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# **ENVIRONMENTAL ASSESSMENT**

For The Marine Corps Air Station Yuma  
Communications Tower at Spring Hill, California



*Prepared by:*  
*The Bureau of Land Management*

**September 2009**

## Acronyms and Abbreviations

ACEC	Areas of Critical Environmental Concern	MDAQMD	Mojave Desert Air Quality Management District
APE	area of potential effect	mph	miles per hour
AQIP	Air Quality Improvement Program	MSL	mean sea level
AST	aboveground storage tank	MUC	multiple use class
BCB	Backcounty Byway	NAAQS	National Ambient Air Quality Standards
BO	biological opinion		
BP	before present		
BLM	Bureau of Land Management	NECO	Northern & Eastern Colorado Desert Coordinated Management Plan
CAA	Clean Air Act	NEPA	National Environmental Policy Act
CAAQS	California Ambient Air Quality Standards	NHPA	National Historic Preservation Act
CARB	California Air Resources Board	NIMA	National Imagery and Mapping Agency
CARIDAP	California Archaeological Resource ID Data & Acquisition Program	NMI	National Measurement Institute
CBU	cluster bomb unit(s)	NO <sub>2</sub>	nitrogen dioxide
CDCA	California Desert Conservation Area	NO <sub>x</sub>	oxides of nitrogen
CDFG	California Department of Fish and Game	NPDES	National Pollution Discharge Elimination System
CDMG	California Division of Mines & Geology	NRCS	National Resource Conservation Service
CCR	California Code of Regulations	NRHP	National Register of Historic Places
CEQ	Council on Environmental Quality	O <sub>3</sub>	ozone
CFC	California Fire Code	PM <sub>2.5</sub>	particulate matter ≤ 10 microns in diameter
CFR	Code of Federal Regulations	PM <sub>10</sub>	particulate matter ≤ 10 microns in diameter
CGS	California Geological Survey		
CMAGR	Chocolate Mountain Aerial Gunnery Range	ppm	parts per million
CMU	concrete masonry unit	PSEC	public safety enterprise communication
CNPS	California Native Plant Society	ROG	reactive organic gases
CO	carbon monoxide	RONA	Record of Non-Applicability
CWA	Clean Water Act	RWQCB	Regional Water Quality Control Board
dBA	A-weighted	SCM	Special Conservation Measures
DTED	Digital Terrain Elevation Data	SHPO	State Historic Preservation Officer
DWMA	Desert Wildlife Management Area	SIP	State Implementation Plan
DWR	Department of Water Resources	SO <sub>2</sub>	sulfur dioxide
EA	Environmental Assessment	SO <sub>x</sub>	oxides of sulfur
EO	Executive Order	SWPPP	Storm Water Pollution Prevention Plan
FAA	Federal Aviation Administration	SWRCB	State Water Resources Control Board
FCC	Federal Communications Commission	TACAN	tactical air navigation
FEMA	Federal Emergency Management Agency	TMDL	total maximum daily load
ft	foot/feet	UHF	Ultra High Frequency
ha	hectare(s)	U.S.	United States
HA	Hydrologic Area	USACE	U.S. Army Corps of Engineers
HU	Hydrologic Unit	USGS	U.S. Geological Survey
km	kilometer(s)	US Navy	U.S. Department of the Navy
KOP	key observation point(s)	USC	U.S. Code
L <sub>dn</sub>	day-night average sound level	USEPA	U.S. Environmental Protection Agency
m	meter(s)	USFWS	U.S. Fish and Wildlife Service
MBTA	Migratory Bird Treaty Act	USMC	U.S. Marine Corps
	Combat Center	VHF	Very High Frequency
MCAS	Marine Corp Air Station	VOC	volatile organic compound
MCO	Marine Corps Order	VRM	Visual Resource Management
MDAB	Mojave Desert Air Basin	WBDG	whole building design guide

**ENVIRONMENTAL ASSESSMENT  
FOR THE MCAS YUMA COMMUNICATIONS TOWER AT SPRING HILL**

**Lead Agency for the EA:** Bureau of Land Management  
**Title of Proposed Action:** Marine Corps Air Station Yuma Communications Tower at Spring Hill  
**Affected Jurisdiction:** Spring Hill – Township 8 South, Range 16 East, Sections 12 & 13,  
northeast of the Chocolate Mountains Aerial Gunnery Range (CMAGR)  
**Designation:** Environmental Assessment

**Abstract**

This Environmental Assessment (EA) has been prepared to analyze the potential impacts of actions associated with the construction and operation of a communications tower on Bureau of Land Management (BLM) property by Marine Corps Air Station (MCAS) Yuma at Spring Hill in Riverside County, California. The Proposed Action is needed in order to improve dangerously poor Very High Frequency (VHF) and Ultra High Frequency (UHF) communications connections for low-altitude aircraft, and vehicles on the ground located east of the Chocolate Mountains. The current low-altitude coverage deficiency forces flight crews to execute maneuvers that are costly and dangerous when performed at night. Communication establishment with range management personnel requires aircraft to climb vertically to approximately 3,000 feet (950 meters) above mean sea level (MSL) and then descend back to their low-altitude flight profile. This maneuver wastes fuel and at night is dangerous to all the aircraft while flying in low-level formation.

Under the Proposed Action, new communications facility construction would occur and be supported by improvement of an existing jeep trail, a new unimproved access road to the facility, unimproved helicopter landing area, tower pad construction, and adjacent lay-down yard at the top of Spring Hill. A staging area is also being proposed at the south side of Bradshaw Trail, at the intersection of Augustine Pass Trail. The proposed project is part of the overall support of MCAS Yuma to enhance combat capability and operations of the United States Marine Corps (USMC) and other military forces. This EA evaluates other site alternatives; however, because these alternatives would not accomplish the project's purpose and need, a detailed evaluation was not carried forward. Therefore, the Proposed Action and the No Action Alternative have been carried forward for analysis in this EA.

This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S. Code § 4321 *et seq.*); the Council on Environmental Quality implementing regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508); procedures for implementing NEPA as described in Marine Corps Order P5090.2A, Environmental Compliance and Protection Manual; and the BLM NEPA Handbook (H-1790-1), January 2008. Potential environmental and human resource impacts have been analyzed for geological resources, water resources, biological resources, cultural resources, air quality, land use, noise, and aesthetics and visual resources.

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**SEPTEMBER 2009**



## EXECUTIVE SUMMARY

Marine Corps Air Station (MCAS) Yuma, California, in cooperation with the Bureau of Land Management (BLM), proposes to install a new communications facility and helicopter landing area on 1.6 acres (0.7 ha) of BLM-owned land in Spring Hill, California.

This Environmental Assessment (EA) has been prepared to analyze the potential impacts of actions associated with the construction and operation of the communications tower and an unimproved helicopter landing area. This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States [U.S.] Code § 4321 *et seq.*); the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] §§ 1500-1508); U.S. Marine Corps (USMC) procedures for implementing NEPA, as described in Marine Corps Order (MCO) P5090.2A, Environmental Compliance and Protection Manual; and the BLM NEPA Handbook (H-1790-1), January 2008. This EA documents the purpose and need of the Proposed Action, providing a detailed description of the affected environment, actual and potential cumulative effects, and beneficial and adverse effects of the Proposed Action and Alternatives.

The purpose of the proposed project is to support MCAS Yuma's mission to provide aviation ranges, support facilities, and services that enhance combat capability and operations of the USMC and other military forces that defend the nation's interests. The project would accomplish this by providing improved communications with aircraft (including low-altitude aircraft), and vehicles within restricted military area R-2507, associated with the Chocolate Mountains Gunnery Range (CMAGR).

The Proposed Action is needed in order to improve extremely poor Very High Frequency (VHF) and Ultra High Frequency (UHF) connections for low-altitude aircraft, and vehicles on the ground located within a large portion of R-2507, east of the Chocolate Mountains. The current low-altitude coverage deficiency forces flight crews to execute maneuvers that are both costly and dangerous as they enter and leave the range area. As it stands, communication establishment with range management personnel requires aircraft to climb vertically to approximately 3,000 feet (ft) (950 meters [m]) above mean sea level (MSL) and then descend back to their low-altitude flight profile. This maneuver wastes fuel and when executed at night while flying in low-level formation, constitutes a danger to all the aircraft in that formation (US Navy 2003).

In order to address this deficiency, the Proposed Action would include the construction of a new communications tower and associated support facilities, improvements to an existing jeep trail for service vehicle access, and construction of a new unimproved access road to the project site. A staging area is also being proposed at the south side of Bradshaw Trail, at the intersection of Augustine Pass Road.

Alternatives to the Proposed Action must be considered in accordance with NEPA, CEQ regulations for implementing NEPA, and MCO P5090.2A. However, only those alternatives determined to be reasonable relative to their ability to fulfill the purpose and need for the Proposed Action require detailed analysis. Several sites were considered for the Proposed Action, but only one site, Spring Hill, met all mission requirements. Therefore, the EA only examines the Proposed Action and the No Action Alternative, as required by NEPA.

Under the Proposed Action, MCAS Yuma would construct a communications facility and install associated equipment on approximately 1.6 acres (0.7 ha) of BLM land in Spring Hill, California. The following elements include anticipated construction and maintenance requirements and the communications link that would connect the site to range management personnel at MCAS Yuma:

- A communications tower, approximately 195-ft (59-m) tall, would be installed on site. The tower would be painted and lit in compliance with Federal Aviation Administration guidelines.
- Three VHF/UHF AM/FM antennas located on the tower would be augmented with a high-performance directional antenna. The tower would also support a microwave relay link to Black Mountain, an existing communications facility supporting MCAS Yuma. Other government agencies also may install antennas on the tower.
- On site solar power panels would power the communications equipment when needed. The solar panels would be the primary source of electrical generation. An array of up to approximately 180 175-watt solar panels would be installed within the fenced enclosure.
- A backup generator located along the southeastern edge of the site would be powered by a 2,000-gallon (7,571 liter) propane tank.
- A shelter (shed), 25 ft by 18 ft (7.6 m by 5.5 m) and 13-ft (4.0-m) tall, to house electronics equipment would be constructed on site to enclose electronics such as the batteries, charger/controllers, repeaters, circuit breakers, signal amplifiers, etc.
- Perimeter security fencing, approximately 8-ft tall (2.5-m), constructed of chain-link and capped by security wire (e.g. strands of barbed wire) would provide security to the communications facility. Two lockable gates would provide access to authorized personnel, with one gate being large enough for vehicle passage.
- A helicopter landing area, approximately 100 ft by 100 ft (30 m by 30 m), located at least 175 ft (53 m) from the communications tower and 50 ft (15 m) from the enclosure fence would provide access to the site.
- An existing unpaved road would be re-graded to a width of approximately 12 ft (3.7 m), and include at-grade crossings or culverts at seven ephemeral washes. For vehicle access to the communication tower site, a new road would be graded to connect the unpaved jeep road to the proposed communication tower site. Under the No Action Alternative, no new communications equipment would be installed to improve communications coverage of R-2507, east of the Chocolate Mountains to USMC pilots and personnel or other military contingencies, thereby hindering improvement in the efficiency and safety of training conducted in the eastern portions of R-2507. Training aircraft would continue to need to climb vertically to 3,000 ft above MSL and then descend back to their low-altitude flight profile, wasting fuel and potentially endangering aircraft, especially during nighttime training. Communications with ground vehicles would not be improved to ensure that there are continuous, consistent communication links with personnel working within the eastern CMAGR, a live bombing range. A shelter to house electronics such as batteries, chargers, repeaters, circuit breakers, signal amplifiers, etc. that supports the communication tower would not be constructed. A helicopter landing area needed to support USMC operations and provide secondary quick access to the communications facility would not be constructed, thereby hindering real-time support to the location. Under this alternative, repair of existing unpaved roads and the creation of a new unpaved access road leading to the top of Spring Hill would not occur.

The affected environment for the Proposed Action includes the tower enclosure, a construction buffer and the helicopter landing site, as well as a path between the helicopter landing site and the tower enclosure. Environmental consequences due to the construction and operation of this facility were evaluated for 19 resources. The following presents the resource categories and the anticipated impacts if the Proposed Action were chosen for implementation. However, several resources that were analyzed in this EA are not expected to be impacted, or impacts are expected to be negligible. Socioeconomics, Environmental Justice, Roadways and Traffic, Public Health and Safety, and Hazardous Materials resources would not be affected, or the potential effects would be minimal. Table ES-1 summarizes the potential environmental impacts for the resources carried forward for analysis in this EA.

**Table ES-1. Comparison of Potential Environmental Consequences**

Resource Area	Proposed Action	No Action Alternative
Land Use	○	○
Geological Resources	○	○
Biological Resources	○	○
Water Resources	○	○
Air Quality	○	○
Noise	○	○
Cultural Resources	○	○
Utilities & Public Services	○	○
Aesthetic & Visual Resources	○	○

*Notes:*

- = No significant impact
- ◐ = Adverse, but not significant impact
- = Adverse impact
- + = Beneficial impact

ENVIRONMENTAL ASSESSMENT
FOR THE CONSTRUCTION OF A COMMUNICATIONS TOWER
BY MCAS YUMA AT SPRING HILL, CALIFORNIA

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# CHAPTER 1

## PURPOSE AND NEED FOR PROPOSED ACTION

---

### 1.1 INTRODUCTION

This Environmental Assessment (EA) has been prepared to analyze the potential impacts of actions associated with the construction and operation of a new communications tower and an unimproved helicopter landing area in a remote area of Spring Hill, California. The action proponent is Marine Corps Air Station (MCAS) MCAS Yuma, and the proposed project site is located on Bureau of Land Management (BLM)-owned land. This EA has been prepared in compliance with:

- National Environmental Policy Act (NEPA) of 1969 (42 United States [U.S.] Code [USC] § 4321 et seq.);
- Council of Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508);
- Marine Corps Environmental Compliance and Protection Manual (Marine Corps Order [MCO] P5090.2A); and
- BLM NEPA Handbook (H-1790-1), January 2008.

### 1.2 REGIONAL LOCATION

The proposed project would be located on approximately 1.6 acres (0.7 hectares [ha]) of undeveloped land in a remote area of Spring Hill, California. Spring Hill lies on the southern slopes of the Chuckwalla Mountain Range in east Riverside County, which borders Imperial County to the south and San Diego County to the southwest (Figure 1.1-1). The project site would be located northeast of the Anza-Borrego Desert State Park and southeast of Joshua Tree National Park (Figure 1.1-1). The site is located in the Chuckwalla Desert Wildlife Management Area (DWMA) (Figure 1.1-2).

### 1.3 PURPOSE AND NEED

The purpose of the proposed project is to support MCAS Yuma's mission by providing adequate communications coverage for military aircraft (including low-altitude aircraft) and vehicles in and near restricted military area R-2507, associated with the Chocolate Mountain Aerial Gunnery Range (CMAGR), which is a live bombing range. The Proposed Action would improve communications coverage east of the Chocolate Mountains in R-2507.

The need for the project is that existing communications coverage for aircraft and vehicles operating in and near R-2507 is dangerously deficient. Currently there is a low-altitude communications deficiency that causes safety hazards and costly, inefficient practices. The current low-altitude coverage deficiency forces flight crews to execute maneuvers that are both costly and dangerous as they enter and leave the range area, especially at night. Specifically, in order to establish communications with range management personnel prior to training runs, aircraft must climb vertically to approximately 3,000 feet (ft) (950 meters [m]) above mean sea level (MSL) and then descend back to their low-altitude flight profile. This maneuver wastes fuel, and, when executed at night while flying in low-level formation, constitutes a danger to all the aircraft in that formation (US Navy 2003). Communications with ground vehicles within portions of the CMAGR also need improvement to ensure that there are continuous communication links with personnel working within this live bombing range. Other federal agencies and

first responders that operate in eastern Riverside County (such as the BLM and U.S. Border Patrol) also might benefit from improved communications coverage in the area.



Figure 1.1-1. Regional Location

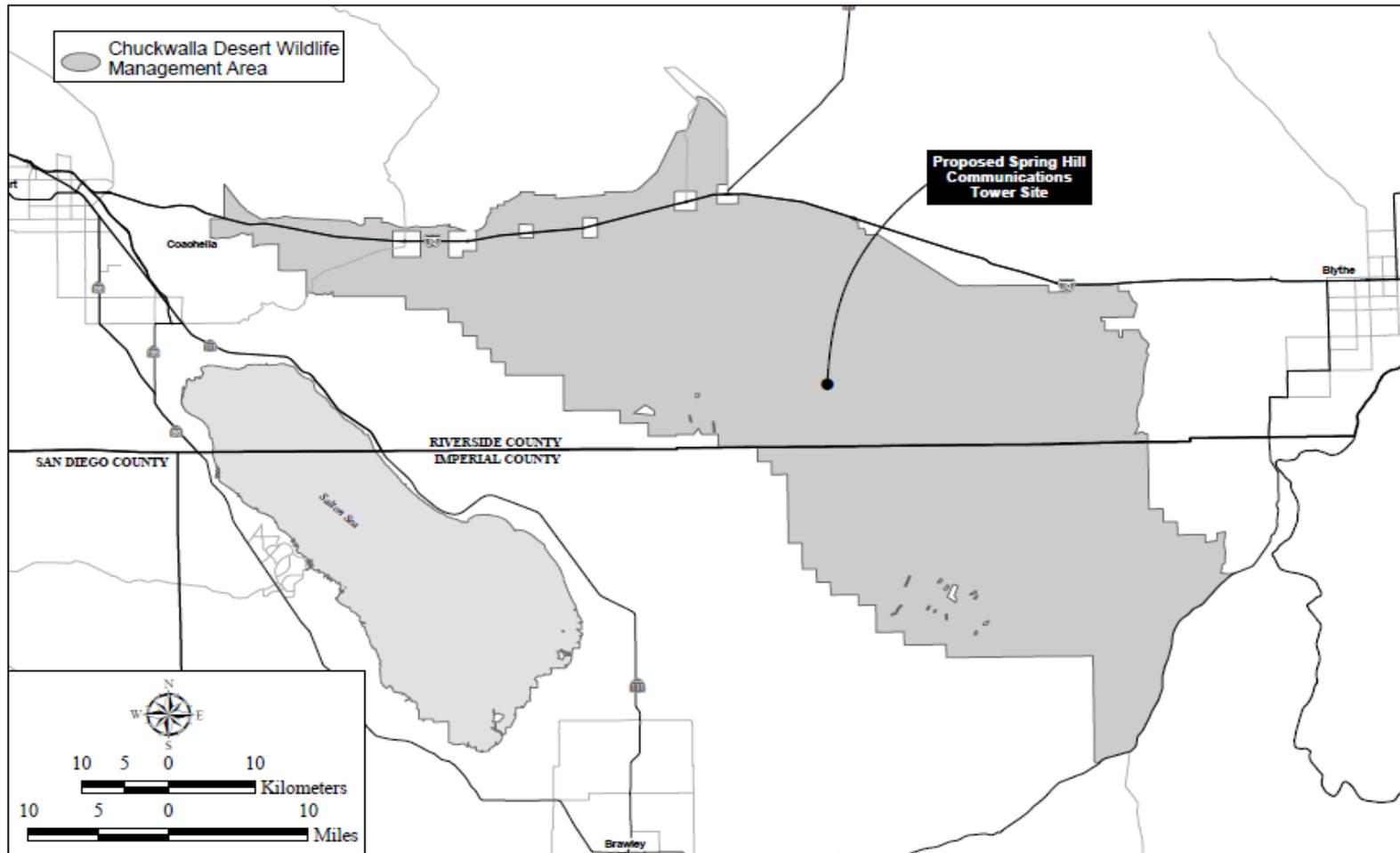


Figure 1.1-2. Chuckwalla Desert Wildlife Management Area

Secondary objectives of the Proposed Action include the following:

- (1) Meet the project's purpose and need with a communications tower site that can connect by line-of-sight to MCAS Yuma's existing network of microwave communications towers (thereby avoiding the costs and communication signal delays associated with satellite connections).
- (2) Meet the project's purpose and need with a communications tower site that is outside the CMAGR in order to provide unrestricted maintenance access to the communications equipment (sites within the CMAGR cannot safely be accessed when the range is in use, and the CMAGR is in use virtually all days except holidays and during target repair).
- (3) Meet the project's purpose and need by utilizing a communications tower site with relatively flat existing topography in order to minimize necessary grading and other ground disturbances associated with communications equipment installation.
- (4) Provide sufficient equipment capacity at the communications tower site to accommodate the future installation of communications equipment by other federal agencies and/or first responders.

#### **1.4 REGULATORY COMPLIANCE**

Various federal and state laws, rules, regulations, and policies are pertinent to implementation of the Proposed Action. A description of the Proposed Actions' consistency with these policies and regulations, as well as regulatory agencies responsible for their implementation, is presented in Chapter 5 of this EA.

## CHAPTER 2

# DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

---

### 2.1 PROJECT LOCATION

The proposed project site is located on BLM lands in Spring Hill, California on the Chuckwalla Mountains at Township 8 South, Range 16 East, Sections 12 and 13. The project site is located northeast of the CMAGR, eastern Riverside County (Figure 2.1-1). The proposed communication tower site is located on approximately 1.6 acres (0.7 ha) of BLM lands less than 1 mile northeast of the CMAGR. The project site is accessible by two main roads: Bradshaw Trail and Augustine Pass Road. These roads lead to an off-road jeep trail that leads to the proposed project site (Figures 2.1-1 and 2.1-2).

The CMAGR is part of the Yuma Training Range Complex, a military aviation training facility composed of airspace and lands located in southwestern Arizona and southeastern California. The CMAGR is an unattended/non-instrumented ordnance range located approximately 60 (National Measurement Institute) northwest of the MCAS Yuma tactical air navigation (TACAN), frequency Channel 84. Access to the Chocolate Mountains is by air or surface roads. The Chocolate Mountain Impact Area provides a large land and airspace area for air tactics, close air support missions, laser system operations, and air-to-ground bombing, rocket, and strafing exercises. All types of live and inert conventional ordnance up to 2,000 pound general purpose bombs; including MK 20 (Rock eye) and cluster bomb units (CBUs) are authorized in specific areas with prior coordination (GlobalSecurity2009a).

### 2.2 PROPOSED ACTION

MCAS Yuma proposes to construct a communications facility and install associated equipment with the capacity to meet the U.S. Marine Corps (USMCs) communications needs. The tower, equipment and site (including site access approach via repair and construction of an old and new unpaved roadway, and construction of a helipad), would be sized to accommodate USMC personnel and other government agencies' communications equipment (Figure 2.2-1).

The fenced communications tower site would encompass approximately 0.4 acre (0.2 ha). The enclosure would be large enough to accommodate the tower and the electrical generation and communications equipment. Within the fenced area, it is anticipated the tower would be installed in the northern portion of the enclosure, the solar panels would be mounted in the western portion of the enclosure, and the propane tank and backup generator would be in the center of the enclosure.

An additional up to 100 ft by 100 ft (30 m by 30 m) area outside the fenced site would be designated as a landing area for a helicopter. The landing site would be south of the fenced enclosure (Figure 2.2-1), and there would be foot traffic between the landing site and a pedestrian gate on the south side of the fenced enclosure. Figure 2.2-2 depicts the proposed construction staging area. Table 2.2-1 below indicates the approximate size of each project element.

