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