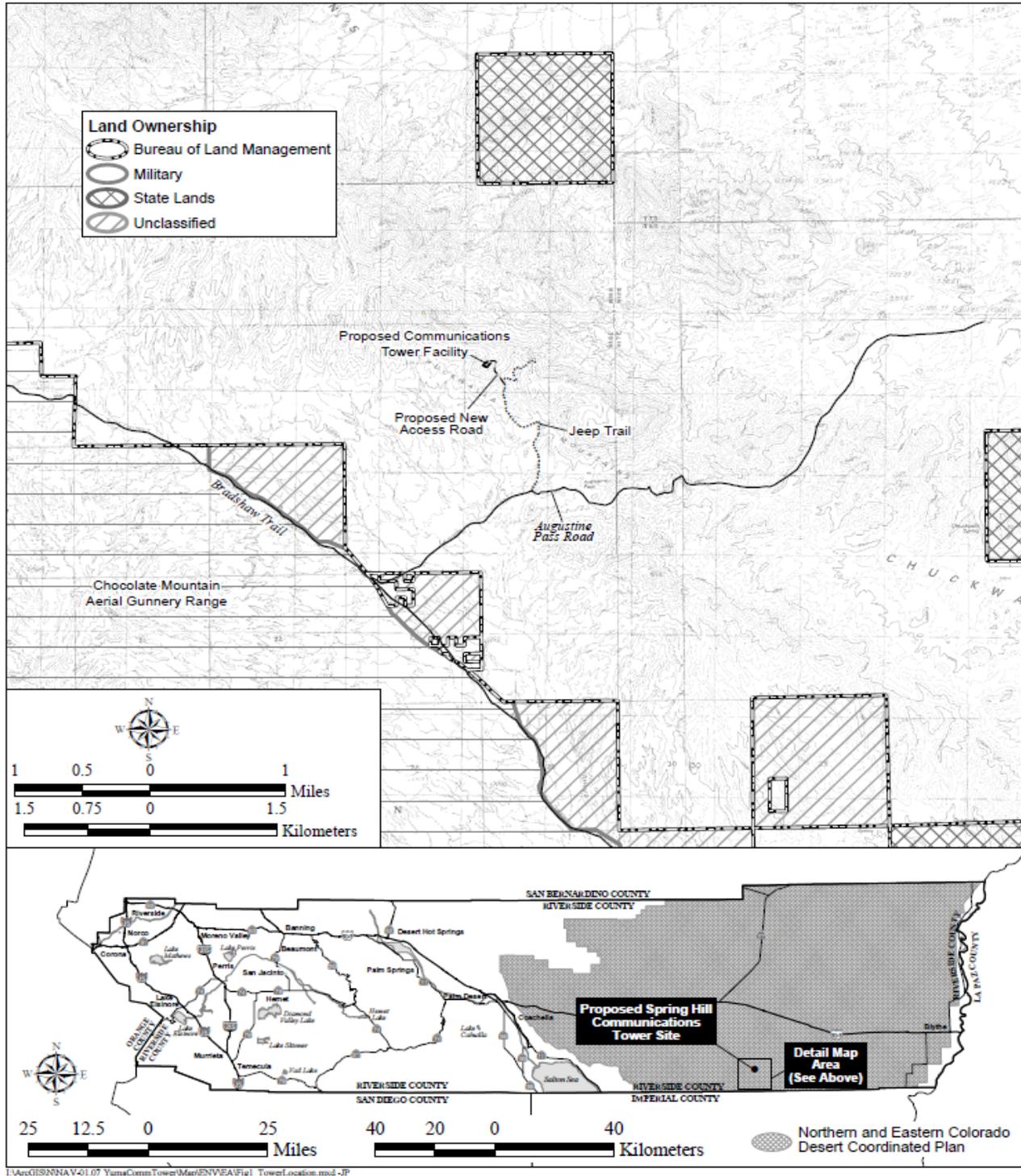


Figure 2.1-1. Spring Hill Project Location

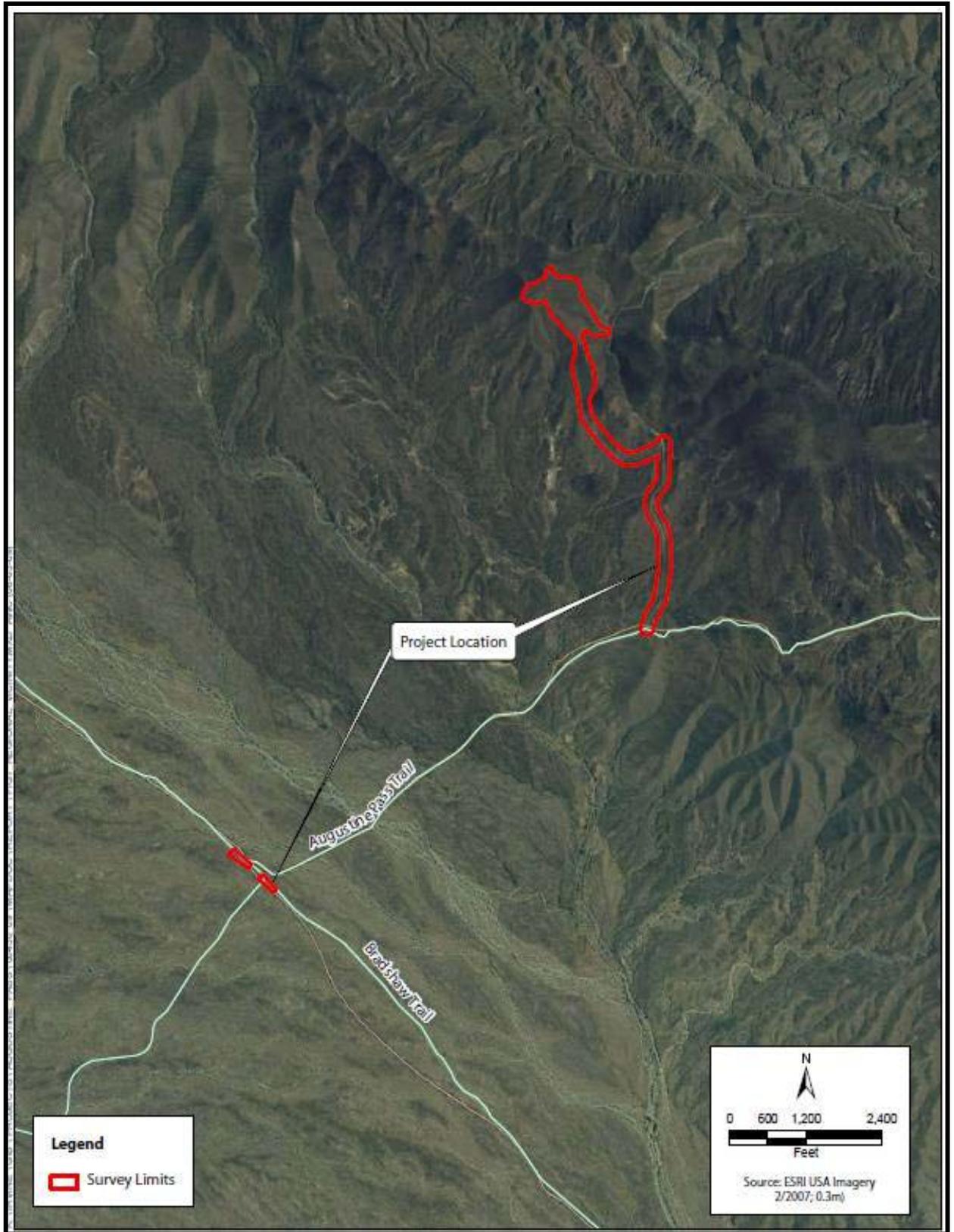


Figure 2.1-2. Spring Hill Proposed Site Location

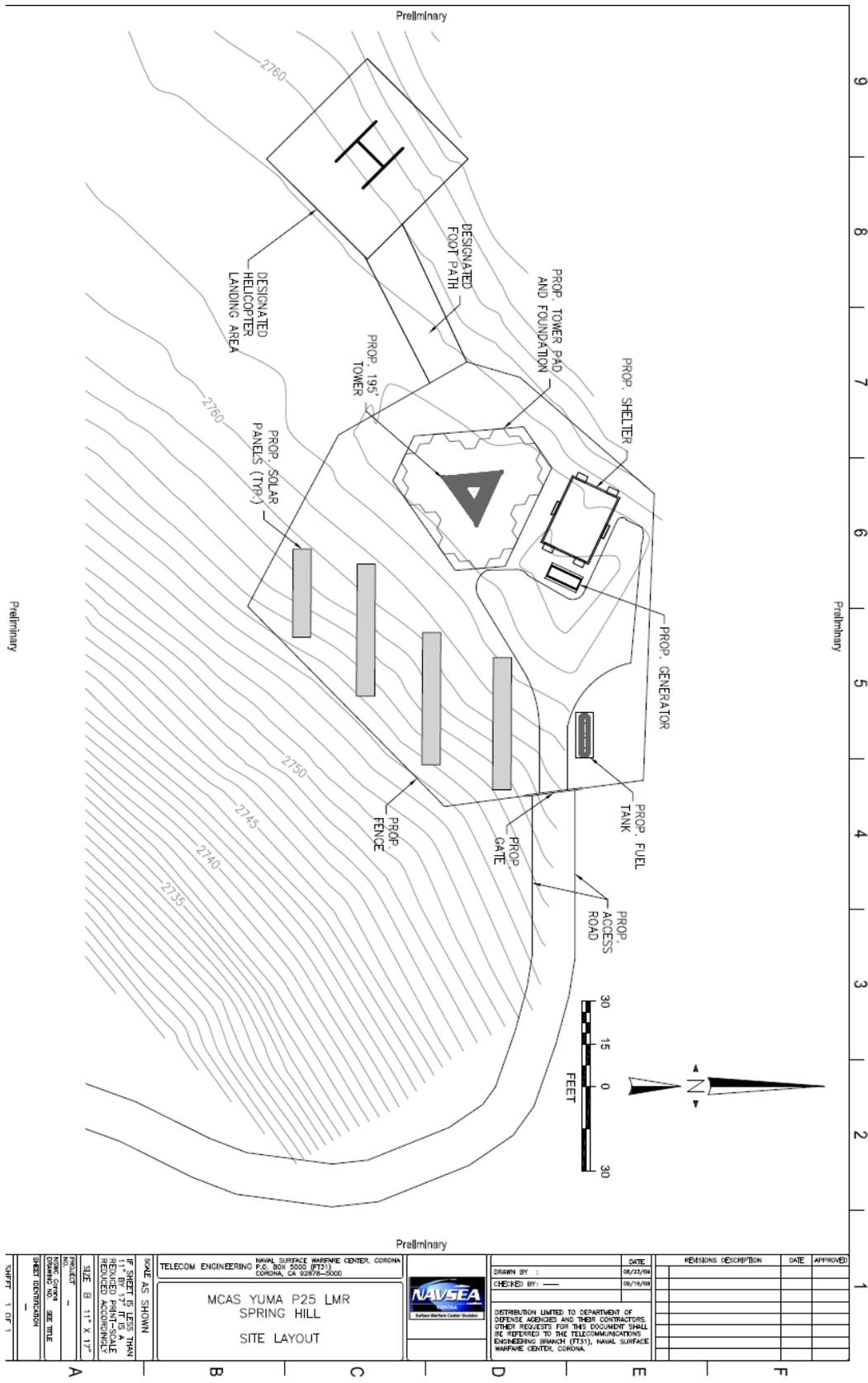


Figure 2.2-1. Proposed Site Layout

**Table 2.2-1. Approximate Size of Project Elements**

Element	Area	
	Acre(s)	Hectare(s)
Tower enclosure	0.4	0.2
Helicopter landing area	0.1	Less than 0.1
Buffer around enclosure and landing area	0.5	0.2
New road	0.6	0.2
<b>Total</b>	<b>1.6</b>	<b>0.7</b>

*Notes:* Excludes re-grading of existing roads. New access road APE assumes 12-ft (3.7-m) wide impact corridor.

## 2.2.1 Detailed Description of the Proposed Action

### 2.2.1.1 Communications Tower

A communications tower, approximately 195-ft (59-m) tall, would be installed on site. The tower would be painted and lit in compliance with Federal Aviation Administration (FAA) guidance and Federal Communications Commission (FCC) regulations related to aviation safety [The applicable FAA guidance is contained in two advisory circulars: 70/7460-1K, “Obstruction Marking and Lighting” and 150-5345-43E, “Specifications for Obstruction Lighting Equipment” (see 47 CFR §§ 17.21-17.5847)]. The Federal Communications Commission has made the guidance contained in these FAA advisory circulars mandatory for communications towers (USC § 303(q)). The tower would be painted grey or be constructed of unpainted, galvanized metal. Additional lights may be placed at approximately mid-height level on the tower to give more than a single horizontal and vertical point of reference and aspect to aircraft operating in the area. The specific paint and lighting scheme would be confirmed with the FAA in a “Notice of Proposed Construction or Alteration” form submitted by the USMC in compliance with 14 CFR Part 77.

### 2.2.1.1 Very High Frequency/Ultra High Frequency (VHF/UHF) Antennas

Five VHF/UHF AM/FM antennas located on the tower would be augmented with a high-performance directional antenna. The microwave transceiver at Spring Hill would connect by line-of-sight to an existing communications facility at Black Mountain, approximately 41 miles (65 kilometers [km]) to the southeast, where a new transceiver would be added to one of that site’s existing communications towers. From Black Mountain, the microwave signal would be relayed to MCAS Yuma via an existing microwave station at Telegraph Pass (which is approximately 39 miles [62 km] southeast of Black Mountain and approximately 16 miles [25 km] east of MCAS Yuma). Other government agencies also may install antennas on the tower.

### 2.2.1.2 Solar Power Panels

On-site solar power panels would power the communications equipment when needed. They would be the primary source of electrical generation. Approximately 180 175-watt solar panels would be installed within the fenced enclosure. The size of the panels would depend on the manufacturer and model; however, based on the 120-watt power requirement, each panel is expected to be approximately 2.5 ft by 3.5 ft (0.8 m by 1.1 m). The solar power design and plan would include infrastructure provisions for additional users that would accommodate the installation of additional solar panels and batteries. Electrical power generated in excess of immediate demand would be stored in a battery array located inside an enclosed shelter.

### 2.2.1.3 Construction Staging Area

A construction staging area would be located on Navy land near the Bradshaw Trail and Augustine Pass junction (Figure 2.2-2).

### 2.2.1.4 Backup Generator

Although the Spring Hill site is ideal for solar power generation because it has elevated and unobstructed south-facing views and is located in the sunny, southern California desert, backup power generation would be required to ensure continuous operation of the facility. A backup generator located along the southeastern edge of the site would be powered by a 2,000-gallon (7,571 liter) propane tank and requirements to follow all federal, state, and local standards including permitting requirements would be implemented. A propane fuel truck would deliver the propane to the site.

### 2.2.1.5 Communications Shelter

A shelter (shed) 25-ft (7.6-m) long by 18-ft (5.5-m) wide by 13-ft (4.0-m) tall, to house electronics equipment would be constructed on site to enclose electronics such as the batteries, charger/controllers, repeaters, circuit breakers, signal amplifiers, etc. Each agency using the communications tower would have separate access to its equipment.

### 2.2.1.6 Security Fencing

An approximate 8-ft (2.5-m) tall perimeter security fencing, constructed of chain-link and capped by security wire (e.g. strands of barbed wire), would provide security to the communications facility. Two lockable gates would allow access to authorized personnel. One gate large enough to allow vehicle entry would be located on the eastern side of the enclosure, and a pedestrian gate would be located on the western side to allow access from the helicopter landing area. At the base of the fence, wire mesh would be installed to exclude desert tortoise from gaining access into the facility. This “tortoise exclusion fencing” would conform to the specifications contained in Northern and Eastern Colorado Desert Coordinated Management Plan Appendix D, Desert Tortoise Mitigation Measures, Section 7, Site Fencing and Hazard Removal.

### 2.2.1.7 Helicopter Landing Site

As noted previously, the Proposed Action would include the provision of helicopter access to Spring Hill (Figure 2.2-3). During construction, helicopter landings on Spring Hill would occur where it is safe to do so, based on the type and location of construction activities going on at that time. Once construction is completed, an approximately 100-ft by 100-ft (30-m by 30-m) unimproved landing site would be established for helicopter access. Because this would be considered a landing “site” not a formal pad, Naval Facilities Engineering Command P-80, “Facility Planning Criteria for Navy & Marine Corps Shore Installations” would not apply. Specifically, P80.3, “Unified Facility Criteria” and Naval Air Systems Command “51-50AAA-2 Technical Manual General Requirements for Shore-based Airfield Marking and Lighting” would not be applicable. However, requirements to follow FAA guidelines as stated in the FAA Interagency Helicopter Operations Guide, Chapter 8 would be adhered to.

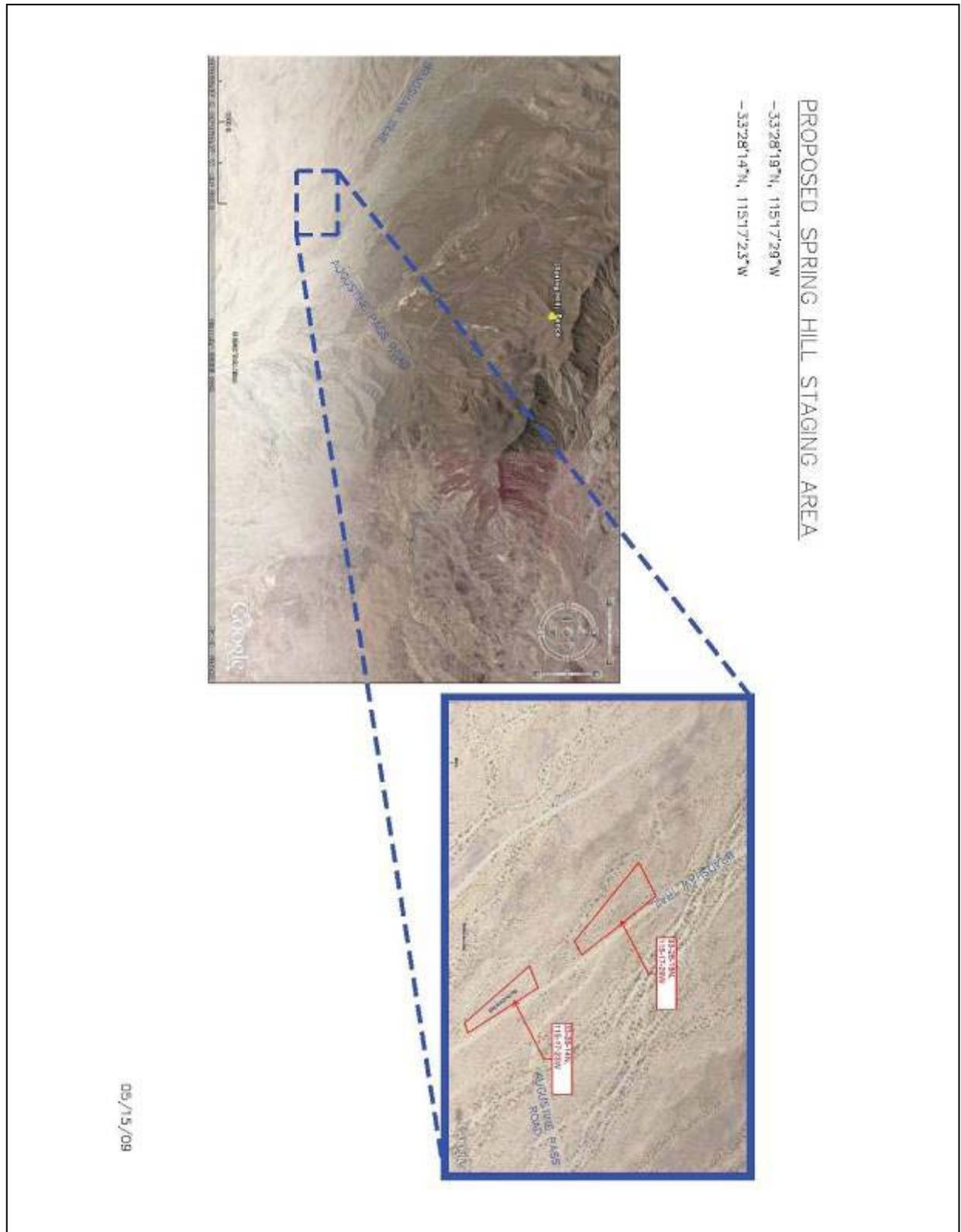


Figure 2.2-2. Proposed Construction Staging Area on Navy Land

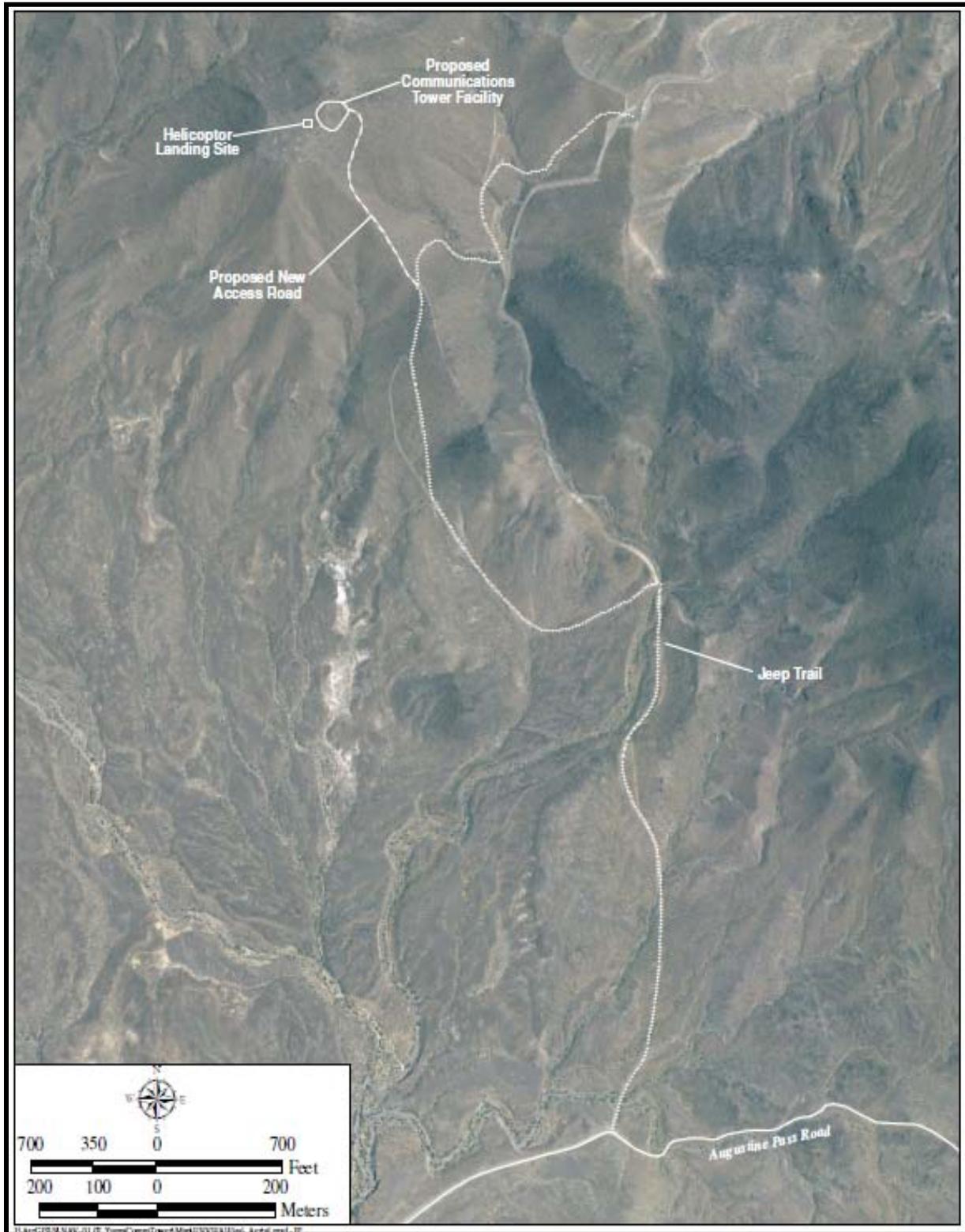


Figure 2.2-3. Proposed Location of Helicopter Landing Site

The landing site would be located at least 175 ft (53 m) from the communications tower and 50 ft (15 m) from the enclosure fence in order to help avoid potential helicopter/tower collision hazards. Foot traffic from the helicopter would traverse the top of Spring Hill and enter the fenced enclosure through a pedestrian gate on the southern side of the enclosure. Construction and improvement of helibases and helispots should conform as closely as possible to the specifications as shown in Figure 2.2-4.

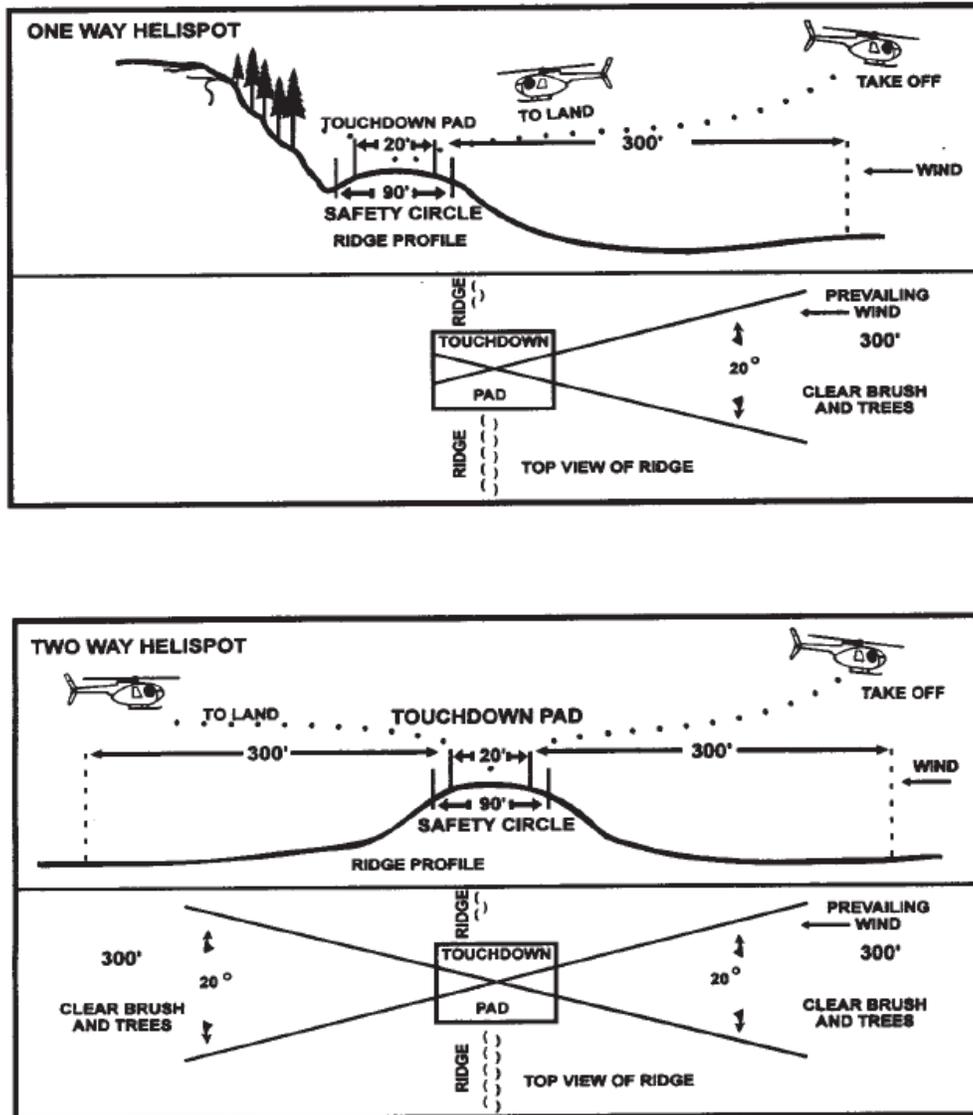


Figure 2.2-4. FAA Generalized Helispot Construction Specifications

#### 2.2.1.8 Access Roads

Surface access to the proposed communication tower site would be via the maintained Bradshaw Road, an unpaved road that runs along the northwest boundary of the CMAGR. From Bradshaw Road exit on to Augustine Pass Road for approximately 1.5 miles (2.4 km) and take the respective jeep trail approximately 1.1 miles (1.8 km), to within approximately 1,300 ft (396 m) of the proposed Spring Hill communication tower site on the south. The new unpaved access road would be approximately 12-ft (4-m) wide and would connect the end of the jeep trail to the communications tower site. Approximately 15 cubic yards of soil would need to be exported.

In order to allow access to the proposed site on top of Spring Hill, the segments of Augustine Pass Road and the jeep road leading to the site would be re-graded to the existing road widths of approximately 12 ft (4 m). The re-grading would include at-grade crossings or culverts at approximately seven ephemeral desert washes. The new road would traverse the spine of a ridge leading toward Spring Hill, veering northeast along the edge of the hill and then circling back toward the proposed communications tower site. The length of this road would be approximately 1,300 ft (396 m). A gate would be installed in the perimeter fencing to allow for vehicular access to the site. Construction crews and, later, maintenance and repair crews would access the communications tower facility via these roads. As necessary, MCAS Yuma would re-grade the unpaved roads leading to the Spring Hill communications tower site from Bradshaw Trail to ensure that they remain passable for four-wheel-drive (maintenance and repair) vehicles. Adherence to all requirements for construction and authorized use according to 43 CFR 8342.1 and the Northern and Eastern Colorado Desert Coordinated Management Plan, specifically Chapter 2.5, Motorized-Vehicle Access, Routes of Travel Designations, and Recreation would be followed.

#### 2.2.2 Construction Activities

Construction materials, equipment and labor would be brought to the site via surface roads or by helicopter. Depending on the selected contractor, larger project components such as the tower may be assembled elsewhere and airlifted to the site for installation, or they may be brought to Spring Hill in pieces and assembled on site. Construction of the proposed communications facility would be expected to take approximately five months. All construction occurring outside of the fenced enclosure (including periodic re-grading of access roads but excluding access along roads) would occur outside the active desert tortoise season of March 15 to November 1 when practicable. When active season avoidance is not practicable, measures described in the Special Conservation Measures (SCM) Section 2.2.5 of this EA would be applied for desert tortoise and would be subject to review through informal consultation.

#### 2.2.3 Maintenance and Repair Activities

Maintenance activities, such as cleaning the solar panel array using soap and water and conducting upkeep on communications equipment, are expected to occur on an approximately monthly basis. Equipment repairs and re-grading of access roads would occur as needed.

#### 2.2.4 Summary of Proposed Action Elements

Table 2.2-2 provides a summary comparison of the Proposed Action.

**Table 2.2-2. Summary of Proposed Action’s Main Elements**

<b>Component</b>	<b>Fenced Site Size</b>	<b>Tower</b>	<b>Electrical Power</b>	<b>Shelter</b>	<b>Fencing</b>
<b>Description</b>	0.4 acre (0.2 ha)	Up to 195-ft tall (59-m tall)	175-watt solar panels & propane backup generator	25 ft x 18 ft 13 ft tall (7.6 m x 5.5 m, 4.0 m tall)	Site enclosed with security & tortoise exclusion fencing
<b>Component</b>	<b>Access</b>		<b>Construction</b>	<b>Maintenance</b>	<b>Microwave Link</b>
<b>Description</b>	By helicopter and/or on surface roads via Bradshaw Trail, Augustine Pass Road, unnamed jeep trail and new access road		5 months	Monthly site maintenance; road re-grading as needed	Via Black Mountain and Telegraph Pass to MCAS Yuma

**2.2.5 Special Conservation Measures (SCM)**

The following paragraphs describe SCMs which would be incorporated into the Proposed Action to avoid, minimize, and compensate for effects to biological and/or cultural resources. MCAS Yuma and any organization(s) that would jointly utilize the communications facility would adhere to all requirements and stipulations in the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO) and the associated Biological Opinion (BO) (BLM 2002; USFWS 2005). The implementation of the Proposed Action would also comply with the communications site lease between MCAS Yuma and BLM.

**2.2.5.1 Biological Resources**

The Biological Resources SCMs are based on the results of the BLM’s information consultation with the USFWS; NECO Plan including Appendix D, Desert Tortoise Mitigation Measures; and the U.S. Fish and Wildlife Service (USFWS) BO to minimize impacts to habitat, wildlife, and plants within the Chuckwalla DWMA, including the potential effects to desert tortoise (BLM 2002; USFWS 2005).

- 1) The project is located within the Chuckwalla Bench, an area noted for its high densities of desert tortoises. The area is also designated by the USFWS as critical habitat for this species, and is managed by the BLM and the Navy as a Desert Wildlife Management Area for the tortoise. Because of this, it is especially important that an Authorized Biologist(s) be present during all activities in which encounters with tortoises may occur.
  
- 2) The Authorized Biologist(s) shall watch for tortoises wandering into the construction areas, check under vehicles prior to moving, drive in the lead vehicle while moving equipment to and from the project site, and conduct other activities necessary to ensure that death or injury of tortoises is minimized. The Authorized Biologist shall be approved by the USFWS and BLM at least 30 days prior to the start of the project. Only Authorized Biologists shall handle desert tortoises, and only when necessary. In handling desert tortoises, the authorized biologist shall follow the techniques for handling desert tortoises in Guidelines for Handling Desert Tortoises during Construction Projects (Desert Tortoise Council 1996).

- 3) The USMC (project proponent) shall designate a field contact representative (FCR) who will be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The FCR must be on-site during all project activities. The FCR shall have the authority to halt all project activities that are in violation of the stipulations. The FCR shall have a copy of all stipulations when work is being conducted on the site. The FCR may be a crew chief or field supervisor, a project manager, any other employee of the project proponent, or a contracted biologist.
- 4) The FCR and Authorized Biologist, if different individuals, will coordinate to provide a monthly written report to the BLM and USFWS with a detailed accounting of all oversight activities pertaining to desert tortoise. Any non-compliance issues with the project's conservation measures will be thoroughly documented in writing and reported to the Agencies. The Authorized Biologist will coordinate his/her activities with the FCR as frequently as needed to effectively implement the project's conservation measures, but no less frequently than once per week.
- 5) All employees of the project proponent who work onsite shall participate in a tortoise education program prior to initiation of field activities. The project proponent is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees shall receive formal, approved training prior to working onsite. The employee education program must be received, reviewed and approved by the BLM and USFWS at least 30 days prior to the presentation of the program. The program shall cover the following topics at a minimum: general natural history of the desert tortoise, sensitivity to human activities, legal protection, penalties for violations of State or Federal laws, and project protective mitigation measures. The names of all employees who have participated in the education program will be kept on file and provided to BLM.
- 6) To the extent possible, activities shall be scheduled when desert tortoises are generally inactive (November 1 – March 15). This timeframe is when tortoises are generally inactive. Tortoises in the Colorado Desert (the location of the project site) can be active anytime during the year including warmer days during the winter and anytime after rainfall events.
- 7) Total permanent and temporary disturbance resulting from the construction of the tower facility, helicopter pad, new spur road leading to the top of Spring Hill, improvements to the existing roads (jeep trail and Augustine Pass Road), and staging areas shall be limited to 2 acres.
- 8) All work areas, including the staging area, shall be conspicuously staked, flagged, or marked. All workers shall strictly limit activities and vehicles to the designated work areas.
- 9) Prior to entering the project site, all construction vehicles shall be thoroughly washed and cleaned at an offsite location to ensure against the introduction of invasive non-native weeds to desert tortoise habitat.
- 10) Habitat restoration. Areas of temporary disturbance (e.g., staging areas) will be restored to a pre-disturbance condition, to the extent possible, using established desert restoration methods, including vertical and horizontal mulching, live plantings where needed, raking, rock placement,

etc. (Bainbridge, D.A. 2007. A Guide for Desert and Dryland Restoration. Island Press). The desert pavement of the main staging area along Bradshaw Trail and the road cuts leading up to Spring Hill will be restored using a method such as Permeon to replicate desert vanish and eliminate scars.

- 11) Pets shall not be allowed at the project site.
- 12) The Authorized Biologist shall maintain a record of all desert tortoises handled. This information shall include for each tortoise: the locations (narrative and maps) and dates of observations; general condition and health, including injuries and state of healing and whether animals voided their bladders; location moved from and location moved to; diagnostic markings (i.e., identification numbers or marked lateral scutes); and photographs of each handled desert tortoise.
- 13) No later than 90 days after completion of construction or termination of activities, the FCR and authorized biologist shall prepare a report for the BLM and USFWS. The report shall document the number of tortoises handled, the number of tortoises killed or injured, and the specific information for each tortoise as described above. The report shall provide the actual acreage disturbed by various aspects of the operation.
- 14) Upon locating a dead or injured tortoise, the project proponent or agent is to notify the BLM Palm Springs/ South Coast Field Office. The BLM must then notify the appropriate the USFWS Carlsbad office by telephone within three days of the finding. Written notification must be made within five days of the finding, both to the USFWS Carlsbad field office and to the USFWS Division of Law Enforcement in Torrance. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information. An injured animal shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the USFWS Carlsbad Field Office should be contacted for final disposition of the animal. The BLM shall endeavor to place the remains of intact tortoise carcasses with educational or research institutions holding the appropriate State and Federal permits per their instructions. If such institutions are not available or the animal's remains are in poor condition, the information noted above shall be obtained and the carcass left in place. If left in place and sufficient pieces are available, the BLM (or its agent) shall attempt to mark the carcass to ensure that it is not reported again. Arrangements for disposition to a museum shall be made prior to removal of the carcass from the field.
- 15) Except on county-maintained roads, vehicle speeds shall not exceed 20 miles per hour through desert tortoise habitat.
- 16) All trash and food items shall be promptly contained within closed, raven-proof containers. These shall be regularly removed from the project site to reduce the attractiveness of the area to ravens and other tortoise predators.
- 17) The USMC would provide replacement habitat, or funding for replacement habitat, at a 5:1 ratio consistent with the NECO plan for the Proposed Action's ground disturbance (excluding re-

grading existing roads) because the proposed project area is within the Chuckwalla Desert Wildlife Management Area. The footprint of the ground disturbance is estimated to be approximately 2 acres; the specific impacted acreage and associated 5:1 compensation requirement would be confirmed upon final design of the tower enclosure, construction area, and roads.

- 18) The tower enclosure on Spring Hill would include permanent tortoise exclusion fencing that conforms to the specifications contained in NECO Desert Coordinated Management Plan Appendix D, Desert Tortoise Mitigation Measures, Section 7, Site Fencing and Hazard Removal. The fencing would be wire mesh with a maximum mesh size of ½ inch-square fastened securely to posts. The wire mesh would extend at least 18 inches above the ground and preferably about 12 inches underground. Where burial is not possible, the lower 12 inches shall be folded outward and fastened to the ground. Any gates in the fence would be equipped with desert tortoise fencing to prevent entry of tortoises.

#### 2.2.5.2 Cultural Resources

- 1) Prior to the completion of the new access road leading to the top of Spring Hill, a barrier would be installed at the lower portion of the new road to minimize the potential for recreational vehicle access to the top of the hill. The barrier's specific design is subject to approval by the BLM, but is envisioned to include a gate and a short segment of fencing or equivalent. Based on topography, it should be possible to provide a barrier on the "spine" of the hill between the existing jeep trail and Spring Hill such that it would be difficult to drive around the barrier. It is important that the locking mechanism for this barrier prevent the use of bolt cutters to simply cut through the lock. Given the openness of the desert terrain, it would not be expected that this barrier could exclude pedestrian access to Spring Hill.
- 2) The following seven sites within the APE have not been subject to evaluation; they are assumed to be eligible for the National Register, and must be unconditionally avoided: CA-RIV-8234, -8237, -8238, -8241, -8250, -8233, -8239. These seven sites shall be treated and protected as if they were Historic Properties. If these sites are located within or immediately adjacent to the APE, an archaeological monitor must be present during construction activities to ensure they are avoided. Further, if these sites are located outside of the APE, all activities associated with the Spring Hill project must stay within the APE.

### 2.3 ALTERNATIVES

Alternatives to the Proposed Action must be considered in accordance with NEPA, CEQ regulations for implementing NEPA, and MCO P5090.2A. However, only those alternatives determined to be reasonable relative to their ability to fulfill the purpose and need for the Proposed Action require detailed analysis.

The Proposed Action was the only alternative that met all of the criteria, which are listed in Table 2.3-1. CEQ regulations require an analysis of the No Action Alternative for all actions. Therefore, the Proposed Action and No Action Alternative were included in the EA analysis.

**Table 2.3-1. Selection Criteria for Communication Tower Construction**

<b>Criteria</b>	<b>Minimum</b>
Training	Must not adversely impact USMC mission essential training, including surface and flight operations.
Operational	Must provide the necessary area for construction, maintenance access and safe military operations.
Land Use	Must be consistent with previous/current land use.
Environmental	Must minimize impact on existing environmental resources including biological, cultural, air, geologic and hydrologic resources.
Objectives	Meets all project objectives described in Section 1.3 of this EA.

### 2.3.1 No Action Alternative

The following conditions would apply under the No Action Alternative:

- A communications tower approximately 195-ft (59-m) tall would not be installed on site. The site would remain open, undeveloped land.
- There would not be five USMC VHF/UHF AJ/FM antennas placed on the tower and augmented with a high-performance directional antenna to meet the USMC communications needs.
- On site solar power panels that act as the primary source of electrical generation to power the communications equipment when needed would not be installed.
- A backup generator located along the southeastern edge of the site powered by a 2,000-gallon (7,571 liter) propane tank would not be installed.
- A shelter (shed) approximately 25-ft by 18-ft (7.6-m by 5.5-m) and 13-ft (4.0-m) tall, to house electronics equipment would not be constructed on site to enclose electronics such as the batteries, charger/controllers, repeaters, circuit breakers, signal amplifiers, etc.
- Perimeter security fencing approximately 8-ft (2.5-m) tall, constructed of chain-link and capped by security wire (e.g. strands of barbed wire) that provides security to the communications facility would not be constructed.
- A helicopter landing area approximately 100 ft by 100 ft (30 m by 30 m), located at least 175 ft (53 m) from the communications tower and 50 ft (15 m) from the enclosure fence that provides access to the site would not be constructed.
- An existing unpaved road would not be re-graded to a width of approximately 12 ft (4 m), nor would a new road be constructed in order to connect this trail and allow access to the site.

Under this alternative, no new communications equipment would be installed to improve coverage of R-2507 east of the Chocolate Mountains. Accordingly, there would be no physical disturbance of Spring Hill and/or the roads leading to Spring Hill. There also would be no improvement in the efficiency or safety of military aircraft training conducted in the eastern portions of R-2507. Aircraft training in the eastern CMAGR would continue to need to climb vertically to approximately 3,000 ft (914 m) above MSL and then descend back to their low-altitude flight profile, wasting fuel and potentially endangering aircraft, especially during nighttime training. Communications with ground vehicles would not be improved to ensure the needed continuous, redundant communication links with personnel working within the eastern CMAGR, a live bombing range.

**2.3.2 Comparison of Alternatives**

Table 2.3-2 presents a comparison of the potential environmental consequences resulting from implementation of the Proposed Action or alternatives.

**Table 2.3-2. Comparison of Potential Environmental Consequences**

Resource Area	Proposed Action	No Action Alternative
Land Use	○	○
Geological Resources	○	○
Biological Resources	○	○
Water Resources	○	○
Air Quality	○	○
Noise	○	○
Cultural Resources	○	○
Utilities & Public Services	○	○
Aesthetic & Visual Resources	○	○

Notes:

- = No significant impact
- ◐ = Adverse, but not significant impact
- = Adverse impact
- + = Beneficial impact

**2.3.3 Alternatives Considered but Eliminated from Further Analysis**

MCAS Yuma evaluated several potential alternatives for the Proposed Action (refer to Table 2.3-1 for the site selection criteria). Alternatives considered but eliminated from further analysis in the EA because they did not meet the site selection criteria.

- Helicopter-only Access
- North Chocolate Site (R2507N)
- South Chocolate Site (R2507S)
- Chuckwalla Commercial Communications Site
- Other Sites: Bau Hill, Riverside County Public Safety Enterprise Communications (PSEC), Spring Hill
- Spring Hill B
- Other Power Sources (Land Line)
- Other Means of Communications

A brief description of each alternative considered but eliminated follows.

**2.3.3.1 USMC-only Facility**

The USMC considered the construction and operation of a communications tower that would only accommodate USMC communications equipment. This alternative was eliminated from further analysis because it would have deprived other government agencies of the opportunity to improve their communications within the area surrounding Spring Hill.

### 2.3.3.2 Helicopter-only Access

Helicopter-only access was considered as a potential means of avoiding the need to create and maintain surface road access to the communications tower site. This alternative was eliminated from further analysis because of the constraints it would pose on bringing people, equipment, and fuel to the site during construction and maintenance.

### 2.3.3.3 North Chocolate Site

The North Chocolate Site (R-2507N) is a remote site located in the northern portion of the Chocolate Mountains inside the training range. The site is only accessible by helicopter. The site was eliminated from analysis because conducting maintenance requires closing down part of the training range, which impedes critical training. The site was also eliminated from further analysis due to safety hazards. The helicopter landing area is approximately 6-ft (2-m) wide with steep drop-offs on both sides. There is approximately 12 ft (4 m) of rotor blade clearance on either side of a helicopter when it hovers above the landing area making entering and exiting the helicopter dangerous for all personnel. High winds can create safety issues during air operations. Helicopters cannot land or approach the landing area during high winds, which can result in delays to emergency maintenance. Helicopters usually cannot land and remain on site while maintenance is being performed due to shifting winds, causing the helicopter to drop off all personnel and return later to pick them up. This creates additional cost to maintaining the site, and personnel have been stranded at the site for extended periods of time due to the winds.

### 2.3.3.4 South Chocolate Site

The South Chocolate Site (R-2507S) was eliminated from further analysis due to many of the same issues as R-2507N. R-2507S is a remote site located in the southern portion of the Chocolate Mountains inside the training range. The site is only accessible by helicopter and requires closing down a portion of the training range each time maintenance is needed, which hinders range training.

The site is a safety hazard due to the small area provided for a helicopter to land on, which is only slightly larger than the area at the R2507N site. The landing area is estimated to be approximately 20-ft (6-m) wide with steep drop-offs on three of the four sides of this area. There is approximately 18 ft of rotor blade clearance on either side of the aircraft when it lands. The landing area is located almost 75 yards below the actual communication site, requiring maintenance staff to carry all equipment and tools across rough terrain to get to the site. There would be no room for expanding the site to upgrade communications without extensive ground removal at the site. This alternative was also eliminated from further analysis because it does not provide the radio coverage capabilities required for positive range safety communications.

### 2.3.3.5 Chuckwalla Commercial Communications Site

The Chuckwalla Commercial Communications Site was tested during an initial communications survey. This site provided very limited communications coverage in the northern portion of the training range, and almost no communications in the southern portion of the range. This is primarily due to the natural terrain and location of the Chuckwalla communications site. The site is located on the northern part of the mountain with a large portion between the site and the training range. This alternative was eliminated from further analysis because the mountain blocks most of the communications from the ranges.

### 2.3.3.6 Other Sites

The *MCAS Yuma R-2507 Low Altitude Radio Communications Technical Report/Cost Proposal* (Navy 2003), identified potential communications tower sites near R-2507. The study identified candidate sites

for communications towers using information gathered during interviews with range management personnel, from examination of U.S. Geological Survey (USGS) maps, and from a review of National Imagery and Mapping Agency (NIMA) Digital Terrain Elevation Data (DTED) Level 1 maps.

The analysis indicated that there are a limited number of potential communications tower sites that could meet the primary objective of the Proposed Action's purpose and need. In addition to Spring Hill, two sites were identified: Bau Hill and the proposed Riverside County PSEC tower site. Each of these sites would require a microwave relay link to MCAS Yuma. The Bau Hill and Riverside County PSEC sites were not considered practical alternatives and were eliminated from further analysis in this EA for the reasons described below.

#### Bau Hill Site

The Bau Hill site is located approximately 1.3 miles (2.1 km) north/northwest of the Spring Hill site. The Bau Hill site's location raises concerns about the ability to provide adequate radio coverage near the Little Mules area of the CMAGR and in the Lionshead Pass area. The steep topography and more remote location would mean that additional grading and ground disturbance, with a correspondingly higher level of environmental impact, would result from this alternative. This would include the need to grade a road capable of supporting construction cranes for tower construction. Construction would be more difficult and costly at this location. This alternative was eliminated from further analysis because of the many constraints, and because it would not provide advantages over Spring Hill with regard to communications coverage.

#### Riverside County PSEC Site

The County of Riverside is planning to implement a new public safety communication system to resolve radio coverage issues for its public safety emergency responders (County of Riverside 2008a, b). The proposed PSEC project would expand and upgrade the existing Riverside County communication systems capabilities and its associated infrastructure, including the addition of approximately 50 new sites to the already existing system of sites for a total of 70 sites. One of these proposed new sites would be near Spring Hill, where the County would install a self-supported 330-ft (100-m) tall communication tower and associated infrastructure, including a propane tank and generator, approximately 1,400 ft (427 m) southeast and 140 ft (43 m) lower in elevation than MCAS Yuma's proposed communication tower. Due to the lower elevation, a larger tower would be required to achieve comparable coverage to the Proposed Action addressed in this EA. The use of a larger tower to make up for the lower elevation would reduce communication coverage due to the line loss of the longer transmission lines. An additional 140 ft (43 m) of transmission line could result in approximately 22% additional coverage loss.

The Riverside County PSEC site was also eliminated from further analysis because its communication coverage would be poorer than that of Spring Hill. The largest impact would be in the northern area of the CMAGR where the requirement for first-responder and tactical communication is the highest. The MCAS Yuma communication site must be built to USMC Enterprise-Land Mobile Radio specifications. These follow the Whole Building Design Guide (WBDG) as well as other Department of Defense specifications and apply to all facets of the building design (grounding, seismic, foundation, etc.). The required specifications may be more stringent than required by the Riverside County PSEC design. Any re-design could be costly, and any retro-fit or addition may require extensive disturbance of operations.

Due to the limited space at the PSEC site, available locations for solar panel arrays would be minimal. Without available utility power, MCAS Yuma would power the site with solar power. The physical area required for solar panel arrays to support a full-size site that houses USMC communication requirements

would be considerable, without including other power requirements that Riverside County and other possible tenants may have.

For these reasons, constructing the communications tower at the Riverside County PSEC site was eliminated from further analysis.

#### Spring Hill B Site

The County of Riverside considered two conceptual renderings of a communications tower at the Spring Hill B site (Sec.12, T8S., R.16W., S.B.B.&M. Augustine Road). The main difference between the two conceptual drawings was that one tower was self-supporting while the other was supported by guy-lines. Both towers were approximately 350-ft (107-m) high including antennas, lightning rods, and beacons. The towers would be solar-powered with a backup generator enclosed by a chain-link fence with barbed wire. The site designs included a Concrete Masonry Unit (CMU) block shelter and road improvements for maintenance vehicle access. These alternatives did not meet the project screening criteria; thus they did not fulfill the purpose and need of the project. These alternatives were also not economically feasible.

#### Other Power Sources (Land Line)

Extending existing utility lines (including electrical distribution) to the Spring Hill site was considered as an alternative to solar power. The nearest utility lines are located approximately 3 miles (5 km) from Spring Hill. This alternative would result in increased ground disturbance associated with utility line pole installation and maintenance; the potential for utility lines to provide perching opportunities for common raven (*Corvus corax*), which prey on young desert tortoises; and the visual resource impacts of a utility line traversing Spring Hill. By comparison, the Proposed Action would rely primarily on solar power that (unlike commercially generated electricity) does not generate pollutant emissions and avoids the ground disturbance, predator roosts, and more extensive visual impacts of a new transmission line through undeveloped desert habitat. This alternative was eliminated from further analysis because of the associated environmental impacts.

#### Other Means of Communication

Another alternative considered but eliminated from analysis was the use of satellite phones. This was not considered a feasible means of achieving the Proposed Action's purpose and need because of constraints associated with satellite phone use. Among the chief drawbacks to this approach would be the time required to acquire a connection with the respective satellite(s), which could make this an infeasible means of communicating effectively with aircraft on low-altitude approaches to the CMAGR. As noted in the above, it is important to have reliable and consistent communications with aircraft and ground personnel within CMAGR because it is a live bombing range. In addition to the technical constraints associated with satellite phone use, this would not be a cost effective approach to communications.

Similarly, a satellite connection could be used in lieu of establishing a line-of-sight microwave link from Spring Hill, to Black Mountain, to Telegraph Pass, to MCAS Yuma. Both the use of a microwave link and the use of a satellite connection would require the installation of a transceiver at the Spring Hill site; accordingly, there would be little to no difference in impact associated with either means of establishing a communications link to MCAS Yuma. Similarly, the addition of one new microwave transceiver at an existing communications tower on Black Mountain would have a negligible environmental effect. Because the use of a satellite connection for communications with MCAS Yuma would be more expensive and would have virtually identical environmental effects as a microwave relay link, this alternative was not carried forward for detailed evaluation.

## CHAPTER 3

### AFFECTED ENVIRONMENT

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#### 3.1 SCOPE OF ANALYSIS AND ANALYTICAL APPROACH

This chapter includes a description of existing environmental conditions within the project area at Spring Hill, Riverside County, California. The project area encompasses approximately 1.6 acres (0.7 ha) and includes new communications facility construction to be supported by construction and improvement of an existing jeep trail for service vehicle access, along with a new unimproved access road to the facility, a helicopter landing area and tower pad construction, and adjacent lay-down yard at the top of Spring Hill.

Information presented in this chapter serves as baseline data to identify and evaluate any potential impacts that could result from implementation of the Proposed Action or alternatives. Impacts evaluated are presented in Chapter 4. NEPA, CEQ regulations, and USMC procedures for implementing NEPA specify that an EA should focus only on those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of impact. Consequently, the affected environment is described for geological resources, water resources, biological resources, cultural resources, air quality, land use, noise, and aesthetics and visual resources.

##### 3.1.1 Resources Evaluated but Not Carried Forward

The following resources were not evaluated in this EA as it was determined that implementation of the Proposed Action or alternatives would be unlikely to have impacts on these resources. These resources include Socioeconomics, Environmental Justice, Roadways and Traffic, Human Health and Safety, and Hazardous Materials. A brief explanation of the reasons why each resource would not need further evaluation in this EA is provided below.

***Socioeconomics and Environmental Justice.*** Implementation of the Proposed Action or alternatives would not affect socioeconomic resources and would comply with Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The Proposed Action would be construct a communications tower and associated infrastructure in a remote area of Spring Hill, California. The project site would be located in rugged, undeveloped, uninhabited lands far removed from an urbanized area. The tower construction and maintenance would not change or impact the human population or demand for housing or jobs in the Spring Hill area. Because the Proposed Action would occur in a remote, undeveloped desert area and would not generate any additional growth or decline in population, housing, or jobs, there is no need to analyze it further in terms of socioeconomics and environmental justice.

***Roadways and Traffic.*** Surface access to the communications tower would be via existing and new unpaved roads leading to Spring Hill from the south. Traffic and roadway use would experience a short-term, temporary impact due to construction equipment and vehicles going to and from the construction site. Grading would be required to construct the access roads and on-site construction activities, and rod grading could adversely affect the desert tortoise if present. However, the lease between BLM and MCAS Yuma, the BO, and Appendix D of the NECO Plan would address all roadway access restrictions and requirements (please also see Special Conservation Measures in Section 2.2.5). Therefore, there is no need to further analyze potential roadway and traffic impacts.

**Human Health and Safety.** All federal and state safety standards would be adhered to in order to assure worker safety during construction activities; this construction would occur within a fenced, secured area so it would be unlikely that public health would be at risk during construction. Operationally, because of the desolate location and a fenced, secured facility being constructed, the likelihood of any public health risk would be considered insignificant. Maintenance and/or military personnel would take appropriate precautions while on site to ensure safety. No further evaluation is needed for this resource.

**Hazardous Materials and Wastes.** The amount of material used and waste disposed of during the construction phase is estimated to be minor because of its temporary nature. Operational activities are considered self-sustaining and maintenance activities would likely be minimal. A backup generator on site would be fueled by a 2,000-gallon propane tank and requirements to follow all federal, state, and local standards would be implemented. Such regulations include California Code of Regulations (CCR) Title 8, Sections 470 through 494 and California Fire Code (CFC) Article 82, including permitting and posted warning sign requirements for propane tanks having a volume greater than 125 gallons. As such, no impacts are expected for Hazardous Materials and Waste. No further evaluation is needed for this resource.

### 3.1.2 Resources Evaluated and Carried Forward

A total of 19 resources were evaluated for their potential impacts and 13 were carried forward for further analysis. Table 3.1-1 presents the results of a screening analysis to identify resources to be analyzed in this EA. This analysis considered the elements of the Proposed Action that would potentially impact a resource. Consideration was given to each resource and it was noted if the resource would be impacted. A description of each resource analyzed follows below.

**Table 3.1-1. Resources Analyzed to Determine Further Evaluation**

Categories/Resources	Proposed Action Elements		
	Construction	Operations	Maintenance
Land Use	Yes	Yes	Yes
Geology and Soils	Yes	Yes	Yes
Vegetation	Yes	No	No
Wildlife and Aquatic Resources	Yes	No	No
Threatened and Endangered Species	Yes	Yes	Yes
Hydrology and Groundwater	No	No	No
Surface Waters and Waters of the U.S.	Yes	No	No
Floodplains	Yes	No	No
Air Quality	Yes	No	No
Noise	No	No	No
Cultural Resources	Yes	Yes	Yes
Utilities and Infrastructure	No	No	No
Aesthetic and Visual Resources	Yes	Yes	No

## 3.2 LAND USE

### 3.2.1 Definition of Resource

Land use is defined as the natural conditions and/or human-modified activities occurring at a particular location. Human-modified land use categories include residential, commercial, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed use areas. Management plans, policies, ordinances, and regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally

sensitive areas. The attributes of land use addressed in this EA include general land use patterns, land ownership, and special use areas.

### **3.2.2 Existing Conditions**

#### **3.2.2.1 Area Description for the Vicinity of Spring Hill**

The affected public lands are within Sections 12 and 13, Township 8 South, Range 16 East. This area is part of Spring Hill and is located just northeast of the CMAGR and the Bradshaw Trail in eastern Riverside County, California. The proposed communications tower site is on the relatively level top of Spring Hill, which is within Sonoran mixed woody shrub/creosote bush shrub habitat, and which also encompasses areas of “desert pavement”. The potential road alignment, which traverses slopes leading up to the hill from Augustine Pass Road and includes an unnamed jeep trail, passes through the southwest quarter of Section 12 and the northwest quarter of Section 13.

#### **3.2.2.2 Military Operations**

During the past 22 years, a relatively small area (less than 1 percent) of the CMAGR has been used for air to ground combat training and Navy SEAL training. This limited area of impacts is not expected to change (NECO 2002).

#### **3.2.2.3 Previous Historic Land Use**

The site’s history of the Anglo-American period (1848-present) saw travel routes through the area, such as the Bradshaw Trail. The first historic period road through Riverside County was created by William Bradshaw in 1862, as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona (now Ehrenberg, Arizona). The east-west trail was used extensively between 1862 and 1877 to haul miners and other passengers to the gold fields at La Paz. Mining in the Chuckwalla Mountains began in late 1876 or early 1877. Mining activity continued through mid-1942. After World War II, gold mining in the Chuckwalla Mountains was sporadic. The trail partly followed established routes to Dos Palmas and Salt Creek Pass. From Salt Creek Pass, Bradshaw Trail went east to Tabaseca Tank on the north side of the Chocolate Mountains. Today, the Bradshaw Trail is a 65-mile (105-km) graded road that traverses mostly public land between the Chuckwalla Mountains and the present-day CMAGR, from the Salton Sea State Recreation Area to the community of Ripley near the Colorado River.

#### **3.2.2.4 Land Use Plan**

The *Northern and Eastern Colorado Desert Coordinated Management Plan* (2002), which is an amendment to the *California Desert Conservation Area (CDCA) Plan* (1980), designates the proposed communications tower site as Limited Use Class in the Chuckwalla DWMA (see Figure 3.1-2). Limited development, such as communications tower sites, may be allowed within DWMA as long as new ground disturbance is limited to a cumulative total of 1% of the respective DWMA and compensation for disturbance of public lands within DWMA is provided at a 5:1 ratio.

DWMA are also considered Areas of Critical Environmental Concern (ACECs), and the Chuckwalla DWMA encompasses the former Chuckwalla Bench ACEC.

## **3.3 GEOLOGICAL RESOURCES**

### **3.3.1 Definition of Resource**

Geological resources are generally defined as the geology, soils, and topography of a given area. The geology of an area includes bedrock materials, mineral deposits, and fossil remains. The principal

geologic factors influencing the stability of structures are soil stability and seismic properties. Soil refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, liquefaction potential, and erodibility all determine the ability for the ground to support structures and facilities. Soils are typically described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular construction activities and types of land use.

Topography is typically described with respect to the elevation, slope, aspect, and surface features found within a given area. Long-term geological, seismic, erosional, and depositional processes typically influence the topographic relief of an area.

### **3.3.2 Existing Conditions**

#### **3.3.2.1 Regional Geologic Conditions**

The proposed site is within the Colorado Desert Geomorphic Province, which is generally bounded by the Peninsular Ranges Province to the west, the Colorado River to the east, the Mexican border to the south, and the Transverse Ranges Province (and the projected eastern extension of this province) to the north. The Colorado Desert Province includes two distinct geologic regions, the Salton Trough and a more topographically variable area east of the trough. The project site is located in the area east of the Salton Trough.

The eastern portion of the Colorado Desert Province is interpreted geologically as the southern extension of the Mojave Desert Geomorphic Province by most authors. This area exhibits generally more varied and rugged topography than the Salton Trough to the west, and includes both internal drainage and flows to the Colorado River. There are three distinct geologic regions in the eastern Colorado Desert. The project site region is characterized by generally northwest/southeast trending structural features (i.e., mountain blocks with intervening fault zones and alluvial valleys), including the Chocolate and Chuckwalla Mountains.

#### **3.3.2.2 Topography**

The project site and adjacent areas are largely undeveloped, with existing improvements limited to unpaved roads and trails. Spring Hill exhibits relatively level terrain and is surrounded by steep and rugged slopes (Figure 3.3-1). Surface elevations within the potentially affected federal lands range from approximately 2,750 ft (839 m) above MSL at the tower site, to 2,250 ft (685 m) above MSL at the Augustine Pass Road/Bradshaw Trail intersection. Figure 3.3-2 shows a USGS topographic map of the project area.

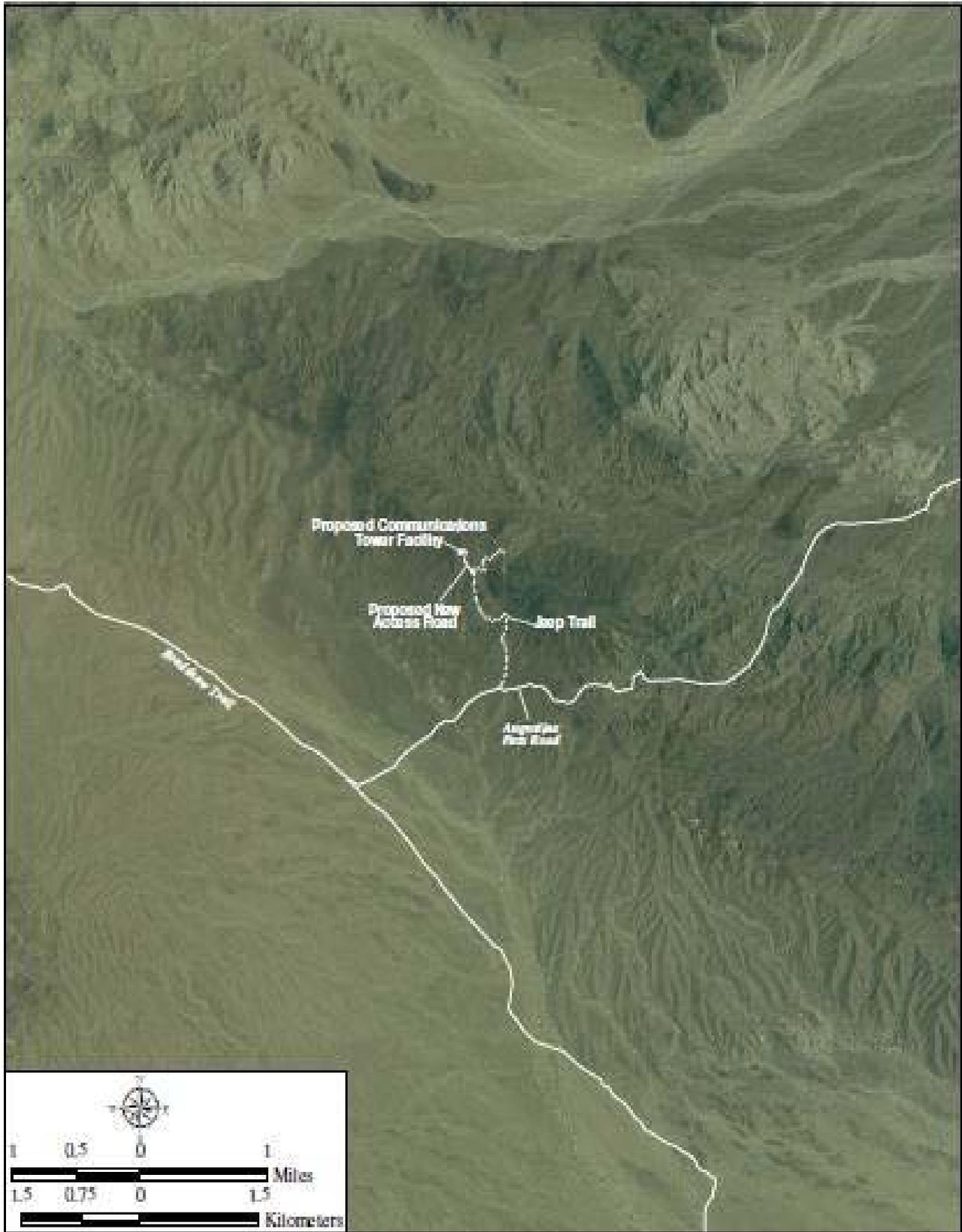


Figure 3.3-1. Aerial Photograph Spring Hill, MCAS Yuma Project Area

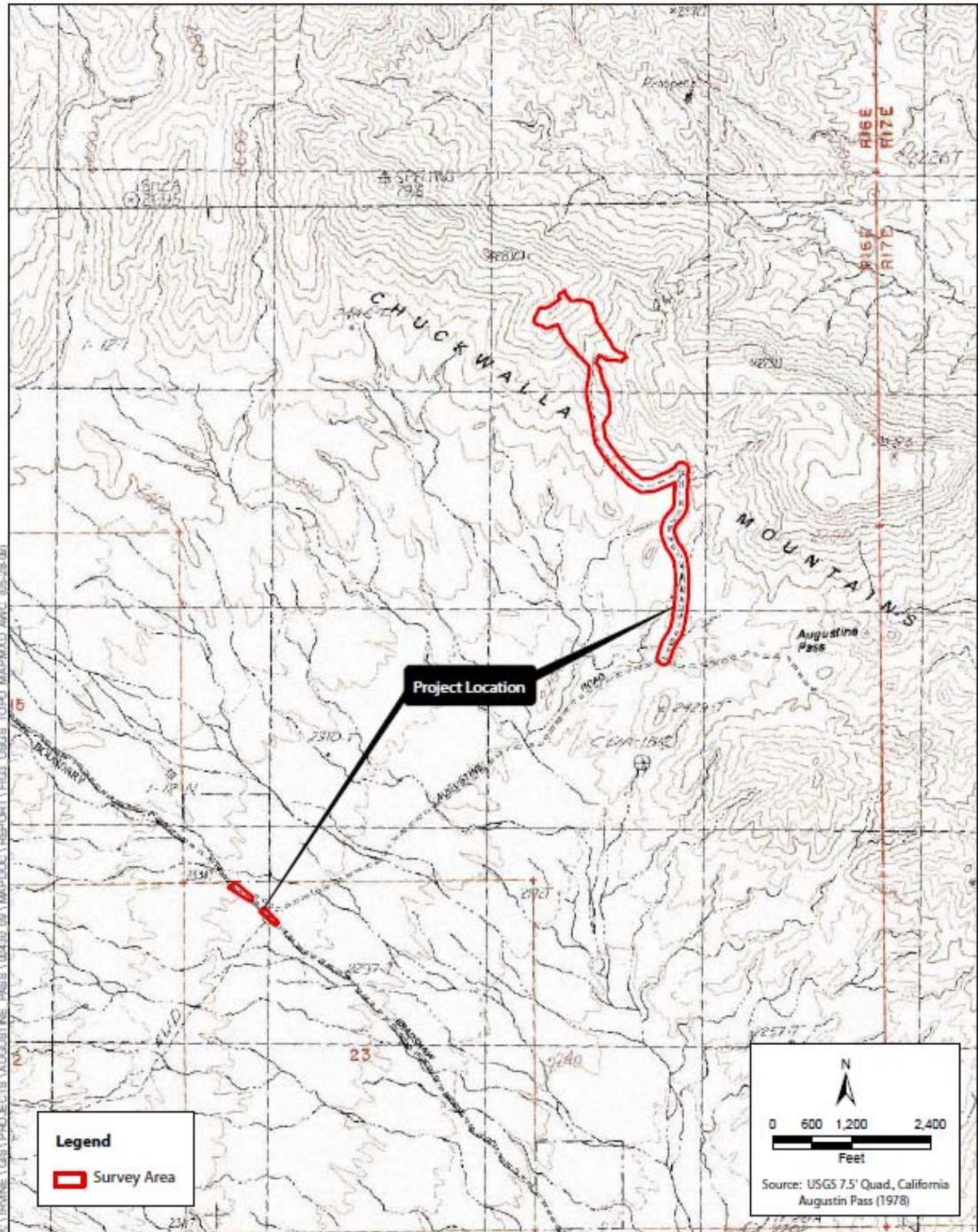


Figure 3.3-2. Spring Hill, MCAS Yuma Topographic Map

### 3.3.2.3 Stratigraphy

Geologic units mapped in the immediate project site vicinity include Precambrian age (approximately 600 million years or more in age) metamorphic basement rocks to the north and east of the site; Tertiary (between approximately 65 and 2 million years in age) volcanic rocks within and surrounding the project site; Tertiary and/or Quaternary (less than approximately 2 million years in age) non-marine sedimentary strata to the southeast and southwest; and Quaternary non-marine sedimentary deposits to the south and west (California Geological Survey [CGS], formerly the California Division of Mines and Geology [CDMG] 1967). The proposed site and vicinity also locally encompass a thin mantle of poorly developed topsoil consisting of generally sandy materials associated with both alluvial and aeolian (wind blown) deposition. Precambrian rocks in the site vicinity are associated with the Chuckwalla Complex, an undifferentiated series of metamorphic rocks including gneiss, schist and metamorphosed igneous intrusives. The Chuckwalla Complex has been correlated with similar assemblages in the San Gabriel Mountains and the Soledad Basin, with associated rocks typically hard and resistant to weathering. Additional metamorphic materials observed as float (isolated and displaced rock fragments) within the site vicinity during field reconnaissance on March 24, 2006 include quartzite and jasper.

### 3.3.2.4 Soils

According to the National Resource Conservation Service's (NRCS) Web Soil Survey, the survey area is listed as NOTCOM (mapping not complete). However, during a plant species survey conducted between May 11 and 31, 2009 of the project area, a visual observation of the existing roads, proposed staging areas, lay-down yard, facility access road, helicopter pad, and tower locations, it was determined that the areas are composed of desert pavement, talus slopes, alluvial slopes, and alluvial washes.

### 3.3.2.5 Seismicity

The project site is within a broad, seismically active region characterized by plate boundary tectonics as summarized above. No active or potentially active faults are mapped within or adjacent to the project site, with the closest active faults located within the San Andreas Fault Zone approximately 23 miles (37 km) to the west (CDMG 1994). In addition, two short but potentially active fault segments are mapped approximately 1 mile (1.6 km) north and south of the project site, with total lengths of approximately 5 and 3.5 miles (8 and 5.6 km), respectively (CDMG 1994). Active faults are defined as those exhibiting historic seismicity or displacement of Holocene (approximately 11,000 years or less in age) materials, while potentially active faults have no historic seismicity and displace Pleistocene but not Holocene strata.

### 3.3.2.6 Mineral Resources

Based on regional-scale mapping provided in the *CDCA* (1980, as amended), the project site is not within any areas of identified economic mineral resources. No evidence of mineral entries (e.g., mining claim markers) or exploration/production activities was observed within the project site and vicinity during field reconnaissance conducted on March 24, 2006. Identified potential for the occurrence of specific mineral categories, including locatable, leasable and salable minerals, varies within the site and vicinity as outlined below.

- Locatable Minerals - Locatable minerals encompass resources subject to development under the federal Mining Law of 1872, as amended. This includes virtually all metallic minerals (e.g., gold, silver and copper), as well as certain non-metal resources such as talc, gemstones and chemical grade carbonate rocks. The basic method of securing (or entering) locatable mineral rights on

federal lands is by establishing (or locating) one of several types of mining claims. The project site is within an area identified as exhibiting known (although currently not economical) occurrences of locatable minerals, as well as areas favorable for such occurrences based on geologic data (BLM 1980, as amended).

- Leasable Minerals - Leasable minerals generally include commodities such as coal, oil & gas, geothermal resources, sodium, potassium and phosphate. These types of minerals were removed from the general mining laws by the 1920 Leasing Act, except for geothermal resources which were established as a leasable commodity by the 1970 Geothermal Steam Act. Leasable mineral entry is obtained via renewable leases, with such rights typically subject to acreage fees and production royalties. The project site is not located within or adjacent to any areas of identified leasable mineral potential (BLM 1980, as amended).
- Salable Minerals - Salable minerals include common varieties of deposits such as sand & gravel, aggregate and building stone. These types of materials were removed from the general mining laws by the 1947 Sale Act, which authorizes the federal government to dispose of common variety materials through “free use” (e.g., to non-profit entities), negotiated (non-competitive) contracts, or competitive sales.

### 3.4 WATER RESOURCES

#### 3.4.1 Definition of Resource

Water resources include surface and subsurface water and floodplains. Surface water includes all lakes, ponds, rivers, streams, impoundments, and wetlands within a defined area or watershed. Subsurface water, commonly referred to as ground water, is typically found in certain areas known as aquifers. Aquifers are areas of mostly high porosity soil where water can be stored between soil particles and within soil pore spaces.

The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation’s waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the CWA is to restore and maintain the integrity of the nation’s waters. Jurisdictional waters of the U.S. are regulated resources and are subject to federal authority under Section 404 of the CWA. This term is broadly defined to include navigable waters (including intermittent streams), impoundments, tributary streams, and wetlands. Areas meeting the waters of the U.S. definition are under the jurisdiction of the U.S. Army Corps of Engineers (USACE).

#### 3.4.2 Existing Conditions

Under Section 404 of the CWA, the USACE has jurisdiction over the discharge of dredge or fill material in waters of the U.S. The potential access road improvements associated with the Proposed Action could entail re-grading existing at-grade crossings of approximately seven desert washes. While the USACE has historically exerted jurisdiction over washes such as these, the recent Supreme Court *Rapanos*<sup>4</sup> Ruling limits the USACE’s ability to regulate discharges to non-navigable waterways, potentially including desert washes. A joint memorandum issued by the USACE and the U.S. Environmental Protection Agency (USEPA) (2007) states that:

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<sup>4</sup> The consolidated cases of *Rapanos v. United States* and *Carabell v. United States* (generally referred to simply as “Rapanos”), 126 S. Ct. 2208 (2006).

*“Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) are generally not waters of the United States because they are not tributaries or they do not have a significant nexus to downstream traditional navigable waters”.*

The joint memorandum; however, also provides the following guidance regarding the application of washes in the arid west:

*“Certain ephemeral waters in the arid west are distinguishable from the geographic features described above where such ephemeral waters are tributaries and they have a significant nexus to downstream traditional navigable waters. For example, in some cases these ephemeral tributaries may serve as a transitional area between the upland environment and the traditional navigable waters. During and following precipitation events, ephemeral tributaries collect and transport water and sometimes sediment from the upper reaches of the landscape downstream to the traditional navigable waters. These ephemeral tributaries may provide habitat for wildlife and aquatic organisms in downstream traditional navigable waters. These biological and physical processes may further support nutrient cycling, sediment retention and transport, pollutant trapping and filtration, and improvement of water quality, functions that may significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters”.*

The washes traversed by access roads leading to Spring Hill exhibit only intermittent flow (immediately following storms) and are geographically distant from navigable waterways. Accordingly, it is not clear that there is a significant nexus between these washes and navigable waterways such that the affected washes would be subject to USACE regulation under Section 404 of the CWA. If the affected washes are considered to be subject to USACE regulation, it is expected that the re-grading of existing roads would be covered by CWA Section 404 Nationwide Permit 14, Linear Transportation Facilities. In short, the USACE either (1) does not have jurisdiction over the proposed re-grading of existing roads or (2) has already issued a Nationwide Permit pursuant to Section 404 of the CWA that would allow the re-grading to occur.

#### 3.4.2.1 Watershed and Drainage Characteristics

The proposed communications tower site is within the Colorado Hydrologic Unit (HU), one of 28 such designations identified in the California Regional Water Quality Control Board (RWQCB) *Water Quality Control Plan, Colorado River Basin Region* (Basin Plan, 2005). The Colorado HU is a generally linear area that includes approximately 1,920 square miles (4,970 square km) and extends along the Colorado River between the Riverside/San Bernardino County line on the north and the Imperial Reservoir on the south. The Colorado HU is further divided into several hydrologic areas (HAs) based on local drainage characteristics. The project site is within the Midway Well HA, which includes approximately 675 square miles (1,750 square km) and includes the easternmost extension of the Colorado HU. Specifically, the Midway Well HA extends northwest from the Colorado River to the Chuckwalla Mountains along several tributary drainages (including Arroyo Seco and Milpitas Wash), with the project site located in the northwestern corner of this unit (Figure 3.4-1).

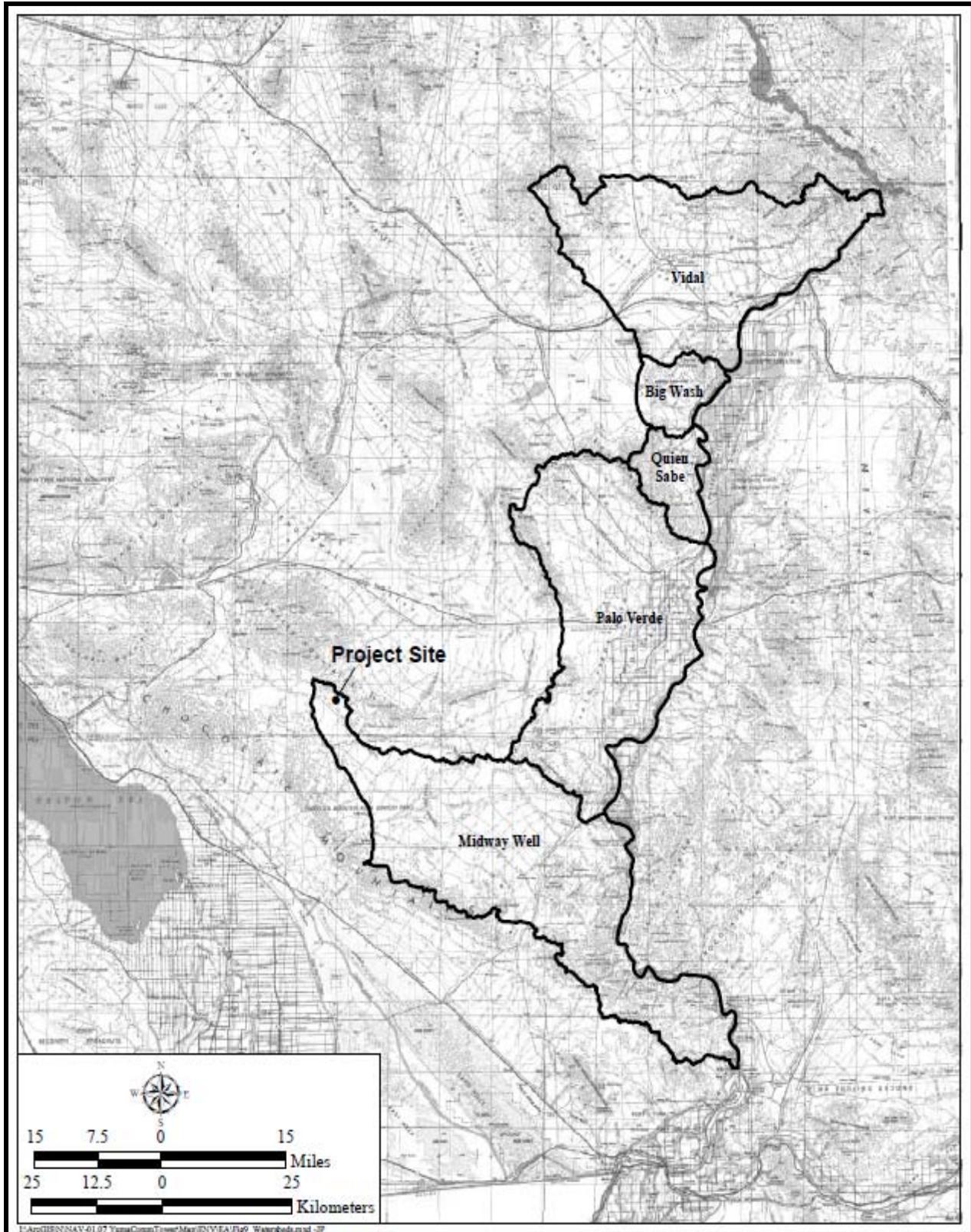


Figure 3.4-1. Map of Hydrologic Areas

The Colorado River is the principal drainage course in the Colorado HU, with all associated surface flows entering the river through numerous tributary drainages. Surface runoff from the project site moves generally to the south and southeast as non-point (overland) flows, with off-site drainage continuing in the same direction as both overland flow and within several small, unnamed ephemeral drainages. Flows from the site and vicinity enter Arroyo Seco approximately 1.5 miles (2.4 km) to the south, with this drainage course continuing to the south-southeast for approximately 20 miles (32 km) before merging with Milpitas Wash. The combined flow from these two drainages continues east-southeast for approximately another 25 miles (40 km) and ultimately enters the Colorado River near Three Finger Lake.

The project site is within an arid climatic zone, with mild winters and hot summers. Average annual precipitation at the closest reporting station (Desert Center, approximately 15 miles [24 km] to the north) is approximately 4.4 inches (11.2 centimeters). The majority of this precipitation occurs during the periods of January through March and July through September, while April through June are typically the driest months. The project site and adjacent areas are largely undeveloped. No drainage facilities were observed or are expected to occur within the site and immediate vicinity, with downstream facilities likely to include crossing structures (e.g., culverts, bridges or at-grade crossings) along Arroyo Seco, Milpitas Wash and the Colorado River.

#### 3.4.2.2 Floodplains

The project site and surrounding areas are mapped as Zone D, or “areas of undetermined but possible flood hazards,” by the Federal Emergency Management Agency (FEMA). Flood hazard mapping in the Safety Element of the Riverside County General Plan does not identify any 100- or 500-year floodplains within the project site and vicinity. The probability of a 100-year flood occurring within the site is considered low. There are several mapped “blue-line” streams along Augustine Pass Road and the existing jeep trail. These features, which depicted atypical ordinary high-water marks (Environmental Laboratory 1987), may be subject to USACE jurisdiction under Section 404 of the CWA. These streams traverse proposed road improvements associated with the proposed ground access to the communications tower site.

#### 3.4.2.3 Groundwater

No known site-specific data are available regarding the occurrence of groundwater within the project site and surrounding areas. Regional groundwater mapping does not identify groundwater aquifers within or adjacent to the project site, although areas to the south (i.e., south of the Chuckwalla Mountains) are within the 196,000-acre (790-square-km) East Salton Sea Groundwater Basin (California Department of Water Resources [DWR] 2003). Based on the described regional aquifer, topographic and climatic conditions in the site and vicinity, the probability of shallow groundwater occurring within the project site is considered low.

### 3.4.3 Water Quality

#### 3.4.3.1 Surface Water

Surface water in the project site area is limited to seasonal flows from storm water runoff. No known water quality data are available for runoff within the site or vicinity, with storm flows typically subject to variations in water quality with factors such as runoff volume/velocity and adjacent land use. Surface water quality within the project site and vicinity is anticipated to be generally good due to the predominantly undeveloped nature of surrounding areas, although high levels of suspended and dissolved

solids may occur periodically during larger storm events (i.e., due to greater runoff volumes and velocities).

The State Water Resources Control Board (SWRCB) and RWQCB produce bi-annual qualitative assessments of statewide and regional water quality conditions. Since 1998, these assessments have focused on federal CWA Section 303(d) impaired water listings and priority status for assignment of total maximum daily load (TMDL) requirements. The Section 303(d) and TMDL assessments involve prioritizing waters on the basis of water quality (i.e., impaired) status and the necessity for assigning quantitative contaminant load restrictions (i.e., TMDL), with these data submitted to the USEPA for review and approval. No impaired waters are identified for the Colorado HU in the most current (2002) approved assessment (SWRCB 2007).

#### 3.4.3.2 Groundwater

As previously noted, shallow groundwater is not expected to be present within the project site and adjacent areas. No known water quality data are available for the regional East Salton Sea Groundwater Basin located south of the project site (DWR 2003).

### 3.5 BIOLOGICAL RESOURCES

#### 3.5.1 Definition of Resource

Biological resources include native or naturalized plant and animal species and the habitats within which they occur. For the purpose of this EA, these resources are divided into three categories: vegetation, wildlife, and special-status species, the latter including state and federally listed threatened or endangered species and other sensitive species.

#### 3.5.2 Existing Conditions

The description of existing conditions applies to the proposed project area, i.e. areas directly or indirectly affected by the Proposed Action. The proposed project area is within land designated as Limited Use Class in the Chuckwalla DWMA, which was established by the BLM (2002) to protect the desert tortoise and other special-status plant and animal species. The proposed project area includes the summit and upper slopes of Spring Hill and habitats occurring along a potential new access road that connects the top of Spring Hill to the terminus of an existing jeep trail. The project area also encompasses habitats along each side of a 1.5-mile (2.4-km) segment of Augustine Pass Road between Bradshaw Road to where it joins the existing jeep trail and a 1.1-mile (1.8-km) segment of the existing jeep trail from Augustine Pass Road to the jeep trail's terminus.

##### 3.5.2.1 Vegetation

Vegetation of the proposed project area is typical of the Chuckwalla Mountains region of the Colorado Desert, resulting from low rainfall, poorly developed soils due to low amounts of weathering, and fairly unsubstantial topographic relief (BLM 2002). The Colorado Desert, a subregion of the Sonoran Desert, receives a bimodal pattern of rainfall, meaning that rainfall in the eastern portions, including the proposed project area, is chiefly derived from summer monsoons and rainfall in the western portions is chiefly derived from winter rainfall. Vegetation is overwhelmingly dominated by small-leaved shrub species, including creosote bush (*Larrea tridentata*) and burro bush (*Ambrosia dumosa*; also called bur-sage). Areas that are above the mostly alkaline desert flatlands, including much of the proposed project area, typically become more vegetatively diverse and can include several succulent species. Herbaceous

species, while not present during all but the rainiest portions of the year, typically comprise half of the species composition at particular sites.

Four vegetation communities exist in the proposed project area: Sonoran Desert (creosote bush) scrub, desert pavement, desert dry wash woodland, and disturbed habitats. All of these vegetation communities are common in the Colorado Desert of southern California and are not considered rare or sensitive.

#### Sonoran Desert (Creosote Bush) Scrub

This habitat dominates the proposed project area and much of the Sonoran Desert, and is characterized by the dominance of creosote bush, with a co-dominance of burro bush. In addition, several other species were observed, including jojoba (*Simmondsia chinensis*), catclaw acacia (*Acacia greggii*), pencil cholla (*Opuntia ramosissima*), beavertail (*Opuntia basilaris*), Whipple's yucca (*Yucca whipplei*), California ephedra (*Ephedra californica*), and cheesebush (*Hymenoclea salsola*). Understory species included plantain (*Plantago* sp.), Mediterranean schismus (*Schismus barbatus*), woolly sapphire (*Eriastrum sapphirinum*), and desert trumpet (*Eriogonum inflatum*).

#### Desert Pavement

The top of Spring Hill supports this habitat type within the proposed project area. The habitat is definitively sparse and comprised of a layer of tightly compacted rock, usually having a "desert varnish" finish. Very little vegetation is present, including mostly representatives of the surrounding creosote bush scrub.

#### Desert Dry Wash Woodland

This community, also known as microphyll woodland (because of the prevalence of woody plants with small leaves), occurs within well-defined desert washes which traverse areas of relatively low topographic relief. Plant species found in the proposed project area in the desert dry wash woodland include smoke tree (*Psoralea spinosa*), California ephedra (*Ephedra californica*), and spiny senna (*Senna armata*).

#### Disturbed Habitat

Areas with little to no vegetation, as a result of non-natural disturbance, are considered disturbed areas. This would primarily include the dirt roads and trails in the proposed project area, but also any regularly used "pullouts" where vegetation has been suppressed.

Several ephemeral washes cross the proposed access road and existing roads, some of which may be jurisdictional waters of the U.S. For a complete list of plants observed during 2009 rare plant surveys see Appendix C.

#### 3.5.2.2 Wildlife

Wildlife includes all native and naturalized invertebrate and vertebrate species of animals. This section focuses on common and typical species, as well as those of general interest and importance to the ecosystem. Special-status species are discussed in more detail in Section 3.4.2.3. Nearly all of the bird species that occur are protected under the Migratory Bird Treaty Act (MBTA), and are given special consideration under EO 13186, *Migratory Bird Conservation*.

The Chuckwalla DWMA supports a wide variety of desert-adapted wildlife species, including the federally threatened desert tortoise (*Gopherus agassizii*), discussed in more detail in Section 3.4.2.3, chuckwalla (*Sauromalus obesus*), desert bighorn sheep (*Ovis canadensis nelsoni*), kangaroo rats (*Dipodomys* spp.), greater roadrunner (*Geococcyx californianus*), Gambel's quail (*Callipepla gambelii*), desert night lizard (*Xantusia vigilis*), desert horned lizard (*Phrynosoma platyrhinos*), and sidewinder

(*Crotalus cerastes*). Numerous wildlife species with a more widespread distribution can also be found in the Chuckwalla DWMA, including mountain lion (*Felis concolor*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), burro deer (*Odocoileus hemionus eremicus*, a subspecies of mule deer), black-tailed jackrabbit (*Lepus californicus*), common raven (*Corvus corax*), phainopepla (*Phainopepla nitens*), side-blotched lizard (*Uta stansburiana*), and several species of bats (BLM 2002).

During the November 2005 site visits, two invertebrate species, tarantula (*Lycosa tarantula*) and painted lady butterfly (*Vanessa cardui*) and six vertebrate species were recorded in the proposed project area (USMC 2009). The vertebrate species observed included two reptiles, side-blotched lizard and desert tortoise (discussed in more detail in Section 3.3.2.3), and four mammals, coyote, bobcat, desert cottontail, and desert woodrat (USMC 2009).

### 3.5.2.3 Special-Status Species

This section includes listed species and other special-status species. Listed species include plant and animal species listed as threatened, endangered, or proposed as such, by the USFWS or California Department of Fish and Game (CDFG). Other special-status species include those species formerly considered as candidates for federal listing; species of special concern to the State of California, BLM sensitive species, and species that are regionally rare or of limited distribution and listed by the California Native Plant Society (CNPS).

#### Federally Listed Species

##### *Desert Tortoise*

One threatened, endangered or sensitive species has been recorded within the study area, the desert tortoise. The desert tortoise is one of four tortoise species occurring in North America. Desert tortoises inhabit a wide variety of habitat types. In the Colorado Desert, they use creosote bush scrub, creosote bush scrub with succulents, desert dry wash woodland, desert pavement, Sonoran woody scrubs, dry streambeds, and several other habitat types. Tortoises create burrows that are typically found along the sides of incised washes (caliche dens) or underneath woody shrubs that provide some cover. Suitable burrow locations are vital to tortoise survival. The dietary preference of tortoises is typically native forbs and grasses, but also includes some native perennials. Tortoises will also forage on non-native forbs, grasses and shrubs. Much of the aforementioned and following information has been taken from USFWS (1994a, 1994b, and 1994c).

Although once widely distributed across most of the southwestern deserts, the desert tortoise is now declining throughout its range and is a federally listed threatened species. This decline has been attributed to destruction, degradation, and habitat fragmentation due to urbanization, agricultural development, livestock grazing, mining operations, and roads. Decline has also stemmed from a respiratory disease and predation, especially predation of juvenile individuals. The most acute declines have occurred near urbanized areas, including Barstow, Apple Valley, Lucerne Valley, Twentynine Palms, and others where they have been collected for pets, food, medicinal, cultural, and commercial purposes. The presence and growth of common raven and coyote populations near urbanized zones has further increased mortality of juvenile tortoises in those areas (Miller 1932). Roads pose a hazard to tortoises, which often can get stuck between the berms that border graded roads, but off-road vehicle activity poses an even greater risk. Vandalism directed at tortoises is, unfortunately, common as well.

The desert tortoise listing process was initiated in the early 1980s with the listing of the Beaver Dam population in Utah as threatened. At that time, the remainder of the populations was listed as candidate species, but it was later determined that listing was warranted for the entire Mohave population. In 1990,

the USFWS finalized listing of the Mohave and Colorado Desert populations of the desert tortoise as threatened (USFWS 1990). Even though the listing involves two separate ecological regions, the listed population is referred to as "The Mohave Population of Desert Tortoise."

Pursuant to four years of data collection and a public review period after the listing, the USFWS published the *Desert Tortoise (Mohave Population) Recovery Plan* in 1994 (USFWS 1994b). At the same time as the recovery plan, the USFWS finalized critical habitat for the tortoise, which included 6.4 million acres (2.7 million ha) of habitat, including the proposed Spring Hill proposed project area (USFWS 1994c). In 2008 a draft revised recovery plan was published (USFWS 2008). The recovery plan outlines a strategy for recovery of the desert tortoise and divides the plan area into five recovery units. The proposed project area at Spring Hill lies within the Colorado Desert Recovery Unit and the Chuckwalla DWMA.

The BLM administers the majority of desert tortoise habitat, accounting for approximately 1,627,714 acres (658,715 ha) (64%) of critical habitat (USFWS 2008). At roughly the same time as the USFWS was considering the listing petition for the desert tortoise, the BLM published its *CDCA Plan*; (BLM 1980, as amended), which serves as the primary land use and management guide for BLM public lands. In recognition of the impending and existing declines of the desert tortoise, the BLM published the *Desert Tortoise Habitat Management on the Public Lands: A Rangeland Plan* (BLM 1988), which had the goal to manage tortoise habitat using an ecosystem approach to management. More recently, the BLM has been working with the USFWS to finalize its *Northern and Eastern Colorado Desert Coordinated Management Plan* (BLM 2002), a bioregional plan update to the CDCA to make the older plan more compatible with tortoise conservation. The BO was issued by the USFWS in 2002, and re-issued in 2005 after a few years of legal entanglements (BO 1-8-04-F-43R). The BO represents the USFWS opinion on the *Northern and Eastern Colorado Desert Coordinated Management Plan* and the *CDCA Plan* and provides guidance for conservation actions within the Colorado Recovery Unit and the Chuckwalla DWMA (USFWS 2005).

In the 1940s, many square miles of the Chuckwalla DWMA were used for tank maneuvers and other military activities, causing significant long-term damage in some portions. Steps have been taken to reduce impacts to this DWMA, but human activity still poses the major threat to the DWMA. Recent data have shown a continuing decline of the desert tortoise in the Chuckwalla DWMA (Tracy, et al 2004).

Desert tortoises in the Colorado Recovery Unit are found in the valleys, broad well-developed washes, desert pavements, bajadas, and rocky slopes characterized by creosote bush scrub, succulent scrubs, and blue paloverde-ironwood-smoke tree woodlands (USFWS 2008). The dietary preference of tortoises is typically native annual forbs and grasses, but also includes some native perennials. Tortoises will also forage on non-native forbs, grasses, and shrubs.

Tortoises create burrows that are typically found along the sides of incised washes (caliche dens) or underneath woody shrubs that provide some cover. Suitable burrow locations are vital to tortoise survival. Winter burrows are shorter in length than elsewhere, and their activity periods are longer than elsewhere due to mild winters and summer rainy periods in the Colorado Desert.

Home ranges of desert tortoises are typically not defended, overlap broadly between individuals, and range from 4 to 450 acres (2 to 190 ha). Home range variability may be directly attributable to the availability of food and water resources in a particular region or during a particular year. Both the size and location of home ranges vary from year to year (USFWS 2008, 1994a, 1994b, and 1994c).

The desert tortoise active season is March 15 through November 1 (BLM 2002). Tortoises are typically most active between March and June after winter rains, but can also be very active in late summer during the monsoon rainy season. During times of extreme heat and dryness, they will stay in their burrows, often for extended periods until mild weather conditions prevail or it rains. They often use washes for travel routes and will navigate to particular sites that provide sources of food and water. Tortoises will dig water reservoirs, often made in areas of desert pavement, which can catch rainwater into small puddles for their use after rainy periods.

The tortoise breeding period is also in early spring, from March to April, coinciding with their primary activity period. They also can breed in the fall in areas where late summer rains provide sufficient moisture. Female tortoises lay eggs during the summer in friable nest sites, and the eggs will hatch approximately three or four months later. Once juvenile tortoises emerge from the eggs, they are extremely vulnerable to predation and many are lost before they can find their own burrows. Desert tortoise populations, due to having typically limited water and food resources from year to year, have low reproductive output and low survival of young. Tortoises need a relatively long period to reach reproductive maturity, and as a result populations are seldom able to successfully adapt to rapid environmental changes (USFWS 2008, 1994a, 1994b, and 1994c).

The proposed communications tower site and existing and proposed access roads are all within occupied desert tortoise habitat. During site visits to evaluate the Proposed Action, scat and a tortoise carcass were observed within 100 ft (30 m) of the proposed communications tower enclosure site (USMC 2009) (see Photo below).



**Photo 1. Desert Tortoise Carcass on Spring Hill**

### **3.5.3 Other Special-Status Species**

The BLM has indicated that the proposed communications tower site and access roads are within the habitat (or modeled habitat) for the species listed below (BLM 2002). Although none of these species is federally or state listed, these species are considered sensitive by the BLM due to threats to their populations or habitat (BLM 2002).

*Animals*

- burrowing owl (*Athene cunicularia*)
- California leaf-nosed bat (*Macrotus californicus*)
- western spadefoot toad (*Spea [=Scaphiopus] hammondi*)
- western mastiff bat (*Eumops perotis*)
- chuckwalla (*Sauromalus obesus*)
- ferruginous hawk (*Buteo regalis*)
- mountain lion (*Felis concolor*)
- pallid bat (*Antrozous pallidus*)
- western free-tailed bat (*Eumops perotis*)
- prairie falcon (*Falco mexicanus*)
- rosy boa (*Charina trivirgata*)
- spotted bat (*Euderma maculatum*)
- Townsend's bit-eared bat (*Corynorhinus townsendii*)
- white-tailed wood rat (i.e., Colorado valley wood rat, subspecies of white-throated wood rat; *Neotoma albigula venusta*)
- yellow warbler (*Dendroica petechia brewsteri*)
- Yuma puma (*Puma concolor browni*)

*Plants*

During the spring of 2009, rare plant surveys were conducted for 19 CNPS special-status plant species that were identified as having potential to occur within the proposed project area. The 19 species included:

- Angel trumpet (*Asceisantes longiflora*)
- Harwood's Milkvetch (*Astragalus insularis* var. *harwoodii*),
- Coachella Valley Milkvetch (*Astragalus lentiginosus* var. *coachellae*)
- Fairy Duster (*Calliandra eriophylla*)
- ferruginous hawk (*Buteo regalis*)
- Crucifixion Thorn (*Castela emoryi*)
- Las Animas Columbrina (*Colubrina californica*)
- Spiny Abrojo (*Condalia globosa* var. *pubescens*)
- Foxtail Cactus (*Coryphantha alversonii*)
- Glandular Ditaxis (*Ditaxis claryana*)
- California ditaxis (*Ditaxis serrata* var. *californica*)
- Crown-of-thorns (*Koeberlinia spinosa* ssp. *tenuispina*)
- Spearleaf (*Matelea parvifolia*)
- Munz's Cholla (*Opuntia munzii*)
- Desert Unicorn Plant (*Proboscidea althaeifolia*)
- Orocopia Sage (*Salvia greatae*)
- Coues' Cassia (*Senna covesii*)
- Mesquite Nest Straw (*Stylocline sonorensis*)
- Jackass Clover (*Wislizenia refracta* ssp. *palmeri*)
- Mecca Aster (*Xylorhiza cognate*)

For a complete description of these species and their habitat requirements, see Appendix C. No rare plants were observed within, or in the vicinity of, the proposed project area during the 2009 surveys.

### 3.6 CULTURAL RESOURCES

#### 3.6.1 Definition of Resource

Cultural resources include prehistoric resources, traditional cultural places (or properties), and historic resources. Prehistoric resources are physical properties resulting from human activities that predate written records and are generally identified as archaeological sites. Prehistoric resources can include village sites, temporary camps, lithic scatters, roasting pits/hearths, milling features, petroglyphs, rock features, and burials. Traditional and cultural places are tangible places that are important in maintaining the cultural identity of a community or group. Historic resources include resources that postdate the advent of written records in a region. Historic properties are significant cultural resources that meet one or more criteria for eligibility for nomination of the resource to the NRHP.

The National Historic Preservation Act (NHPA) requires federal agencies to consider the preservation of historic and prehistoric resources. Under the NHPA, the Secretary of the Interior is authorized to expand and maintain a NRHP. Section 106 of the NHPA mandates that all federal agencies take into account the effects of their undertakings (actions) on historic/prehistoric resources and to afford the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on any action that may affect properties that are listed, or are eligible for listing, in the NRHP. Eligibility for the NRHP is based on the following (36 CFR 60.4):

“The quality of significance in American History, architecture, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, workmanship, feeling, and association, and:

- (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or,
- (b) that are associated with the lives of persons significant in our past; or,
- (c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
- (d) that have yielded, or may be likely to yield, information important in prehistory or history”.

Under Section 101 of the NHPA a State Historic Preservation Officer was established in each state and designated the responsibility of reviewing and commenting on any action affecting NRHP properties, or properties eligible for listing in the NRHP. The Area of Potential Effect (APE) for cultural resources includes the entire project area at Spring Hill, Riverside County.

#### 3.6.2 Existing Conditions

The following section includes a discussion of the proposed project site’s prehistory, ethnohistory, history, and current conditions.

##### 3.6.2.1 Prehistory

The prehistory of the Colorado Desert region can be divided into three major periods of occupation: Paleoindian, Archaic, and Late Prehistoric/Patayan.

The first well-documented cultural tradition in the Colorado Desert region is the San Dieguito-Lake Mojave Tradition (12,000 to 7,000 years before present [B.P.]), which occurred during a time when the regional climate was cooler/moister than present. The associated artifact assemblage during this Paleoindian period consists of percussion-flaked core and flaked-based tools such as crescentics, choppers, planes, and scrapers, as well as leaf-shaped projectile points and the distinctive Lake Mojave and Silver Lake projectile points. In the California deserts most of these materials are found along the edges of extinct lakes or streams. A number of sites consisting of trails and cleared areas in and near the Chocolate and Chuckwalla mountains have been posited to date to this tradition.

The Archaic period (7000 to 1500 B.P.) can be divided into two temporal complexes: the Pinto complex (7000 to 4000 B.P.) and the Amargosa complex (4000 to 1500 B.P.). In general, the Archaic period saw an increase in groundstone tools, perhaps indicative of an increasing exploitation of plant resources. Smooth slabs of groundstone are reported for the earlier Pinto complex, along with distinctive Pinto series spear points. The Amargosa complex is characterized by the presence of fine, pressure-flaked Elko and Humboldt series and Gypsum-type projectile points, leaf-shaped points, knives, flake scrapers, drills, choppers, and hammerstones. Manos and basin metates were common, and the mortar and pestle were introduced late in this period.

The Patayan or Late Prehistoric period dates from approximately 1450 B.P. to the historic period. Changes in the artifact assemblage, economic systems, and settlement patterns characterize this period. Along the Colorado River subsistence expanded to include floodplain horticulture. During this period, the bow and arrow were introduced, and burial practices shifted from inhumations to cremations. Floodplain horticulture, featuring maize, beans, squash, and other crops, was introduced along the lower Colorado River and extended to the New and Alamo rivers in Imperial Valley. The Colorado Desert lay on the prehistoric frontier of expansion of agriculturally based subsistence systems.

### 3.6.2.2 Ethnohistory

The Colorado Desert is an arid region that supported relatively small groups of people during ethnohistoric times. Spring Hill is within land traditionally used by the Desert Cahuilla. Primary settlement areas were in the Coachella Valley as far south as the Salton Sea. Cahuilla subsistence focused on gathering plant foods. The most important desert subsistence plants included cactus fruits, palm dates, agave root, seeds from sages, grasses and other plants, and the pods of screwbean and mesquite. Stalks and heads of agave were harvested in spring and baked in rock-lined pits.

The archaeological evidence suggests that ancestral Cahuilla groups may have maintained permanent, or semipermanent, habitation sites along the northern Lake Cahuilla shoreline during high lakestands. Permanent villages were located in places that provided convenient access to water and subsistence. In the desert region, some Cahuilla settlements were located at the toe of alluvial fans where the water table was shallow enough so that their remarkable walk-in wells would be practical. Hunting contributed to the diet in a minor way. It was focused on small game, primarily rabbits. These were taken with bow and arrow or rabbit stick (macana). Deer and bighorn sheep were taken by stalking and the use of hunting blinds.

To the south, the Tipai (which included the Desert Kumeyaay [also known as the Kamia]) were known to occupy the area around the New and Alamo rivers. Along the Colorado River, the Mohave, the Hachidhoma, and the Quechan hunted and farmed. The greater desert surrounding the project area appears to have been largely used as an area of transit shared by the native peoples who inhabited the surrounding region. Among the more mobile of the groups were the Quechan who used the Colorado Desert as a transportation corridor to sacred areas and their relatives farther north on the Colorado River.

Major trails in the vicinity included the Cocomaricopa along the eastern side of the Chocolate Mountains and the Indian Pass-San Sebastian trail just south of the CMAGR.

### 3.6.2.3 History

As early as 1539, the Spanish began to explore parts of California. Early explorers, such as Francisco de Ulloa (1539), Hernando de Alarcon (1540), and Francisco de Coronado (1540) led expeditions into the Gulf of Mexico, reaching the mouth of the Colorado River and continuing up the river past the Gila confluence. However, little exploration of the interior deserts was undertaken until much later. Spanish exploration for the next 200 years was intermittent in this area as it was considered remote and difficult to access.

Unlike the Spanish and Mexican periods (1500s-1848), the Anglo-American period (1848- present) saw travel routes through the area, such as the Bradshaw Trail. The first historic period road through Riverside County was created by William Bradshaw in 1862, as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona (now Ehrenberg, Arizona). The east-west trail was used extensively between 1862 and 1877 to haul miners and other passengers to the gold fields at La Paz. The road partly followed established routes to Dos Palmas and Salt Creek Pass. From Salt Creek Pass, Bradshaw Trail went east to Tabaseca Tank on the north side of the Chocolate Mountains. From there, it followed the Maricopa-Cahuilla Trail, which may have been the Cocamaricopa Trail. Today, the Bradshaw Trail is a 65-mile (105-km) graded road that traverses mostly public land between the Chuckwalla Mountains and the present-day CMAGR, from the Salton Sea State Recreation Area to the community of Ripley near the Colorado River.

Prior to 1805, Spanish and Mexican miners had worked in eastern Imperial County on a limited basis. The first mining activity by Anglo-Americans started in the 1850s. Completion of the Southern Pacific Railroad in 1877 had a major influence on mining activities. Mining in the Chuckwalla Mountains began in late 1876 or early 1877, when a prospector named Hathaway discovered gold. Ore assays of 1877 attributed to Hathaway included gold and silver. The Chuckwalla Mountains were referred to as Hathaway Mountains for a short time thereafter. The Chuckwalla Mining District (also known as the Pacific Mining District) was formed in the 1880s to regulate gold mining in the Little Chuckwalla and Chuckwalla mountains. Mining activity continued through mid-1942, when most gold mines throughout the U.S. were closed by order of the War Production Board. After World War II, gold mining in the Chuckwalla Mountains was sporadic.

During World War II, large portions of the desert served as training grounds for troops to be sent to the campaign in Africa. Evidence of their activities is found in the form of rock constructions, fox holes, and ration cans. The proposed tower site is just south of the official boundaries for the Desert Training Center and California-Arizona Maneuver Area, where the majority of the activities took place (Bischoff 2000). Since World War II, the CMAGR has been the site of aerial targeting and gunnery practice. The Marine Corps currently uses the range to meet assigned training requirements. Previously under the management of the China Lake Naval Weapons Center, the range is currently managed by MCAS Yuma.

### 3.6.2.4 Cultural Resources in the APE

Working under contract to Naval Facilities Engineering Command (NAVFAC) Southwest, EDAW, Inc. archaeologists conducted a records search and performed pedestrian surveys of the Proposed Action's APE (Apple and Gregory 2007a). Fieldwork was conducted on November 14 and 15, 2006, and January 26, 2007. The survey area encompassed approximately 50 acres (21 ha). A total of 11 archaeological sites and four isolated finds were identified and recorded. Nine of the sites are prehistoric and two were

historic period resources. All four of the isolates were prehistoric. The two historic period sites, P-33-015364 and CA-RIV-8240, and the four isolates were recommended not eligible for the NRHP. Of the potentially NRHP-eligible sites, it was determined that two of the sites, CA-RIV-8235 and CA-RIV-8236, could not be avoided and would require evaluation. The evaluation specifically addressed NRHP eligibility pursuant to 36 CFR 60.4 Criterion D states:

*“The quality of significance in American History, architecture, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, workmanship, feeling, and association and...(d) that have yielded, or may be likely to yield, information important in prehistory or history”.*

#### CA-RIV-8235

Close-interval survey identified three flaking stations and a very low-density artifact scatter at CA-RIV-8235. Several tools were collected from the site as well as debitage (waste material produced during lithic reduction and the production of chipped stone tools). Four of the seven tools collected were not associated with flaking stations. These tools included one production stage biface, which appears to be fashioned on a prepared flake blank and was abandoned when efforts to thin the dorsal side failed. Based on the limited data potential of CA-RIV-8235, it does not appear to possess significant information applicable to answering regional research issues; accordingly, it was recommended as not eligible for the NRHP.

#### CA-RIV-8236

Close-interval survey identified 23 flaking stations, 2 rock rings, and 1 cleared circle at CA-RIV-8236. The cleared circle is amorously shaped and surrounded by heavily patinated desert pavement. The cleared circle measured 10.5 ft (3.2 m) north-south and 12.8 ft (3.9 m) east-west. About 20 cobbles were in the cleared circle sitting on top of the desert pavement. No artifacts were noted within the cleared circle. Investigations to date by EDAW, Inc. have not indicated use of the rock rings and cleared circle at CA-RIV-8236 for either ritualistic or domestic purposes.

Although the data potential of CA-RIV-8236 may only offer incremental levels of information related to regional research issues, EDAW, Inc. archaeologists felt that it met the threshold for NRHP-eligibility under criterion D. The EDAW, Inc. archaeologists felt that the site had the potential to address temporal issues related to patination, as well as lithic questions relating to technologies (Apple and Gregory 2007b).

#### BLM Determination

The BLM made a determination regarding the Spring Hill site and consulted with the California State Historic Preservation Officer (SHPO) through the BLM State Protocol Agreement with the SHPO. The Navy completed the Tribal consultation associated with the Spring Hill project, which is discussed in the next section.

BLM made the following determinations for the Spring Hill site:

- The following eight sites and isolates are determined ineligible for the National Register: CA-RIV-8236, CA-RIV-8235, P33-015364, CA-RIV-8240, P33-15373, P33-15376, P33-15375, and P33-15374. These sites were recorded, tested (as applicable), and as a result of evaluative testing an adequate sample of cultural materials from CA-RIV-8236 and CA-RIV-8235 was collected.

Research at CA-RIV8236 and CA-RIV-8235 indicated that:

- Native Americans did not express cultural or religious affiliation with the archaeological sites and materials;
  - There was a lack of variety and quality of artifacts that could serve to address regional and local prehistoric research issues and domains of the Colorado Desert. Over 95% of site constituents consist of debitage (with a majority being core-reduction flakes). The remaining artifacts consist of a few hammerstones, cores, and expedient edge-modified pieces;
  - Detailed lithic analysis was completed, and whatever research potential the sites offered with regards to technology has been exhausted through recordation, sample collection, and analyses;
  - Testing clearly suggested that there is little to no potential for subsurface deposits at CA-RIV-8235 and CA-RIV-8236;
  - There is limited to no potential that materials from the site could address research issues relating to determining age of debitage based on patination; and
  - The sites lacked artifact types, material types, and formed tools that could be absolutely or relatively dated.
- The following seven sites within the APE have not been subject to evaluation; they are assumed to be eligible for the National Register, and must be unconditionally avoided: CA-RIV-8234, -8237, -8238, -8241, -8250, -8233, -8239. These seven sites shall be treated and protected as if they were Historic Properties. If these sites are located within or immediately adjacent to the APE, an archaeological monitor must be present during construction activities to ensure they are avoided, as described in SCM #2 in Section 2.2.5.2 of this EA. Further, if these sites are located outside of the APE, all activities associated with the Spring Hill project must stay within the APE.

### Native American Contacts

In March 2007, MCAS Yuma sent letters to 14 Native American tribes in order to describe the Proposed Action and solicit input. Of the 14 tribes contacted, 6 responded. Some tribes requested copies of relevant documents, but none provided comments on the Proposed Action or identified Spring Hill as a site of special cultural or religious importance. The contacted tribes are listed below:

- |  |   |
|--|---|
| ● Agua Caliente Indian Reservation*          | ● Fort McDowell Yavapai Nation*             |
| ● Cabazon Band of Mission Indians            | ● Fort Mojave Indian Tribal Council         |
| ● Cahuilla Band of Indians                   | ● Fort Yuma Quechan Tribe*                  |
| ● Twenty-nine Palms Band of Mission Indians* | ● Gila River Indian Community               |
| ● Morongo Band of Mission Indians*           | ● Salt River Pima Maricopa Indian Community |
| ● Chemehuevi Reservation                     | ● Torres Martinez Desert Cahuilla Indians   |
| ● Colorado River Tribal Council              | ● Cocopah Tribe*                            |

\* Indicates that a response (but not a comment on the Proposed Action) was received

### 3.7 AIR QUALITY

This section addresses baseline air quality conditions for Riverside County and includes a description of air quality terminology, regulatory requirements applicable to the Proposed Action, and current air quality conditions. The APE for assessing potential impacts to air quality includes the non-Palo Verde Valley portion of the Mojave Desert Air Basin (MDAB), which encompasses all of San Bernardino County and portions of Riverside, Los Angeles, and Kern counties and is regulated by the South Coast Air Quality Management District.

#### 3.7.1 Definition of Resource

##### 3.7.1.1 Air Quality Standards

Air quality is defined as the ambient air concentrations of specific criteria pollutants determined by the USEPA to be of concern to the health and welfare of the general public. These criteria pollutants include ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>), and lead. Both California and the federal government have established ambient air quality standards (California Ambient Air Quality Standards [CAAQS] and National Ambient Air Quality Standards [NAAQS], respectively) for several pollutants, often referred to as criteria pollutants (Table 3.7-1). These standards identify the maximum allowable concentrations of criteria pollutants that are considered safe, with an additional adequate margin of safety to protect human health and welfare. Depending upon the type of pollutant, these maximum concentrations may not be exceeded at any time, or may not be exceeded more than once per year (USEPA 2002a). As depicted in Table 3.7-1, the CAAQS are somewhat more stringent than federal standards. The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS- as in addition to the six criteria pollutants covered by the NAAQS, there are CAAQS standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles. Figure 3.7-1 shows the regional air quality management air basins.

##### 3.7.1.2 Emissions

Air quality within a region is a function of the type and amount of pollutants emitted, the size and topography of the air basin, and prevailing meteorological conditions. Criteria pollutants affecting air quality in a given region can be characterized as being either stationary or mobile sources. Stationary sources of emissions are typified by emissions from smokestacks. Mobile sources of emissions include emissions from cars and aircraft.

Table 3.7-1. California and National Ambient Air Quality Standards

8

Ambient Air Quality Standards							
Pollutant	Averaging Time	California Standards <sup>1</sup>		Federal Standards <sup>2</sup>			
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>	
Ozone (O <sub>3</sub> )	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry	
	8 Hour	0.070 ppm (137 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )			
Respirable Particulate Matter (PM <sub>10</sub> )	24 Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		—			
Fine Particulate Matter (PM <sub>2.5</sub> )	24 Hour	No Separate State Standard		35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	15.0 µg/m <sup>3</sup>			
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	None	Non-Dispersive Infrared Photometry (NDIR)	
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )			
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		—			—
Nitrogen Dioxide (NO <sub>2</sub> )	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence	
	1 Hour	0.18 ppm (339 µg/m <sup>3</sup> )		—			
Sulfur Dioxide (SO <sub>2</sub> )	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m <sup>3</sup> )	—	Spectrophotometry (Pararosaniline Method)	
	24 Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (365 µg/m <sup>3</sup> )			
	3 Hour	—		—			0.5 ppm (1300 µg/m <sup>3</sup> )
	1 Hour	0.25 ppm (655 µg/m <sup>3</sup> )		—			—
Lead <sup>8</sup>	30 Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	—	Same as Primary Standard	High Volume Sampler and Atomic Absorption	
	Calendar Quarter	—		1.5 µg/m <sup>3</sup>			
	Rolling 3-Month Average <sup>9</sup>	—		0.15 µg/m <sup>3</sup>			
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards			
Sulfates	24 Hour	25 µg/m <sup>3</sup>	Ion Chromatography				
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence				
Vinyl Chloride <sup>8</sup>	24 Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography				

See footnotes on next page ...

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**Figure 3.7-1. Southern California Regional Air Quality Management Air Basins**

Emissions are often characterized as being “primary” or “secondary” pollutants. Primary pollutants are those emitted directly into the atmosphere such as CO, SO<sub>2</sub>, and PM<sub>10</sub>. Secondary pollutants are those formed through chemical reactions in the atmosphere such as O<sub>3</sub> and NO<sub>2</sub>. Volatile organic compounds (VOCs) (also referred to as hydrocarbons or reactive organic gases [ROG]) are precursors to the production of O<sub>3</sub>. SO<sub>2</sub> and NO<sub>2</sub> are commonly referred to and reported as oxides of sulfur (SO<sub>x</sub>) and oxides of nitrogen (NO<sub>x</sub>), respectively, as SO<sub>2</sub> and NO<sub>2</sub> constitute the majority of their respective oxides. Fine particulate matter refers to particulate matter with an aerodynamic diameter of 2.5 microns or less (PM<sub>2.5</sub>). PM<sub>10</sub> and PM<sub>2.5</sub> arise from a variety of sources, including road dust, diesel exhaust, combustion, tire and brake wear, construction operations, and windblown dust. Areas that exceed ambient air quality standards are designated as in nonattainment. Nonattainment designations for O<sub>3</sub>, CO, and PM<sub>10</sub> include subcategories indicating the severity of the air quality problem (the classifications range from moderate to serious for CO and PM<sub>10</sub>, and from marginal to severe for O<sub>3</sub>). Areas that comply with federal air quality standards are designated as in attainment. Areas that have been re-designated from O<sub>3</sub> nonattainment to attainment for the 1-hour O<sub>3</sub> standard are designated as maintenance areas. Areas that lack monitoring data to demonstrate attainment or nonattainment status are designated as unclassified, and are considered to be in attainment for regulatory purposes.

Federal Requirements

Section 176(c) of the Clean Air Act (CAA), as amended, requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the CAA and with federally enforceable air quality management plans. The USEPA general conformity rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of criteria pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. Exceedance of *de minimis* levels (in tons per year) vary from pollutant to pollutant and are also subject to the severity of the nonattainment status. The USEPA has designated all areas of the U.S. as either “attainment,” “nonattainment,” or “unclassified” with respect to the NAAQS. An attainment designation means that the air quality of the area is better than the NAAQS. A nonattainment designation means that a primary NAAQS has been exceeded more than three separate times in 3 years in a given area. An area is designated as unclassified when sufficient data are not available to classify it as either attainment or nonattainment. If an area is re-designated from nonattainment to attainment, the CAA requires a revision to the State Implementation Plan (SIP), called a maintenance plan, to demonstrate how the air quality standard will be maintained for at least 10 years. The applicable *de minimis* levels for the Mojave Desert Air Basin are listed in Table 3.7-2.

**Table 3.7-2. Applicable Criteria Pollutant *de minimis* Levels (tons/year [metric tons/year])**

<i>VOCs</i> <sup>1</sup>	<i>NO<sub>x</sub></i> <sup>1</sup>	<i>CO</i> <sup>2</sup>	<i>SO<sub>x</sub></i> <sup>2</sup>	<i>PM<sub>10</sub></i> <sup>3</sup>
25 (23)	25 (23)	100 (91)	100 (91)	100 (91)

Note: <sup>1</sup> The Mojave Desert Air Basin is in nonattainment (severe) for the federal and state O<sub>3</sub> standards; VOCs and NO<sub>x</sub> are precursors to the formation of O<sub>3</sub>.

<sup>2</sup> The Mojave Desert Air Basin is in attainment of the federal and state CO and SO<sub>x</sub> standards; *de minimis* levels are presented for comparison purposes only.

<sup>3</sup> The Mojave Desert Air Basin is in nonattainment (moderate) for the federal and state PM<sub>10</sub> standards.

Source: Mojave Desert Air Quality Management District 2001.

The USEPA conformity rule establishes a process that is intended to demonstrate that a proposed federal action would not: 1) cause or contribute to new violations of federal air quality standards; 2) increase the frequency or severity of existing violations of federal air quality standards; and 3) delay the timely attainment of federal air quality standards. Compliance is presumed if the net increase in direct and indirect emissions from a federal action would be less than the relevant *de minimis* level. However, if the increase in emissions for a nonattainment pollutant exceeds *de minimis* levels, thereby violating the set standards, a formal conformity determination process must be implemented.

State Requirements

In 2007, Governor Schwarzenegger signed into law the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air, and Carbon Reduction Act of 2007. The Act creates the Air Quality Improvement Program (AQIP), a voluntary incentive program administered by the Air Resources Board (Board) to fund clean vehicle and equipment projects, research on biofuels production and the air quality impacts of alternative fuels, and workforce training. The AQIP proposes to utilize this flexibility by directing the AQIP funds to support development and deployment of the advanced technologies needed to meet California’s longer-term, post 2020 SIP goals, complementing the existing programs’ focus on near-term emission reductions from fully commercialized emission control technologies (CEPA 2009). The CAA requires each state to develop, adopt, and implement a SIP to achieve, maintain, and enforce federal air quality standards throughout the state. SIPs are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. Local governments and air pollution control districts

have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the Riverside County region, the South Coast Air Quality Management District is responsible for governing air quality and reports to the California Air Resources Board (CARB).

### 3.7.2 Existing Conditions

#### 3.7.2.1 Climate

The climate within the Chuckwalla Valley and Mountain range is an arid, upland desert typified by hot days, cool nights, low rainfall, and low humidity. Mean annual temperature ranges from 65°F to 75°F, with average winter lows at 67°F and average summer highs at 102°F. Average annual precipitation is approximately 2 to 3 inches, which is highly variable from year to year, especially during summers (Spellenberg 2003). Winter storms are typically gentle and last a few days. These are contrasted with summer monsoons, which occur between July and September and are typified by violent thunderstorms that can lead to heavy precipitation events over a short period. Although winters are generally mild, there are occasional winter frosts. The mean freeze-free period is from 275 to 325 days (MCAS 2009).

#### 3.7.2.2 Regional Conditions

The Mojave Desert Air Quality Management District (MDAQMD) includes the desert portion of San Bernardino County and a portion of eastern Riverside County commonly known as the Palo Verde Valley. The MDAQMD has experienced ambient ozone concentrations in excess of the 8-hour ozone NAAQS (CARB 2002b; USEPA 2002b). However, the eastern portion of Riverside County, located in the Mojave Desert Air Basin, is sparsely populated, with few emissions from industry or traffic sources. This portion of the County is currently designated as unclassified for the federal 8-hour ozone standard (CARB 2008).

#### 3.7.2.3 Riverside County Emissions

Figure 3.7-2 shows a closer view of the California Air Basins, showing Riverside County to be in both the South Coast and Mojave Desert Air Basins. Riverside County is subdivided among three air basins: South Coast Air Basin, Salton Sea Air Basin (Coachella Valley), and Mojave Desert Air Basin. The urbanized South Coast and Coachella Valley portions of the County have design values that violate the standard, and these areas are designated as nonattainment. In contrast, the eastern portion of Riverside County, located in the Mojave Desert Air Basin, is sparsely populated, with few emissions sources. When USEPA designated areas for the 0.08 (ppm) ozone standard, complete ozone monitoring data were not available for eastern Riverside County, and the area was designated as unclassified. Since then, the ozone monitoring site at Blythe (Blythe-445 West Murphy Street) has continued to operate. The Blythe data show a design value of 0.063 ppm, relative to the NAAQS standards of 0.075 ppm, and CAAQS of 0.070 ppm, based on data collected during 2006 through 2008. Because this value is below the standard, Air Resource Board recommends that eastern Riverside County be designated as attainment for the 2008 federal 8-hour ozone standard. Table 3.7-3 presents 2008 actual stationary, mobile and area-wide daily source emissions for Riverside County (CARB. 2008).



Figure 3.7-2. Eastern Riverside County, Mojave Desert Air Basin

Table 3.7-3. Estimated 2008 Annual Average Emissions in Riverside County (tons/year)

Stationary Sources	TOG	ROG	CO	NOX	SOX	PM	PM <sub>10</sub>	PM <sub>2.5</sub>
* Total Stationary Sources	1.5	0.8	0.1	0.2	0.0	0.5	0.3	0.1
Area-wide Sources	TOG	ROG	CO	NOX	SOX	PM	PM <sub>10</sub>	PM <sub>2.5</sub>
* Total Area-wide Sources	3.9	0.9	0.8	0.1	0.0	11.1	6.0	0.8
Mobile Sources	TOG	ROG	CO	NOX	SOX	PM	PM <sub>10</sub>	PM <sub>2.5</sub>
* Total Mobile Sources	2.7	2.4	13.8	21.8	0.0	0.9	0.9	0.8
<b>Total Riverside County In Mojave Desert</b>	<b>8.2</b>	<b>4.1</b>	<b>14.7</b>	<b>22.0</b>	<b>0.1</b>	<b>12.4</b>	<b>7.2</b>	<b>1.8</b>

Source: CARB 2008.

#### 3.7.2.4 Proposed Project Location Emissions

Emissions from aircraft overhead activity and minimal motor vehicles gaining access to the site for maintenance and repairs on infrequent visits, represents the primary source of emissions at the proposed project location. In addition, fugitive dust (PM<sub>10</sub>) emissions generated during temporary construction events and as a result of vehicle activity on nearby unpaved roads also affect air quality in the area.

### 3.8 NOISE

#### 3.8.1 Definition of Resource

This section is a general discussion of the noise metrics associated with the Proposed Actions and alternatives. Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive. It may be stationary or transient. Stationary sources are normally related to specific land uses, e.g. industrial plants. Transient noise sources move throughout the environment, either along established paths or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

Different sounds have different frequency content. When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to account for the response of the human ear. The term “A-weighted” refers to a filtering of the sound signal to emphasize frequencies in the middle of the audible spectrum and to deemphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound. The dBA noise level has been found to correlate well with people’s judgments of the noisiness of different sounds and has been used for many years as a measure of community noise.

#### 3.8.2 Existing Conditions

The ambient noise environment within Riverside County differs by location and the influence of various factors. The Spring Hill site is located in a remote, uninhabited area. Due to its relative proximity to the CMAGR, existing noise stems from intermittent aircraft training and sounds associated with gunnery range activities.

### 3.9 AESTHETICS AND VISUAL RESOURCES

#### 3.9.1 Definition of Resource

Visual resources include the natural and manmade physical features that give a particular landscape its aesthetic character and value. Viewer perceptions are formed through the impression of scenic quality in elements such as landform, vegetation, water, color, adjacent scenery, and man-made (cultural) modifications. Visibility and visual sensitivity evaluations are based on public viewing opportunities and concern for the potential for changes to the landscape.

#### 3.9.2 Existing Conditions

The project site is located on undeveloped land located within the California Desert District, Palm Springs Resource Area in Sections 12 and 13, Township 8 South, Range 16 East. Access to the site is currently via an unimproved jeep road that branches off from Augustine Pass Road. Augustine Pass Road branches off from the 75-mile Bradshaw Trail National Backcountry Byway (BCB) (Barclay et al 2009), a county

road designated by the BLM California State Director for its importance as a historic route into Southern California (see Cultural Resources section). BCBs are a system of roads and trails on public lands that pass through areas with public scenic value. Currently maintained by Riverside County as part of the county road network, Bradshaw Trail was a historic route travelled by early settlers of Southern California. In 1989 the California BLM State Director designated Bradshaw Trail as a BCB because of its historic importance and scenic value (Barclay et al 2009). The current landforms at the proposed project site are undeveloped, desert mountains. The dominant landforms are, "...massive, rough mountains, smooth to bumpy ridges, and nearly flat valley floors containing sinuous water courses" (Barclay et al 2009). The vegetation generally consists of cholla, Joshua trees, creosotebush, and ocotillo, which have sharp and jagged lines and irregular forms. Colors on the project site are generally neutral, consisting predominantly of yellows, browns, grays, and blacks with a lesser degree of blues, greens, and reds. The texture of the land and vegetation are similarly coarse and bumpy (Barclay et al 2009).

BLM categorizes tracts of public land into four visual resource management classes based on scenic quality, public sensitivity, and the distance from the viewer. These classes and how they apply to the Proposed Action will be discussed in Chapter 4, Environmental Consequences.

## CHAPTER 4

# ENVIRONMENTAL CONSEQUENCES

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This chapter describes potential environmental consequences associated with implementation of the Proposed Action or alternatives. This discussion addresses all resource areas described in Chapter 3. Where applicable for each resource, the impact analysis is presented for each major component of the Proposed Action and alternatives: a communications facility and installation of associated equipment with the capacity to meet the USMC's communications needs. This includes a communications tower, equipment and site access approach via repair and construction of an old and new unpaved roadway, and construction of a helipad.

### 4.1 IMPACT SEVERITY CRITERIA

#### 4.1.1 Determination of Significance

According to Section 1508.27 of the Council on Environmental Quality Regulations for Implementing National Environmental Policy Act (1997), determining the level of significance of an environmental impact requires that both context and intensity be considered. These are defined in Section 1508.27 as follows:

- “Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant”.
- “Intensity. This refers to the severity of the impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:
  - Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect would be beneficial.
  - The degree to which the proposed action affects public health or safety.
  - Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
  - The degree to which the effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.
  - The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
  - Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
  - The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined critical under the Endangered Species Act of 1973.
- Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment”.

This chapter uses these criteria to determine the level of significance for potential impacts resulting from the proposed actions.

**4.2 LAND USE**

**4.2.1 Approach to Analysis**

This analysis of potential land use impacts includes an identification and description of land use activities that could be affected by implementation of the Proposed Action or alternatives and an examination of the potential impacts on land use patterns and activities. The CDCA Plan (1980) outlines management tools available to meet the objectives of managing species and habitats. These tools include the designation of multiple-use classes, designation of ACECs, Habitat Management Plans, and Special Areas. Wilderness Areas, enacted through the Wilderness Act of 1964, can be considered advantageous to species and habitats because the uses for land are limited. The Multiple Use Class (MUC) designation shown below describes a different type and level or degree of use which is permitted within that particular geographic area (Table 4.2-1). The multiple-use guidelines were set up to provide for uses in areas that would enhance those inherent values (BLM 1980). In areas with high sensitive, natural, scenic, ecological, or cultural resource values, low intensive use is appropriate to enhance these values. In areas where intensive use such as mining or motor-vehicle recreation was present, an intensive value would be assigned.

**Table 4.2-1. Land Use Designation for Multiple Use Classes**

<b>Land Designation for Multiple Use Classes</b>	
MUC C	Controlled
MUC L	Limited
MUC M	Moderate
MUC I	Intensive

**4.2.2 Impacts**

4.2.2.1 Proposed Action

Communications Facility Construction and Operation

*Construction*

The proposed communications tower site is within land designated as Limited Use Class in the Chuckwalla DWMA. In accordance with Title 43 of the Code of Federal Regulations, the Proposed Action is in conformance with NECO and the appropriate land use limitations. Limited development, such as communications tower sites, may be allowed within DWMA as long as new ground disturbance is limited to a cumulative total of 1% of the respective DWMA and compensation for disturbance of public lands. The Chuckwalla DWMA encompasses 816,685 acres (33,500 ha), of which 465,287 acres (188,395 ha) are under BLM ownership. One percent of the BLM-owned Chuckwalla DWMA land is equivalent to 4,653 acres (1,884 ha). The Proposed Action evaluated in this EA would affect

approximately 1.6 acres (0.7 ha), which is far less than 1% of the Chuckwalla DWMA, even when added to the cumulative total of other ongoing or foreseeable actions.

To minimize potential conflicts with Desert Tortoise habitat and nesting season activities in the Spring Hill vicinity, construction activities would incorporate all SCMs in Section 2.25 of this EA.

### *Operation*

Under the Proposed Action, operation of the communications facility would not introduce a new land use to the area. The communications facility would be compatible with existing land use and would not require any changes to general land use in the area. Therefore, no significant impacts to land use would occur as a result of operation of the facility. The activities for operations and maintenance would follow the same guidelines as described in the above *Construction* section.

### Existing and New Access Road Improvements

As described previously, ground access would be provided along unimproved new and existing roads. The closest maintained road is Bradshaw Road, an unpaved road that runs along the northwest boundary of the CMAGR. From Bradshaw Trail, Augustine Pass Road and an unnamed jeep trail lead to within 1,000 ft (300 m) of the proposed Spring Hill communications tower on the south. The segment of Augustine Pass Road between Bradshaw Trail and the turnoff to the jeep trail is approximately 1.5 miles (2.4 km) long. The segment of the jeep trail leading to near Spring Hill is approximately 1.1 miles (1.8 km) long. The new access road leading to the summit of Spring Hill from the jeep trail would be approximately 1,300 ft (400 m) long. Assuming a 20-ft (6-m) wide impact corridor, this would represent 0.6 acre (0.2 ha) of new ground disturbance, or approximately one third of the total ground disturbance associated with the Proposed Action.

Under the Proposed Action, old and new road construction activities would follow the requirements and guidelines as stated in the NECO plan and Section 2.25 of this EA. Implementation of the Proposed Action would be consistent with current land use and no significant impacts would occur.

#### 4.2.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.2 would remain unchanged. Therefore, implementation of the No Action Alternative would not result in significant impacts to land use.

## **4.3 GEOLOGICAL RESOURCES**

### **4.3.1 Approach to Analysis**

This section evaluates potential impacts to geological resources as a result of implementation of the Proposed Action or alternatives. The protection of unique geological features, minimization of soil erosion, and construction of facilities away from potential geological hazards are considered when evaluating potential impacts of an action on geological resources. Generally, geological resource impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering components are incorporated into project design.

### **4.3.2 Impacts**

Prior to implementation of the Proposed Action or alternatives, standard soil and geotechnical engineering measures would be conducted to ensure the stability of the proposed communications facility. In addition, prior to implementation of the Proposed Action or alternatives, an Erosion Control Plan would be

prepared and used to minimize potential soil erosion impacts. This plan would provide guidance regarding the use of standard erosion control measures (e.g., sandbags, silt fencing, earthen berms, and temporary sedimentation basins) as described in more detail below.

#### 4.3.2.1 Proposed Action

##### Erosion/Sedimentation

The proposed communications tower site and access roads encompass generally sandy surficial deposits with moderate to high erosion potential, and are subject to potential erosion and off-site sediment transport (i.e., sedimentation) impacts from proposed development. Project-related erosion/sedimentation could ultimately result in the influx of sediment into downstream drainages, with associated potential effects such as increased turbidity from sediment, as well as transport of other contaminants that tend to adhere to sediment particles (e.g., hydrocarbons). The described potential impacts are associated primarily with short-term construction activities, with erosion and sedimentation not considered to be significant long-term concerns. This conclusion reflects that all disturbed areas would be stabilized through the installation of proposed facilities and/or surface compaction (e.g., at the helicopter landing site), as described below.

Potential short-term erosion and sedimentation could affect downstream receiving waters and associated wildlife habitats, including applicable portions of Arroyo Seco, Milpitas Wash and the Colorado River. Construction would be required to comply with existing regulatory standards of the National Pollution Discharge Elimination System (NPDES) General Construction Permit. Such requirements may include implementing a Storm Water Pollution Prevention Plan (SWPPP) and associated erosion/sedimentation BMPs.

##### Seismic Impacts

Construction activities could involve: (1) removal of existing surface stabilizing features such as vegetation and desert pavement; (2) excavation of existing compacted materials; (3) redeposition of excavated (and/or imported) material as fill; and (4) potential sediment generation from concrete work (if implemented at the communications tower site or helicopter landing site). Ground rupture and related effects such as lurching (i.e., the rolling motion of surface materials associated with passing seismic waves) can adversely affect surface and subsurface structures including buildings and foundations. No significant impacts related to seismically-induced fault rupture are anticipated in association with project implementation. This conclusion is based primarily on the fact that no known active or potentially active faults are located within or adjacent to the project site.

The estimated peak ground acceleration level within the project site would be approximately 0.1g in association with a maximum credible earthquake event of magnitude 7.5 along the southern segment of the San Andreas Fault Zone. Based on the relatively low level of estimated on-site ground acceleration, as well as the fact that proposed facilities would be underlain by shallow and generally competent bedrock materials, no associated significant impacts are anticipated. The design of the Proposed Action would also incorporate appropriate design measures as identified in the noted geotechnical investigation and pursuant to applicable industry standards including the Uniform Building Code and California Building Code. Specifically, these would include efforts such as proper fill and foundation design, use of reinforced concrete, and anchoring of applicable facilities.

Liquefaction is the phenomenon whereby soils lose shear strength and exhibit fluid-like flow behavior. Loose, granular soils with relative densities of less than approximately 70% are most susceptible to these effects, with liquefaction generally restricted to saturated or near-saturated soils at depths of less than

approximately 50 ft (15 m). Liquefaction most typically results from seismic ground acceleration, with the related loss of support potentially resulting in significant impacts to surface and subsurface facilities such as building foundations. Based on the anticipated lack of shallow groundwater within the site, as well as the fact that all proposed facilities would be underlain by shallow and generally competent bedrock materials, no significant impacts related to seismically-induced liquefaction and dynamic settlement are anticipated from project implementation.

### Minerals

Pursuant to information provided by BLM staff and obtained directly from the BLM Land and Mineral Database, no currently active mining claims are present within or adjacent to the project site. Four historic mining claim entries were recorded in the site vicinity in 1971 and 1972, including the Golden Duke Nos. 19 through 22 lode claims (serial nos. CAMC 46147, and 46392 through 46394). All of these claims were officially closed in 1989, with no associated residual legal rights or restrictions to surface use.

No active mineral leases or associated use/prospecting permits were identified in the noted BLM database for the project site and vicinity. One inactive, non-competitive oil & gas lease was identified in the project site vicinity (including portions of Sections 13, 14 and 24 of Township 8 South, Range 16 East), with this case listed as closed in current records.

The project site is not located within or adjacent to any areas of identified salable mineral potential (BLM 1980, as amended). No free use, negotiated or competitive mineral material sites were identified in the noted BLM database for the project site and vicinity.

#### 4.3.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.1 would remain unchanged. None of the proposed facilities described under the build alternatives would be constructed, and the proposed site would remain in its current undeveloped condition. Accordingly, no impacts related to erosion/sedimentation or seismicity would result. Therefore, implementation of the No Action Alternative would not result in significant impacts to geological resources.

## **4.4 WATER RESOURCES**

### **4.4.1 Approach to Analysis**

This section evaluates potential impacts to water resources as a result of implementation of the Proposed Action or alternatives. Impacts to water resources could potentially occur if implementation of the Proposed Action or alternatives resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, endangered health by creating or exacerbating health hazards, resulted in an increased flood potential, or violated established laws or regulations.

### **4.4.2 Impacts**

Prior to implementation of the Proposed Action or Alternatives, standard erosion control measures (e.g. sandbags, silt fencing, earthen berms, and temporary sedimentation basins) would be identified and implemented to reduce the potential for water quality degradation. The washes traversed by access roads leading to Spring Hill exhibit only intermittent flow (immediately following storms) and are geographically distant from navigable waterways. No jurisdictional waters of the U.S. are located in the project area and no structures would be placed within the 100-year floodplain zone; therefore, no significant impacts to these types of water resource features would occur. If the affected washes are

considered to be subject to USACE regulation, it is expected that the re-grading of existing roads would be covered by CWA Section 404 Nationwide Permit 14, Linear Transportation Facilities. In short, the USACE either: (1) does not have jurisdiction over the proposed re-grading of existing roads, or (2) has already issued a Nationwide Permit pursuant to Section 404 of the CWA that would allow the re-grading to occur.

#### 4.4.2.1 Proposed Action

##### Watershed and Drainage Impacts

During construction of the proposed communication facility, drainages in the project area would be avoided to the greatest extent practicable. This action would serve two purposes: 1) impacts to water resources would be minimized and 2) the long-term integrity of the communication facility and surrounding roads would be increased by avoiding highly erodible areas. Therefore, no significant impacts would occur. Development and ground disturbing activities would be limited to the hilltop area and road alignments previously described. No associated significant impacts related to drainage alteration would occur, based on the noted site location, the lack of defined drainage courses within the communications tower and helicopter landing sites, and the fact that site topography and surface drainage patterns would not be significantly altered. Specifically, post-development surface runoff from the communications tower and helicopter landing sites would continue to drain to the south and southeast as non-point (overland) flows, and would remain tributary to Arroyo Seco, and ultimately Milpitas Wash and the Colorado River. No significant impacts related to drainage alteration, runoff volumes/velocities or flood hazards would be associated with proposed road work, based on the following considerations: (1) proposed new road construction would not cross any existing drainage courses, with associated non-point flows continuing to drain south and southeast to Arroyo Seco (similar to existing drainage patterns); (2) the use of at-grade crossings or culverts would maintain the associated current drainage patterns, with no significant flow diversions or obstructions; and (3) none of the proposed access roads would be paved and the improved roads would not be widened, with associated potential reductions of filtration capacity and related runoff volume increases limited to incremental amounts from the new road construction.

##### Water Quality Impacts

Potential water quality impacts associated with the implementation of the Proposed Action would be limited predominantly to short-term construction activities. This conclusion is based on the fact that long-term site operation would generally not involve materials or activities using exposed hazardous materials or other potential contaminant sources. Specifically, long-term operation would entail the use of solar panels for electrical generation, with the back-up generator to be powered by propane gas. All electronic equipment would be located within an enclosed structure, with other proposed facilities not involving any potential contaminant sources or generation. Long-term site operation would also involve regular access to conduct inspections, maintenance and as-needed repairs. Such activities could potentially result in contaminant generation related to (for example) fuel or oil leaks from sources including helicopter operation or maintenance/repair efforts. These potential impacts are not considered significant due to their small scale and infrequent nature.

Potential short-term water quality impacts related to project construction would be associated with the on-site use and/or storage of hazardous materials such as fuels, lubricants, solvents, concrete, paint, and portable septic system wastes. The accidental discharge of such materials during project construction could potentially result in significant water quality and related biological resource impacts if such materials reach downstream receiving waters. As described above, project construction would include the implementation of a SWPPP pursuant to NPDES guidelines. This document would include detailed

measures to avoid or mitigate potential impacts related to the use and potential discharge of construction-related hazardous materials. While detailed BMPs would be determined as part of the NPDES/SWPPP process based on site-specific parameters, they would likely include the following types of standard industry measures contained in the permit text and other industry sources: (1) use of sediment control devices down-slope of concrete work; (2) proper containment and disposal of concrete wastes; (3) minimizing the amount of hazardous materials stored onsite (if any); and (4) proper location and maintenance of trash and wastewater facilities. Proposed road construction/improvement activities would encompass similar potential water quality impacts and conclusions related to the use and/or storage of hazardous materials as described above for the communications tower site. That is, while these activities would involve additional areas of concern related to potential contaminant discharge (i.e., the noted drainage crossings), similar methods as noted above would be employed to ensure permit conformance and avoid associated significant water quality impacts.

Based on implementation of appropriate BMPs as part of, and in conformance with, the project SWPPP, potential water quality impacts from construction-related hazardous materials would be less than significant. Specific BMPs implemented for the Proposed Action would be further defined during the permit/SWPPP process, with the resulting measures taking priority over the more general types of measures listed above.

Under the Proposed Action, implementation of erosion control measures during construction activities would reduce potential impacts to surface and ground water quality and sedimentation. Furthermore, construction activities (i.e., excavation for the communication tower footings) would not reach depths that could affect ground water resources. Therefore, no significant impacts to water resources would result as a result of construction of the facility. Proposed development would entail some construction of impervious surfaces, including facilities such as the tower base, backup generator, electronics equipment building, and solar panels. In addition, the proposed helicopter landing area may entail a graded surface that would result in increased compaction, reducing (but not eliminating) associated infiltration capacity. No significant impacts related to runoff volumes or velocities would result from the described facilities; however, due to the incremental size of the impervious areas involved, and the minor amount of associated additional runoff generation.

Improvements to the existing access road would include the installation of culverts (where necessary) to facilitate the drainage of storm flow beneath the road, and would follow BMP guidance and regulations to reduce the potential for erosion. Ground water resources would not be impacted since road improvements would not occur at depths where ground water is encountered. Therefore, no significant impacts to water resources would result from road improvements under the Proposed Action.

#### 4.4.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.3 would remain unchanged. Therefore, implementation of the No Action Alternative would not result in significant impacts to water resources.

## 4.5 BIOLOGICAL RESOURCES

### 4.5.1 Approach to Analysis

This section describes the direct and indirect impacts to biological resources that would result from the Proposed Action. Direct and indirect impacts are defined in 40 CFR § 1508.8. Direct impacts are caused by the action and occur in the same time and place. Typical direct impacts include ground disturbance

and the removal of vegetation, and disturbance or mortality to wildlife occurring as an immediate result of project activities. Indirect impacts are also caused by the action but occur later in time or farther removed in distance than direct impacts. Typical indirect impacts include changes in land use (e.g., traffic) or habitat features (e.g., the alteration of drainage patterns) that subsequently impact the vegetation or wildlife of the action area. Indirect impacts are often diffuse, variable, resource-specific, and less amenable to quantification or mapping than direct impacts, but still need to be considered to the extent that they are reasonably foreseeable. Either type of impact may be temporary or permanent, depending on its duration.

## 4.5.2 Impacts

### 4.5.2.1 Proposed Action

In accordance with Title 43 of the CFR, the Proposed Action would be in conformance with the following approved land use plan: *Northern and Eastern Colorado Desert Coordinated Management Plan* (BLM 2002), which is an amendment to the *CDCA Plan* (BLM 1980). The proposed communications tower site would be within land designated as Limited Use Class in the Chuckwalla DDWMA. It should be noted that for purposes of land use plan conformance, DWMA's are also considered ACEC; the Chuckwalla DWMA encompasses the former Chuckwalla Bench ACEC. Limited development, such as communications tower sites, may be allowed within DWMA's as long as new ground disturbance is limited to a cumulative total of 1% of the respective DWMA and compensation for disturbance of public lands within DWMA's is provided at a 5:1 ratio. The Proposed Action evaluated in this EA would affect approximately 1.6 acres (0.7 ha), which is less than one hundredth of 1% of the Chuckwalla DWMA (BLM 2002 and USFWS 2005).

#### Vegetation

The Proposed Action could directly impact as much as 1.6 acres (0.7 ha) (excluding re-grading existing roads) of Sonoran creosote bush scrub, desert pavement, desert dry wash woodland, and disturbed habitat. The impacted area includes the tower enclosure, the helicopter landing site, a buffer around enclosure and landing site, access road, and construction staging area (Table 4.5-1). Surface access to the proposed communication tower site would be via the maintained Bradshaw Trail, an unpaved road that runs along the northwest boundary of the CMAGR. From Bradshaw Trail exit on to Augustine Pass Road for approximately 1.5 miles (2.4 km) and take the respective jeep trail approximately 1.1 miles (1.7 km), to within approximately 1,300 ft (396 m) of the proposed Spring Hill communication tower site on the south. The new unpaved access road would be approximately 12 feet wide and would connect the end of the jeep trail to the communication tower site.

**Table 4.5-1. Potential Areas Affected by the Implementation of the Proposed Action**

Area	Acre(s)	Hectare(s)
Tower enclosure	0.4	0.2
Helicopter landing site	0.1	Less than 0.1
Buffer around enclosure and landing site	0.5	0.2
New access road	0.6	0.2
<b>Total</b>	<b>1.6</b>	<b>0.7</b>

*Notes:* Excludes re-grading of existing roads. New access road include a 20-ft (6-m) wide impact corridor.

The loss of up to a cumulative total of up to 1% of each DWMA is addressed and allowed pursuant to the *NECO*, provided that the activity complies with the guidance provided in that plan and the associated BO (BLM 2002; USFWS 2005).

As stated in SCMs in Section 2 the USMC would provide replacement habitat, or funding for replacement habitat, at a 5:1 ratio for the Proposed Action's ground disturbance (excluding re-grading existing roads) within the Chuckwalla DWMA. The footprint of the ground disturbance is estimated to be approximately 1.6 acres (0.7 ha); the specific impact acreage and associated 5:1 mitigation requirement would be confirmed upon final design of the tower enclosure, construction area, and roads.

Potential indirect impacts on vegetation could include the spread of non-native, invasive plant species into and subsequently from areas disturbed by the project. However, no landscaping would be provided at the proposed facility, which would limit the potential for the introduction of invasive, non-native plants at the facilities. Construction and maintenance of roads facilitates changes in plant species composition and diversity. Non-native, invasive species and edge-associated species often become dominant along linear road features and the disturbed roads serve as corridors for weed dispersal (USFWS 2008). Restoring the areas temporarily impacted by the Proposed Action with native species would limit the introduction and spread of non-native species. The implementation of weed control discussed in the SCMs in Section 2 would also reduce the potential for the introduction of invasive, non-native plants.

With the implementation of the Section 2 SCMs, the impacts to vegetation communities within the Proposed Action area would be less than significant.

#### Wildlife

Implementation of the Proposed Action would permanently remove as much as 1.6 acres (0.7 ha) of wildlife habitat, a direct impact. Aside from the loss of habitat, there would be some temporary and recurring disturbance to wildlife in the surrounding area during construction and operation of the facility. Relatively sedentary and burrowing wildlife species and those seeking refuge in burrows during construction of the Proposed Action would be subject to injury and mortality within the construction area. However, potential impacts to burrowing animals would not involve federally listed or special-status species, and the potential for direct mortality of wildlife during operations would be relatively low because most activity would take place within the fenced enclosure. Birds and larger animals would have sufficient mobility to avoid being crushed by equipment during construction.

The Vehicle traffic on the new access road would result in minimal potential for direct mortality of wildlife during facility maintenance and operations. The only permanent nighttime lighting proposed at the facility would be the lighting on the communications tower (necessary for aviation safety), which would have a negligible effect on wildlife. The free-standing communication tower would also be a negligible collisions risk for birds and bats.

Given the relatively small size of the proposed facility site in comparison to the amount of undeveloped habitat that surrounds the site, construction and operation of the tower site would not fragment the surrounding native habitat into smaller, discrete habitat areas or appreciably affect wildlife movements within the area. Linear projects, such as roads; however, do have a potential to fragment habitat. Given that the new and re-graded roads would be surrounded by vast expanses of native habitat, the largest potential for fragmentation would not be related to breaking up the habitat into discrete parcels; rather, it is the potential for the roads to form a linear impediment to the movement of wildlife. Potentially affected wildlife with the exception of the desert tortoise is expected to have sufficient mobility to traverse the roads and any associated berms.

Indirect effects associated with increased human activity at and near the site (including visits by members of the public interested in looking at the facility) would be minimized by limited access to the site.

Due to the short-term nature (less than a year) of proposed construction activities, the relatively small area not more than 1.6 acres (0.7 ha) that would be potentially impacted in relation to the number and types of wildlife species present in the project area, and the ability of wildlife species to re-colonize the project area upon completion of proposed construction activities, there would be no long-term, permanent impacts to populations of such species. Therefore, no significant impacts to wildlife, including migratory birds, would occur as a result of construction activities or operation and maintenance associated with implementation of the Proposed Action.

### Special-Status Species

#### **Federally Listed Species**

##### *Desert Tortoise*

The desert tortoise is listed as a Threatened Species under the Endangered Species Act. There is a low risk of potential harm to the desert tortoise during construction, if any desert tortoises are present. The 2005 BO for the *CDCA Plan* (pg. 80) (which encompasses the *Northern and Eastern Colorado Desert Coordinated Management Plan*) states:

*“Desert tortoises would be at risk during the construction, operation and maintenance phases of any project that would employ large equipment. Animals can be crushed on the ground, trapped in their burrows, or buried in overburden piles (USFWS 2005)”.*

However, direct impacts to the desert tortoise during construction would be minimized to less than significant by the implementation of the SCMs in Section 2, including a tortoise survey prior to construction, a qualified biological monitor onsite during construction, and permanent and temporary tortoise exclusion fencing. Also, to minimize impacts to the desert tortoise, construction outside of the permanent tortoise-exclusion fencing would not occur during the active desert tortoise season (March 15 through November 1) except in accordance with the SCMs described in Section 2.

- 1) Desert tortoise movement would potentially be restricted by the berms on the edges of the new or re-graded roads. As described in the Section 2 SCMs road side berms would be constructed in coordination with the USFWS to minimize impacts to the desert tortoise.
- 2) Potential fragmentation of desert tortoise habitat from impacts to 1.6 acres (0.7 ha) within the proposed project footprint and access road may affect desert tortoise movement and foraging. The 2005 BO (pg. 100) states:

*“Given the large size of the critical habitat units within the action area and the relatively small area that could be adversely affected by new communication sites, the level of impairment to the function of critical habitat is not expected to be extensive or substantial (USFWS 2005)”.*

- 3) There is a risk of potential harm to desert tortoise during facility maintenance and operations, if desert any desert tortoises are present. The approximately monthly maintenance visits would generate trips to and from the fenced enclosure, with a potential for mortality (running over) desert tortoise. The 2005 BO (pg. 99):

*“The construction and maintenance of access roads to the communication sites likely poses a greater potential for desert tortoise to be killed or injured than the site itself. If a new access road is needed, the most deleterious effects of the site may be the increased human intrusion into an area as a result of the road; travel along the new access route, by both workers associated with the communications site and casual users of the desert, could provide additional source of mortality for desert tortoise in the local area (USFWS 2005)”.*

However, these potential impacts would be reduced to less than significant with implementation of the SCMs in Section 2. As described in the Section 2 SCMs desert tortoises would be excluded from the tower enclosure by the permanent tortoise exclusion fence that conforms to the specifications contained in *Northern and Eastern Colorado Desert Coordinated Management Plan* Appendix D, Desert Tortoise Mitigation Measures, Section 7, Site Fencing and Hazard Removal (BLM 2002). Also drivers to and from the site would drive slowly and be educated to avoid desert tortoise.

- 4) Increased opportunities for predation of desert tortoise juveniles by common raven. The 2005 BO (pg. 99) states:

*“Communication sites may also provide additional nesting substrate for common ravens (USFWS 2005)”.*

As stated in the Section 2 SCMs anti-perching material would be instated when feasible and trash generated at the site would be either stored inside the shelter or hauled away, thereby avoiding the potential for refuse to draw common ravens to the site.

- 5) Indirect effects associated with increased human activity at and near the site (including visits by members of the public interested in looking at the facility) would be minimized by limited access to the site.

With implementation of the SCMs it is unlikely that the desert tortoise would be harmed during construction, operations, and maintenance of the Proposed Action. However, if a desert tortoise is encountered during construction, operations, or maintenance, a USFWS authorized qualified desert tortoise biologist, as described in the Section 2 SCMs, would move and minimize impacts to the tortoise.

#### Other Special-Status Species

Sixteen wildlife species of special concern have the potential to occur in the proposed project area. As described in Chapter 3, while these species are not federally or state listed, they are considered sensitive by the BLM due to existing threats to their populations or habitats. As described in the Wildlife Section 4.4.2.1, due to the short-term nature (less than a year) of proposed construction activities, the relatively small area not more than 1.6 acres that would be potentially impacted, and the ability of wildlife species to re-colonize the project area upon completion of proposed construction activities, there would be no long-term, permanent impacts to populations such species. Therefore, no significant impacts to wildlife species of special concern would occur as a result of construction activities or operation and maintenance associated with implementation of the Proposed Action.

Rare plant surveys were conducted for 19 CNPS sensitive plant species and none were found within the proposed project area. The 19 plants surveyed for were either confirmed absent or less than reasonable to be found within the project area, for more information see the rare plant report, Appendix C. No rare plants were found during focused rare plant surveys; therefore, no impacts to rare plants are anticipated from the implementation of the Proposed Action.

#### USFWS Informal Consultation Results

On September 15, 2009, the USFWS concurred with the BLM's determination that the Proposed Action falls within the definition of actions covered by the USFWS Biological Opinion (BO) for Small Projects Affecting Desert Tortoise Habitat in Imperial, Inyo, Kern, Los Angeles, Riverside, and San Bernardino Counties (Small Projects BO 1-8-97-F-17). The Small Projects BO examined potential impacts to desert tortoise and its designated critical habitat from proposed minor construction projects on BLM lands.

The USFWS concurrence was based on the following rationale and assumptions:

- The construction of communications towers was specifically identified as a covered activity in the Small Projects BO.
- The proposed project would result in new surface disturbance of less than 2 acres, which includes construction of the communication site, creation of a new 0.25 mile spur road leading to the top of the mountain, and improvements to the existing road. This small amount of disturbance meets the stipulation of the Small Projects BO that proposed projects result in less than 2 acres of surface disturbance.
- The BLM would implement the biology mitigation and avoidance measures listed in Section 2.2.5.1 of this EA (Special Conservation Measures) per the (a) terms and conditions of the Small Projects BO and the associated mitigation and avoidance measures as outlined in the Stipulations for Small Disturbances of Desert Tortoise Habitat in the California Desert Using Programmatic Consultation (incorporated into the BO by reference), (b) relevant mitigation measures from Appendix D (Desert Tortoise Mitigation Measures) of the Northern and Eastern Colorado (NECO) Desert plan.

Based on this concurrence and with implementation of the required mitigation measures, the Proposed Action would not have a significant impact on biological resources.

#### 4.5.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.4 would remain unchanged. Therefore, implementation of the No Action Alternative would not result in significant impacts to biological resources.

## **4.6 CULTURAL RESOURCES**

### **4.6.1 Approach to Analysis**

This section evaluates potential impacts to cultural resources as a result of implementation of the Proposed Action and No Action Alternative. Factors considered when determining the potential for impacts to cultural resources include the extent or degree to which the Proposed Action or alternatives would diminish the integrity of the location, design, setting, materials, workmanship, feeling, or association of an historic property, including those significant to Native Americans. In addition, impacts may be considered significant if the project has the potential to reduce access to sacred sites that tribal representatives have identified.

## 4.6.2 Impacts

### 4.6.2.1 Proposed Action

#### Construction Activities

The following eight sites and isolates are determined ineligible for the National Register: CA-RIV-8236, CA-RIV-8235, P33-015364, CA-RIV-8240, P33-15373, P33-15376, P33-15375. Because these sites are not NRHP eligible, construction-related ground disturbance activities would have no impacts to these cultural resources.

The following seven sites have not been subject to evaluation, and are assumed eligible: CA-RIV-8234, -8237, -8238, -8241, -8250, -8233, -8239. These sites must be avoided. If these sites are located within or immediately adjacent to the APE, an archaeological monitor must be present during construction to ensure they are avoided, as described in SCM #2 in Section 2.2.5.2 of this EA. If these sites are located outside of the APE, then all activities associated with the Spring Hill tower project must stay within the APE.

#### Post-Construction

Post-construction impacts and requirements would be the same as those listed above for construction activities, Section 4.6.2.1.

### 4.6.2.2 No-Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.5 would remain unchanged. Therefore, implementation of the No Action Alternative would not result in significant impacts to cultural resources.

## 4.7 AIR QUALITY

### 4.7.1 Approach to Analysis

Emission thresholds associated with federal CAA conformity requirements are the primary means of assessing the significance of potential air quality impacts associated with implementation of the Proposed Action or alternatives. A formal conformity determination is required for federal actions occurring in nonattainment or maintenance areas when the total direct and indirect stationary and mobile source emissions of nonattainment pollutants or their precursors exceed *de minimis* thresholds. Potential impacts are evaluated based upon estimated direct and indirect emissions associated with implementation of the Proposed Action or alternatives and have not therefore been broken out by major component. Air quality impacts would occur if implementation of the Proposed Action or alternatives would directly or indirectly:

- produce emissions that would be the primary cause or significantly contribute to a violation of state or federal ambient air quality standards;
- establish land uses that would expose people to localized (as opposed to regional) air pollutant concentrations that violate state or federal ambient air quality standards;
- cause a net increase in pollutant or pollutant precursor emissions that exceeds relevant emission significance thresholds (such as CAA conformity *de minimis* levels or the numerical values of major source thresholds for nonattainment pollutants); or,
- conflict with adopted air quality management plan policies or programs.

## 4.7.2 Impacts

### 4.7.2.1 Proposed Action

**Activity:** The Proposed Action consists of the construction and operation of a communications tower and associated equipment, as well as the construction and maintenance of access to the tower site.

**Summary:** Surface access to the proposed communication tower site would be via the maintained Bradshaw Trail, an unpaved road that runs along the northwest boundary of the CMAGR. From Bradshaw Trail exit on to Augustine Pass Road for approximately 1.5 miles (2.4 m) and take the respective jeep trail approximately 1.1 miles (1.8 km), to within approximately 1,300 ft (396 m) of the proposed Spring Hill communication tower site on the south. The new unpaved access road would be approximately 12-ft (4-m) wide and would connect the end of the jeep trail to the communication tower site. Emissions resulting from proposed construction activities have been estimated using data and procedures described by the URBEMIS Model, Version 9.2.2, which contains California Air Resources Board's Offroad Diesel Emission Factors (CARB 2007), the EMFAC2007 model (CARB 2007), the USEPA's AP-42 emission factors (USEPA 1998), and the South Coast Air Quality Management District's (SCAQMD) California Environmental Quality Act Air Quality Handbook emission factors for fugitive dust and construction operations (SCAQMD 1993), and account for fugitive dust and vehicle exhaust emissions from construction vehicles and equipment. Construction vehicles would consist of a mixture of loaders, trucks, backhoes, water trucks, and other vehicles and equipment typically associated with construction activities. It has been conservatively estimated that proposed construction activities would disturb 1.6 acres (0.7 ha) and would last 8 months to 1 year.

Federal actions in areas that are unclassified for CAA criteria pollutants are exempt from conformity determinations if they would be less than the 100-ton to 250-ton CAA Prevention of Significant Deterioration thresholds established for major new sources of pollutants in unclassified areas. Estimated emissions as a result of implementation of the Proposed Action would be below *de minimis* levels; therefore, a conformity analysis would not be necessary (Table 4.7-1). A Record of Non-Applicability (RONA) for Clean Air Act Conformity is included as Appendix A. In addition, proposed construction activities would be short-term in nature; no long-term increases in emissions would occur as no new stationary sources would be created (annual evaporative emissions from the aboveground storage tank (AST) would be negligible). Fugitive dust (PM<sub>10</sub>) emissions would be minimized by incorporating dust control measures (e.g., frequently applying water on surface grading areas). Therefore, implementation of the Proposed Action would not result in significant impacts to air quality within the Mojave Desert Air Basin.

**Table 4.7-1. Estimated Emissions with Implementation of the Proposed Action (tons/year)**

Category	Emissions				
	VOC <sup>1</sup>	NO <sub>x</sub> <sup>1</sup>	CO <sup>2</sup>	SO <sub>x</sub> <sup>2</sup>	PM <sub>10</sub> <sup>3</sup>
Construction & Worker Trip Emissions	1.96	14.16	8.39	0.02	19.21
<i>de minimis</i> threshold	25	25	100	100	100
Exceeds <i>de minimis</i> threshold?	No	No	No	No	No

Notes: <sup>1</sup> The Mojave Desert Air Basin is in nonattainment (severe) for the federal and state O<sub>3</sub> standards; VOCs and NO<sub>x</sub> are precursors to the formation of O<sub>3</sub>.

<sup>2</sup> The Mojave Desert Air Basin is in attainment of the federal and state CO and SO<sub>x</sub> standards; *de minimis* levels are presented for comparison purposes only.

<sup>3</sup> The Mojave Desert Air Basin is in nonattainment (moderate) for the federal and state PM<sub>10</sub> standards.

#### 4.7.2.2 No Action Alternative

Under the No Action Alternative, existing conditions as described in Section 3.6 would remain unchanged. Therefore, implementation of the No Action Alternative would not result in significant impacts to air quality.

### 4.8 NOISE

#### 4.8.1 Approach to Analysis

This section evaluates potential impacts to noise associated with implementation of the Proposed Action or alternatives. The increase of operations or construction activities from implementation of the Proposed Action or alternatives may result in impacts to noise. The standard threshold for determining at what point noise impacts become a nuisance is 65 day-night average sound levels ( $L_{dn}$ ). Impacts would result from activities that generate the following:

- Annoyance - noise can impact the performance of various every day activities such as communication and watching TV in residential areas;
- Hearing loss - the USEPA recommends limiting daily equivalent energy to 70 dBA, approximately 75  $L_{dn}$ , to protect against hearing impairment over a period of 40 years;
- Sleep interference, which is of great concern in residential areas; and
- Wildlife may show a startle response to high intensity, sporadic noise levels.

#### 4.8.2 Impacts

The following describes potential short- and long-term effects on noise as a result of the installation and operation of the communications facility and supporting infrastructure. Noise from construction activities would be temporary; noise from maintenance activities would be minimal with implementation of the Proposed Action or alternatives. Therefore, no impact to noise would occur with implementation of the Proposed Action or alternatives.

##### 4.8.2.1 Proposed Action

The Proposed Action would result in noise impacts from construction operations (trenching and facilities installation) in the surrounding area only. Construction would require the excavation of soils and would create noise from the use of motorized equipment. Construction activity impacts would be temporary in duration and would not create regional or permanent noise sources.

##### 4.8.2.2 No Action Alternative

The No Action Alternative will not result in any in noise impacts.

### 4.9 AESTHETICS AND VISUAL RESOURCES

#### 4.9.1 Approach to Analysis

BLM categorizes tracts of public lands into classes based on their scenic value, level of public sensitivity, and distance from the viewer. Each class has a management objective, as described in the BLM Visual Resource Inventory Manual (H-8410-1):

**Class I:** The objective is to maintain and preserve the existing landscape character. The level of change to the landscape should be very minimal and not attract attention. This class includes natural ecological changes and may include very limited management activity.

**Class II:** The objective is to maintain the existing landscape character. The level of change should be low, and changes should be consistent with existing natural features. Management activities may be implemented but should not attract attention.

**Class III:** The objective of this class is to partially retain the existing landscape character. The level of change to the landscape may be moderate and management activities should not dominate the view of the casual observer. Changes should be consistent with the basic elements found in the landscape’s dominant natural features.

**Class IV:** The objective of this class is to allow management activities that require major changes to the landscape’s existing character. The level of change can be high. Management activities may be the major focus of viewer attention, but every attempt should be made to reduce activities’ impacts.

The proposed project area would not be within an established Visual Resource Management (VRM) class; therefore, a project-specific VRM study was conducted for Sections 12 and 13 of Township 8S, Range 16E, and is included as an Appendix B of this EA. The results of the study are used below to assess the potential visual resource impacts of the Proposed Action and No Action Alternatives.

**4.9.2 Impacts**

4.9.2.1 Proposed Action

The proposed project area would be composed of Sections 12 and 13 of Township 85 Range 16E. This area constitutes the Sensitivity Level Rating Unit (SLRU) for the project, a unit that defines the area to be studied. The SLRU was then evaluated to determine which management class is applicable to the project site (Barclay et al 2009).

According to the *Visual Impacts Assessment, MCAS Yuma Spring Hill Communications Tower, Riverside County, California* (2009), the SLRU had an overall rating of 13, which placed it in the “B” classification. According to the classification matrix, the project area is categorized as Class III based on a B rating for scenic quality, medium level of visual sensitivity, and visibility in the foreground-middleground for both Bradshaw Trail and Augustine Pass Road (Figure 4.9-1).

		Visual Sensitivity Levels					
		High		Medium		Low	
Special Areas		I	I	I	I	I	I
	A	II	II	II	II	II	II
Scenic Quality	B	II	III	III*	III	IV	IV
				IV*			
	C	III	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s
		Distance Zones					

Source: BLM Handbook H-8410-1

\* If adjacent areas are Class III or lower, assign Class III; if higher, assign Class IV.

**Figure 4.9-1. Visual Resource Inventory Classification System Matrix**

According to the BLM Visual Resource Inventory Manual (H-8410-1), The objective of Class III 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”* (Barclay et al 2009).

The VRM study evaluated the views of two Key Observation Points (KOPs) of the project area that were the most likely viewing points for the users of Bradshaw Trail and Augustine Pass Road. KOP #1 was a kiosk at the intersection of Bradshaw Trail and Augustine Pass Road, and KOP #2 was at the intersection of Augustine Pass Road and an unnamed jeep trail. KOP #1 was approximately 1.04 miles (1.7 km) from the proposed communications tower location and KOP #2 was approximately 1.89 miles (3.4 km) from the proposed tower (Barclay et al 2009). Photographs were taken of the viewshed from each KOP to the proposed tower site (Figure 4.9-2 and 4.9-3). A photorealistic simulation of a tower with characteristics similar to those of the proposed tower were placed on the photographs to show what the view of the tower from each KOP would look like (Figure 4.9-4 and Figure 4.9-5).

#### 4.9.2.2 No Action Alternative

Figures 4.9-2 and 4.9-3 show the current baseline view of the project site. Under the No Action Alternative, the communications facility would not be constructed. There would not be any impact to the visual and recreational resources at or near the project site. However, low-altitude military aircraft communications problems and the potential for military aircraft safety hazards during night flight operations would persist.



**Figure 4.9-2. KOP #1 Natural Landscape View**



**Figure 4.9.3. KOP #2 Natural Landscape View**



**Figure 4.9-4. KOP #1 View with Simulated Tower**



**Figure 4.9-5. KOP #2 View with Simulated Tower**

# CHAPTER 5

## OTHER CONSIDERATIONS REQUIRED BY NEPA

This chapter addresses topics required by NEPA in an EA, including cumulative impacts, irreversible and irretrievable commitment of resources, and possible conflicts between the Proposed Action and the objectives of federal and state land use plans, policies, and controls. In addition, the relationship between short-term environmental impacts and long-term productivity is addressed.

### 5.1 CUMULATIVE IMPACTS

Federal and U.S. Department of the Navy (US Navy) regulations implementing NEPA (42 USC § 4321 *et seq.* and 32 CFR 775, respectively) and the USMC’s *Environmental Compliance and Protection Manual* (MCO P5090.2A) require that the cumulative impacts of a Proposed Action be assessed. CEQ regulations implementing the procedural provision of NEPA define cumulative impacts as:

*“The impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions”* (40 CFR 1507).

In addition to NEPA, other regulatory authorities have been addressed during the preparation of this EA. These include but are not limited to federal statutes, EOs, regulations, and permitting requirements (Table 5.1-1).

**Table 5.1-1. Applicable Environmental Statutes and Regulations**

<b>Federal Statutes</b>
Watershed Protection and Flood Prevention Act of 1954
Illegal Immigration Reform and Immigrant Responsibility Act of 1996
National Historic Preservation Act of 1966, as amended
National Environmental Policy Act of 1969, as amended
Migratory Bird Treaty Act of 1918, as amended
Endangered Species Act of 1973, as amended
Archaeological and Historic Preservation Act of 1974
Archaeological Resources Protection Act of 1979
Farmland Protection Policy Act of 1980
Noise Control Act of 1971
Clean Air Act of 1990, as amended
Native American Graves Protection and Repatriation Act of 1990
Resource Conservation and Recovery Act of 1976
Toxic Substances Control Act of 1976
CWA of 1997, as amended
<b>Executive Orders, Memorandums, etc.</b>
Floodplain Management (EO 11988) of 1977
Protection of Wetlands (EO 11990) of 1977
Federal Compliance with Pollution Control Standards (as amended by EO 13423)
Government-to-Government Relations with Native American Tribal Governments (Presidential Memorandum) of 1994
Federal Actions to Address Environmental Justice to Minority Populations and Low-Income Populations (EO 12898) of 1994
Indian Sacred Sites (EO 13007) of 1996
Protection of Children from Environmental Health Risks (EO 13045) of 1997

**Table 5.1-1. Applicable Environmental Statutes and Regulations**

Federal Statutes
Consultation and Coordination with Indian Tribal Governments (EO 13175) of 2000
Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423)
Protection of Migratory Birds & Game Mammals (EO 11629) of 2001

The Proposed Action site is located in a remote, uninhabited area in Spring Hill. At this time there are no other projects being proposed within or near the proposed project site at Spring Hill. Riverside County is proposing to construct a PSEC tower in the eastern part of the County, but if the proposed tower at Spring Hill is built, they would likely jointly use the tower at Spring Hill and not construct a separate tower. Therefore, the Proposed Action would not have any cumulative impacts.

## **5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

Resources that are irreversibly or irretrievably committed to a project are those that are used on a long-term or permanent basis. This includes the use of non-renewable resources such as metal and fuel. These resources are irretrievable in that they would be used for a project when they could have been used for other purposes. Human labor is also considered an irretrievable resource. In addition, the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment is also considered an irreversible commitment of resources.

Implementation of the Proposed Action at Spring Hill would require the consumption of materials typically associated with construction activities (e.g., concrete). In addition, the use of vehicles and possible use of emergency generators would result in the consumption of fuel, oil, and lubricants. An undetermined amount of human energy to construct the tower and associated infrastructure would also be expended and irreversibly lost. However, the amount of these resources used would be negligible and these resources are readily available in large quantities. Further, the tower's main source of power would be solar, which is renewable. Therefore, implementation of the Proposed Action would not result in a significant irreversible or irretrievable commitment of resources.

## **5.3 POSSIBLE CONFLICTS BETWEEN THE PROPOSED ACTION OR ALTERNATIVES AND THE OBJECTIVES OF FEDERAL AND STATE LAND USE PLANS, POLICIES, AND CONTROLS**

Implementation of the Proposed Action not conflict with the objectives of federal and state land use plans, policies, and controls. The action proponent would adhere to all requirements in the BO, the NECO Plan, and the SCMs in Section 2.25 of this EA.

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

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

Under the Proposed Action, short-term effects would be primarily related to construction activities and the use of associated vehicles and equipment that are currently used for other purposes. In the long-term, the construction and operation of the communications tower would increase the safety of military and commercial aircraft flying in and around the CMAGR airspace, thereby resulting in beneficial impacts to

public health and safety. The Proposed Action would not result in any impacts that would reduce environmental productivity or narrow the range of beneficial uses of the environment (Figure 5.4-1).

**Table 5.4-1. Project Compliance with Objectives of Federal and State Land Use Plans, Policies, and Controls**

<b>Plans, Policies, and Controls</b>	<b>Lead Agency</b>	<b>Status of Compliance</b>
NEPA (42 USC 4321 <i>et seq.</i> ) US Navy Procedures for Implementing NEPA (32 CFR 775)	US Navy	This EA has been prepared in accordance with the CEQ Regulations implementing NEPA and US Navy NEPA procedures.
CWA Section 401/402 (401-402, 33 USC 1251 <i>et seq.</i> ), Section 404 (404, 33 USC 1251 <i>et seq.</i> )	USEPA/USACE	Implementation of the Proposed Action would not discharge or place fill material into waters of the U.S.
EO 11990, <i>Protection of Wetlands</i>	US Navy	Implementation of the Proposed Action or would not impact wetlands.
EO 11988, <i>Floodplain Management</i>	US Navy	Implementation of the Proposed Action or would not impact floodplains.
Endangered Species Act (16 USC 1531)	USFWS	Pursuant to Section 7 of the Endangered Species Act, informal consultation with the USFWS has been initiated to address potential effects on the desert tortoise. The BO would be adhered to.
CAA, as amended (42 USC 7401 <i>et seq.</i> )	USEPA	Implementation of the Proposed Action would not compromise air quality attainment status or conflict with established attainment status and goals.
EO 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations</i>	US Navy	Minority or low-income populations would not be disproportionately affected by implementation of the Proposed Action.
EO 13045, <i>Protection of Children from Environmental Health Risks and Safety Risks</i>	US Navy	Implementation of the Proposed Action would not disproportionately expose children to environmental health risks or safety risks.
NHPA (106, 16 USC 470 <i>et seq.</i> )	Advisory Council on Historic Preservation and/or the California State Historic Preservation Officer	BLM has determined that there are no NRHP eligible cultural resources on the project site.

## CHAPTER 6

### REFERENCES

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## CHAPTER 7

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## **CHAPTER 8**

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